

Eighth Annual Orchard and Garden Number

# FARM AND DAIRY & RURAL HOME

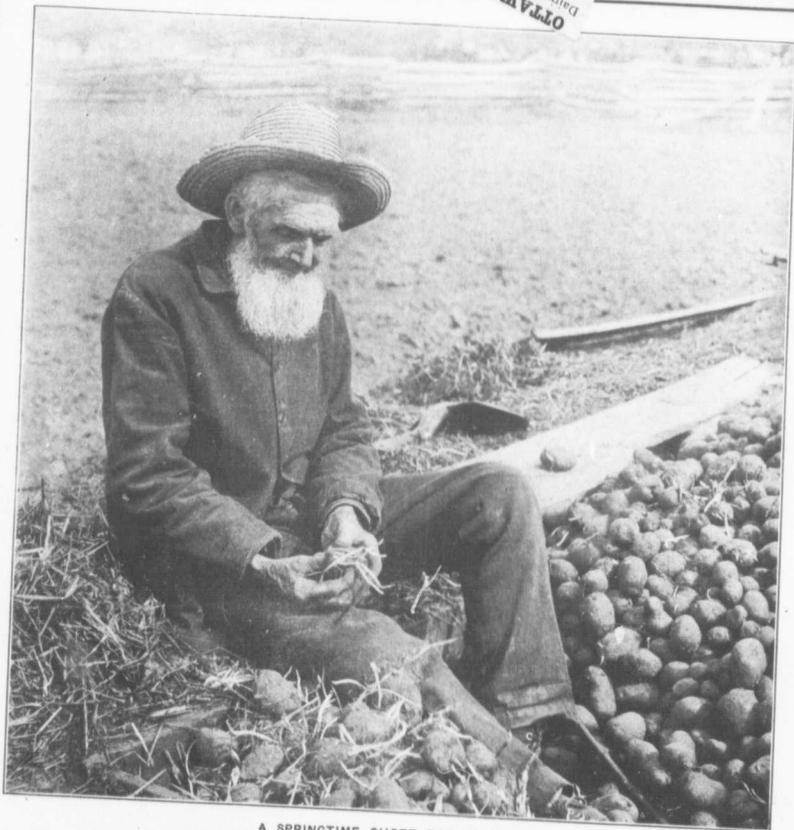


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COUNTRY LIFE



Peterboro, Ont., N

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A SPRINGTIME CHORE FOR GRANDPA.

—Photo in Huron Co., Ont.

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## "Life Is Real, Life Is Earned"

H. Percy Blanchard, Hants Co., Ont.

SO said the poet Longfellow. I would be that his thought went higher than a matter of raising fruit, or beef, or dairy produce. "Man does not live by bread alone," says a still greater teacher. The ambition to gather around us much may be open to question; but who can question the ambitions to gather the best? At the great "Harvest Home," when each thing that we have added to our naked selves has been threshed and winnowed and separated, such in its several bin and now, and the sum total of values taken, what will be the net product? There might be opportunity here for the preacher or the moralist to take up and develop this theme; but I will purposely pass that aspect by.

There is, too, the question of what harvest our "spare minutes" have produced. These minutes may have been wasted or worse; or they may have been scattered among our friends and neighbors for their lasting benefit and help. This aspect too is passed by.

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The real, serious theme for us today is the serious grappling with the ordinary problems which confront us as farmers. I realize far too well by experience how easy it is to drift along. It is true that in some cases speed is lost. The freight train across the Continent dragging along at 15 miles an hour, or the ocean tramp at seven miles may pay; when double the speed would consume all profit in the disproportionately extra fuel. But such apparent sluggishness is not the result of inertia at headquarters; it is the evidence of skilled calculation. For a dairy buying up is quicker; but breeding up is better. Not slow speed, nor yet high speed, but right speed counts. Adapt system to circumstance. Some Chinese farmers start their wheat in seed-beds, and later transplant it at measured distances in the permanent field as we set out tomatoes. They get immense crops. It pays them, because labor is of less

value to them than land. Such a method would be folly with us because of the opposite factors.

It seems so, or it is that we could get much more out of our raising industry with little more effort, of we gave more careful thought to details and methods? Often we are inclined to act from impulse, instead of from deliberation. Even our thinking and reasoning is apt at times to be illogical, because we are not sure of the facts upon which we base our conclusions; or because our reasons are insufficient. Clear reasoning is often assisted by paper and pencil. The idea apparently is good, but it is vague. Make it specific. Put it down on paper. We would plan to set out a hundred new apple trees next spring of a particular variety. What will they cost, not merely merely to sell, but till they bear, deducting the acreage taken from the general farming? Counter this "idea" with the query:—What would this same time, labor, and manure on my present orchard add to quantity and quality of fruit? Your "idea" comes back with the reply:—

But I want to add this special variety to my orchard. Now bring in a left hander:—Why not graft out a lot of cheap trash not in the orchard and put in thus the desired variety? It is a mental boxing match with its blow and guard and counter. In the end you may find "idea" knocked out, and your conclusion to be that there is more money to-day in a fair sized orchard with a limited number of choice varieties, and every tree made to produce its utmost, of the best grade than in an orchard extended to your limit and often neglected. Or, the "idea" may be that because crops are increasing it would be a good "idea" to add more cows. You "counter" this with the suggestion to give the extra feed to the cows you have. Who wins? Surely that should all depend on the special facts that govern your particular case. But it will have to be fought out, not reached at random; for life is real, life is earned.

## A Danish Fruit Grower of Note

DENMARK, home of cooperative dairying, is also the home of a rapidly developing fruit industry. One of these Danish fruit farms is the property of Mr. Hans Rasmussen, of "Progress," Denmark. He writes a Canadian friend about his farming as follows:

My farm is 26 acres, of which 10 acres are planted in fruit, mostly apples, the principal sort being Cox Orange. A couple of hundred trees are planted of a local variety, Peterstrop Kehnotta. This sort has shown more resisting power against disease, canker, etc., than sorts imported from foreign countries. One and a half acres are in raspberries (Fred). Some of them are planted between fruit trees, as shown in the accompanying illustration. Two acres are in black and red currants (the first pickings are shipped to England), three-quarters of an acre in gooseberries, one and a quarter acres in strawberries, and one and a half acres in asparagus. The asparagus is sold to the canning factory at an average of eleven cents a pound.

\$400 An Acre From Asparagus.

Last year my income from the sale of asparagus amounted to \$400 an acre. The asparagus market requires white shoots. The plants are set one and a half feet apart in the row, and the rows are six feet apart. In the spring the plants, or the rows, are covered with the adjoining mould to a depth of 10 inches, in order to secure white shoots of a length of eight to nine inches. The shoots are

cut twice each day, to avoid the heads getting colored by the sun and air by growing above ground.

We also grow some hazelnuts, 1,110 bushes, some of which are planted between fruit trees, and some along the walks, as can be seen to the left in the illustration. In about four acres we grow carter and flower, white, light, green, carrot, aster, viola, clarkia, etc. A plot is used for raising roots of lily-of-the-valley. A cooperative association has been organized for the sale of the roots. They are shipped to England.

A College Farm.

My farm is acknowledged by the Government of Agriculture as a suitable one for young folks to learn fruit growing and gardening. I receive from the Government about thirty-three dollars for each pupil, male or female, who has attended an agricultural college or any other notable school, and who stays here at least six months. I fully understand this. I may add a few words of further explanation. Without going into detail, I may state that much is being done to help people to obtain a piece of land, and not only to get hold of a tract, but also to teach these people how to use and till the ground, in order to be able to make a fair living on a small tract, say six to ten acres. As fruit growing and gardening realizes more money than ordinary farming, the Government gives aid to movements working toward this goal. The price of farm land, without buildings, is frequently two hundred dollars an acre.



# FARM AND DAIRY

## & RURAL HOME



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No. 8

## Home Markets Unreached by Our Fruits

If Poor People Could Pay More Big Crops Would Be Easily Marketed

H. BRONSON COWAN, EDITOR-IN-CHIEF FARM AND DAIRY

THE problems confronting the fruit grower are becoming more complex in character. A few years ago it was the common belief that if fruit growers would merely increase their production their most pressing difficulties would be solved. In time it became apparent that other factors had a determining influence on the prosperity of the fruit grower, and activities were started to secure lower freight and express rates, and ultimately for the appointment of a railway commission. About this time also the importance of marketing fruit on a better and more economical basis was recognized, and cooperation as a remedy was advocated. Growing out of all this, as the local markets became supplied, came the call for wider markets, and experiments were started which had for their object the obtaining of varieties of fruit which would stand shipment, and also to ascertain the best methods of packing for distant markets.

Until recently most of our fruit growers have felt that the fruit growers in other provinces and districts were their competitors, and that there was little in common between them. Recently we have begun to recognize that anything which will benefit the fruit growers in other sections is likely to have an important bearing on our own prosperity. A striking evidence of this new way of looking at things occurred at the last Dominion Fruit Conference in Grimby. The delegates from Nova Scotia were seeking the cooperation of the delegates from the other provinces in order that pressure might be brought to bear on the Dominion Government to have it use its influence to obtain a reduction in steamship rates on fruit from Nova Scotia to the British markets. Their case was listened to with attentive interest by the fruit growers from the other provinces, who seemed, however, to think that the point at issue constituted a local problem which the fruit growers from the Maritime provinces should solve for themselves. When, however, one of the Nova Scotia delegates pointed out that if these steamship rates were secured it would enable them to market the bulk of their crop in Europe, while otherwise they would be forced to ship to Ontario and the Western markets, thus possibly glutting these markets, the fruit men of Ontario and British Columbia were quick to see their interest in the situation. Within a few minutes they decided to cooperate with the growers of Nova Scotia, and had appointed a representative committee to wait on the Dominion Government, and thus help to obtain the improved steamship service desired by the Nova Scotia growers. In passing, it might be added that their joint efforts proved successful. This incident shows the identity of interest that exists between the fruit growers of all our fruit provinces.

Leading fruit growers are now beginning to realize and admit that the various complex problems already mentioned do not begin to exhaust those for which the fruit growers must ultimately seek to find solutions. Amongst the most pressing of these is the economic condition of the

working classes, not only in our Canadian cities, but in other countries as well. A statement made at the last Dominion Fruit Conference by Mr. Elmer Lick, of Oshawa, revealed as though by a lightning flash something of the nature of this problem. While discussing the problem of wider markets, Mr. Lick made this remark:

"The disturbing feature that confronts us when we attempt to find an outlet for our apples is the large percentage of the people in our cities who are unable to buy fruit at 'any price.'"

The importance of Mr. Lick's remark was recognized by all present, but no one seemed to think that the question was one which the conference was called upon to deal with. The problem Mr. Lick called attention to is such a large one it cannot be more than touched upon in this issue of Farm and Dairy. For, the present, therefore, let us merely examine the bearing the economic condition of the working classes in our cities at home has on the prosperity of our fruit growers.

