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June 20th, 1899

Farming

A Paper for

Farmers and Stockmen

Office of Publication

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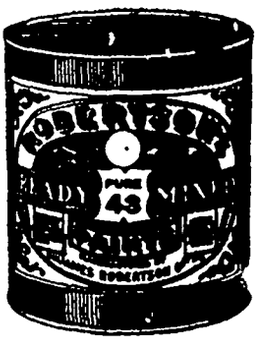

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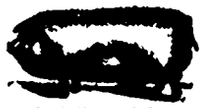

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Oak Lodge Herd of Large Yorkshires

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Stock Notes

MR. D. ALEXANDER, of Brigden, Ont., advertises for sale a number of young Shorthorn heifers, some in calf and others old enough to breed. The stock is good and should find a ready market.

MR. E. E. MARTIN, of Canning, Ont., is offering choice Berkshires in this week's FARMING. As an experienced breeder Mr. Martin can be relied on to give his customers satisfaction, and, as his guarantee goes with every sale, there should be no hesitancy in giving him a call if in need of good stock.

A REMARKABLE EWE.—John Campbell, *Fairview Farm, Woodville, Ont., reports* having a very prolific Shropshire ewe in that she produces lambs twice in the year. Last October she dropped a ram lamb and suckled it extra well. Last month she dropped two more lambs, which are doing remarkably well. Two years ago when imported she produced in January and again in November living and well-doing lambs.

MR. GEO. LARSCH, of Freeport, Ont., has issued the catalogue of purebred Jersey cattle to be offered for sale on June 30th at his farm, *two miles east of Berlin. The foundation of* this herd was laid some years ago at considerable expense; the cows are large and are said to be heavy milkers, backed up by pedigrees which it will be difficult to surpass. The stock bulls are noted for their prepotency and high breeding. For the convenience of those who cannot attend the sale bids may be sent by letter or telegram to the auctioneer, Mr. Joseph Mickus, Waterloo, Ont.

FAIRVIEW FARM stock of Shropshires is this season the best lot so far produced. Lambs sired by "Newton Lord," "The Best Type," and "The Gentleman," all noted winners of first premiums, and that on several occasions when the best from beyond the sea were competitors, including one of England's champion rams, are most promising. As the breeding was one of the best that money would buy, and nearly all noted prize-winners, it is not strange that the progeny is of the best types. A choice importation is being now selected in England. With many orders placed for stock rams at $100 to $250, and for ewes no limit *stated, but get some of the very best, it may* be expected that this season's importation to Fairview will be one well worthy of breeders' attention, as John Campbell will probably be bringing sheep for his own use that will equal and surpass in excellence any former importation.

FARMING

VOL. XVI JUNE 20th, 1899 No. 42

The Butter and Cheese Trade

A very large make of both butter and cheese is generally reported. From the 1st of May up to June 14th the exports of cheese from Montreal increased by over 100,000 boxes as compared with the same period of 1898. If this rate of increase keeps up, the present season will witness the largest make of cheese that this country has ever had. This largely increased make is beginning to have its effect upon the British markets, and the English cable has dropped several shillings during the past few weeks. But, as our market review shows, this lowering of values has greatly increased the consumption of cheese, resulting in a steadier feeling. It is reported that if it were not for short sales prices on this side would be much lower than they are, and some in the trade are endeavoring to show from this that the short-selling is a great "boon" to the producer. But while this may be true in so far as the present is concerned, dairymen should bear in mind that it will not last. As soon as the dealer has filled his short sales, he is very likely to go to the opposite extreme and endeavor to make up his loss by "bearing" the market and getting the price down as low as possible. For this reason any benefit that short-selling may be to the producer is only temporary, and, taking the whole season through, he would fare as well if such short-selling were prohibited.

The export butter trade also shows a very gratifying increase. From May 1st to June 14th the exports of creamery butter from Montreal were 23,372 packages as compared with 11,638 packages for the same period of 1888, an increase of considerably over 11,000 packages. While this is true in regard to the Canadian trade the American butter exports show a decrease of 5,500 packages for the same time. Present prices for June butter are considered reasonable, and large quantities are being bought up on English speculative account. The outlook is considered bright and the Canadian creamery butter trade will, doubtless, experience one of the best seasons it has ever had. An important feature in the situation is the large demand from British Columbia for the mining districts. This, in addition to the large export demand, is making the market lively and trade active.

Seed Growth and Selection

A More Detailed Statement of Prof. Robertson's Important Delivery on the Subject

In our issue of May 16th we gave a short summary of the evidence given by Professor Robertson before the committee on agriculture in reference to the growth and selection of seeds. Since then we have received a more detailed statement of what he said particularly in reference to his statements on the second day. At the beginning of his evidence he outlined the great underlying principles which govern the increase of plants during their growing period. The conditions which make for the increase in the size of the roots, stems, and leaves, do not make for an increase in the grains, fruits, or seeds. An excess of easily available plant food promotes a great growth and enlargement of the vegetative parts of the plants, namely, the roots, stems and leaves. A bareness of available plant food when the plant is near the ripening period makes for an increase in the quantities of seeds.

With regard to the question of seeds he stated that seeds which germinate most quickly are the best and heavy seeds give more vigorous and heavier crops than smaller seeds of the same sort and variety. All plants have a tendency towards variation. When they are changed from one place to another, they make an effort to adapt themselves to the new conditions. Those which succeed most fully in adapting themselves are the best for the locality. Variation in plants was brought about and intensified by a change of seed, by the method of tillage, by crossing varieties and the like. Whenever a seed is sown in a locality new to it, if it be suitable, some forms will vary in the direction of adapting themselves to the conditions there; and selection of the seeds from these forms is practically the only means of continuing any improvement of the productiveness of the seed. That is actually a grading up of the seed by continued selection from year to year on the farm where it is to be grown.

He analyzed the reports of the growing of cereals at the Dominion Experimental Farms for four years, and said that in his opinion the comparison of varieties without a continued selection of the best seeds from year to year was of no service to the farmers, and was apt to mislead them into expecting service from named varieties as such, instead of obtaining the seeds by continued selection from year to year on their own or similar farms. Variation in the productiveness of all varieties appeared to be brought about by growing them under different conditions of soil and climate. He gave a number of instances taken from the tests made at the five experimental farms during the season of 1898 to show that there is no inherent superiority in the variety without selection. Of the 195 varieties of oats, barley, spring wheat and peas compared, 138 appeared in the selected lists of the twelve or six of the largest yielders at the five farms. The selected lists included over 70 per cent. of the total number compared.

The only valuable or useful selection of farm seeds was a selection of the seeds from the individual plants which give evidence of power by succeeding and yielding largely under soil and climatic conditions where the crop is to be grown the following year. In every field of grain some plants are more vigorous, larger, earlier and more productive than the others. That is evidence that these plants have varied in the right direction for profit making to the farmer. The difference in the same field is due to some form of inherited vigor. The only quality of inheritance in plants for farm crops which is worth naming is the power to overcome obstacles, power to take materials from the soil and the air, and power to hold these and organize them into valuable forms. That is the only quality of inheritance or heredity which is worth naming in any field, the field of the farm or the field of the nation. He recommended every farmer to select enough heads from the largest, most vigorous and early plants in his field to give him two bushels of seed grain, then to select the large seeds from that by the vigorous use of the fanning mill and sieves. Such seed grain would doubtless prove better adapted to the soil and climate of his place than any outside seed he could obtain. Selection in that way from year to year would develop seeds with the greatest vigor for productiveness and also with the quality of the grain improved. Such a course would result in an increase of crop varying from 20 per cent. to 30 per cent., which, if applied to the farm crops of Canada, would

mean an increase of from $60,000,000 to $80,000,000 to their present annual value.

On the second day Professor Robertson's evidence is summarized as follows:

He repeated the statement that there did not appear to be any superior productiveness in any one variety under the different conditions of soil and climate in different provinces in Canada. In fact, the sowing of the same varieties at the five different experimental farms in one season brought about such a variation in the relative productiveness of them that there was no evidence of constant superiority in regard to productiveness. A change of soil and locality brings about a variation, which may be towards greater or less productiveness. When a variety is sown in a locality new to it, it is simply a hazard whether it will succeed as well as those which have been sown there before, or whether it will succeed as well in the new locality as in the place where it has been grown before.

Having used the word "hazard" in this connection, he said that he had actually compared the hazard selection of numbers with the lists of selected varieties of grains reported at the experimental farms last season. He cut pieces of paper and put a number corresponding to a variety of grain on each. Sixty five of these papers numbered consecutively were put in a box. Twelve were shaken out; they were put back again, twelve more were shaken out; that was repeated five times. Each twelve that were shaken out were for comparison with the twelve in the selected lists of the best yielders at each of the experimental farms. He said there was a most remarkable, a most astonishing, similarity of results. In the case of 65 varieties of oats grown the selected list contained 41 varieties; the average of six trials by hazard gave 43; one of the trials giving 41. The comparison of the farms of 18 varieties of six-rowed barley gave 14 in the selected lists; the hazard method 16. The comparison of 23 varieties of two rowed barley gave 18 on the selected lists; the hazard method gave 17. The comparison at the experimental farms of 42 varieties of spring wheat gave 33 on the selected list, the hazard method gave 33. The comparison of 47 varieties of peas gave 32 on the selected lists; the hazard method gave 33.

UNSELECTED SOWING AND SELECTION BY CHANCE.

Class of Grain.	No. of Varieties Tested.	No. in Selected Lists by Sowing	No. in Selected Lists by Chance.
Oats	65	41	43
Spring Wheat	42	33	33
Peas	47	32	33
Six-Rowed Barley	23	18	17
Two Rowed Barley	18	14	16
Totals	195	138	142

In the case of sowing, 70 per cent. appeared in the selected lists; and 72 per cent. appeared in the other lists.

He held that there was abundant evidence to prove that the productiveness of varieties varied greatly when the localities in which they were grown were changed; whereas the productiveness of each variety was increased when seed of the best quality was selected from it and was sown again in the same locality.

He cited the comparison of varieties on the Experimental Farm of the Ontario Agricultural College. In the case of spring wheat he said the evidence was all in one direction, namely that the new varieties, and those were the ones which were recommended as being superior to the old varieties, did not yield nearly as largely in 1895, 1896, 1897 and 1898 as the varieties which had been grown continuously on that farm for periods varying from six up to ten years. This was specially the case in a season unsuitable for yielding large crops of grain. In such a year the crops from the varieties which had been grown continuously on that farm for five, six or seven years, gave over twice as large a yield per acre as the varieties which were quite new to the farm. In the case of oats also, varieties which had been grown on the same land continuously for ten years, gave larger yields in 1896, 1897, 1898 than varieties which were comparatively new to the farm.

Since the varieties which have been grown on a farm continuously yield more largely than any new variety during the first two or three years, it is evident that continued selection in one place from plants or crops which yield largely there, will increase the productiveness of varieties. Change of seed or change of locality in which the seed is grown brings about a variation in the variety. Unless that is followed up by selection, there is no gain through change of seed. Continued selection of the best seed from large crops on the farm on which it is grown will give on the average much better results than the introduction of new varieties.

Hay-Making

Cutting and Curing Timothy and Clover

"Make hay while the sun shines" is a saying that has in it, not only good general advice that may be applied in many walks of life, but contains a truth that should be applied in a practical way by every farmer when haying arrives. Everything considered, the quicker hay is made the better. But to do this and cut the crop at the proper time, lots of sunshine is necessary. When this is available, timothy or clover wilts readily, and by proper handling can be put in cock or into the barn, when a hay-loader is in use, in comparatively short time.

With the improved haying machinery a farmer now has at his disposal, the hay crop can be attended to without much loss if the weather is at all favorable. What with hay tedders, sulky rakes, hay loaders, hay forks, etc., the work of getting the haying done is made very much easier than was the case even a few years ago, when it was our privilege to pitch tons of it on and off the load to the peak of the barn sometimes. But, though there is not the muscle developing work about it now that there was, yet the saving of the crop in the best possible condition for feeding purposes is one of the most important parts of the farm work. When a farmer has accomplished this in connection with all of his hay crop, he has reason to feel proud of the task he has performed.

The most important part of the haying operation is the cutting; not the mechanical part of it, but cutting when the crop is in the stage when it will give the most feed quantity and quality considered. Some of the best authorities agree that timothy should be cut when the heads begin to show a slight trace of brown or ripeness and when the seeds are well formed. Timothy cut at this stage, it is claimed, cures more pounds to the acre than if cut earlier, and many who raise hay to sell follow this plan, but some of them admit that it is at the expense of quality. When hay is to be fed on a farm, especially to cows and sheep, it should be cut at an earlier stage. Professor Henry says that for dairy cows and sheep grass should be cut early, since these animals do not relish hay that is woody and lacking in aroma, as is the case with late-cut hay. For horses and fattening cattle late cutting is perhaps better, as these animals subsist mostly on concentrated feed and hay serves more for "filling." If harvesting is delayed too long the stems of the grass are tough and woody and the seed shatter from the heads, thus leaving the hay lacking in aroma and palatability, if not nutrients.