One of the enigmas of our modern civilization is the fact that large crops of fruit, which should bless the producer and the consumer, often do not bless either, at least to the extent they should, because they result in prices, which, while so low as to leave the producer little or no profit, are not low enough to bring the fruit within the reach of most of the working classes of our large industrial centres. Let us see how this condition works out.

### Divisions of Wealth.

In a large city like Toronto there are different degrees of wealth. Supposing apples were a short crop and hard to obtain. Ten families in Toronto might be able to pay as high as \$50 a box and not feel the price. Fifty other families might be able to pay \$25 a box; 100 families \$10 a box; 200 families \$5 a box; 3,000 families, \$2.50 a box, and 5,000 families \$1.50 a box. Should the crop be a large one and the price of apples drop to 75 cents a box there might be 10,000 families who could afford to buy apples at that price. Below this number there might be 40,000 or more families who, after paying for their clothes, fuel, rent and other absolutely necessary expenses, could not afford to buy apples even when as low as 75 cents a box.

### How the Market Price is Set.

At this point a factor enters which should be recognized. That is that the market price of fruit in fact is always fixed by the lowest price the bulk of it is sold for. If there were only enough apples to supply the demand of the 10 families who could pay \$50 a box for them, the price of apples would be \$50 a box. When, however, the

(Concluded on page 8.)



### THE GREAT HOME MARKET.

In 1901 there were in British Columbia 436,644 fruit trees. The number in 1913 was 2,291,173 trees. In Nova Scotia two-thirds of the orchard area is not yet in bearing. In Ontario, orchard planting has not proceeded so rapidly, but even in Ontario there are thousands of acres of orchards which have not yet borne their first crop. In addition, old and neglected orchards have been rejuvenated. The logical result now faces us—overproduction. Where are we to find a market for our surplus fruit?

The best market lies right at home among the working classes of our cities. It is the price they can afford to pay for fruit that determines its prices in years of large production; and when all our young orchards are in bearing all years will be years of great production. Every movement, therefore, that tends to increase the prosperity of the working people in the cities will also tend to solve the marketing problem of the fruit grower in the country. Our interests are one. This fact is made clear in the adjoining article. But how may the buying power of the masses be increased. By doing away with monopoly and the swollen fortunes that monopoly breeds, and assuring to each man the product of his own toil. The problem is a big one. If we can solve it in Canada we will open such a home market that the only difficulty will be to supply it, the danger of overproduction will disappear, and Canada would prosper as never before.

# Experience in Growing Seed Potatoes

H. T. GOLTZ, MUSKOKA DISTRICT, ONT.

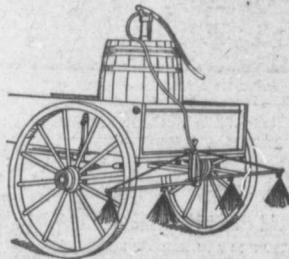
I HAVE been asked to give my experience in growing seed potatoes with which I have had very good success. The soil I have to deal with on my farm is a clay loam. This I cannot say is the best kind of soil for potato growing; a sandy land is more satisfactory. I will try, however, and explain my method.

I prefer a field on which there is a good growth of clover to plow down in the first half of September. I plow medium shallow and then add 12 to 15 loads of manure per acre and harrow it thoroughly. The last thing in the fall I plow the field again, plowing deeply this time. In the spring, as early as the ground can be worked mellow, I disc, and from then till planting time, I harrow it a few times, at intervals with a sweep harrow to keep weeds killed and to reserve moisture.

When I get the ground in good shape I make drills with a plow 28 inches apart and five inches deep. For making the drills I use a riding plow, which I find most convenient, and cover by harrowing crosswise. I cut the sets by hand, and like to have from one to three eyes in each set. I drop the sets in the drills by hand 14 inches apart. I make a point to have my potatoes planted not later than May 24th, which I find is the best time for Muskoka.

## After Planting Cultivation.

About a week after planting I harrow them with a seeding harrow and as soon as the plants show growth through the ground, I go through them with a one horse cultivator and cover them



Potato Spraying Outfit for Small Areas.

The piping can be purchased complete with nozzle and attached to an ordinary farm wagon. The barrel and pump may also be used for orchard spraying.

slightly, continuing this cultivation at intervals, slightly ridging as the growth of the potato advances, say, twice more. By that time the plants should be large enough to cover the ground and leave no room for cultivation. In spraying for insects I use Paris green and water and apply with a hand sprayer which holds about three gallons. I cannot mention any definite time for spraying, except to advise watching the bugs closely and keeping them under control.

Selecting the seed is a very important part in my success in potato growing. When digging the potatoes I have never used a potato digger. It may be all right, but I think it would not be very satisfactory on clay soil. I use a plow and potato fork. When selecting my seed potatoes, which I always do when digging, I use a fork so as to get each hill separate, that I can select tubers from plants which yield all good, uniform tubers and which are a perfect type according to variety.

## Changing Seed Not Necessary.

As long as I have farmed and grown potatoes I have not changed from the seed of the Early Rose and Empire State potatoes, which I have grown for 33 years, but kept improving it by selecting the best tubers each year when digging, for the next year's seed. The Davies' Warrior potato I have grown for five years with good satisfaction. I have grown the Early Bureka and Early Ohio also for about 10 years. To get good seed potatoes is just like getting into good stock. Always select the best shaped tubers and continue doing so from year to year. Study your soil and feed it if you want a good crop. Land varies so much in Muskoka District that a man needs to study his own soil.

To store seed potatoes I pit them on a side hill where the soil is sandy and there is good drainage. I find it best to leave the potatoes in the pit till time for planting and not allow them to sprout much, as sprouted tubers do not produce a good, uniform type of potato.

# Success in Strawberry Growing

UNUSUAL success has attended the efforts of Mr. Geo. Johnson, of Peterboro Co., Ont., as a grower of strawberries. His start was made almost by accident. While busily occupied a few years ago farming ninety acres of land, he yielded to the suggestions of his family and put in five rows of strawberries at one end of a small field, "just for family use." That was four years ago. The small family-sized plot of berries proved a pleasant revelation to Mr. Johnson of the possibilities of intensive cultivation, as the five rows which had been intended to supply only the requirements of the family yielded an additional revenue of \$104 from berries sold.

The following year, Mr. Johnson set out half an acre. This also proved profitable, with the result that the next year he had one and one-half acres in bearing. Market favored his new venture, and all of the crop was sold at prices ranging from 12 cents to 18 cents a box. From his one and one-half acres, Mr. Johnson picked 5,100 boxes. When the boxes had been paid for and picking expenses deducted, he found that he had realized \$670 from the small area in fruit.

In 1915 the market was not so favorable, and equally satisfactory returns were not realized, but still they compared to advantage, considering the labor and capital expended, with the returns from the remainder of the farm, on which general farming was still practiced. Herbert raspberries have been added, and have proved almost equally satisfactory with the straw-berries.

"Senator Dunlap and Parsons are my favorite varieties," Mr. Johnson informed a representative of Farm and Dairy who visited him in the picking season last summer. "We set the rows three and one-half feet apart, and the plants two feet apart in the row. We allow the runners to



A Lesson in Strawberry Planting.

From left to right, the first plant is set too shallow, the second one is set just right, and the third has the crown buried too deeply. The proper depth of planting is one of the most important details of the operation.

run freely, and all the training they get is that given by the cultivator. Of course we aim to cultivate the same way each time. We aim to take two to three crops off a bed. I have made more money by following this practice than by plowing down after the first crop has been harvested."

In one respect, Mr. Johnson's methods differ radically from the methods of other fruit growers in his section. "Many have the idea," he said, "that the strawberry plantation should be kept clean the first year but not touched the following spring until the crop is off. We followed the common practice at first, and one year the weeds stood a foot high over the whole bed, but we did not dare to pull them. That year was the first cropping season for the bed, and we should have got a maximum crop. Instead, we got a poor crop. The next year we cleaned that bed thoroughly in the spring, and the result was larger pickings throughout the season."

The cultivator is kept going constantly in the Johnson plantation, even during the picking season. "Moisture conservation is an absolute necessity to a good crop of berries," said Mr. Johnson. "Rain will spatter more sand on the berries than the scuttler ever does."

Barnyard manure is the staple fertilizer. Mr. Johnson plans to grow roots the first year, applying a good coat of manure to them. Berry plants are set the following spring, and they receive a second and equally heavy coat of manure.

Factors which have contributed to Mr. Johnson's success have been the fact that the soil on his farm is particularly suited to small fruit culture, while one of the best markets in Ontario, the city of Peterboro, is only a couple of miles distant. These conditions have enabled him of late to secure a larger return from his what are now five acres in small fruit than he formerly obtained from his farm of ninety acres.

The marketing of apples may be a difficult matter for a few years until production and consumption again equalize themselves. For this reason many orchards will be rooted out and more orchards now in bearing will be wholly neglected. It is well to remember, however, that the easiest fruit to market will be the good fruit. Only with greatest difficulty will poor, wormy apples be marketed at all. My advice would be, therefore, to give the orchard thorough spraying, pruning and cultivation, even if there be little profit in it. The gross returns will be larger and the orchard kept in better condition for the time when the market returns to normal. This will mean my policy no matter how bad the market goes.—E. L. Chambers, Norfolk Co., Ont.



The Home of W. W. Pineo, one of the Extensive Fruit Growers of the Annapolis Valley of Nova Scotia, at Waterville, in Kings County.

## The Methods of a Veteran Fruit Grower

Dairy Cows and Potatoes Also Add to the Revenues of W. W. Pineo, Kings Co., N.S.



W. W. Pineo.

ONE of the most pleasant places in Canada is the village of Waterville, in King's County, Nova Scotia. Everybody there grows apples. The eye of the visitor is gladdened at this season with rich foliage and a profusion of bloom. Among the prosperous residents is Mr. W. W. Pineo, one of the veteran orchardists of Canada. Mr. Pineo began to plant an orchard 40 years ago, and has planted a few acres every spring since that time. He now has 180 acres under apple trees, of which about 20 acres are in full bearing. His orchard contains 9,500 trees.

The varieties represented in his orchard include Gravensteins, Kings, Blenheims, Northern Spies, Baldwins, Ben Davis and Starks. He finds Kings and Ben Davis to be the most profitable varieties. "The Tompkins King" he said to a representative of Farm and Dairy, "is perhaps the quickest selling of any of the standard varieties grown in this province. It is in strong demand in the English market around Christmas. It was introduced into this country about 60 years ago, and owing to its size and beauty became rapidly popular. The King is fond of a warm soil, well drained, and likes early cultivation. The claims of the Ben Davis to popularity are based on its long-keeping qualities combined with its excellent yields, and the demand that exists for it among the English costermongers in March and April. Moreover, it blooms

late, and that is an advantage in this climate."