All authorities agree that the best time to cut clover is when it is in full bloom. At this stage it has the maximum nutritive matter, and is in the best condition for assimilation. If cut before bloom the amount of water in the crop is so excessive that the process of hay making is slow and unsatisfactory. If the cutting is delayed till the heads are all brown the plants are easily dried, but such

hay has lost much of its valuable protein and carbohydrates. Both in regard to cutting clover as well as timothy the farmer will have to be governed to a large extent by the acreage he has to cut in deciding upon the best time to do it. If, for example, he has a large acreage of clover it would be well to begin cutting on the early side so that none of the crop will get over ripe. The same would apply to timothy.

As to the methods of clover-haymaking three practices are largely followed. Under the first system the clover is mown as soon as the dew is off, and by frequent turnings, aided by bright, hot sunshine, it is ready for raking in the afternoon and housing before five o'clock in the afternoon, when the gathering dews prevent further operations. Under this plan the clover must be well ripened, indeed, past its prime, for hay, and the weather very favorable if good results are to be obtained. The second plan is to cut the clover so late in the afternoon that the dew does not materially affect the plants because they have as yet wilted but little. On the following day haymaking proceeds as quickly as possible, the crop being placed under cover before nightfall. Under the third plan clover is cut after the dew is off, and remains till the afternoon, when it is gathered into windrows, and from these into cock. before the dew falls, which stand several days, undergoing a sweating process. After sweating, the cocks are opened in flakes, which give off moisture rapidly, and the hay is soon ready for the barn. When curing in cocks it is a good plan to have caps for covering in case of rain.

Group of young Ayrshire Cows, imported by the Isaleigh Grange Stock Farm, now in quarantine at St. John, N.B. For particulars see our Stock Notes column in this issue.

As to the best plan to be adopted the hay-maker will have to be governed largely by his own conditions. In any case the utmost care should be exerted in preserving the leaves or finer parts of the plants, which are liable to be wasted, leaving only the coarse woody stems to be gathered. The clover plant should never be placed in barn or stack when carrying external moisture, dew or rain. This outside moisture seems to be more detrimental in curing hay than the natural sap of the plant. It is very injurious to allow clover hay that is any way wilted to be scattered over the ground when the dew is on. In harvesting Lucerne or alfalfa there is more danger of loss from the smaller parts of the plants falling off than with ordinary clovers. For this reason making hay from this plant should be carried on with the greatest care. Alsike clover continues longer in a condition to be cut than the others, even when the heads are nearly ripe the stalks and leaves are in a good condition to make very good hay.

Salt and lime scattered over hay when it is put into the mow tend to prevent fermentation and check the growth of moulds and mildews. Salt renders hay more palatable. These materials are not essentials in hay-making, but are helpful when partially cured hay is being stored during bad weather. Some recommend placing damp hay in alternate layers with dry straw. The straw absorbs moisture from the hay and so improves in quality.

Apple and Forest Tent Caterpillars

According to reports the apple tree and forest tent caterpillars are doing considerable injury in some localities. The ravages of these pests have become so bad in Eastern New York State that the Cornell University Experiment Station has issued a special bulletin on the subject. Nearly everyone is familiar with the apple tent caterpillar, and especially its large silken tent used as a nest. It is the work of only a few moments to wipe out with a rag or burn out one of these tents with its writhing mass of worms. The sooner this operation is performed after the nest is begun the easier and more effectual will it be.

Wild cherry trees along roadsides are a favorite breeding place for the apple tent caterpillars, fall web worms, and other injurious insects, and when they become affected should be destroyed. Farmers should familiarize themselves with the egg masses of this caterpillar for one of the easiest and most effectual methods of controlling the pest is to collect and burn these egg masses at any time between August and the following April. It is a good plan to pay the boys and girls a few cents for each score or hundred of the egg masses they collect.

Those who spray their orchards thoroughly with bordeaux mixture, to which paris green or some similar poison has been added at the rate of one pound to 150 gallons of the bordeaux, report little trouble in controlling apple tent caterpillars by this method alone. The first application should be made just before the blossoming period, when the caterpillars are very small and require but little poison to kill them; the second spraying should follow as soon as the blossoms have fallen, and a third application is usually necessary and advisable about a week or ten days after the second.

The apple and forest tent caterpillars are two distinct kinds of insects, but are closely related to each other, and have practically the same general life-history, differing only in some details of habits. During early June the caterpillars select a place where they undergo their wonderful transformation. This may be a leaf on or under the tree on which they feed, or some angle in a house or rail fence may afford a more suitable place. Here the caterpillar spins for itself a cocoon within which it soon changes to a curious brown object known as a pupa. In about ten days or two weeks after the cocoon is spun there emerges from it the adult insect, a buff brown colored moth, marked with a slightly darker band across each wing. These moths fly mostly at night, and are often attracted to lights. Soon after emerging the female moths deposit their eggs in masses of about two hundred each around the smaller twigs. The eggs thus deposited early in July, and which are covered with a varnish-like substance, will remain unhatched until the following April. Thus there is but one brood of caterpillars in the year.

The forest tent caterpillars never make any tent or nest like the apple tent caterpillar. The only approach to one is a thin carpet spun on the bark or sometimes over several terminal leaves on which the whole family usually rest in a cluster during the day or when they are shedding their skins.

Fortunately both caterpillars are preyed upon by many enemies, including insects, spiders, toads and birds. When the forest caterpillars confine their work to the forest trees we must depend upon their natural enemies to keep them in check. Where they are present in large numbers in fruit and shade trees the case is quite different, and prompt measures should be taken to keep them in check. In orchards, etc., the methods of gathering the egg clusters and spraying with bordeaux and paris green previously

mentioned will usually control the forest tent caterpillars. Their presence is not so readily discovered, as they erect no tent in the tree as does the apple tent caterpillar. The two kinds often occur on the same tree.

As the time is past for spraying to have any effect on these pests active efforts should be made during the fall to destroy all the egg masses. As has been pointed out, it is a good plan to enlist the boys and girls for this work.

Avoid Waste

An important thing for farmers to learn is to avoid waste. Whether a crop of wheat yields 30 bushels or only 10 bushels per acre taxes have to be paid. The waste lands around the fences or around stumps are not deducted by the assessor when making his assessment. It is important then, that every piece of land on the farm, where at all possible, should be made to produce as much as possible.

This subject of waste is very well put in the following from the pen of a practical farmer :

"We pay taxes on land that we do not farm ; we only half cultivate our fields and so waste both land and labor ; we leave a large percentage of the crop in the field ; we waste time and capital in raising inferior animals ; we waste energy in trying to do more than one man can do right ; we waste money in buying what we should raise ourselves ; we waste opportunities to improve our condition by staying away from institutes and fairs and by neglecting to read papers ; we waste—in a thousand ways—and then we are ready to say 'farming don't pay.' And it is no wonder"

Of Interest to Fruit Growers

At a meeting of fruit growers held at Grimsby last week at the call of the Executive of the Ontario Fruit Growers' Association a strong resolution was passed deprecating the dishonest packing of apples for export, and urging upon the Dominion Minister of Agriculture to take steps to prevent the repetition of such fraudulent practices. It was suggested that certain marks or numbers be adopted to indicate certain grades and sizes of apples, and that it be made a misdemeanor for anyone to stamp these marks or numbers on the outside of his packages unless the contents of the packages are in accordance therewith, and that the name and address of the owner and shipper be always required on closed packages intended for export ; and that an inspector be appointed with power to open packages and, if found fraudulent, to expose or punish the offender ; and it was further suggested that the terms used for grading by "No. 1" and "A No. 1," No. 1 to include sound apples reasonably free from worm holes, scabs or other blemishes, and to be not less than two and a half inches in diameter, and grade A No. 1 the same, with apples not less than three inches in diameter.

It was also recommended that efforts be made to establish a market in Great Britain for certain varieties of Canadian grapes, having superior flavor and excellent carrying qualities—such as the Rogers—and that the Government export a large quantity of these grapes the coming season. A similar request in regard to the Rogers grape was made by the Burlington Horticultural Association at a meeting also held last week.

At the Burlington meeting the Dominion Government was strongly urged to fix a standard barrel for all kinds of green fruit both for domestic and foreign trade, and that such a barrel be twenty-seven inches in length, seventeen inches at the end and nineteen inches through the centre, inside measurements. A resolution was also adopted, recommending the continuance by the Provincial Government of the inspection of trees infested with the San Jose Scale, and the removal and destruction of all such infested trees, and that owners should be adequately compensated where a loss is sustained through such inspection.

All these recommendations seem to be along the right line, especially that referring to the dishonest packing of fruit. Urgent measures are needed to prevent the recurrence of fraudulent packing this fall and the branding of every barrel or package with a mark or number indicating its quality would help matters very much. But still the grading of the fruit would be left almost entirely to the packer, as it would be impractical to have an inspector on hand to see that every package contains the quality which the marking represents. However, the fact that every package was liable to be examined by an inspector would deter many from practising such frauds as disgraced the name of Canada last fall. The recommendation to have the name of the owner or shipper stamped on every barrel should be carried out in any case, as no packer would care to have any dishonest practices brought to his very door.

Strawberry Culture

There is no more pleasant or wholesome fruit grown than strawberries, and what is best about them they can be grown on every farm without very much trouble. What is required most is a little care and attention in the way of cultivation, and preparing the land and the selection of good plants. The soil cannot be too well prepared, the more work put upon it at that time the less it will require in the future.

For field culture it is a good plan to plant in rows 3½ or 4 feet apart, with plants 18 inches apart in the rows, or about 8,000 plants per acre. For garden culture rows about 3 feet apart will do or along the border of the paths, if there is room to use the hoe. Some prefer the hill system, while others like the matted row. Where barnyard manure is used it should be worked in from the top of the soil with a harrow ; it is then placed in reach of the roots. When plowed under it is seldom reached by them.

Success depends in a great measure upon getting fine, healthy plants, strictly pure and true to name. As to the best variety to plant it is hard to say. It is well, however, to plant three or four varieties, as some may do better than others under different climatic conditions. Large berries will always command good prices if offered for sale, though for long shipment solid varieties with good color and quality are necessary. In any case, it is important to have well rooted, strong, healthy plants. Little, long-rooted ones, with little or no crown, should not be used ; the extreme long roots are no good, but the strong branched roots from the crown are what is needed. The plants should be set properly ; the top of the crown where the leaves come out should be just above the surface, and after the plant is set the soil should be levelled down around it.

There is some difference of opinion as to the best time to plant strawberries. Some claim that the spring is the best time to plant them, while others are just as strong in the opposite view. When planted in the spring they should be kept hoed and cultivated till winter sets in. The plants should be covered as soon as the ground is frozen with straw or strawy manure, in which there are no weed seeds, and a light furrow made between the rows to draw off the surplus water, which is very injurious to strawberries during the winter or early spring.

A writer in the *Ohio Farmer* has this to say *re* fall and spring planting :

"The one danger of fall planting is heaving by frost. This can easily be prevented by mulching with strawy manure or other litter, directly over the plants. Do not neglect this and do not cover too early. But if it is a dry fall then cover the soil with straw around the plants in order to hold the moisture. What we gain by planting in the fall. First : If plants are planted in the fall nearly one year's growth is secured as compared with following spring. Second : You can buy plants cheaper in the fall than in the spring. Third : You have more time to plant in the fall than in the spring. Fourth : If you plant in the fall the work is done, but if you postpone until spring other work may prevent and it may be years before the planting

is accomplished, since spring is such a hurried season. We find that strawberry growers differ on this question, which is the best time to plant. You can settle it by experiment and then you will know. We do know for a certainty that there is no confidence to be put in nurserymen, for in their spring catalogs they claim that spring is the proper time to plant and in their fall catalogs they will tell you that fall is the best time to plant of the whole year. For my part I claim that spring is the best time to plant if you can find time to give them justice. I have always had success with my spring planting, but I can't say that of my fall planting, but nevertheless the soil and climate have a good deal to do with fall planting.

Commercial Fertilizers

The discussion of this subject in these columns during the past few weeks has so far proven to be a very interesting one. We would like, however, if more of our farmers who have had experience with commercial fertilizers would let us know the result. Since we have opened our columns to this discussion we would like to have it made as comprehensive as possible.

Imported Ayrshire Cow, Nora of Fairfield Mains, 11094 Scottish Herd Book. Winner of Sweepstakes for best female of any age at leading Fairs of 1898. Owned by J. N. Greenshields, Isaleigh Grange Farm, Quebec.