### Gravelly Soil Preferred.

The soil of a part of Mr. Pineo's orchard is a sandy loam, and part is a gravelly loam, with a clay subsoil. Mr. Pineo obtains the best results from a gravelly soil. He thinks this is due as much to the depth and natural drainage in such soil as to any other cause. "In Nova Scotia," continued Mr. Pineo, "apples are successfully grown on nearly all kinds of soil from light sand to heavy clay. The sandy soils, when supplied with plant food and humus, become useful for orchard purposes. It is, however, on some kind of loam that most of the orchards in this province are grown. Personally, I prefer a northern slope for apple trees and a site if possible somewhat higher than the adjoining land. On such a situation there is, of course, less chance of injury from frosts, owing to the drainage of the cold air to lower levels. Moreover, I find that a northern slope

tends to retard blossoming until after the period of late spring frosts."

Mr. Pineo claims that young trees from a local nursery, if well grown, are preferable to imported ones. The purchaser has the advantage of inspection before buying, gets stock with roots subjected to a minimum amount of exposure, and local stock is less apt to introduce insect pests and diseases. He uses both two-year-old and three-year-old trees, paying from 20 to 30 cents for them.

### Preparing for the Trees.

He prepares the soil thoroughly before setting out the trees. This preparation is begun at least one season ahead. A root crop is generally grown, to which is applied a liberal supply of barnyard manure. He has never utilized sod land for orchard purposes. The land is always plowed and harrowed in the fall, and again in the spring before the trees are planted.

The trees are set out as early as possible in the spring, as Mr. Pineo has found that early planting allows the roots to develop ahead of the buds, so that later on the roots are able to supply the moisture evaporated from the leaves. He sets out the trees 30 feet apart each way and does not use fillers. In digging the hole the top soil and subsoil are often placed in separate piles. In replacing this material, a shovelful of the surface soil is put in first, the tree placed in position, and the remaining top soil filled in around the roots. The subsoil is placed on top. The earth is worked in well around the tree. As soon as the trees are set the land is given a most thorough cultivation by both plowing and harrowing. Until the trees begin to bear, the intervening ground is planted to potatoes, corn or roots. When the trees come into bearing, the land is cultivated with the harrow or cultivator every week, and after every rain, until the first



Spraying is one of the Operations Never Neglected in the Pineo Orchards.

of July, when a cover crop consisting of clover or buckwheat is sown.

#### Fertilizing Methods.

"I am cutting out commercial fertilizers as much as possible," said Mr. Pines, "and using barnyard manure instead. It has been my experience that not much money can be made in this country in raising apples if the grower has to depend altogether on commercial manures. I use some of the straight fertilizers—nitrate of potash, nitrate of soda and bone-meal. I have not found it profitable to use mixed fertilizers. We are told that in countries where, artificial fertilizers are used in enormous quantities the use of mixed fertilizers has been almost entirely given up. Many growers in the Nova Scotia fruit belt, where the greatest quantities of commercial fertilizers are consumed, are getting more and more into the way of applying fertilizers, such as acid phosphate or muriate of potash, by themselves, according to the needs of their orchards, or of mixing these together at home when they wish to apply all the elements of plant food. I believe it would be well if more farmers would adopt this practice.

"Conditions vary very much. It would be impossible to describe a fertilizer which would be suitable for a certain crop under all conditions,

as there are too many factors to be considered. A farmer, in use manures or fertilizers intelligently, must keep in mind the nature of this soil as well as the character of the crop. I keep a large number of live stock and have about 800 tons of manure available from that source. In addition, I buy yearly about 300 tons of this fertilizer at from \$1.50 to \$2.00 a ton, according to the state of preservation.

#### Value of Barnyard Manure.

"We are told that a ton of barnyard manure well saved is worth in comparison with commercial fertilizers \$2.97 cents a ton. But too often under the ordinary farm-conditions the manure available has depreciated in value. Farmers are learning, however, that a manure heap may lose more than half its value in a few months through leaching and fermentation. But too many of them do not realize that out of a total value of \$2.97 a ton the liquid part is worth \$2.06, and the solid part but 91 cents. Our provincial Agricultural Department is doing excellent work in advising the use of tighter barn floors to prevent leakage, the use of more straw, earth, muck and other material to absorb the liquids and the storing of manure, whether indoors or out, in a place from which drainage is impossible. The manure heap should be kept level and as compact as possible.

An uneven surface allows an easy circulation of air and, in consequence, rapid fermentation. The manure from horses, sheep and poultry, being hot, should, if possible, be mixed with the manure from the cows and hogs in one common heap. The heap should be thoroughly and frequently tramped down. The application from time to time of quantities of dry earth is useful, as the earth absorbs nitrogen and other organic gases which would otherwise be lost.

"I do not use more than 10 tons of manure to the acre in my orchard. More than this sometimes causes an over-stimulation of wood growth."

#### Pruning Methods.

Mr. Pines prunes lightly from the outside every June. He prunes the young stock so as to develop symmetrical, well-balanced trees. Bearing trees are pruned so that the tops are opened up for sunlight and the height kept convenient for spraying and picking. The only fungicide employed is lime-sulphur. The proportions used are six gallons of commercial lime-sulphur to 200 gallons of water. About two pounds of arsenate of lead are incorporated with every 40 gallons of the mixture. Spraying is begun just before the fruit buds burst. The young leaves are well covered with the spray and protected against scab

(Continued on page 8.)

## Suggestions for the Orchard and Garden

### How Bonnie Grew Onions

Alice A. Ferguson, York Co., Ont.

**B**ONNIE was a farm hand on a Manitoba farm; hobby—gardening; specialty—growing onions. He chose silverchins, and bought one-quarter pound of seed at a cost of 60 cents. He sowed the seed with a garden sower. When the green sprouts appeared he tramped the earth with his feet astride the rows. He bought washing soda—25 cents worth—pulverized it, and before a rain sprinkled this up and down the rows to kill the grubs. He kept the rows free from weeds, always hoeing the earth away from the onions to make them grow on the surface. After the tops were sufficiently grown, he rolled them down, so that the growth would get to the bulb. During the season the onions were thinned, supplying abundance of green onions. The two rows planted next to a double row of sunflowers were allowed to go unthinned, as they were for pickling.

In the autumn the onions were harvested and dried in the barn. He sold ten bushels at \$1.25 a bushel, besides keeping an abundant supply for home use. Among the pickling onions were many very small ones, which were saved for Dutch sets the next season. The onions kept well.

### Practical Pruning

**S.** B. CHUTE, of King's Co., N.S., known to his friends as "Sam" Chute, is the apple king of the far east. His orchards cover 277 acres of which 112 acres are in bearing. The pruning methods of this great apple grower find their best endorsement in his success.

In the early days of his experience in apple growing, Mr. Chute gave little attention to pruning, resting satisfied with abundant crops of fruit and healthy growth. But the demands of the market for highly-colored fruit, together with the ravages of apple scab and insect pests, have caused him to give the matter of pruning serious attention. He has learned by experience the impossibility of producing spot-free, highly-colored fruit in the shade. S. B. Chute makes mistakes, but unlike most people he does not make the same mistake twice. He now prunes systematically and thoroughly. The work of pruning begins

### MONEY IN THE GARDEN.

A thrifty Swede purchased a worn-out farm in one of the provinces down by the sea. The previous owner had been starved out. Behind him he left several wagon loads of empty tin cans and a big bill at the grocery store. The Swede had an entirely different plan. His ideal of a farm was one that fed the family. His kitchen garden covered half an acre. In it he grew everything in the way of vegetables, and, as the years passed, all kinds of fruits. For several months of the year these thrifty people practically lived off their garden. What the previous owner had purchased in cans they canned themselves for the months when the garden didn't produce. Their outlay for the necessities of life was small. The garden gave them their start by feeding the family when money was scarce. The rest of the farm contributed to their living, of course, but the garden was the important factor. There is profit as well as pleasure in a garden. The moral? Well, how about your garden for 1916?

whose progress through the orchard can be seen by the long stubs he leaves behind him. The limb removed must be cut parallel to the one from which it is taken, and as close to it as possible.

### Intercropping Young Orchards\*

W. T. Macoun, Dominion Horticulturist.

**I**T costs a considerable amount to bring an orchard into bearing. The price of land, cost of trees, their planting and care, and interest on money invested must be considered. To offset this it is important that we get some income from the land while the trees are young.

For the average farmer a three-year rotation, consisting of grain, clover and potatoes, is probably the best. Manure should be applied to the clover in the fall. If the land is in good condition, potatoes can be planted offener. No matter what crop is grown, a strip four feet on each side of the trees should be left. It should be kept cultivated and seeded to a cover crop at the proper time. A good growth should be obtained in the trees every year. The strips should be increased as the trees become larger.

When planting potatoes, it is well to remember that the source of the seed is almost as important as the variety itself. Potatoes from districts where the potatoes keep on growing until the frost kills the top make much better seed than those from parts of Ontario where the tubers are prematurely ripened by the tops dying in hot weather. The latter seed is much weaker in vitality. In experiments conducted at the Ottawa Experimental Farm, it was found that a crop three and one-half times as large was obtained from western grown seed as was given by seed obtained where hot summers are the rule. These results are from an average of eleven varieties. Late planted potatoes will keep on growing until the frost and make better seed than early planted potatoes. These immature potatoes will not sprout so early in the spring, and on this account also make better seed.

An average increase of ninety-four bushels an acre was obtained from plots sprayed with the

\*Extract from an address delivered at the annual meeting held in Port Hope, Ont., Jan. 27th, of the Northumberland and Durham Fruit Growers' Association.

Bordeaux mixture over unsprayed plots at Ottawa. As an insecticide, a mixture of Paris green and arsenate of lead in the proportion of eight ounces of Paris green and one and one-half pounds of the lead to forty gallons of water, has given the best results at the Experimental Farm. The Paris green kills more quickly than the arsenate of lead, but the latter adheres longer. The good qualities of the two are obtained in the mixture. The greatest development of the tubers takes place in the latter part of the summer. If the potato tops can be kept green throughout September, a large crop is assured.

Good varieties for the main crop are: Gold Coin, Green Mountain, and Carman No. 1. For the early crop, Irish Cobbler, Rochester Rose, and for extra early the Early Ohio give good results. The last-mentioned variety is a rather light cropper. Davies Warrior is a promising new sort.

Another good crop, where the soil is of a warm nature, is field beans. They are now selling at a high price, and are likely to be higher next year. It is very important that no crop that will injure the trees in any way should be planted. Corn, for instance, shades the trees and often causes them to keep on growing too late in the season. The little money to be obtained from an inter-crop will not pay for the injury to the trees. This is success attained in the Annapolis Valley of Nova Scotia. There as elsewhere it comes as a reward to untiring industry, and Mr. Pines is now reaping the fruits of his labors of many years.

### Beautification of Country Homes\*

R. A. Penhale, Elgin Co., Ont.

THE plans for the beautification of home surroundings in the country must always be laid with an eye to the saving of labor. Out there on the farms we have large areas of

\*Synopsis report of an address by R. A. Penhale, St. Thomas, before the recent Horticultural Convention, Toronto.