The entrance of Mr. Frank Wallis, of Lincoln, England, into the discussion has given it wider scope and increased the practical interest in it. We have had a few inquiries as to who Mr. Wallis is, and as it will be of interest to our readers he will, perhaps, pardon us if we make the following personal reference to himself, inasmuch as we have been favored with several valuable contributions from his pen since the beginning of the year. Mr. Frank Wallis is known in Great Britain as an agricultural and dairy specialist. He is lecturer for the Lindsey County Council and other public bodies in several counties of the United Kingdom. In this capacity we judge that he would do somewhat similar work to that done by a lecturer at one of our Ontario Farmers' Institutes. He is also one of the most widely known writers on agricultural matters in England, being a frequent contributor to many of the leading agricultural journals of the Old Land, such as the *Field*, *Agricultural Gazette*, *Mark Lane Express*, etc. In the *Field* he writes under the pseudonym of "Wamba." He was not educated as a journalist, but as a farmer, which latter calling he followed for many years and which accounts for the very practical character of his writings

So far the discussion has turned chiefly upon the value of Thomas-phosphate as a fertilizer. But this should not shut out the publication of any experience connected with the use of other fertilizers. There is some misapprehension in regard to the use of the term Thomas-phosphate in our reading columns, many considering it an advertisement for a certain firm dealing in that commodity. But it is not used for that purpose, but because there is no other term to use to describe this particular type of fertilizer. This will be better understood by a perusal of Frank Wallis' letter in last week's issue, where he describes how this kind of fertilizer results. In Great Britain the name by which it is mostly known is 'basic slag," or "basic" phosphate," but as our readers would not know what was meant by such terms we have substituted the term "Thomas-phosphate," which is used interchangeably with the others, and is better known in this country. And so it is the use of the term "Thomas-phosphate" is no more an advertisement for a particular firm than the use of the term "super-phosphate" would be or the term "Kainit," the name given to muriate of potash. We think it is due to our readers as well as to ourselves to make this explanation, as this term has been used so frequently in this discussion.

Caterpillars on Currant Bushes

A correspondent of the (British) *Rural World* writes that journal in regard to sowing one or two broad beans under gooseberry and currant trees as a remedy against caterpillars as follows: "The first two years I had practically no caterpillars. Last year there were a few only, some trees being quite free. This may possibly be only a coincidence, but I should be glad to know the experience of any others of your readers. I may add that generally my garden was infested with the gooseberry caterpillar."

This is a simple remedy and we would like to see it tried here. If any of our readers have tried it we would be glad to hear from them.

Incubators

The following, taken from a French poultry journal, may be interesting to those managing and using incubators:

"An artificial incubator should be kept away from draughts, but in a spot where the air can easily be renewed, and the temperature as much as possible uniform. Therefore, never keep an incubator in a place which is heated during the day and without fire at night; nor in a conservatory, where the sun greatly increases the temperature. Final success in hatching does not depend solely on the perfect condition and regular working of the incubator. It is requisite, and we insist on this point, that the eggs should cool daily. As we know, the hen sometimes leaves her nest for an hour when the weather is fine. Do not, then, fear to imitate her, and let the embryos inside the shells live a little by themselves, awaken from their warm slumber, they will sleep better afterwards, and will be stronger at birth. On the 18th and 19th day, however, cooling must not last more than a few minutes.

"It has often been recommended that shaking of incubators should be avoided, but we shall quote the following lines from the work of M. Remy Saint-Loup: 'It is at least useless to shake eggs, but I have observed that shakes have not much to do with failure. Two experiments demonstrated this fact. I tested artificial incubators in an apartment on the third floor of a house in a street where the passing carts and vehicles made the crockery dance in the cupboards, yet the eggs gave as many chicks as in the quiet country place.

"'On another occasion, eggs which had been a fortnight hatching were sent to me by rail. The eggs, packed in wadding and pasteboard, travelled during eleven hours,

and at the end of incubation there were 50 per cent. of chicks, in spite of the shaking to which the eggs had been subjected.

"'No one will think of recommending fowl-keepers to send their incubators across continents, but these remarks seemed worth mentioning. Failures ascribed to shaking are generally due to other causes, and there are many other injurious circumstances, in fact, which intervene.'"

Ostrich Farming

More than ordinary interest has been aroused in this wonderful bird from the fact that an ostrich farm is to be located in the vicinity of Toronto. A number of birds for this purpose have already arrived and are for the present located at Munro Park, one of the many pleasure resorts for which this good city is known, where they form the chief attraction. Whether the promoters will be successful in their venture to breed and raise ostriches in this climate time will tell. We can only hope that abundant success will crown their efforts.

In the meantime the following account of a visit to a California ostrich farm by Miss Louise E. Drew gives some idea of how such a farm is managed:

California has many things of which to boast besides "the land of sunshine," charming climate and luscious fruit. For instance, the only ostrich farms of any importance in the United States are located here. The one at San Diego is the original farm which was at the World's Fair, but the one at Pasadena is the largest in this country. The day of our visit to the latter we were somewhat startled at the announcement that President McKinley had "thrashed his wife shamefully," and we were told that the pugilistic Bob Fitzsimmons had joined in the fracas—but then they were only ostriches.

We were so fortunate as to witness a plucking bee, and it was a most interesting sight. The youngest birds were six months old and it was funny, indeed, to watch them balk like untamed colts. A long stocking-shaped hood was drawn over the head and down the neck, thus blinding the bird, a small opening being left at the toe of the hood through which the beak could project to admit of breathing. When blinded, the bird became passive and was shoved into a stall to prevent his moving forward, while the operators prevented him from backing.

The plumes of the six months' chick are not of much commercial value, and they are called spadonas. From this age on, however, the bird is plucked every ten months, the feathers attaining perfection at the maturity of the bird. Twenty-six plumes in each wing are protected by floss feathers underneath, and by three rows of feathers above overlapping one another. Besides the wing feathers the tails are also taken. Body feathers are not taken, but are picked up during the moulting season, and used for cloak trimmings, collarettes, etc.

An average bird yields one and one fourth pounds of feathers at a plucking, those of the male being of a heavier quality and of more value than those of the hen. The time when the plumes are at their best is just before they are ripe. The quill is then cut with a pair of sharp clippers—small pruning shears are best—about two inches from the socket. The stubs are left two or three months to ripen and can then be easily pulled without injury to the socket in the wing.

The kicking qualities of an ostrich are great, but he exercises the prerogative only when in the breeding season. They do not back up to one for that purpose as has been often stated, but are thoroughly progressive in whatever they do. The kick is delivered either standing or running, and has a distinct up and down stroke. When in the immediate vicinity of an infuriated ostrich a high board fence is comforting; lacking this, one should be provided with a ten-foot pole with a forked end. In plucking a breeding bird it sometimes becomes necessary to pick a fight with him before he can be caught.

The average weight of an ostrich egg is 3½ pounds, and it will measure 15½ by 17½ inches in circumference. For eating it is delicate and nutritious, equalling 2½ dozen hens' eggs. For a soft boil 30 minutes' time is required. The flesh of a young bird compares favorably with the choice cuts of good venison. Dried beef ("biltory" in Africa, "jerky" in California) is made of the flesh of the older birds, and is used by African boers (farmers).

It takes just 42 days in Africa for eggs to incubate, in California two days' less time. After mating, the ostriches prepare for housekeeping by scooping a nest in the sand or loose soil, pushing with their breast bone, and pushing out behind with their toes. The nest, when completed, is 4 feet in diameter, and slanting to a depth of 10 inches in the centre, saucer-shaped. One egg is deposited every other day for three or four weeks. These are faithfully turned every day in order that the germ, which is held in place by a delicate spiral cord, and always near the upside of the egg, may not become inactive, and thus cause an imperfect embryo.

The birds take regular turns at sitting on the nest—the hen occupying it from 8 a.m. until 4 p.m., while the gallant male takes the 16 hour watch. The care of chicks hatched in the natural way devolves upon the cock. Chicks artificially hatched must be cared for much in the same way as young turkeys. Too soon out in the morning dew, too late out in the evening damp, is good cause for sickness and death.

The feeding process is an interesting sight. The birds push one another aside, exhibiting all the selfishness of human nature—greediness is no name for it. The long neck is craned to receive an armful of alfalfa, a dozen oranges, as many potatoes, a measure of grain, etc. It takes enough rations for a good-sized regiment to appease their hunger. The oranges and potatoes are swallowed whole, and each one can be distinctly seen as it passes down. The birds are also fed shells and gravel in order to aid their digestive apparatuses to perform their work.

Just at the sunset hour as we were ready to turn away Madam Ostrich deposited an egg in her nest, evidently for our benefit. The keeper "stole" it right away, and placed it in the incubator. Thus the birds are "fooled" and they will lay many more eggs than if left to their own devices.

Orchard Cultivation

The following, taken from a press bulletin issued by the Kansas Experiment Station, will be of interest to fruit growers here:

Bare soil soon loses its humus and becomes infertile. This must be prevented. Here is one way of preventing it. Plow the orchard in the spring, cultivate both ways and keep all weeds down till September 1, at which time the soil will be in fine condition for a seed bed. Sow rye at the rate of two bushels per acre. This will cover the ground well before winter, and therefore protect the ground from blowing or hard freezing during the winter. Let the rye stand till knee high in the spring, then turn under and proceed with clean cultivation through the summer.

Deep cultivation is not essential nor advisable, but the cultivation should be frequent. Go over the ground after every rain, if possible, with the disk or the harrow to break the crust. This will give a mulch of loose earth two inches deep, which will greatly retard evaporation and therefore conserve the moisture for the use of the trees. This system of management has the following advantages:

1. It provides the soil with a good supply of organic matter (humus), which will keep it in good physical condition, as well as prevent washing and blowing.

2. It provides a cover for the ground during winter, thus preventing the soil from blowing; it catches the snow, thereby moderating the temperature of the soil.

3. It provides for clean cultivation during the summer, the time when all the moisture that falls should be conserved for the use of the trees.

4. By ceasing cultivation and introducing a crop Septem-

ber 1, the trees are helped to ripen off their wood and prepare for winter.

These advantages are worthy of the consideration of the orchardist. The plan has worked well in the orchards of this department, and it will without doubt operate as successfully in many other regions of the state.

It is a matter of grave doubt as to whether there is anything gained in the long run by cropping the land that has been planted to fruit trees. Of course it pays while the crops are being gathered, but does it pay to have the orchard come into bearing on soil reduced in fertility? Will not the orchard during its bearing period have need of all the food elements that the soil contained at the start? Will not the productiveness of the orchard be reduced in the same proportion as the elements of fertility have been removed by previous crops? This will certainly be the case unless the removed elements are restored by means of fertilizers. Ground that supports an apple orchard for thirty successive years has no food to spare for corn crops. Either cling to the orchard and forego the corn crop or else depend upon the corn and abandon the orchard.

It is now the latter part of May The soil is moist, and good growing conditions prevail all over the state. It is nip and tuk between crop and weeds on every side. With the farmer in the garden or the cornfield, the weeds grow apace in the orchard and often predominate. Once in control they soon fully possess the situation; and, as dry weather prevails later on, they will consume the water in the soil and leave none for the trees, which thereby starve for the time being. The only remedy is prevention. Do not allow the weeds to grow.

Should Towns Assist in Road-Making?

The following extract from the report of the Provincial Instructor in Road-making for 1898, just issued, is to the point:

"A difficulty in the way of obtaining better roads in Ontario is that, under the present system of township management, the entire cost of road building falls upon the farmers. The people of the villages, towns and cities, to whom country roads are as necessary as to the farmers, and who compose nearly one-half of the population, pay nothing towards their construction or maintenance.

While it is necessary that the farmer should have roads to haul his produce to the centres of population, he also uses the roads to draw back to the farm the supplies purchased in the towns. It merely happens, as a matter of convenience easily understood, that the farmer draws his produce to the town and his purchases back to the farm instead of the merchant hauling his merchandise to the farmer, and the produce of the farm back to the town.

It is only a century or so ago since the active settlement of Ontario commenced. It was at that time the statute labor system was established. In addition to this, the Provincial Government spent the greater part of its revenue on the construction of roads and bridges. Since that time the distribution of the population has materially changed; the statute labor system remains for the construction of country roads, applying only to the rural districts, while the provincial aid has been withdrawn, thus wholly relieving the people of the towns and cities from their share in the cost of road building.

The change of conditions has taken place so gradually that the evident disparity resulting has remained unnoticed. The system of road control and taxation has not grown and developed with the growth and development of the country. The result, so far as road control is concerned, is similar to a full grown man still wearing the clothes in which he went to school.

There does not appear to be any reason why the farmer and rural population should pay the entire cost of road building, any more than they should meet the entire cost of railway and canal construction. A system of good country roads is an expensive public work, in every way necessary for the development of a country, and so long as the farmer bears the entire burden it is manifest that the desired end, good roads, will be difficult, if not impossible, to reach. In any event the attempt to do so comprises an injustice.