A Dust Sprayer at Work in a New York State Orchard; a Form of Spray that is Giving Good Results Across the Border.

open space to look after, and the schemes adopted for planting must not be so elaborate as those for cities or towns. There is a vast difference between keeping a city lot and an Ontario farm beautiful and such things as striving after color and mass effects, though they may be all right in the city, are entirely out of place on the ordinary farm.

One of the easiest ways in which the general appearance of the country can be improved is by properly caring for the roadsides. If they are leveled so that an ordinary farm mower can be run over them without any inconvenience, but little labor is necessary to keep them looking like broad boulevards. Then, again, by making the use of the mower easy the farmers are encouraged to keep the weeds down. A great deal of money is now being spent by our Governments for the establishment of good roads. Engineers are employed to lay out road improvements. While they are at it, they should lay them out to the very fences. It would cost but little more to level the sides of the road with the result that they would be kept free from weeds and more attractive looking.

We have found from experience that the Man-

toba maple is a very suitable tree for roadside planting. It is very hardy and a rapid grower.

In laying out the surroundings of the rural home, the first consideration should be economy of labor in maintenance. The less labor involved in keeping the home surroundings attractive, the more attractive they will be kept. The open spaces should be large and not cut up by trees or flower beds. If they are large enough to permit of the use of the mowing machine, so much the better. Planting should be confined, for the most part, to trees and hardy shrubs which will grow with little or no attention. Such flowers as are planted should be perennial. The outline of the whole should be very simple, and in planning the varieties used should be few in number and perfectly hardy.

### Dust Spray for Orchards

REPRESENTATIVES of the Ontario Fruit Growers' Association, who attended the recent convention of the New York State Fruit Growers' Association, were impressed with the evidence there brought out in favor of the use of dust sprays for apples. For several years experiments have been conducted by the Agricultural Experimental Station of Cornell University with dust sprays. The information furnished during the discussion supported the conclusions set forth in Bulletin 369 of the Cornell University entitled "Dusting and Spraying Experiments with Apples." In brief this bulletin contends, the dust spray does not control scale insects, but it now seems settled that a mixture of an insecticide and a fungicide can be applied in powder form, using air as a carrier, with better commercial results in the control of preventable apple diseases, and of apple insects, than can be obtained by spraying. The dust method makes it possible for the owner of a large acreage to protect his orchard at critical times, a thing that he has not been able to do with the slower liquid process.

The only objection to the general adoption of the dust method of spraying is that there is no known dust preparation which will kill scale insects and such insects as aphids and pear psylla. For this reason those persons who must spray for scale and for aphids will do well to continue with the liquid method.

Benefits claimed for the dust method are that the equipment is lighter, the application can be made more quickly and easily, as for instance when the soil is wet, there is no trouble from clogging nozzles, higher trees can be sprayed, and the cost, if anything, is less. As yet this new method has not been tested in Ontario, but arrangements are being made by the Ontario Department of Agriculture for a test during the coming season. While it would not do for fruit growers to rush into its use, all fruit growers will be interested in the results obtained from the tests of this spray that will be given next summer.

Our "small fruits" garden is small in two ways. It is devoted altogether to the small fruits and its total area does not cover over one-sixteenth of an acre. Not much land, but the products thereof probably give us more satisfaction than those from a hundred times the area anywhere else on the farm. Our small fruit garden started a good many years ago with a few rows of strawberries.—E. L. McCaskey.



A Scene that is Typical of the Tender Fruit District of Ontario. Overlooking the farm of Fred Woolberton, Lincoln Co., Ont.

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## Methods of a Veteran Fruit Grower

(Continued from Page 6.)

until the second application, just after the blossoms fall, can be given. Two and often three additional sprayings are applied with intervals of 10 days between. Care is taken that a fine spray is produced. Nevertheless, the trees are very frequently frosted. The proportions used, however, instead of drenching without injuring the foliage, and it pays better to waste lime-sulphur than apply a power sprayer is used at a pressure of 300 pounds.

Sprays Thoroughly.

"I believe in the gospel of thorough spraying," said Mr. Pinso. "We must grow clean, apple-producing trees. The orchardist who is content to grow only spotted apples is on the road to the poorhouse, and the more apples he grows the sooner he will arrive there. Spabby apples will not be worth anything in the very near future. Apples can be kept clean in the worst season if the grower knows his business. Many people, when they spray, have in mind only the necessity of keeping the apples clean, free from diseases, so that they may look more attractive, keep better and fetch a higher price. But spraying does more than this. It prevents the premature dropping of fruit and keeps the trees in good health, so that they not only produce more fruit but actually destroy the scale insects that suck the life-blood out of the leaves. We can understand how the destruction of these pests increases the vitality of the orchard."

While the orchard represents Mr. Pinso's prime interest, he recognizes that there are other means of making a livelihood on the farm. He has an average of 40 acres under oats, 30 under corn, 40 under hay, 70 under hay, and 10 acres under roots. He keeps 100 head of cattle, 76 hogs, and 10 horses. He uses a pure-bred Holstein bull with his herd of high-grade Holsteins, and the most satisfactory. His cows give in June an average of from 35 to 60 pounds of milk a day.

Overproduction. "The cry about over-production of apples does not worry me," said Mr. Pinso, "or I shouldn't be setting out ten additional acres under apple trees this year. But there is no good reason

why an orchardist should not have more than one string to his bow. Dairying and orcharding fit in very satisfactorily together. The fruit grower who keeps live stock has an immediate, a convenient, and a profitable market for his culms. A large quantity of manure is produced and returned to the soil. Moreover, while the beginner is waiting for the young orchard to grow, the cows help pay the bills. Then, by raising some cash crops, such as small fruits and potatoes, he is enabled to make a fat living, and when the trees begin to bear the apples seem to come almost like a present. The combination of dairying and orcharding enables the grower to furnish steady employment to his men during the entire year, thus solving the help question in a measure, for it is when men are idle in the winter months that they become restless and wish to get away to some other country."

Mr. Pinso keeps careful records of his farming operations. By reference to his book he was able to furnish the writer with the following statement of his yearly expenditures and receipts per acre of bearing orchard:

Value of land	.....	\$20.00
Rent of land	.....	20.00
Hauling and spreading manure	.....	3.00
Sowing fertilizer	.....	1.00
Disking and harrowing	.....	2.00
Seed for cover crop	.....	2.00
Sowing cover crop	.....	.25
Spraying	.....	3.00
Barrels	.....	27.00
Picking, packing and truckage	.....	25.00
Other expenses	.....	1.00
		\$114.00

Each acre of full bearing orchard yields an average of about 110 bushels. This, at \$2, gives him a gross income per acre of \$220, and, less the expenditure, gives him a net income of \$106.75. Mr. Pinso has several times picked 350 barrels from one acre in a season. Those were, of course, exceptional crops. His average crop over a large acreage is as stated. His average total crop per year is 5,000 barrels. It must be remembered that this is not a bit of farming on paper, but the concrete results that follow the intelligent efforts of a skilled orchardist.

## Home Markets Unreached by Our Fruit

(Continued from page 3.)

supply exceeded such a demand, but did not exceed the requirements of the 100 families who could pay \$10 a box, then the price of apples would drop to \$10 a box and the 10 families who could pay \$50 a box and the 50 families that could pay \$25 a box would pay only \$10 a box for their fruit. In other words, the amount produced determines the selling price.

When apples are so plentiful that in order that they may be sold the price drops to 75 cents a box, all families alike pay only 75 cents a box for their apples, even if many families can afford to pay much more. Should there be more than enough apples to supply the demand at 75 cents a box, then the growers are forced to seek for a market amongst the 40,000 families or more who cannot afford to pay 75 cents, and in consequence the price must drop to 60 cents or 50 cents, or to whatever point is within the reach of those people. Supposing this price should be 50 cents a box, it means that the fruit must be at a loss to the fruit grower or, as sometimes happens, not be marketed at all.

Here then is where the real basis of the marketing question comes in. The level of a large part of the pos-

sible home market for fruit has sunk below the cost level of production. The trouble is not that too many apples are produced, but once more in the words of Mr. Lick, "there is such a large percentage of people who are unable to buy fruit at any price." It is this condition which knocks the bottom out of the market whenever there is a large production of fruit, or if all the families in our cities could afford to pay 75 cents a box there would not be enough fruit to go round.

In time we will realize that the only real and lasting cure is to so change the conditions of the masses that they will be able to pay a price for fruit that will ensure growers receiving a profit for their product. This then is the economic condition of the so-called working classes comes in. When such a condition is brought about the bumper of large crops will lose much of its terrors for the producer. To many this problem seems incapable of solution. There is, however, no certainty of this. What we in common with other classes in the community who are equally affected by it, approach this side of the marketing problem with the same earnestness we have displayed in other matters a remedy for it will be found.

## The Use of Fertilizer

S. H. Rittenhouse, Lincoln Co., Ont.

TO fertilize our strawberries we plough down a clover sod in the fall and cover it with stable manure during the early winter months previous to planting the following spring. This system has given us excellent returns.

For a couple of seasons we have been getting poor results from the manure through the use of commercial fertilizers. Naturally it requires more intelligence and careful observation to get profitable results from commercial fertilizers than in the case of stable manure. We will be forced to change our plans in the near future because of the scarcity of the manure. I look upon the clover crop as indispensable in keeping up fertility.

## Bees Saved Strawberry Crop

L. T. Floyd, Central Norton, N.B.

SOME time ago, while travelling, I chanced to mention to some parties whom I met that we had received one thousand dollars for the crop of strawberries we had grown on an acre of our farm at Central Norton. From there the story found its way into the local paper. Since then we have received many enquiries about it, and as the subject seemed to be of interest to so many, I thought I would like to state once again the reasons why we succeeded in harvesting a fine crop in a year when berries were generally a failure.

We got a fairly good stand of plants this year, the season being very wintered fairly well, but the spring was backward and cold. They began to bloom about June 1. On the night of June 4 we had a heavy frost, which killed all the blossoms down to the smallest buds. We thought our crop was doomed, because we remembered a season about seven years before when a lighter frost had ruined the crop. This was before we began keeping bees.

The evening after the frost it rained a good soaking rain, which caused the plants to set more fruit buds out of the crowns. Where one or two fruit stems had been before, there were sprang many more—and in about ten days the patch was white with blossoms again.

Blossoms Well Pollenized.

Near to this patch we had 14 colonies of bees. At this time of year the hives were brimming full, and every day, while the plants were in bloom, you could hear their busy hum quite a distance from the patch. The spring being so cold, there were very few wild bees or other winged insects, so we had to depend solely on our own bees for the fertilization of these blossoms, and they made a good job of it. How do we know? Because, as the season drew near its close, every blossom that had not been frozen grew a berry. There were none of the small red knots often seen towards the last of the harvest.

How much do you think those bees were worth to us on that crop of berries? We place it at hundreds of dollars, but this is only an estimate. One thing we are sure of, and that is that it pays well to have a good crop of berries in a year when they are scarce and high in price; and we know the bees were largely responsible for the excellent pollenization of the blossoms. We had more than half these berries picked before it began to snow on us that we were going to have a crop, we were so sure the frost had fixed them.

The sooner that fruit growers find out the benefit that bees are to them, the sooner they will catch the dollars that are slipping through their fingers because of imperfect pollenization. The profits in beekeeping are not all to be counted in the number of pounds of honey harvested.

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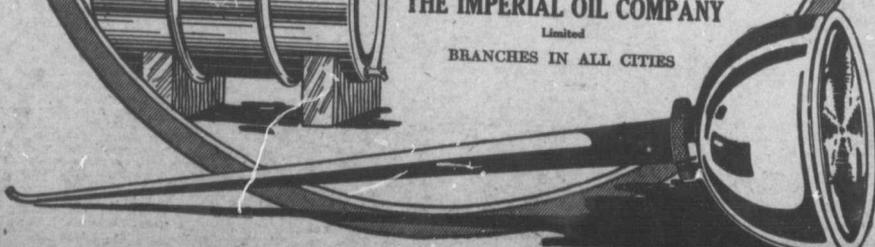
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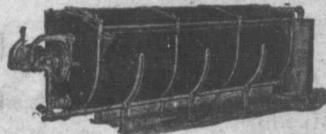
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### Hints for March

**T**HIS is the month to produce fall layers, so it is time to be getting things in readiness for the spring work. Hatching coops should be cleaned and painted so old biddy will not be kept waiting. There will soon be plenty of chicks, and time is scarce at this time of the year.

In the breeding pens should be found oyster shells, grit, charcoal, and green stuff.

If the hens have been too closely confined in glass houses the eggs for this month will not hatch well. Let them have some fresh air and exercise to get them thoroughly alive again.

Healthy hens lay eggs if they are not abused. Do not neglect or try to keep the birds too warm. The open front house will enable one to treat the birds fair.

Make table scraps the foundation for a wet mash occasionally. Do not feed it in a sloppy mash, but rather have it in a crumbly condition.

Keep the house free of draughts and have a good clean litter to scratch in. If the rooster is old do not have too many hens in the breeding pen if you want the eggs to hatch well.

There is no need of a male bird if keeping hens for eggs alone.

Take good care of the birds and they can be developed into good, hardy stock.

Set as many hens as possible this month. If an incubator is used, follow the directions closely and do not try to experiment. The man who made the machine undoubtedly knows more about it.

It isn't always the fancy stock that pays the mortgage. Give plain old biddy a chance on it.

Plenty of brains and good common sense, as well as some capital, is needed in the poultry business.

### Efficient Poultry Farming

**"O**LDHAM FARM" is the largest egg farm in Canada. And in connection therewith is an interesting history. Mr. Lewis N. Clark, the proprietor, a young United States engineer, came to Fort Hope a few years ago to spend the summer and recuperate his health. He adopted chickens as a hobby, and became so seized of the joys of poultry farming and the possibilities, profits therefrom that he never went back to his home in the States. During the five or six years that Mr. Clark has been in the business, he has made a full study of every phase of the poultry industry, and is now recognized as an authority of all that pertains to chickens. Small wonder, then, that he was selected to deliver the leading poultry address at the recent Ottawa Winter Fair.

Mr. Clark selected as his subject, "Efficiency in Poultry Farm Management," and confined himself to commercial poultry keeping that is, poultry keeping with eggs and market poultry as the main sources of income. "I don't believe you can breed for eggs and feathers on the same bird," remarked Mr. Clark, "and I have devoted myself entirely to the production of utility stock. Of course there are side lines, even on the commercial poultry plant. We have hatching eggs in the spring, hens and cockerels for sale as breeders, the season's cockerels to market as broilers, but the chief source of profit is eggs—market eggs of the highest quality. In 1915 we marketed over 40,000 dozen of eggs from our farm."

The speaker then referred to the

statement that there are many failures in commercial poultry keeping. "One reason for these failures," said he, "is that many of the men who go into it have also been a failure in other business. Perhaps they have failed four or five times. The poultry business is one demanding knowledge and skill. Another frequent cause of failure is the lack of systematic culling of the flock."

### Estimated and Actual Profits.

Mr. Clark then estimated the profits of poultry farming as the green enthusiast is apt to see it. Fourteen dozen eggs a hen, \$4.50; feed, \$1.50; labor, 90c; leaving a net profit of \$2.50 a hen.

"This should leave a mighty nice profit in poultry farming," said he. "Where, then, is the trouble? Just here! The hens do not average 14 dozen eggs a year. On my farm, one hen in ten laid 15 to 17 dozen eggs last year. When we average all the hens, however, it is not high. Where there are no bred-to-lay strains in the flock, the average will be much lower than the estimate. The only way to keep up the laying of eggs of a flock is to go through continually and weed out the non-layers. Some poultrymen like to have their houses full, but the keynote of farm poultry efficiency is to get rid of the unproductive birds. We put our pullets in the laying houses in September. About January we go through and cull out the pullets that are not laying. In the spring we cull again, and so again in the summer. In this way the poultryman can automatically build up a laying strain."

"I am asked how I tell good layers from poor. Trap nesting is the only absolutely sure method. There are other indications which I consider certain enough. These are three in number:

"(1) Time of moulting. Hens that moult last are the greatest producers. The earliest moulters are the poorest layers, although they look fine in the fall because they have been so easy on themselves.

"(2) Color of the ear lobe. This determinant, of course, applies only to those breeds which have white ear lobes and yellow shanks. Poultry that lay well in the fall and early winter have white or light yellow ear lobes. In non-layers the ear lobe will be quite yellow. The explanation is that the hens lay the pigment out of the lobes. This I consider one advantage of the White Leghorn, in that members of this breed have white lobes.

"(3) Color of shank. The color here does not change as rapidly as in the ear lobe, but the same general rules apply."

### Production Comes First.

In considering efficiency generally, Mr. Clark did not place business efficiency first in running a poultry plant, as is so commonly done nowadays. "In other businesses," he explained, "the production of products to be sold is simple. Their big problem is to sell what they produce. On the poultry farm we can sell whatever we produce."

Next in importance to culling the flock, Mr. Clark placed the time of hatching. The pullet he regards as the highly-profitable bird. Pullets lay from October to January, when eggs are high in price. Yearling hens start to lay in February when prices are going down. In his own flock, separate records have been kept for six years. He has made 90 cents profit in one month from pullets from their eggs alone, but the highest profit from yearling hens has been kept for six cents. In his experience, Mr. Clark was very explicit. Barred Plymouth Rocks and similar breeds should not be hatched earlier than April 1st, and not later than May 15th. In the Leghorn group, hatching continues from April 20th to May 25th.



## Approved Methods Again Prove Profitable

THE possibilities that lie in many a neglected orchard have been revealed, among others, by F. H. Johnson, of Bridgetown, N.S., who for some years has obtained an average profit of one hundred dollars an acre from a reclaimed orchard. These results have been accomplished by the thorough application of the principles of orchard practice frequently described in these columns.

Mr. Johnson's orchard comprises ten acres, five of which are in full bearing. When he purchased his farm in 1859, the orchard contained 300 apple trees. The trees had been badly neglected, having been left in sod, seldom pruned and never sprayed. They were covered with a growth of moss, and had a starved and stunted appearance. The annual crop was about one hundred barrels of inferior apples.

As soon as the land was fit to work, the spring after he took charge, Mr. Johnson plowed up the orchard and kept the ground thoroughly cultivated until the first of July. A clover crop was then sown. Meanwhile the trees were sprayed regularly. In the autumn his efforts were rewarded by three hundred barrels of clean fruit of good size. The orchard now contains 1,000 trees, one-half of which yield an average crop of 800 barrels of first-class merchantable apples. When asked by a representative of Farm and Dairy for details of the methods by which these results had been reached, Mr. Johnson readily responded.

### Principles of Success.

"I attribute," he said, "most success I have met with to four operations: First, spraying; second, cultivation; third, fertilizing; and fourth, pruning. The best soil for an orchard is a light or gravelly loam. Mine is a light loam. My orchard is situated on the crest of a hill and slopes to the north, west and south. So far as I can see, the slope of the orchard does not make any difference in this part of the country. Of course we are not troubled with spring frosts here. It is possible, perhaps, that where these are prevalent a northerly slope would

possess slight advantages.

"I have practised thinning for ten years with good results. About the first of July I go through the orchard for this purpose. This practice gives me larger fruit, more uniform and better colored. Moreover the fruit can be handled much more quickly in picking and packing. Thinning is one of the important operations in growing first-class fruit. The superintendent of the Dominion Experimental Station has directed experiments in thinning in my orchard. The Reinheim variety was selected for the test. Five trees were thinned and these were compared with seven trees unthinned. The trees were uniform in size and were equally well set with fruit. About 15 per cent. of the apples were removed from the thinned trees on July 15th. The apples were counted when picked and were packed by the Cooperative Fruit Company, of Bridgetown. All the barrels were marked so that the shipment could be traced to the selling point. The apples were sold on their merits and the purchaser knew nothing of the nature of the experiment. The total number one fruit from the thinned trees sold at 24 cents a barrel more than for the same grade from the unthinned trees."

### Cost of Production.

Mr. Johnson values his bearing orchard at five hundred dollars an acre, which at six per cent. is a rental of thirty dollars. He has kept complete records of his expenditure and receipts. The fertilizer used per acre averages \$11.50. Sowing the fertilizer costs \$1 an acre, discing and harrowing \$6, seed for the cover crop \$2.50, barrels \$30, spraying \$15 and picking, packing and truckage \$30. The total outlay per acre of bearing orchard he places at \$112. For the past number of years he has averaged 150 barrels to the acre, and his average price for all varieties has been \$1.86 a barrel. This gives him a gross income per acre of \$272, and a net profit of \$100 an acre. These returns show an encouraging improvement over those formerly obtained from this land.

## Suggestions on Pear Culture

A. W. Cook, Wellington County, Ont.

PRUNING pears must be done with the idea of securing fruit buds near centre of tree. This alleviates the tendency of large limbs to break under the strain of their crop. Remember to disinfect all large wounds, that are the result of pruning or other causes, with lime-sulphur solution or some other disinfectant. Take the greatest care to thoroughly treat the pruning tools while going from one tree to another. If this is done it does not leave an opportunity for this disease to gain a foot hold in the tree.

### Thin the Fruit.

When the tree reaches maturity and comes into the bearing state there can be a considerable amount of time saved in the thinning of the fruit by pruning of the fruit spurs. There is one disadvantage in this method when the orchard is located in a section that is known to have late frosts. As the pruning should be done before the leaves start there is apt to be enough fruit spurs left on the tree that has been late in maturing to give a yield of fruit, while if no thinning had been done there probably would have been a light crop of fruit. However, taking into account this one disadvantage, pruning can be and should be practised more throughout Ontario than it is. The pear, like many other varieties of fruit, can be made to yield more regularly by regular, systematic pruning and the thinning of the fruit each year.