The towns are asking for good country roads. They are beginning to realize how important for them it is to have free and uninterrupted communication with the surrounding country districts at all seasons of the year, and would no doubt be willing to pay a fair proportion of the cost in order that road improvement would progress more rapidly. This very interest which is being displayed is the strongest evidence as to the mutual right of townsman and farmer to pay for the construction of a country road system."

A Sheep Clipping in the Old Land

The following spicy account of a sheep clipping in the lake district of England and published in a recent issue of the *North British Agriculturist* is a beautiful piece of word painting of this old time custom where work is combined with a great deal of pleasure and good fellowship:

It was a rememberable sight that sheep-washing on Thirlmere's side—a sight that will never more be seen there, as long as Manchester drinks the water of the mere of Thorolf the Dane.

With barking and much noise, the sheep dogs drove from the high fells the brave company of bleating ewes and lambs, and the farm lasses met the shepherds as they strode through the fern, and the boys and girls all helped to get the noisy multitude of Herdwick mountain sheep into the funnel-shaped pen inside the wall. Then into the close-crammed company the lads went, picked out the struggling lambs, and tilted them over the pen side, to await their dripping lake-bathed mothers.

What a picture it all was!—Raven Crag lifting up solemnly and silently into the sunny air, and down by the lake's glistening marge the whole farm company gathered with their loud-voiced charges. As we listened to the bleating and the baaing and the barking, it seemed as if the fell-side voices of miles of pasture were mingling in protest against the bathe; but what suspicion of harm could there be, when the shepherd's daughter sat on the boulder close by, cooing to and caressing two of the tiny lambkins clasped under each arm, while the collie lay at her feet or licked her face.

Then what good-natured fun and frolic it all seemed! The shepherd stood waist-deep in the lake water, the sheep were lifted one by one and thrown towards him. Seizing the fore legs and keeping the heads above water, he soused and swayed the body of each Herdwick in turn, gave it a friendly push towards the shore with a 'theer git heam to the barn,' and the sheep, heading for the land, crept out upon the grass, shook its head and ears violently, and waited till its child should own its much altered and less lovely if cleanlier form.

I said, what fun and frolic reigned The lad who threw the ewes into the pool would wait till the shepherd's back was turned, then splash, splash right atop of him would come the sheep. I thought one or two of the Herdwicks looked as if they enjoyed the joke, but when the shepherd "clicked" the lad by the heel and dragged him in with the last ewe in his arms, and, letting the sheep go, took the lad by the head and treated him to a downright good sheep-washing, I fancied the whole flock shook their sides with laughter, as much as to say, "Serve him right."

Then all the lads and farm lasses sat down and waited, and over the fell-tops came another bleating multitude, while the lately washed ones went back with their lambs in silent thankfulness, through the fern, and were lost to sight.

But not for ever were they lost. I was brought face to face with them again in less than a fortnight; for "Th'

Deall Clippin'" was a week "forrarder" than was usual, owing to the sun and the "mawk," or blue-bottle fly, and it was my fortune to receive an invitation to attend "Brig-End Clippin'!" so thi her on the appointed Friday I went. . . .

The Deall Clippin' had been instituted as an annual "do" for the second week in July, time out of mind.

"Fornsett clipping on Monday; Smeathwaite, Tuesday; Thirlspot, Wednesday; Stanah, Thursday; Brig-End, Friday; and Kessick market daay 'n' Setterday." This had been the shepherd's calendar for the "Deall" in second week in July, from a time whereof the memory of man runneth not to the contrary, and when one considers that the men who handled the shears had collected from 300 to 500 sheep from the fells each day, sorted them out, sheared them, marked them, and sent them back to the fells, one feels that Keswick market day, as a bye day, and a good "rust," or rest day on Sunday, must have been welcome enough.

"And who does the clipping?" I asked.

"Nebbors," said my friend. "Times is alterin' sadly. Chaps comes fra Scotland now and teks a flock by contract, but 'nea good' comes of it. Fellows clip away here a bit and theer a bit; it's nowt to them, they get t' brass and away wi' them, but theer's nowt like nebbors for shearin' sheep, mind ye. They tak time to job, theer's no paay—but theer's meat, and it's aw i' a friendly waay togither."

There was something very touching in the way my old friend of the dark and glittering eye spoke of the days of good fellowship in sheep shearing times, days which were now giving way to hard contract.

"Not," continued he, "but what i' the auld daays a deal o' the 'woo' was eaten up, I dar say. It was oft mair of an occasion for a downreet jollification than owt else, but than farmin' fowk works hard, and a bit of plesser yance over does naebody harm." . . .

Our host smiled, and just nodded with his head towards this or that clipping-stool, as his friends and helpers came up, and without another word they took their seats astraddle of the quaint four legged racks, on which their friends the Herdwicks were to be laid, and the clipping began.

There was not quite the same idyllic beauty about the farm scene as that I was accustomed to in Yewdale, where under those stern crags, that always seem to remind one of Mount Sinai in miniature, one used to see the whole drama of the shearing-time enacted beneath the magnificent canopy of the "burnished sycamore." . . .

As I thought on these things, I heard a shepherd from his shearing-stool close by cry:

"*John, what's te lug mark?*"

And John answered, "Cropped nar, upper-and-under-haulved far."

"*Hes te gitten yan o' mine?*"

"Ay that have I," replied the cheery clipper, "by lug-n ark on 'im," which being interpreted meant that one of John Hawkrigg's sheep had strayed and got mixed up with Bristow's, of Bridge End, whose sheep were "cropped nar," or cropped on the near ear, but differed from Hawkrigg's in having only the upper part of the far ear halved, while Hawkrigg's sheep had their far side or right ear halved both on the upper and under part.

But these ear marks were spoken of as "lug marks," and little did they, who were clipping that day under the hill of the log sayer at Legburthwaite, realize that the word lug is only another way of spelling the word log or law, and the ear mark was the mark of the law which gave a lawful ownership of the sheep in question. "What's te lug mark?" though the speaker did not know it, was really only a Viking or Norse way of saying, "What is thy law mark?" . . .

Very little was said; one heard the click, click of the shears, and sometimes the sigh of a pocket whetstone as the shearer sharpened his weapons; but occasionally it seemed as if all the dogs of the dale had gone mad; such barking! such fun! For some sheep, after being let free from the shearing-bench, and feeling his unwonted lightness of body, had gone off on a scamper, and must needs be brought back to the pen to wait for sauving or salving and *straking* or marking.

The gravity of the whole business struck one. It was solemn work of a very solemn order. At least, so the men astride of the clipping benches seemed to feel. I daresay they were right to be solemn, for I know that a "Herdwick" can kick and struggle with much spirit till he is mastered. The shears are sharp and very near the surface, and no man cares to wound his neighbor's sheep. But, in addition, these men were friends from a "lang time sen," and one clipping bench was filled to day by a new man; "T'auld un hed gone down. It was aw in course o' natur," said my friend, "so you cannot complain, but it natterly teks heart o' yan for aw that to see old nebbors and good nebbors neah mair at clipping time; and it meks one think to onesel' that it's mebbe last time fer sume on us an' aw."

But if there was a kind of dignified solemnity in the air as far as the clippers went, there was plenty of sparkle and life amongst the youngsters. It seemed to be their privilege to catch the sheep as they were called for and hug them to the shearers' benches. They would hear the cry: "Bring us anudder—a good un this time, my lad!" and the boy dashed into the flock, and while the dogs barked with excitement, seized and dragged them willy nilly to their fate. . . . .

The light began to go for all that long after glow of Cumberland clipping-nights, and still the shears clicked away, till the girl came out with a summons to supper, and the work of the day was over.

"A reet down good supper it was, an' aw," said one of the shearers after, and he spoke but the honest truth. It was the women-bodies turn to show what they could do to crown the clipping with success, and they certainly managed to make all the hungry shearers feel that a farm supper-table would be a very poor thing if it were not for the women kind.

There was a bit o' fiddling after supper, and a deal o' good shepherds' crack, and the following famous Herdwick shepherd's song was sung by John Birkett to an old fashioned countryside tune. It was a song all seemed to know, and had been sung time out of mind at all the clippings under Helvellyn. How they made the rafters ring with the chorus:

THE SHEEP SHEARING SONG.

"Now our sheep-shearing's over, surround the gay board,
With our hearts full of pleasure and glee!
And while we partake of this plentiful board,
Who so blithe and so happy as we?
From that staple, the wool, all our consequence springs,
The woolsack is next to the throne,
It a freedom secures both to peasants and kings
Which in no other country is known.

Chorus—It guards us awake, it protects us asleep,
Night and day then thank heaven that gave us the sheep.
(Repeat.)

"When bleak piercing winter comes on with a frown,
Frost and snow clogging hedge, ditch, and stile,
Annoying alike both the squire and the clown,
Wrapt in wool we look round us and smile.
Could we sing of its praises from evening till morn,
'Twould our gratitude only increase,
From the dying old man to the infant new-born,
We are all kept alive by its fleece.

Chorus—The hour with the truth a fair pace it can keep,
When in warmest expressions we speak of the sheep.
(Repeat.)

"No words are sufficient, whate'er can be said,
To speak out its uses aloud;
It never forsakes us—nay, after we're dead
It furnishes even our shroud.
Nay, more! for the sheep, while it ranges our fields,
Our wants and our comfort supplies;
Faithful still to the last, to the butcher it yields,
For our nourishment daily it dies.

Chorus—Thus living or dead we its benefits reap,
Then, ye sheep-shearers, sing your true friends the poor sheep."
(Repeat.)

I came away with the chorus ringing in my ears, and from that pleasant, cheery clipping-festival at Brig-End to this day "I thank heaven that gave us the sheep."

CORRESPONDENCE

Curing Alfalfa or Lucerne

To the Editor of FARMING:

In reply to your favor of June 6th regarding Lucerne or Alfalfa for hay, it should be cured in about the same way as red clover. Keep the leaves on as much as possible. This crop will cure when up in coil.

Lucerne or Alfalfa should be cut when about one-half or three parts in blossom. The second crop is the one to save for seed. I have found that in all cases it pays me better to cut the first crop for hay and then pasture the balance of the season.

A. RAWLINGS.

Forest, Ont., June 8th, 1899.

Commercial Fertilizers—Manurial Experiments

Root Manuring

To the Editor of FARMING:

SIR,—My purpose in quoting a few of the results obtained in our British manurial trials is not only to show the influence artificial fertilizers may have in the increasing of crops, but also to point out some peculiarities of action under varying conditions; illustrating the fact that unless we give due consideration to *all* the circumstances, we may very easily deduce erroneous conclusions.

In the Northumberland County Council experiments an unmanured plot of swedes yielded 13 tons 2 cwt. of roots per acre; but another plot treated with 1¾ cwt. of sulphate of ammonia and 7 cwt. of superphosphate only yielded 8 tons 3 cwt. per acre; whereas, when 5¾ cwt. of Thomas-phosphate was substituted for the superphosphate, the yield was increased to 17 tons 12 cwt. This, on the face of it, shows the Thomas phosphate to have been immensely superior; and so it was under those particular conditions; but an addition of potash, in the form of 6 cwt. of kainit, made an immense difference to the respective and comparative positions. The super and kainit dressed plot was raised up to 25 tons 5 cwt.; the basic and kainit plot being 21 tons 14 cwt. These figures are singular, but there is no doubt that that soil was deficient in available potash; and under those conditions the stimulating ammonia and vitriolized phosphate would induce a growth in the earlier stages which could not be maintained, and would be susceptible to disease.

Thomas-phosphate would not only be likely to promote a more stable growth, but it is probable the accompanying lime would so act upon the soil as to liberate a supply of potash for the immediate necessities of the plant.

Many soils are fairly well stored with potash, and on them there would not be this marked effect, but as potash is so essential a plant food it is necessary to maintain the supply, and an occasional dressing of kainit would mostly prove remunerative.

I will now quote a Scotch experiment conducted by the Glasgow College authorities: They report, "the land was so poor in condition that practically no turnips could grow on it without manure." There were two unmanured plots, one yielded 1 ton 8 cwt. of swedes per acre, and the other nothing at all. An application of 6 cwt. of Thomas-phosphate induced a yield of 14 tons 5 cwt. of roots per acre; and the same quantity of super produced 16 tons 10 cwt. Both these results are remarkable, showing the immense influence of phosphate on the root crop; and what a marvellous transformation an artificial application of it can effect on land where it is deficient. In this experiment the superphosphate has given a little heavier gross weight than the Thomas-phosphate—but in this instance the roots were analyzed, and this yields us another important lesson, namely, that *the biggest crop is not necessarily always the best.* The roots grown with superphosphate contained 88.52 per cent. of moisture and 11.48 per cent. of dry, solid matter; the swedes grown with Thomas-phosphate contained only 86.53 per cent. of moisture, but yielded 13.47 per cent. of solid nutriment. This certainly is an enormous difference, affording ground for serious reflection, particularly when we find that this extra 2 per cent. of nutriment is chiefly composed of the most valuable food constituents; of sugar there is 7.11 per cent. as against 6.12—and of the flesh-forming albumenoids the Thomas phosphate roots yielded 0.91 per cent., while the super roots gave only 0 75 per cent.

I attach, perhaps, more importance to this extra percentage of nutritive matter than the figures would themselves appear to warrant; but I do so advisedly. Turnips are an artificial production, and, more or less, an artificial food; and they contain a greater percentage of water than is natural to animals. When animals are required to be fed chiefly on roots, it is difficult for them to consume and digest a sufficient quantity to yield the amount of nutriment required to maintain the body in a healthy and thriving condition. Of course this difficulty will be increased or reduced in proportion with the concentration or density of the roots. I have said the value of roots will increase in proportion with the concentration of the nutriment, but I think they will really increase in value in double ratio, as I am quite assured that 10 tons of 12 per cent. roots is of considerably greater feeding value than 12 tons of 10 per cent. roots.

On another farm, embraced within the same series of experiments as the last referred to, the conditions were very different, *the land yielding 26 tons 15 cwt. of swedes per* acre without any manure; and here 6 cwt. of superphosphate only increased the crop 5 cwt.; the same weight of Thomas-phosphate effected an increase up to 29 tons; but I should be inclined to think, in this instance, that the increase was as much due to the lime as to the phosphate; and I have no doubt that the feeding value of the roots was also improved, but unfortunately these roots were not analyzed. This land was already so rich that 20 tons of dung per acre only forced the crop to 30 tons. And probably this increase was at the sacrifice of quality, for in those analyses the roots grown with farmyard manure were the least nutritious of any, yielding only 0.54 per cent. of albumenoids. On another plot an excessive quantity of artificials was applied—6 cwt. of super, 4 cwt. of bone meal, 1 cwt. nitrate of soda, 1 cwt. sulphate of potash; but this heavy dressing only induced a growth of 30 tons 10 cwt.; and this increase would again probably be at the sacrifice of quality, as, in the aforementioned analysis a similar dressing only promoted roots yielding 0.56 per cent. of albumenoids. And, indeed, in the whole series on this farm the Thomas-phosphate was the only manure which yielded a remunerative return.

The Cumberland report says that without manure they got 11 tons 11 cwt. of swedes per acre: with 1 cwt. nitrate of soda, 2 cwt. of kainit, and 5 cwt of superphosphate they got 23 tons 4 cwt.; and that with the same dressing as the last, substituting Thomas-phosphate for the superphosphate, the crop was increased to 25 tons per acre. The report concludes: "Thomas-phosphate has beaten superphosphate; in fact the mixture of 1 cwt. of nitrate of soda, 2 cwt. of kainit and 5 cwt. of Thomas-phosphate has proved the best *artificial dressing for the swede crop this year.*"

This letter appears to be a sound general conclusion, considering the various aspects of the root manuring question, so there, for the time being I will leave it.

FRANK WALLIS.

Lincoln, England.

The Farm Home

Materials Required for Human Food.

(Continued from last issue.)

ORGANIC INGREDIENTS OF FOOD.—The elements of the second class, of organic origin, are crystallizable, and are first found in organized bodies. They are made up of carbon, oxygen and hydrogen, and because they have no nitrogen in them are called "non-nitrogenous" substances. These are divided into three sets, starch, sugars and fats; and it must be remembered that starch has to be changed into sugar by saliva or the pancreatic juice before it can crystallize and become really valuable as nourishment to child or adult. Surely, then, the craving children have for sweet things is entirely natural, and should be indulged within reason.

SUGAR AND STARCHY FOODS.—Starch is found in potatoes, beans, in fact in all vegetable used as food, and because of its convertibility into sugar is valuable as a nutrient after the child's system is prepared to receive it. Sugar is introduced with the food, and is formed by chemical changes inside the body, but is absorbed, and never is found in the excretions.

FATS.—After sugar, we come to the fats, essential elements of the body. These are fluid at a high temperature, soluble only in ether, and upon being boiled with an alkali a separation is caused between the pure glycerine and the fatty acid which, uniting with the alkali, forms a soap. There is a very marked difference between the sugars and the fats, chemically. The former contain oxygen and hydrogen in the proportion to form water; in the fats there is much less oxygen. It is a singular fact that in the body the fats are nearly always deposited in separate layers, never forming part of any other substance. In adipose tissue they are found in little vesicles. In the chyle these vesicles are so finely sub-divided as to form an emulsion. In the bones it makes the marrow and is found in a free state in the different glands. A large quantity of the fat found in the body is taken in with the food, but by careful experiment it has been found that a great deal is formed by chemical action inside the organism.

It is important that careful attention be given to the fact that the elements of the second class are purely organic in origin, and once introduced into the body, they do not reappear in the excretions, but disappear by decomposition in the interior of the body, and serve by their death to promote the growth and health of the individual. Let mothers then see to it that their children are not stunted in their growth by the lack of the non nitrogenous substances.

ALBUMINOUS INGREDIENTS OF FOOD.—The third class of proximate principles is the most numerous, containing all four of the elements, oxygen, hydrogen, carbon and nitrogen, and of this class every animal fluid and tissue contains one at least peculiar to itself. They are called albuminous, and include albumen, casein, fibrin, etc.

It is a notable fact that with scarce an exception, everything for the growth of the body comes from what is exterior to itself and is taken in either with food or drink. The adult chooses; the helpless baby must needs trust to the judgment of mother or nurse, and hence, for the good of the race, thorough training in the chemistry of the foods and human physiology is of vast importance in the education of girls. A mother has learned that sulphur is a component part of the flesh, hair and bones; it does not at all follow then that she must give her growing child a dose of that medicine; but her chemistry will have taught her sulphur is to be found in meat and eggs. Phosphorus is an important element of nerve and brain substance, and this the same chemistry shows can be found in bran, the yelk of eggs, in fish, and even in potatoes. Iron, an important constituent of the blood—that which helps to keep it red and pure—is a component part of nearly all foods, and, except in cases of mal-assimilation or peculiar disease, is rarely needed for use in tangible quantities.

One only has to know the value of different foods to choose and then to have, for nature is generous and her storehouse always richly laden.

Canning Strawberries.

By Mrs. J. S. McKenny.

Annually great quantities of our finest fruits are wasted because proper care is not taken and right methods employed for its preservation, and that which should have been toothsome and palatable for the household during the long winter months is open only to be thrown away—the time and labor of the housewife has counted for naught. In the first place in order to be successful in canning fruit one must have the fruit in perfect condition, neither green nor over ripe. The next requisite is a good porcelain or granite kettle, one that is used strictly for putting up fruit. Have the best granulated sugar and some good fruit jars and we are ready for our morning's work. One should see to it that fruit jars after using are thoroughly washed, scalded, dried and put carefully away for the next year's use. The safest plan is to use new rubbers on our bottles each year, but often the old ones are apparently so good that the economical thing seems to be to drop them into a pint of water into which you have put a teaspoonful of pure ammonia, let them remain a few minutes and then use them again. Often the rubbers fit too loosely, but by placing a second over the first one the lids will fasten securely. It is a mistake, too, to use the lids year after year when new ones can be purchased so cheaply and preserve our fruit in better condition.

Let us consider the subject of strawberries a few moments. It is a well-known aphorism that there is nothing new under the sun, but when we learned a method at cooking school for canning strawberries and preserving them whole and natural, and successfully tried the recipe last summer, we decided there were exceptions to some aphorisms. For the benefit of those who may not know it I give the recipe as it was given to us: First, select nice berries in prime condition. If necessary wash them. To one pound of granulated sugar, use sufficient water to moisten the sugar. Place on stove and let come to a good boil, skimming well of all impurities. Now drop in about six drops of lemon juice and let boil until it hairs. To this amount of syrup, add a pound of the berries and let boil slowly for five minutes. Take from the stove, cover and let stand in a cool place six or eight hours. At the end of that time cleanse your bottle with hot water and fill with the berries. Overflow the cars with syrup and seal tight. On the scientific principle that two bodies cannot occupy the same space at the same time—in canning any fruit, overflow the bottles with the syrup of the fruit and seal immediately. We should first fill the jar about one-fourth full of the berries and then work them down on the sides with a silver-plated knife so as to fill the jar compactly with the fruit and expel all air then. Do not stir the syrup after it boils, but by putting in a few agate marbles they will act as an automatic stirrer and prevent the syrup from burning. Should the jars not be air-tight, dip a piece of writing paper in warm brandy, place on top of liquid and over this place a layer of cotton batting. This will prevent the berries fermenting. Raspberries canned in this way are also very nice.

Social Possibilities of Farm Life.

It always is a mystery to me why anyone will spend the best part of their life clearing and improving a farm and then, at the time when it would seem most natural to seek the quiet and retirement of country life, change their associations and environments by moving into town. One can only regret that instead of giving up

the comforts of their country home, often living in cramped quarters for the sake of social advantages, they do not turn their attention toward improving the social condition of the country.

In passing through the country we often see great, solemn-looking houses standing in neglected grounds, a silent reproach to the stupidity of their owners. My hands always tingle to take possession and lay out a croquet ground or tennis court, hang up some hammocks and swings and place garden seats about, then send out invitations to a garden party. The cost and trouble would be so little and the enjoyment so great that I believe the birds that inhabit the old grounds would sing all the merrier for hearing a chorus of human laughter therein.

The dependence which country people place upon the towns for their amusements is always distasteful to me and I would be pleased to see them arise to their privilege and form a social system of their own, thereby letting the towns know that they have passed the stage of greased pig and greased pole entertainment, and that even a balloon ascension is not an irresistible attraction.

There is hardly any locality so lacking in natural advantages that there is not some woods or grove suitable for picnics and parties, with plenty of fields for ball games, so there is no need of our flocking to the towns for our pleasure, and leaving our hard-earned dimes in the pockets of those who have too often furnished questionable amusements to our young. And what is more disgusting to one's pride of station than to see a mass of country people crowding a rope watching some foot-race or greased-pole exhibition, and then to see the townspeople standing back and regarding the farmer folk as if they were on exhibition for their amusement.

I do not wish to try to antagonize the country against the town. When the town offers something worth seeing or hearing let the rural residents show their appreciation by attending by all means. But I do think we should strive to furnish amusement and recreation for ourselves and the young people in our own community or neighborhood and not drive them to seek such in the public streets and dance halls.

I think it is the mistake of farmers as a class that they do not sufficiently appreciate their homes as a place of entertainment, but depend too much on outside pleasure. If every one who owns a home could be caused to feel that he owes a social debt to his community our social state would be much improved.

Let us all do what we can to add to the social life of our neighborhood, and grow sunny in the light of harmless merriment and laughter. Let us take pride in our farms and in our country society, and in time our city friends will deem it a favor to be invited to our festivals.

MRS. MAC.

Everyday Recipes.

STRAWBERRY TARTLETS.—A dainty and attractive fancy dessert: Line tartlet tins with puff paste, fill them with raw rice (to preserve the shape) and bake in a hot oven; turn out the rice, return the crusts to the oven to harden the bottoms, then set in a cold place. Make a pink meringue of the whites of two eggs, and two tablespoonfuls of pink sugar. Fill the tartlet shells with berries that have been cut in quarters and sweetened; heap a tablespoonful of whipped cream in the centre of each, and border it with the pink meringue.

STRAWBERRY MERINGUE.—Beat the whites of six eggs to a stiff froth, add six tablespoons of powdered sugar, and beat again. Cover a clean board or shallow baking pan with white paper, drop the meringue in twelve even-sized mounds over it, and set in a cool oven for ten or twelve minutes. Remove and set in cool place. Sift sugar over medium-sized sweet strawberries, and let stand fifteen minutes; neatly remove the soft meringue from the centre of the mounds, fill them with the prepared berries, heap whipped cream over the top, and serve.

STRAWBERRY FILLING FOR CAKE.—Bake three rather large layers of white cake. Whip one coffee-cupful of cream; add four tablespoonfuls of sugar, and whip well together. Mash one cupful of ripe strawberries, add these to two-thirds of the cream, and spread between the cake just before serving. Cover the tope of the cake with the plain cream, set a dozen or more perfect, even-sized berries regularly around and sift powdered sugar over it.

ROMAN CREAM.—Into one quart of milk put one-half box gelatine; heat for fifteen minutes; then add yolks of four eggs beaten with one cup sugar; scald; cool four minutes, then add the whites of the eggs beaten stiff, a pinch of salt, rose or vanilla flavoring.

OLD-FASHIONED JOHNNY CAKE.—Two tablespoonfuls of lard, two tablespoonfuls molasses, two eggs, one-half cup sugar; beat all together; two cups sweet milk, two cups cornmeal, two cups flour; mix with three teaspoonfuls baking powder. Bake in large dripping pan for twenty minutes in hot oven.