The cultivation of the pear is very

similar to that of the apple. Cultivation should commence as early in the spring as it is possible to do so. Cultivation should be thorough and done systematically. It is very essential to keep a dust mulch at the surface to maintain the necessary moisture for proper plant and fruit development. As all fruits are composed mostly of water, the necessity of maintaining the soil surface wet at once be seen. This is the case in practically all orchards. The humus can to a large extent be enlarged by the use of cover crops. Among the best cover crops we have vetch, rye, oats, turnips and winter oats. The rye and vetch are sown in the later part of August so as to obtain a good heavy crop. After this is plowed in during the spring it is generally followed by rape or summer turnips.

In cultivating the orchard one should not continue it later than the latter part of June for the southern counties. If cultivation is kept up it induces large twig growth. If a high color is desired, this is a serious handicap. There has been a feeling amongst fruit growers in Ontario that certain chemical fertilizers would produce highly colored fruit. From experiments conducted by the Ontario Agricultural College, it has been found that very little of the color is derived from the use of fertilizers. If one were to alternate the use of barnyard manures with commercial fertilizers it will be found more profitable than if either is used separately.



"Mother, have some

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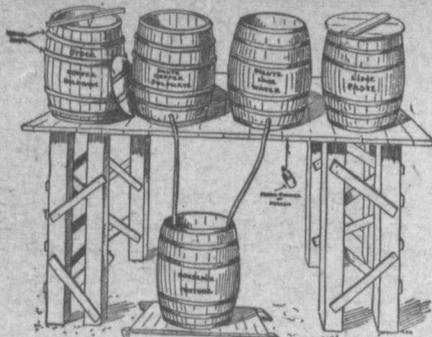
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### Capital for Cooperative Associations

F. C. Hart, Markets Branch, Department of Agriculture, Toronto, Ont.

As a class, farmers in the past have shunned borrowing money. A man who borrowed money was apt to be looked upon as inefficient. This was due perhaps to the fact that expensive modern machinery was not required in farming and a comparatively large capital unnecessary.

With the growth of farming as a business, however, and the introduction of more and higher priced implements, capital, as it is in any business, became necessary. To wait till this capital is accumulated from the annual profits of the farm is a slow process, and especially when the machinery for producing extra profits is lacking. And so the farmer-to-day, like the business man, borrows money for productive purposes. This basic principle is that in borrowed capital should be used in such a way as to return not only interest and depreciation, but something over to pay back the capital.

In Ontario, farmers are so using large amounts of capital and have become business men in the true sense of the word. This is an encouraging fact when we come to consider the formation of co-operative societies for business purposes.

#### Methods of Securing Capital.

When a group of men is formed for carrying out the business operations of organizations, capital is necessary. There are two ways of securing this capital: First, by gathering together the cash savings from the individuals in the group; second, by using the credit of the members. The first is accomplished by selling shares in the company or association, the members paying for the same in cash. Joint stock companies are formed on this basis. The cash so obtained is put to the uses intended, and the earnings are returned to the form of a dividend in proportion to the capital invested. Where capital is raised for a co-operative association in this way the returns on the capital are fixed at the usual rate of interest, and extra profits are returned to the members in proportion to the business each gave to the association.

The second method of raising capital in a co-operative association is by the credit of the members is accomplished by taking a joint and several note of the members, or by individual notes. These notes are placed with the bank or other lender, as collateral, and form a line of credit. By this system the actual cash of the members is not

used as capital. This presupposes, of course, that the capital so acquired is put to paying uses.

The disadvantage of the share system as applied to co-operation is that interest must be paid on the capital whether it is in use or not. The cash has been accepted by the association, and interest must be paid on it. If part of the year the money is lying in the bank at three per cent, a certain loss results. By the note system interest is paid on capital only while in actual use. When the money is not in use, the notes are redeemed. And so long as the association is a paying enterprise, the individual member does not need to have cash in the bank to meet his note; simply his credit is used.

#### Factors Controlling Borrowing.

In acquiring capital for co-operative associations, certain factors must receive attention. The most important is that the loan must be repaid. The business for which it is to be used must be productive. If the business to be undertaken is unsafe, it is unwise to borrow capital under any conditions. Another factor of importance is that provision should be made for depreciation, where the capital is used for tools or buildings which deteriorate. This depreciation account should amount to the full value of the tools or building by the time they would have to be renewed. For instance, if a spraying outfit bought with such capital will last for ten years, one-tenth of its full value should be put aside each year. In other words, the equipment should pay for itself within ten years.

A third important factor is the rate of interest. This should be as low as possible. The difference between five per cent and seven per cent is, of course, only two dollars per one hundred dollars a year, but this small difference is important in any going concern. Under the note system of raising capital, the security offered is of the best, and should command a low rate of interest. Suppose twenty farmers form an association and borrow five thousand dollars. If each farmer has unimpaired resources to the value of say \$5,000, the security behind the \$5,000 borrowed would be 20 times \$5,000 or \$100,000.

#### Business Without Capital.

Many co-operative associations in Ontario are endeavoring to do business without capital. Where limited transactions are undertaken, this may

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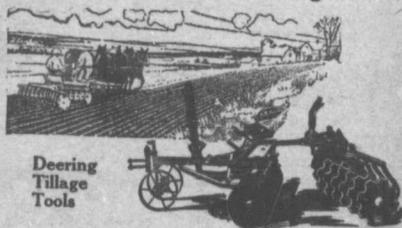
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Dept. 108

work to their entire satisfaction but where the business undertaken has been previously carried on by a capitalised concern, the association may find itself at a disadvantage in the details of its business. With eggs, for on delivery, if the egg circle is not able to do the same, dissatisfaction of one kind or another is sure to result. In either case the eggs must pay a profit on capital, and it is just a question as to whether it is the merchant's or members' capital that is to be used. Under certain circumstances endeavoring to run a business without capital would appear to be

unbusinesslike.

When a permanent outfit is required by an association, such as a storehouse by a fruit association, the difficulty is presented of determining the equity each member has in the building. A non-co-operative method of meeting this difficulty is to form a subsidiary joint stock company to own and control the building.

In any well-conducted business, capital is necessary. If borrowed, it should be used only for productive purposes. These purposes should be interest, depreciation, and a return of the principal within a reasonable time.

## Fruit Tree Grafting for the Amateur

A Clear Exposition of the Practice of a Simple Operation—By John Gall, Peel County, Ont.

GRAFTING is usually performed in the spring, about the end of March or earlier if there are signs of spring influence. Grafting is simply the transfer of a shoot carrying several buds, from one tree to another; and this operation may be performed by the amateur with ease if only a little care is exercised. There can be no question as to the utility of grafting, for by its aid a poor class of apple or pear may be transformed into one which is good.



A. Tongue grafting, scion and stock prepared. B. Same placed together. C. Tied.

The first point in successful grafting is to secure an intimate union of the parts—not a mere sticking together, but an absolute union.

In all methods of grafting the shoot to be transferred is called the scion, and the tree which is to receive it is called the stock. It is of the utmost importance, when cutting scions, to select only from trees which have the desirable characteristics most strongly marked; and by so doing the individual may greatly improve his plantation by top-grafting with scions from a tree having the desired qualities.

It is essential that the cambium layer—that is, a layer of tissue formed between the wood and the bark—of the scion and stock be in contact on at least one side. From this layer, the cells are formed, which through time unite the parts and cover the wounds made by grafting to prevent the entrance of rot-producing spores, and for this purpose wax.

There are two simple methods of top-grafting, namely, tongue and cleft grafting. Tongue grafting is practised upon young trees and small branches, while cleft grafting is generally performed on branches from one to two inches in diameter. In tongue grafting the stock is cut with a bevel about one inch long, and the scion cut to fit that bevel. Both bevels are cut into slightly and the tongue of one fitted into the other. The cambium layers must be in contact on one side at least. After the scion is set, the wound should be covered over with wax to exclude the air.

When cutting off large branches for cleft grafting, it is always a good idea to make a second cut, making the first cut five or six inches above the position chosen for the scion. Then cut off the remainder at the desired place, and thus avoid the danger of tearing the bark. With a grafting iron or chisel split the branch just far enough to admit the scions. Avoid making too deep a split, as this tends to weaken the stock, and the scions will

not be held sufficiently firm. It is well not to graft two horizontal limbs, one directly above the other, as the tendency of new growth is upward, and the growth from the lower one will come in contact and interfere with the other. In branches other than those growing directly upright the split should be made parallel to, rather than at right angles to, the ground. The scion should be made wedge-shaped, with bevel about one inch long, starting at each side just at the base of a bud. Make the scion three buds long, cutting off just above the third bud. It should be cut a little thicker on the side next to the bud, so that the stock may pinch tightly on that side to ensure a close contact of the cambium layers.

Open the cleft with the wedge end of the grafting chisel and insert one or two scions, as may be thought necessary. Place the lower end of the scion to the outside. The scion must not be forced down, but open the cleft with enough leverage on the chisel to admit the scion freely. Setting the scion with the top pointing slightly outward guarantees contact in at least one point. Use grafting wax to cover all wounds.

## Training Tomatoes

Geo. Baldwin, York Co., Ont.

THERE are many systems of training and attending to tomatoes. I have tried training them in almost every conceivable manner and have proved to my own satisfaction that the system here described is the best method.

Four stakes are driven into the ground at an angle of about 75 de-



A. Cleft grafting, splitting the stock. B. Scion. C. Scion inserted in cleft of stock. D. Grafting chisel made from an old blacksmith's file.

grees, outwardly, about six inches from the root, and four feet six inches above the ground. The vine is tied to the stakes with raffia every eight inches up the stake. All laterals and suckers are removed as soon as they come. The fruit is picked as soon as ripe. The roots are kept moist and the foliage dry, and the leaves snipped off a piece at a time wherever they keep the sun from getting at the soil. I recommend the rake for cultivation instead of the hoe, as with the latter there is a tendency to injure the roots which grow close to the surface.

Thirty-six and a half pounds of fruit were taken from one plant. This should prove convincingly that it is a good policy to keep the plants off the ground.



## Results From the Use of Good Seed

F. C. Nanaick, Agriculturist, Commission of Conservation, Ottawa

**D**URING the past three years the Commission of Conservation has conducted illustration work on a number of farms in Canada. The question of good seed and seed selection has received particular attention. From the reports of 23 of the farmers who have been doing illustration work in the five eastern provinces, many valuable facts have been secured.

Sixteen of the men stated that they had not previously been sowing the varieties and strains of grain on their farms to give best results, and 18 say they are now sowing varieties which are more suitable to them and their neighborhood.