Hot Water.

Hot water has far more medical virtues than many believe or know. Because it is so easily procured thousands think it valueless. The uses of hot water are, however, many. For example, there is nothing that so promptly cuts short congestion of the lungs, sore throat, or rheumatism, as hot water when applied promptly and thoroughly. Headache almost always yields to the simultaneous application of hot water to the feet and back of the neck.

A towel folded several times and dipped in hot water, and quickly wrung out and applied over the painful part in toothache or neuralgia, will generally afford prompt relief. A strip of flannel or napkin folded lengthwise and dipped in hot water and wrung out and applied around the neck of a child that has the croup will sometimes bring relief in ten minutes. Hot water taken freely half an hour before bedtime is helpful in case of constipation, while it has a most soothing effect upon the stomach and bowels. A goblet of hot water taken just after rising, before breakfast, has cured thousands of indigestion, and no simple remedy is more widely recommended by physicians to dyspeptics. Very hot water will stop dangerous bleeding.—*National Farmer.*

Questions and Answers.

SKIN DISEASE ON YOUNG PIGS.

To the Editor of FARMING:

I have a litter of pigs three months old, weighing about 45 lbs. each on an average. They are troubled with a sort of dry scab. The back of the ears is raw and very painful; eyes seem to be swollen and the upper part blood-shot. Pigs are fed about 1 lb. each of oat chop, also buttermilk and swill. They run at large in a pasture field and have access to plenty of fresh water. The pigs eat heartily. Please give me a remedy through the columns of your valuable paper.

WM. J. STEVENSON.

Maple Lake Station, Ont.
June 9, 1899.

The symptoms described are not an uncommon accompaniment of some dangerous and contagious diseases. If so, there would be deaths among the pigs. Nothing is stated as to how long this trouble has existed.

The heat of the sun and lack of shelter may produce local skin affections, such as are described. If the trouble is merely a local skin affection the pigs should have protection from the sun and from storms. Wash the affected parts with a mild wash of warm soap and water, and apply a very weak solution of any of the common mild antiseptics, such as creoline, carbolic acid or boracic acid; but be sure and have it weak and mild. A little linseed oil given in the food as a laxative would be advisable.

The food given appears to be all right. It is never advisable, however, to feed young pigs too highly. Sometimes high feeding or excessive nitrogenous food of any kind, such as oat chop, buttermilk or swill, may of itself produce skin disease. If any of the pigs should die we would strongly ad-

vise calling in a veterinary surgeon at once, as it might indicate something much more serious than a mere skin disease.

WHEN TO CUT ALFALFA FOR SEED.

To the Editor of FARMING :

Will you kindly inform me if it is the first cutting of alfalfa that is the best for seed ?

W. J. MITCHELL.

Kirkfield, Ont.

As with the other clovers so with alfalfa, the second crop is the best to save for seed. Where it is intended to save the second crop for seed the first crop should be cut earlier than usual, so as to give the second crop a chance to produce fully developed seed. In such cases the first crop should be cut before the seed is very much developed. This will apply to all clovers where the second crop is to be cut for seed. The second crop, as a rule, will be freer from weed seeds than the first crop, as the first cutting tends to destroy the weeds or to check their growth. To grow clover seed some recommend the plan of pasturing the crop till about the middle of June, and then let it grow for seed. This would have about the same effect as cutting early, and would perhaps prevent too rapid early growth, but it would hardly do as well as a first cutting for killing weeds

A HEIFER HOLDS UP HER MILK.

To the Editor of FARMING :

Would you please let me know, through your journal, what would be best to do with a heifer which holds up her milk, and will give only about one-half of it at a milking? Just as soon as we touch her teats she draws her udder up and will not let her milk down. She calved about the first of April, and we let the calf suck for the first week after calving.

CHAS. MITCHELL.

Port Elgin, Ont., June 12th, 1899.

About the only remedy in a case of this kind is to treat the heife. kindly, and not to handle her roughly. We would not advise any medicinal treatment unless there is something the matter with the udder, but no mention of this is made. The heifer may be of a very excitable and nervous temperament, and the removal of the calf after allowing it to suck for a week may have unduly excited her to such an extent as to cause her to hold back her milk. It would have been better not to have allowed the calf to suck at all, and the heifer would perhaps have allowed herself to be milked from the start without much difficulty. We are of the opinion, however, that she will come around all right if kept quiet and handled with great care and kindness at milking time. It is quite a common thing for cows to hold their milk back when excited or roughly treated, and this one may be a specially aggravated case that needs special care to bring around.

The Ontario Agricultural Gazette

The Official Bulletin of the Dominion Cattle, Sheep, and Swine Breeders' Associations, and of the Farmers' Institute System of the Province of Ontario.

VOL. II. No. 36

THE DOMINION CATTLE, SHEEP, AND SWINE BREEDERS' ASSOCIATIONS.

Annual Membership Fees:—Cattle Breeders' $1; Sheep Breeders', $1; Swine Breeders', $

BENEFITS OF MEMBERSHIP

Each member receives a free copy of each publication issued by the Association to which he belongs, during the year in which he is a member. In the case of the Swine Breeders' Association this includes a copy of the Swine Record.

A member of the Swine Breeders' Association is allowed to register pigs at 50c. per head; non-members are charged $1.00 per head.

A member of the Sheep Breeders Associations allowed to register sheep at 50c. per head, while non members are charged $1.00.

The name and address of each member, and the stock he has for sale, are published once a month Over 13,000 copies of this directory are mailed monthly. Copie are sent to each Agricultural College and each experiment Station in Canada and the United States, also to prominent breeders and probable buyers resident in Canada, the United States and elsewhere.

A member of an Association will only be allowed to advertise stock corresponding to the Association to which he belongs; that is, to advertise cattle he must be a member of the *Dominion Cattle Breeders' Association*, to advertise sheep he must be a member of the Dominion Sheep Breeders' Association, and to advertise swine he must be a member of the Dominion Swine Breeders' Association

The list of cattle, sheep, and swine for sale will be published in the third issue of each month. Members having stock for sale, in order that they may be included in the Gazette, are required to notify the undersigned by letter on or before the 5th of each month, of the number, breed, age, and sex of the animals. Should a member fail to do this his name will not appear in that issue The data will be published in the most condensed form.

F. W. HODSON, Secretary.
Parliament Building, Toronto, Ont

THE DOMINION CATTLE BREEDERS' ASSOCIATION.

Shorthorns.

Birdsall, F. & Son	Birdsall	Stock, both sexes.
Bonnycastle, F. & Son	Campbellford	9 bull calves, 1 to 8 months; heifers and heifer calves.
Bright, J	Myrtle	3 bull calves, 6 to 13 months; females, all ages.
Calder, C	Brooklin	2 bulls, 11 to 16 months.
Caldwell Bros	Orchard, Ont	Bull, 9 months.
Chapman, J. G. & Son	St Thomas	Heifer, 1 year; cow.
Douglas, J	Caledonia	11 bulls, 3 to 18 months; young cows and heifers.
Dyer, J. E	Enfield	2 bulls, 11 and 12 month.
Fried, J	Roseville	5 bulls 11 to 15 months
Hawkshaw, W. & Son	Glanworth	Bull, 12 months; bull, 3 years.
Fairbairn, H. K	Thedford	12 cows, all ages; 5 heifers, 2 years; 3 bull calves, 9 months; 3 heifer calves.
Jeffs, E. & Son	Bond Head	Yearling bull, 6 bull calves; 2 heifers, 2 years; young cows and heifer calves.
Johnston, A	Greenwood	3 bulls, 12 to 17 months; females, various ages.
Martindale, F	York	2 bulls, 12 to 16 months.
Miller, R	Stouffville	5 bulls; 1 bull (dairy strain), 13 months; 25 young cows and heifers.
Milne, D	Ethel	10 bulls, 5 to 10 months; 8 yearling heifers; cows, all ages.
Pettit, W. G	Freeman	4 bulls, 13 to 17 months; 14 heifers, 2 and 3 years.
Smith, A	Maple Lodge	10 bulls; 15 females.
Smith, H	Hay	4 young bulls; 10 young cows and heifers.
Staples, F	Ida	3 bulls, milking strain, 13 to 19 months.

Jerseys.

Birdsall, F. & Sons	Birdsall	Bull calves.
Bull, B. H	Brampton	3 yearling bulls; 5 bull calves; females all ages
Davies, Robert	Toronto	2 bulls, 9 months.
Duncan, J. H.	Sault Ste. Marie	Bull, 2 years; heifer calf, 4 weeks
Gibson, R	Delaware	2 bulls.

Ayrshires.

Caldwell Bros	Orchard	3 bulls, 12 months; bull, 3 months, 3 bulls, 1 month, cows and heifers.
Davies, Robt.	Toronto	7 bulls, 4 to 20 months.
Guy, F. T	Bowmanville	Bull, 12 months; cows, heifers, young calves.
Hume & C., A	Menie	Yearling bull; 3 yearling heifers; 5 bull calves, 4 heifer calves, 1 to 4 months.
Reid & Co., R	Hintonburg	2 bull calves, 9 and 11 months.
Smith, W. M. & J. C.	Fairfield Plains	Bull, 30 months; 2 cows; 5 heifers, 1 to 3 years.
Yuill, J. & Son	Carleton Place	7 bull calves, under 9 months; 23 heifer calves, under 9 months; cows and heifers all ages

Herefords.

Smith, H. D	Compton, Que	Bull calves.

Galloways.

McCrae, D	Guelph	15 bulls and bull calves, 60 cows and heifers.

Holsteins.

Hallman, A. C	New Dundee	3 bulls, 10 months; bull, 4 months; heifer, 10 months.

THE DOMINION SHEEP BREEDERS' ASSOCIATION.

Shropshires.

Davies, R	Toronto	20 yearling lambs.
Hanmer, D. G	Burford	60 shearling rams; 15 shearling ewes; 20 show rams.
Miller, R	Stouffville	60 imported and homebred rams; 30 yearling ewes; 150 ram and ewe lambs.
Pettit, W. G. & Son	Freeman	12 yearling rams.
Yuill, J. & Son	Carleton Place	Ewes and ewe lambs; ram lambs.

Leicesters.

Armstrong, G. B.	Teeswater	Ram, 2 shears; 2 shearling rams; ram lambs.
Jeffs, E. & Son	Bond Head	Shearling and ram lambs; aged, shearling and ewe lambs.
Smith, A	Maple Lodge	100 rams and ewes, various ages.

Cotswolds.

Bonnycastle, F. & Son	Campbellford	Yearling ewes.
McCrae, D	Guelph	30 shearling ewes; 15 rams and ram lambs.
Miller, R	Stouffville	40 lambs, rams and ewes.

(Continued on page 830.)

Institute Memberships.

The following is a list of the members which have been received since the last list published:

Brockville	9
Bruce South	36
Dufferin	17
Durham East	4
Grenville South	1
Grey Centre	8
Haldimand	13
Hastings North	16
Huron West	2
Kent West	24
Manitoulin East	2
Middlesex North	4
Middlesex West	1
Muskoka North	7
Oxford South	3
Welland	2
Wellington Centre	4
Wentworth North	1

According to clauses 34 and 35 of the rules and regulations governing Farmers' Institutes, each institute is entitled to hold four supplementary meetings at which the services of the delegates will be paid by the Depart*ment*, the *travelling* expenses being paid by the local institutes. Should an institute wish to hold more than four supplementary meetings it will be necessary that they pay both the wages and *travelling expenses of the dele*gates. A number of the institutes have asked for more than four supplementary meetings and arrangements can be made to include these meetings in the *regular list, on the understanding that* the local institutes pay both the wages and travelling expenses of the delegates while attending the extra meetings. It will be understood that these are the *arrangements to be made un*less a notice to the contrary is received from the secretary.

The following institutes have forwarded their annual reports:

Brant North.
Bruce North.
Bruce South.
Dufferin.
Dundas.
Grenville South.
Grey Centre.
Haldimand.
Hastings North.
Lambton West.
Leeds.
Muskoka South.
Norfolk South.
Northumberland East.
Northumberland West.
Ontario South.
Oxford South.
Perth North.
Peterboro' East.
Prescott.
Simcoe East.
Victoria East.
Welland.
Wellington Centre.

GAZETTE—Continued

Southdowns.

Jeffs, E. & Son	Bond Head	1 two-shear ram ; 3 shearling rams ; 6 ram lambs ; aged shearling and ewe lambs
McEwen, R	Byron	Rams and ewes
Smith, W M & J C.	Fairfield Plains	Ram, 2 ewes.

Suffolks.

Rudd, W J	Eden Mills	40 sheep, both sexes, various ages

THE DOMINION SWINE BREEDERS' ASSOCIATION.

Berkshires.

Bonnycastle, F. & Son	Campbellford	30 head, 5 weeks to 5 months
Caldwell Bros	Orchard	Pigs, 2 months, both sexes.
Colwill Bros	Newcastle	4 sows, 2 boars, 5 months
Decker, C. R.	Chesterfield	30 head.
Glendinning, H.	Manilla	Boars and sows, 5 and 6 months.
Harris, G. N	Lynden	17 pigs, 6 weeks to 2 months.
Jeffs, E. & Son	Bond Head	Aged hog ; 3 young hogs ; 5 young sows ; spring pigs.
Johnston, A	Greenwood	Sows and boars, various ages
Johnson, C L.	Rosedene	7 boars and 10 sows, 6 weeks to 2 years.
McCrae, D	Guelph	2 boars ; sow.
Reid & Co., R	Hintonburg	Young pigs.
Ross, A. W	Douglas	6 boars and sows, 3 months
Rudd, W. J	Eden Mills	25 pigs, both sexes, 3 to 4 months
Teasdale, T	Concord	20 pigs, both sexes, 11 to 14 weeks.
Vance, R	Ida	20 boars and sows, 12 weeks.
Yuill, J & Son	Carleton Place	Boar, 1 year ; young pigs.

Tamworths.

Brown, W	Paisley	20 head.
Caldwell Bros	Orchard	Pigs, 2 months, both sexes.
Colwill Bros	Newcastle	4 boars, 1 sow, 6 weeks ; 3 boars, 3 months.
Fulton, J., jr	Brownsville	50 young pigs, both sexes.
Hawkshaw, W S. & Son	Glanworth	20 boars and 15 sows, 5 to 10 weeks ; 2 boars, 9 months ; 2 sows, 20 months.
Hoover, P R	Green River	Young stock, both sexes.
Laurie, R. J. & A.	Wolverton	*Boars, 4 to 8 months ; sows, 6 months ; 20 pigs, 6 to 10 weeks.*
Owens, W	Montebello, Que	3 boars, 3 sows, 2 months ; 3 sows, 1 year ; aged sow.
Reid & Co., R	Hintonburg	Young pigs.
Smith, H. D	Compton, Que	Boars and sows, 2 months.

Chester Whites

Birdsall, F. & Son	Birdsall	Stock, both sexes, 12 weeks
Denison, W. S	Denison's Mills, Que	3 boars, 2 sows, 5 months ; 4 sows, 4 months ; 2 boars, 3 sows, 2 months.
Herron, H	Avon	Boars and sows, 4 weeks to 6 months.

Yorkshires.

Brethour, J. E.	Burford	120 boars, 3 to 9 months ; 140 sows, 3 to 13 months ; aged sows and boars.
Caldwell Bros	Orchard	Pigs, 2 months, both sexes.
Colwill Bros	Newcastle	Boars and sows, 4 to 8 weeks
Drummond, D	Myrtle	Boars and sows, 10 to 12 weeks
Hawkshaw, W. S & Son	Glanworth	3 boars and 4 sows, 11 weeks.
Honey, R	Brickley	12 boars and 15 sows, 2 to 8 months
Hume & Co., A.	Menie	25 pigs, both sexes.
Johnson, J. W	Underwood	Boar and sow, 2 years ; sow, 1 year, boars and sows, 2 months.
Owens, W	Montebello, Que.	100 head, all ages
Ross, A. W	Douglas	10 sows, 11 months, 20 boars and sows, 3 months.
Rusnell, F	Cedarville	15 head, 2 months ; 2 boars, 8 months.
Spicer Bros	Yeovil	Stock, all age.

Purebred Stock in the West.

The breeders of purebred stock in Manitoba seem to be copying the Ontario breeders in regard to the transportation of stock to the Northwest Territories. Arrangements have been entered into between the Manitoba Breeders' Association and the Government of the Territories whereby purebred stock will be sent in carload lots, and the various animals distributed at various points, as is done when cars leave this province. The first car left Deloraine for Edmonton two weeks ago with fifteen purebred, animals, comprising five shorthorns, five Polled Augus and five Herefords, sold by Manitoba breeders for purchasers in the Northwest Territories.

Wonders of the World's Waste

A recent writer in the *Ladies' Home Journal* says: Not many years ago when an ox was slaughtered, 40 per cent. of the animal was wasted ; at the present time nothing is lost but its dying breath. As but one-third of the weight of the animal consists of products that can be eaten, the question of utilizing the waste is a serious one. The blood is used in refining sugar and in sizing paper, or manufactured into door knobs and buttons. The hide goes to the tanner; horns and hoofs are transformed into combs and buttons; thigh bones, worth $80 per ton, are cut into handles for clothes brushes; fore leg bones sell for $30 per ton for collar buttons, parasol handles, and jewelry; the water in which bones are boiled is reduced to glue; the dust from sawing the bones is food for cattle and poultry; the smallest bones are made into boneblack. Each foot yields a quarter of a pint of neat's foot oil; the tail finds itself "in the soup," while the brush of hair at the end of the tail is sold to the mattress maker. The choicer parts of the fat make the basis of butterine; the intestines are used for sausage casings or bought by gold beaters. The undigested food in the stomach, which formerly cost the packers of Chicago $30,000 a year to remove and destroy, is now made into paper. These are but a few of the products of abattoirs. Scraps unfit for any other use find their way to the glue pot, or do missionary work for farmers as fertilizer.

A German Farmers' Guild.

We accidentally came across the statement that one agricultural organization in Germany possesses a membership of two million people. When the difficulty of getting Canadian farmers together is taken into consideration, the magnitude of the work accomplished by the Germans in thus combining seems marvellous. No class of men on earth seem to be as difficult to handle in enlistment under a single banner as farmers, and yet no people would derive greater benefits from such unity of action.

The Man Behind the Plow.

There's been a lot to say about the man behind the gun,
And folks has praised him highly for the noble work he done ;
He won a lot of honor for the land where men are free,
It was him that sent the Spaniards kitin' back across the sea ;
But he's had his day of glory, had his little spree, and now
There's another to be mentioned—he's the man behind the plow.

A battleship's a wonder and an army's mighty grand,
And warrin's a perfession only heroes understand ;
There's somethin' sort o' thrilling in a flag that's wavin' high,
And it makes you want to holler when the boys go marching by ;
But when the shoutin's over and the fightin's done, somehow,
We find we're still dependin' on the man behind the plow.

They sing about the glories of the man behind the gun,
And the books are full of stories of the wonders he has done ;
The world has been made over by the fearless ones who fight ;
Lands that used to be in darkness they have opened to the light ;
When God's children snarl the soldier has to settle up the row,
And folks haven't time fer thinkin' of the man behind the plow.

In all the pomp and splendor of an army on parade,
And all through the awful darkness that the smoke of battle made ;
In the halls where jewels glitter and where shoutin' men debate,
In the palaces where rulers deal out honors to the great,
There is not a single person who'd be doin' bizness now
Or have medals if it wasn't fer the man behind the plow.

We're a-buildin' mighty cities and we're gainin' lofty heights ;
We're a-winnin' lots of glory and we're settin' thing to rights ;
We're a-showin' all creation how the world's affairs should run,
Future men'll gaze in wonder at the things that we have done,
And they'll overlook the feller, jist the same as we do now,
Who's the whole concern's foundation—that's the man behind the plow.

—S. E. Kiser, in Chicago News.

Making Charcoal for Pigs

Where wood is plentiful charcoal can be made. Cut into four-foot lengths, stand on end around a pile of shavings or kindling until you have a cord or two. Cover with leaves or straw, then cover with dirt to a depth of three inches, making small openings around the bottom. Drop some coals of fire down into the shavings. Wait until the fire starts to burn, then close the hole at the top. Be careful not to allow any new holes to form around the sides or on top until it is nicely charred. Then re-cover and pile on one side, being careful to suppress all signs of fire. A first-class article can be made of corn cobs alone. All feeders of swine should positively have a supply all the time. It need not be fed carelessly, but once or twice a week.—*Ex.*

Use Judgment in Training Dogs.

When training your dog to do tricks or otherwise, do not kick or abuse him. A gentle tap will do more good, and he will more willingly obey your commands than by lashing, kicking or abusing him.

If a dog cannot be taught by kindness, he cannot be taught at all. Often by striking a dog on the head you are liable to effect the brain, and again it will cause him to become cowed and unfit for any purpose. Teach him one thing at a time, and be sure that he knows it well before you start him on another.

A little piece of meat after he has done your bidding will do a great deal more good than the whip. He will get so he will like to do it for you, and will not start at it as though his life depended upon it.

It doesn't look well to see a dog obey a command in a sneaking manner. It takes half the intelligence from the trick. Have patience, and above all do not lose your temper for a moment, or you may entirely ruin your dog.

Look to the sheep's feet without delay. After the winter there will be need for some treatment of feet that have been injured by tramping in foul pens or in muddy yards. The feet should be thoroughly cleaned, all traces of manure removed, and a wash of some antiseptic preparation should be given. Otherwise in a short time there will doubtless be sheep going about on their knees. The soles that may be turned under should be pared off, and the toes shortened. A washing in a solution of blue vitriol and a dressing of foot ointment will then put the feet in good shape for the summer.

Provision should be made without delay for those of the ewes which may need care when their lambs are dropped. There will always be such a necessity. Some small pens secluded from the rest of the flock should be in readiness for such of the ewes who neglect their lambs, or which may be in need of such attention. It is the small farm flock which needs this most, because of the very common neglect to have things in readiness for the occasion. If every farm flock were managed with the forethought and preparation practised in the large flocks, there would be twice the profit made by the more careful owners.

Every flock should have a stock of roots of some kind prepared for the winter. The yellow Aberdeen turnip is better than any of the white kinds. The rutabaga is hard, but good every other way, and will keep well until next July. But the roots, if fed, should be ground to pulp or shredded in thin strips by some suitable machine. Half a peck of sliced roots (equal to a quarter of a peck of pulped ones) will be a sufficient food daily for a full grown ewe. For making mutton there is nothing better than such feeding as this, for the root-fed mutton is tender, sweet, and has the flavor of venison. The mutton feeder should study the question of feeding for the market from the point of this kind of feeding.

Stock Notes.

AYRSHIRES FOR QUEBEC.—Mr. John Cochrane, Nether Craig, Kilmarnock, has been commissioned by Mr. McCallum, manager for Mr. Greenshields, Islagrance, Quebec, Canada, to procure for him six head of Ayrshires—two cows, two three-year olds, and two two-year-olds—and with the assistance of their very able head herdsman, Mr. Bradshaw, has bought the following animals:—From Mr. Mitchell, Barcheskie, Fairy Queen of Barcheskie, five years old. This grand, big cow has few equals for size, substance, and quality, and is considered by Mr. Cochrane one of the best commercial cows he ever bought. She was bred by Mr. Lindsay, Dunjop, Castle-Douglas. It was with great grudge Mr. Mitchell parted with her. Had it not been for the very tempting price offered she would not have left Scotland, being a prime favorite in the dairy. Another cow, five years old, from Mr. Howie, Fairfield Mains, Moncton, Nancy of Fairyfield (12603). This cow is out of half sister to Nora of Fairfield Mains, which Mr. McCallum purchased last year through Mr. Cochrane, and which won at all the leading shows throughout Canada. Nancy is due on 1st August, and should be in fine bloom for showing. She will be a hard nut to crack, and we hope she may do credit to her new owner. From Mr. Wallace, Auchenbrain, Bessie IV. of Auchenbrain (11989), a great, substantial, thick three-year-old, with good teats, and, like all Mr Wallace's stock, looks like a rent payer as well as having plenty of breeding. She can't fail to find admirers in her new home. Mrs. Smith, Laurieston, Dundonald, furnished another good three-year-old that will give a good account of herself in Jenny of Laurieston (12603). This is another Ayrshire of the right stamp, having all the qualities that would-be judges wish, having size, style, substance, teats, and vessel, and, like the rest of that lady's herd, like giving milk, and is a great favorite with Mr. Bradshaw. From Mr. Mitchell the two-year old heifer Pandora of Monkland (11660), bred by Mr. Barr, after the famous breeding bull White Cockade of Nether Craig (2852). This sprightly youngster can be seen in any company, and is also likely to have many admirers. Mr. Cochrane also sold Emma of Nether Craig (12489), sired by Duke of Argyll (3525), bred by Mr. Wm. Millar, Crosshands, Mauchline. This is a "growthy," big heifer, with the best of teats, and is likely to develop into a great, useful cow. This is the sort that is wanted in Canada. Mr. Bradshaw left Glasgow on Saturday morning per Donaldson liner s.s. *Alcades, en route* for Quebec, where the cattle will be put in quarantine for three months. They had also all to undergo the tuberculin test to satisfy the Canadian Government, which, we are pleased to say, they did without the slightest reaction. We wish Mr. Bradshaw and his select little herd a good voyage and a safe landing, trusting to hear more of them as the great Canadian shows come round.—*Scottish Farmer*

Publishers' Desk.