Only three claim to have been sowing selected seed before beginning work with the Commission, while now

every man is sowing selected, or registered seed and states that it pays him in bigger and better crops. All of the men say that good seed has become something of much greater importance to them than previously. This is something which cannot fail to have lasting and far-reaching results in each community. The following are extracts from the letters received from the farmers themselves:—

Nelson Peterson, (Kingsville, Ont.): "Three years ago, I thought I was sowing good seed; now I find it pays to sow the best that can be had."

George R. Barrie, (Galt, Ont.): "As to Indian corn—it is cheaper to pay \$10 a bushel for good kiln-dried corn than to sow the shelled corn that is sold in the stores. Two acres sown with selected corn purchased on the cob, costing \$3.50 to \$4 a bushel gave almost twice as much weight of ensilage as two acres sown from shelled

corn in sacks, and costing about \$1.50 a bushel."

W. T. Hanks, (Perth, Ont.): "We have not changed varieties of seed, but we are now sowing nothing but registered seed. We find we have better results, and that it pays. Last spring we sold about 400 bushels of oats at \$1.25 a bushel, and 200 bushels of barley at \$1 and \$1.35 a bushel."

Whittiker Bros., (Williamsburg, Ont.): "The tests with corn have proven to us that it is cheapest to buy the best seed corn possible; it matters not what the price may be."

Chester H. Keith, (Corn Hill, N.B.): "I am now sowing the best of seed whereas I used to sow seed of inferior quality. This is one way the Commission of Conservation has helped, not only me, but a number of neighbours, in obtaining good seed grain."

Taylor Bros., (Antigonish, N.S.): "We have been sowing selected seed for the past eight or 10 years; on the average our yields have been a full 50 per cent. greater than they were before."

## Glass vs. Cotton

**R**EFERRING to the use of cotton instead of glass for covering cold frames and hot beds, Dr. Andrews, of Regina, Sask., writes, "Glass has its uses. But many of our gardeners leave home in the morning, which may be cloudy, clearing up by nine o'clock and our hot sun is apt to raise the temperature too high. Cheesecloth quilted double, by sewing across every twelve inches is preferable. It is like ventilated under-clothing, open but warm on account of imprisoned air."

"Hard cotton is of little use, or rather of less use than one more open. We are simply using the same protection and means of ventilation which is making the cotton window so satisfactory in some of the public schools, and in sleeping rooms during the winter. I hope many will try the new device. The plants are hardy, and stand transplanting well. The cost of cotton is so low that one can afford to have a large area of cold frames and hot beds."

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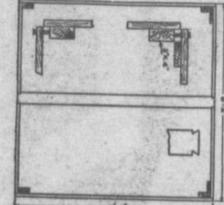


## Possibilities of the Hotbed

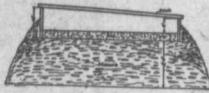
George Baldwin, York County, Ont.

THE location for the hotbed should be facing south, and shielded from the north by a fence or hedge. Make your frame of two-inch planks and of such a size as will enable you to use sashes six feet long by three feet wide. Make your beds according to the number of sashes required.

Procure a sufficient quantity of fresh horse manure and pile it in a heap. When it starts to heat, turn it over into similar heaps twice in six days. Four days after the last turning, it should be ready for use. Level it off to a depth of eighteen inches and place the frame on top. Be sure to tramp the manure down well in layers, then put the sash on, and leave it for three days. At the end of that time tramp the manure down again and put six inches of fairly good soil on it, having the top of the soil not more than six inches from the under side of the sashes, sloping the whole six inches in six feet, so that the rain will shed off. In four or five days the bed will be ready for the seeds. Make sure that the heat is not over eighty degrees, then rake it over and level the soil, sowing the seeds in rows four inches apart, running north and south in shallow drills. Regulate the heat by raising the sash a little at the north end. Close up the bed at sundown and cover it with mats or straw at night. See that the frame is banked up to the top with more manure on the outside. As soon as the young plants appear, more air should be given so that they will not become spindly or damp off. Water only at noontime when absolutely necessary.



The Frame From Above.



Cross-section of Hotbed.

A cold frame is made in precisely the same manner, except that no manure is used. It can be used for the same purposes as a hotbed, but germination takes longer. Its principal use is for hardening off plants that have been raised in a hotbed or greenhouse before putting them out into the open garden. By starting your hotbed the early part of March, you will have good stocky plants by May 24, which is the date for planting out.

### Seeds to Sow.

The next question is what seeds to sow:

Three kinds of onions—Red, White, and Yellow Southports.

Three kinds of tomatoes—Chalk's Early Jewel, Earliana, and Beauty.

Two kinds of celery—Paris Golden and Rose Ribbed Pars.

One kind of beets—Early Flat Egyptian.

Two kinds of lettuce—Nonpariel and Grand Rapids.

Two kinds of cabbage—Henderson's Summer and Glory.

One kind of cauliflower—Snowball.

One kind of parsley—Curled variety.

One kind of cucumber—White Spine or Long Green.

It will assist greatly to transplant the following two or three times in the cold frame before putting them out in the open—onions, tomatoes, and cabbage. The others will do all right by just turning them out and stirring the soil around them. Outside of the extra work attached to making one's own hotbed, the advantages are vastly superior to relying on florists and corner grocers for what they have not left over. There are also a number of flowers which require to be raised early, such as salvia, cobaea, marigolds, salpiglossia, phlox, stocks, asters, sinliss, petunias, and others. If you include satisfaction with cost, the hotbed wins out easily.

## Dwarf Apples Not Profitable

THE culture of dwarf apples is periodically boomed in various parts of the country, for both home grounds and commercial orchards; and a decade and a half ago, when San Jose scale first threatened New York State fruit interests, it began to look as though these dwarf trees offered one solution of this pest problem. The small size of true dwarfs, or even of half dwarfs, makes thorough spraying a much simpler proposition than do the thirty or forty-foot giants of the old orchards.

To test the practicability of such dwarf trees, the Station at Geneva set three orchards of dwarfs, half-dwarfs, and standards intermingled, in three localities in the State, and has had them under test for ten years or more. The results show that "Dwarf apples are not commercially promising," as reads the title of Bulletin No. 406, in which tests are discussed.

The objections are many: High first cost, since dwarf trees usually cost more per tree than standards and it requires from four to nine times as many trees for the same area; uncertainty of securing the desired dwarfness, since much confusion exists in dwarfing stocks; liability of dwarf trees to winter injury, or winter killing, or breaking off at the union or overstraining by winter extra labor

to maintain dwarfness by removal of cion roots and to prevent weakening by suckers; and troubles due to shallow-rooting habit, such as susceptibility to drouth, difficulty in giving thorough cultivation and root injuries in cultivating.

The advantages are few. The dwarf trees come into bearing little if any earlier than standards, nor have they greatly excelled them in yield in the first ten years; the fruit has not proved larger, handsomer or better flavored on dwarf than on standards; but the small size of the trees on dwarfing stocks makes it possible to grow more trees, and consequently more varieties on a given area, and the dwarf trees are more ornamental than standards,—points that make trees of this type useful and valuable to the amateur grower, but that are of no commercial advantage. As San Jose scale can be readily controlled that argument in favor of dwarf trees is now of little force.

Before considering dwarf apples for anything on the home-ground or garden use, the fruit-grower should study this bulletin with care.

A garden is an asset. In it we may find a healthful variation of food at a minimum of cost. The farm home with a garden attached will be relatively free from sickness.

## Seeds with a Pedigree mean Money-making Crops

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# FARM AND DAIRY

AND RURAL HOME  
PUBLISHED EVERY THURSDAY

47

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## The Rural Publishing Company, Ltd.

PETERBORO, ONT.

"Head not in contradiction and to confuse, nor to believe and take for granted, but to weigh and consider."—Bacon.

### Enlist or Produce?

**A** PROMINENT Eastern Ontario dairy farmer informed one of the editors of Farm and Dairy a few days ago that if he cannot soon secure efficient help he will be under the necessity of selling off his whole herd of milk cows. This man farms on a large scale. He cannot begin to care for his own herd with his own unaided efforts and his helpers must be experienced men; greenhorns in the dairy would do more harm than good. These experienced men he finds hard to get. Enlistment has thinned their ranks. The conditions that apply in his section, we believe, apply generally in the dairying districts of Canada. A return of retired farmers to the land, as has been suggested recently, would help out, but it would not be a complete remedy for the evils growing out of our recruiting system—or lack of system. In the Old Land the danger of unregulated rural recruiting, or drafting as it now is, has been recognized and military tribunals determine whether a man is of most use to his country, fighting or producing.

The first military tribunal was held at Kirkby Stephen, recently. The session lasted five hours. The courtroom was crowded with farmers, appealing against enlistment of shepherds, plowmen and herdsmen. Many farmers stated that if the men were drafted, they would be obliged to sell their stock and abandon their farms. After a severe examination, the majority of the farmers' helpers were held to be necessary to Westmoreland agriculture and exempted from military service.

The actual drafting of young men for military service is not yet seriously considered in Canada, but the tendency to point the finger of scorn at the young men of military age, working on the farm, as well as the call of patriotism, have led many to enlist whose real duty lies at home.

Some system is needed to govern such enlistments, and this phase of the recruiting problem should receive the earnest consideration of our government and some official pronouncement should be made on it before spring work starts on the farms. And in coming to their decision our law makers should not forget that the rural districts cannot be expected to contribute in proportion to their population as have the cities, even if it were determined that agricultural production for 1916 is not vitally important. Social conditions had largely drained the rural districts of young men long before the war started.

### Are Farmers So Inefficient?

**W**HAT farming needs is "business efficiency." How often we have heard this statement. It has been, perhaps, the most popular theme alike of the farm management expert and the white-vested financial magnates who hold forth following on seven-course dinners to other five-dollar-a-plate diners. How these after-dinner orators have berated the inefficiency and wastefulness of the poor average farmer! We, the objects of their invective—or commiseration—have been led to believe that all of the inefficiency on the American continent is to be found on the farms and that city business management was all above reproach.

But now comes Edward N. Hurley, vice-chairman of the United States Federal Trade Commission, with the other side of the story. Mr. Hurley tells us that in the United States there are 250,000 business corporations (exclusive of banking, railroad and public utility). One hundred thousand of these corporations make no profit whatever and 90,000 more make less than five thousand dollars a year. Twenty-seven of the large corporations in a certain line of trade have a net income of only \$300,000, which is only three and one-third per cent. on the capital stock.

The figures given by Mr. Hurley for the United States would probably apply in about the same ratio in Canada. If we may judge the efficiency of business management by results, therefore, it would seem that the business enterprises of the cities are not quite so well managed as our farms, and hereafter it will not be out of place, we presume, for farmers to deliver after-dinner talks on factory efficiency, better store management, and so on all along the line. If Mr. Hurley's figures are correct, the farmer has just as good a right to attempt instructing the business interests as the business interests have to extend free advice to the farmer.