A New and Useful Implement.—The Waterloo Manufacturing Co., Limited, of Waterloo, Ont., make a specialty of high class threshing machinery, traction and portable engines and all the requisites of a perfect equipment of that description. At the same time they turn out many other implements and machines for the farm. In this week's FARMING they advertise a new piece of farm machinery, namely, a side delivery hay rake. This rake will undoubtedly prove a great convenience to the successful hay raiser and is especially adapted to the purposes of those who use a hay loader. We recommend it to the favorable notice of our readers.

Lamp wicks that have become clogged with settlings from the oil may be cleansed by washing in vinegar.

Market Review and Forecast

Office of FARMING,
Confederation Life Building, Toronto,
June 19th, 1899.

As midsummer approaches business usually becomes dull but this feature is much less marked than in former years. The volume of business at the present time being larger than is generally experienced at this season of the year and in a decidedly healthier condition. The large investments in mining stocks is hampering general business somewhat, many putting their money in these rather than in other lines. Money seems to be in better supply and there is less difficulty in securing call loans.

Wheat.

The wheat markets have been irregular during the week Early in the week the Chicago market ruled dull, but towards the close it was a cent or two higher with a report that the advance seemed largely due to a natural reaction. The English markets have ruled dull with some business doing on the Baltic. The June crop report of the United States Department of Agriculture has been issued. It places the average condition of winter wheat at 67.3 as compared with 83.4 as the mean of June averages for the past 15 years. This condition points to 10.58 as about the indicated yield would mean an output of 260,000,000 to 280,000,000 bushels. The June condition of the spring wheat is given at 91.4, indicating a yield of 235,000,000 bushels. This would indicate approximately a yield of 500,000,000 bushels for the 1899 crop. A few weeks hence, when the bulk of the crop on this continent is harvested, we will know more about it. Receipts at primary markets in the United States are large for this season of the year, indicating that farmers are bringing out their holdings.

The sharp advance at Chicago caused quite a bullish feeling at Montreal in both wheat and flour. No. 1 hard Manitoba sold at Fort William at 76½c. afloat. Red winter wheat sold for export at Montreal at 79 to 79½c. afloat there. The market here was firmer at the end of the week in sympathy with the rise at Chicago. Red and white is quoted at 71 to 72c. west; goose 67 to 68c., and No. 1 Manitoba hard at 85½c., and No. 1 Northern at 82½c. Toronto. On the Toronto farmers' market red and white brings 76 to 77c.; spring fife, 67 to 69c. and goose 68½ to 69½c. per bushel.

Oats and Barley.

The English oat markets are firmer. Prevailing conditions in the United States indicate a good crop, though in many instances it is getting too much moisture. The Montreal market is firmer, the quotations being 33½ to 34c. afloat. Oats are steadier here at 29 to 30c. west, and on the farmers' market bring 35 to 36c. per bushel.

Prices for barley are merely nominal, there being no business doing.

Peas and Corn.

High prices seem to be checking business in peas in the English markets. The Montreal market is firmer and higher at about 76c. afloat. Peas are steady here at 65 to 66c. west in car lots. On the Toronto farmers' market they bring about 65c. per bushel.

The start of the United States corn crop is regarded as one of good promise. The American markets have been fairly steady and closed a little higher. American is quoted here at 41 to 42c. on track Toronto.

Bran and Shorts.

Ontario winter wheat bran is quoted at Montreal at $14.50 to $15, and shorts at $16 to $16.50 per ton in car lots. City mills here sell bran at $14 and shorts at $15 in car lots f.o.b. Toronto.

Eggs and Poultry.

The English egg markets are firm, and a good demand exists. At Montreal there is not much change in the situation, though a slightly easier feeling is reported, owing to a falling off in the local demand. Prices remain steady at 12c. for No. 1 candled stock and 10 to 10½c. for No. 2. There is a good demand here, and prices are firm at 12½ to 13c. wholesale. On the farmers' market here new laid eggs bring 14 to 16c. per dozen. There is nothing doing in dressed poultry.

Potatoes.

These at Montreal are quiet and easier at 70c. to 75c. per bag for good sound stock and 50c. to 60c. for second grades. Potatoes are in fair demand here for good sound stock which bring 75c. to 80c. for car lots and 85c. to 90c. out of store. On the Toronto farmers' market they bring from 80c. to 85c. per bag.

Fruit.

The Cincinnati *Price Current* reports the United States apple crop to promise abundantly in a general way, although there are complaints of the young fruit falling to an extent causing some misgivings. At Montreal good Russet apples bring $6 to $6.50 per barrel. The American strawberries are about finished on that market, and Canadian are beginning to arrive and fetch from 10c. to 12½c. per box wholesale. The supply of Canadian berries on this market is increasing. They bring from 7c. to 9c. per box wholesale.

Hay and Straw.

Americans are buying large quantities of Canadian hay in the Montreal section and are paying higher prices in the country than can be obtained in Montreal. This large American buying is said to be due to a reported failure of the New England crop. Considerable business is being done on export account. Baled hay is quoted at Montreal as follows: No. 1, $7.50 to $8; No. 2, $5.50 to $6, and clover $4.50 to $5.50. The market is quiet at $7.50 to $8.50 for cars on track and $4 to $4.50 for baled straw. On the Toronto farmers' market timothy fetches $10 to $11, clover $7 to $9, sheaf straw $6 to $7, and loose straw at $4 to $5 per ton.

Wool.

Deliveries of new wool are being freely made, and trade is more active. While the situation in the Eastern States and Europe is strong and the outlook bright, the market here is still depressed, and local dealers are not at all sanguine about better prices later on. Holders both in England and the Eastern States are not inclined to force their goods upon the market, and seem to have every confidence in a strong future market. With this strong feeling elsewhere it is somewhat reasonable to suppose that the Canadian markets would show a stronger outlook. On the local Toronto market fleece is quoted at 13 to 14c., and unwashed at 8c. per lb. Pulled wool is quoted at 15 to 16½c. per lb.

Cheese.

The cheese situation has been somewhat irregular during the week. While lower cables are reported under the increased supplies in England, the market on this side is firmer. At the lower cables, however, there has been a greater demand for export and a steadier feeling is reported at the decline The firmer market on this side is said to be due to short sales, and does not show as healthy a condition as it otherwise would. The make continues to grow, and a very large export trade has been done during the week. About all the May goods are out of the factorymen's hands. Salesmen seem inclined to hold June goods awhile. They are, however, hardly ready to ship, and there is not much to be gained by selling ahead of time. The cool weather of the past few days will help to delay the curing process, and to counteract the effect of the excessive heat, thus very much improving the quality. The Montreal market is firm notwithstanding the large shipments, and there is a good demand from the other side. Finest western colored and white are quoted at 8⅝ to 8¾c., the former being the ruling figure. Finest easterns bring 8⅛ to 8¼c. At the local markets during the week prices ranged from 7½ to 8 9/16c., though all of the offers later in the week were over 8 cents. Though quite a lot of cheese were sold, salesmen did not seem disposed to sell at the prices offered.

Butter.

The *Trade Bulletin's* London cable of June 15th reads thus: Supplies have been more liberal during the week, both as regards home and foreign, and consequently holders have manifested a greater disposition to realize, but there is now a steadier feeling and a better demand. Finest Canadian creamery is now quoted at 84 to 86s.

There has been considerable activity in butter on this side and 18 to 18½c. have been paid at some country points for choice fresh creamery butter. The butter in whole sections has been taken at 18c., which, considering everything, is a good figure. The bulk of this butter is going into cold storage on this side for English speculative account. There is a very large make going on and our exports so far show a large increase over last year. At Montreal choice creamery is quoted at 17½ to 18c. and good to fine at 17 to 17½c. These prices are claimed to be too high for export at present prices and consequently a great deal of it is being sold locally and shipped to the west.

There is some activity and more enquiry about western dairy butter. Quite a lot of held stuff has recently changed hands, but choice, fresh quality is in demand. Montreal prices are 13 to 15c., with 1c. more for choice selections. The demand here is good for

choice dairy at 13 to 14c. for tubs, 13 to 15c for prints, and 12 to 13c. for large rolls. On the Toronto farmers' market lb. rolls bring 12½ to 15c. and large rolls 12 to 13c. per lb. Creamery butter is steady here at 17 to 18c. for prints and 16½ to 17c. for tubs.

Cattle

The cattle markets during the week have been steady, though at Chicago heavy cattle have not been so active. Good feeding cattle continue active in the West, though stock cattle are quiet. A steady feeling is reported at Buffalo, and cables are firm. The receipts on Toronto market on Friday were large and trade fair, the prices earlier in the week being well maintained for stall-fed butchers' and exporters. The quality of the cattle offered was generally good. Several lots of grass-fed cows for butchers' purposes were offered, which had a tendency to weaken prices.

Export Cattle.—Choice well-finished exporters of heavy weights sold at $4.80 to $5, and light ones at $4.65 to $4.75 per cwt. A few lots of well-finished cattle sold at 10c. to 20c. per cwt. above these figures. Heavy export bulls bring $3.87½ to $4.25, and light ones, $3.40 to $3.60 per cwt.

Butchers' Cattle.—Choice picked lots of these, equal in quality to the best exporters, and weighing from 1,000 to 1,150 lbs. each, sold at $4.65 to $4 75 per cwt. Good butcher's cattle brought $4.45 to $4.60, medium $4 30 to $4.45, and inferior to common, $3 50 to $4.10 per cwt.

Stockers and Feeders.—Stockers for Buffalo market were firmer at $3.50 for common, $3.75 to $3.90 for medium to good, $4 to $4 20 per cwt for choice pickled lots. Stock heifers bring $3 to $3.25 and inferior stock bulls $2.75 to $3 per cwt. Heavy feeders are in good demand with prices firm at $4.40 to $4.60 for well-bred steers, half-fat, and weighing not less than 1000 to 1150 lbs. each.

Calves.—Good calves of choice quality are wanted. The Buffalo market is steady with a light supply and moderate demand. 50 calves sold on this market on Friday at $2 to $10 each.

Milch Cows and Springers.—These bring from $25 to $45 each as to quality.

Sheep and Lambs.

The American markets are steadier and firmer than a week ago. There has been a fair demand at Buffalo for both sheep and lambs at firm prices. On Friday at Toronto there was a brisk market for sheep and lambs. Export sheep were in good demand and good spring lambs are wanted. Ewes sold at $3.50 to $3.85 and bucks at $2.75 to $3 per cent. Yearling lambs are not in much demand and bring from $4 to $4.50 per cwt. Spring lambs are firmer at $3.25 to $4.50 each.

Hogs.

The hog market continues strong and active at a substantial advance over last week's prices. The deliveries on Friday were large and prices were $5.12½ for select bacon hogs weighing from 160 to 200 lbs. each, unfed and unwatered; $4.62½ for light and $4.50 for thick, fat hogs. There are too many light and thick fat hogs coming forward. Unless these hogs, which are not wanted, come in smaller quantities, it is expected that prices will decline. The hog in demand is the choice bacon type. The Montreal market has ruled a little quieter, and $4.75 per cwt. is the ruling figure. The *Trade Bulletin's* cable *re* Canadian bacon is more assuring. It reads thus: "London, June 15, 1899.—A decidedly healthier feeling is noticeable in Canadian bacon, the more limited supplies and improved demand having induced a firmer market, with an advance of 2s. per cwt."

Horses

At Grand's Repository, Toronto, last week, a large number of horses were sold by auction. Amongst them was a carload each from Walkerton, Thamesford, Windsor, and Port Elgin, and a great many smaller lots from different points in Ontario. All but about ten per cent. were of the general purpose and draught horse classes. Draught horses from 1,400 lbs. to 1,600 lbs. brought from $125 to $190 each; those from 1,250 lbs. to 1,400 lbs. selling from $85 to $140 each. Good, sound, fresh drivers ranged from $100 to $175, while second-hand and more or less used up horses sold from $35 to $75 each.

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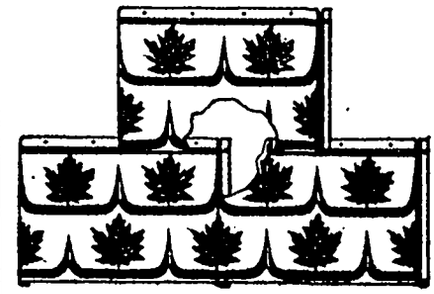

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Home Seekers' 60-Day Excursions To the Canadian North-West	Winnipeg, Deloraine, Reston, Estevan, Binscarth, Moosomin, Carman	$28
	Regina, Moosejaw, Yorkton	$30
	Prince Albert, Calgary	$35
	Red Deer, Edmonton	$40

Going June 27. Returning until August 26. (All Rail or S.S. Alberta).

Going July 18. Returning until Sept'r 12. (All Rail or S.S. Athabasca).

Going July 18. Returning until Sept'r 17. (All Rail or S.S. Alberta.)

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