### Why the First May be Last

**O**NTARIO is proud of her place as the premier dairy province of the Dominion. Her output of dairy products for 1915 was much greater than that of any other two provinces taken together. The strong market and high yields have put her dairymen in the frame of mind and the financial position to enable her to retain her place at the head of the procession.

But there is a sense in which Ontario is at a disadvantage compared with the other provinces. The very extent of her dairy industry and the great number engaged in it make it far more difficult for her than for them to adopt advanced methods of dairy practice. The larger a body, the more difficult it is to move. Her dairy industry was fully established years ago, before the need of improved methods was as pressing as it is at the present time, and she doubtless adopted some practices that will have to be discarded. Alberta grading 96 per cent. and Saskatchewan grading 65 per cent. of the cream entering their factories have far eclipsed Ontario in this regard. But the reason is clear. They have only recently gone into the dairy business

extensively. Old and unsatisfactory methods had not become firmly established, and the extension of their dairy industry has been along the lines of the most approved methods.

To learn a new method is one thing; to unlearn an old one is another and far more difficult undertaking. Ontario will eventually grade her dairy products, but it will take her some time to make the necessary change in her way of doing things. That is one of the disadvantages of being the premier dairy province.

### Cooperative Buying in Dundas

**D**UNDAS county, Ontario, is testing the advantages of cooperative dealing in a very practical way. Last year eight farmers' clubs in that county purchased commodities cooperatively to the value of \$72,270.24. Among these commodities were seed corn, clover, and grass seed, whole grain, mill feeds, binder twine, coal oil, cement, and fruit. The estimated savings to the farmers through this method of purchase was \$3,476.60. Evidently the commercial feature of club activities is growing in Dundas as it must elsewhere. Cooperation in business matters is now recognized as of as much importance as cooperation for entertainment and education, which was the first object of the farmers' club.

There is just one danger on the horizon, and one of which farmers' clubs will do well to take cognizance. Secretaries of local clubs have told us that they can buy cheaper direct from the manufacturers or wholesalers than they can through the United Farmers' Cooperative Company, Ltd., the central organization of the province. This apparent advantage to the clubs through direct dealing in many cases is merely a part of a carefully laid plan to choke the whole cooperative movement. The business interests realize that a strong central organization would get beyond their control as the Grain Growers' Grain Company of the West has already done. If they can keep business away from the Central until it would go out of existence, it would be a comparatively simple matter to crush the clubs one by one.

There will always be some advantage in cooperative dealing through local clubs, but the greatest profits through cooperation will be reaped only when a high proportion of the business of these clubs is done through the central organization. When the Central gets the full patronage of local clubs it will be able to get rates much lower than anything that will ever be quoted to a local.

### Farm and Town United

(Rural Life.)

**W**HY should a farmer retire from the farm to a village home, when with much less expense and far greater satisfaction he can buy an automobile and take his family down town in less time than it would require for them to walk from the upper end of Main Street to the town hall?

The automobile has brought the farmer living on the farm as near the town as is the retired farmer who has moved to the village, and shortened the distance between the farm and town to such an extent that the farmer's family can attend church, lectures, and theatres and enjoy all the social privileges of the town as readily as the family living three or four blocks from the village centre.

Any farmer who is so well situated financially that he can buy a home in town, can own an automobile, and with a good reliable car, distance from farm to town is no objection to country living. The automobile combines the pleasures of rural life with the conveniences of the town.

## Potato Growing in New Brunswick

By J. B. Daggett, Secretary for Agriculture

**T**HE potato industry in New Brunswick has assumed large proportions in the last ten years, until the crop in 1914 amounted to approximately ten millions of bushels. Very much has been learned during these years as to the place in the rotation, preparation and cultivation of the soil, fertilizers and potato diseases.

Previous to ten years ago, commercial fertilizers were practically unknown in the province, but in recent years they have come into very general use, until at present seventy-five per cent. of the potatoes raised are grown with commercial fertilizers, with an increase in the crop of twenty-five to thirty-five per cent. reported. The potatoes so raised are not so susceptible to scab as when raised upon ordinary barnyard manures or fish manures, such as are used in some sections of the province. It has been found that commercial fertilizers cannot be continuously used successfully without a proper rotation and by some means adding vegetable matter to the soil. Farmers who have attempted this have found that their land would soon require two thousand pounds instead of fifteen hundred pounds to the acre.

### A Potato Rotation.

The following rotation is being adopted throughout the province: First year, potatoes with commercial fertilizer; second year, seed down with a grain crop, with a much larger proportion of clover than was formerly used; third year, hay, very manure now taking off but one crop of hay and then breaking up and ploughing under the second growth of clover; the next year a crop of corn, or turnips is raised, the field having been well fertilized with barn-yard manure. This we consider a very satisfactory rotation. The same system is followed by all our farmers, except that some take off two or even three crops of hay before breaking up. From three to five years, however, is the average length of rotation among our best farmers.

While there are a number of varieties of potatoes being raised in New Brunswick, the two favorites are Irish Cobbler for the early crop and Green Mountain for the late.

We have the usual potato diseases common to all countries, but we are learning that the vast majority of these may be successfully combated by the proper treatment of seed, by careful selection of all seed stock, and the faithful use of the Bordeaux mixture. I would like to emphasize the word "faithful" as, in my observations, very many of our farmers are not faithful in the use of this excellent article. When the farmer persistently uses this mixture from the time the plant is a few inches above the ground until well toward the harvest, our experience has been that we have very little blight and the tubers are invariably much better keepers in storage.

### Cauliflower and Celery Culture

J. H. Moore, Lincoln Co., Ont.

**L**AST year perhaps you were discouraged with your cauliflowers. Many people fall with these because they do not realize that very few plants require as much moisture for their development. Its large leaves give out enormous quantities of water vapor, and if a sufficient supply is not given at the root, gnarled and dwarfed plants will result. Plant three feet apart and three between rows, so as to ensure free circulation. Many of the large kinds, like Carter's Autumn Giant, will even touch each other at this distance. Between the rows of cauliflowers a little intensive cultivation may be practiced, in that quick-growing crops, such as lettuce and

radishes, may be sown and harvested ere they interfere with the main crop. Cauliflowers do well on a heavy soil made porous by generous applications of stable manure.

Celery requires even more moisture than the cauliflowers, therefore plant it in trenches in either single or double rows. Make your trench two feet wide, and at least nine inches deep. Carefully fork the bottom of the trench, at the same time working in a barrow load of well rotted stable manure to every 60 feet. Plant the row one foot apart, and allow one foot between the plants in the row. If your row is single, the trench should be only one foot in width. As the plants develop, gradually earth up with fine soil. This will favor even blanching. Boards are sometimes used for this purpose, but soil itself is nature's material, and has for ages given unsurpassed results. Soil will completely exclude light, and when your plants are lifted they will be crisp and toothsome. Celery loves a deep, rich and moist soil. It is almost impossible to kill it with stable manure.

### Horticulture in Alberta

George Harcourt, B.S.A., Deputy Minister of Agriculture.

**A**LBERTA has no orchards or vineyards, or fruit plantations—nothing but possibilities—and they are so full of possibilities that no one can foretell the great things that may come out of these possibilities.

The wild gooseberry, currant and raspberry grow profusely wherever there is shelter, while the wild strawberry is found practically everywhere. In addition to these universally known fruits there is the blueberry, high and low bush cranberry and the Saskatoon. The latter is peculiar to the prairies and responds to cultivation readily but the fruit is flat tasting and not held in very high esteem. Where the wild fruit grows it is generally conceded that the tame or cultivated variety will succeed. It may take a little time and numerous experiments to find just how to attain success, but sooner or later a way will be found.

Small plots of cultivated strawberries are to be found from one end of the Province to the other; while here and there a more enterprising pioneer has laid large sized plots and is placing strawberries on the market.

So uniformly successful has the effort been to grow all of these fruits that there is no excuse for any farmer not having all the strawberry, raspberry, currant and gooseberries needed in the farm home. Windbreaks are necessary and the plants have to be held back in the spring by winter mulching to guard against late spring frosts.

Practically all the varieties of the small fruits that have proven most desirable in Eastern Canada have given best here also. Of the larger fruits a less hopeful report must be made. It is said where the wild plum, the pie-cherry and the choke-cherry are to be found the apple, pear and plum will grow. The two varieties of cherry are to be found growing in practically every ravine or coulee where there is a good shelter of trees. This would indicate that with a shelter built of trees is grown it may be possible to grow hardy apples. That there are possibilities in this direction and that these possibilities deserve most careful study is indicated by the fact that there are apple trees growing and bearing in the Province even as far north as north of Edmonton.



## Now is the Time to Plan for Your Silo

Settle the silo question now before the rush of spring and summer work comes on. You need a silo. Decide now to have one for next winter. It will pay you. Silage increases milk flow at least 20% and reduces feed cost 15 to 20%. It is the best investment you can make.

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## Pigs is Pigs

(Continued from last week.)

"HEY no box," said Flannery coldly. "I've a bill against Mister John C. Morehouse for two dollars and twenty-five cents for kabbage meat by his Dago pigs. Wnd you wish to pay it?"

"Pay—cabbages—!" gasped Mr. Morehouse. "Do you mean to say that two little guinea-pigs—?"

"Eight!" said Flannery. "Papa an' mamma an' the six childer—eight!"

For answer, Mr. Morehouse slammed the door in Flannery's face.

Flannery looked at the door reproachfully. "I take ut the consigny refuses to pay for thim kebages," he said. "If I know signs of refusal, the consigny refuses to pay for dang kebage leaf, an' he banged to me!"

Mr. Morgan, the head of the Tariff Department, consulted the President of the Interurban Express Co. regarding guinea-pigs, as to whether they were pigs or not pigs. The authority was inclined to treat the matter lightly. "What is the rate on pigs and on peas?" he asked.

"Pigs thirty cents, peas twenty-five," said Morgan.

"Then, of course, guinea-pigs are pigs," said the president.

"Yes," agreed Morgan. "I look at it that way, too. A thing that can come under two rates is naturally due to be classed as the higher. But are guinea-pigs, pigs? Aren't they rabbits?"

"Come to think of it," said the president, "I believe they are more like rabbits. Sort of half-way station between pig and rabbit. I think the question is this, are guinea-pigs of the domestic pig family? I'll ask Professor Gordon. He is an authority on such things. Leave the papers with me."

The president put the papers on his desk and wrote a letter to Professor Gordon. Unfortunately, the Professor was in South America collecting zoological specimens, and the letter was forwarded to him by his wife. As the Professor was in the highest Andes, who no white man had ever penetrated, the letter was many months in reaching him. The president forgot the guinea-pigs. Morgan forgot them, Mr. Morehouse forgot them, but Flannery did not. One-half of his time he gave to the duties of his agency; the other half was devoted to the guinea-pigs. Long before Professor Gordon received the president's letter, Morgan received one from Flannery.

"About them Dago pigs," it said, "who shall I do? They are great in family life, no race studies for them; they are thirty-two now. Shall I sell

them? Do you take these express quick?"

Morgan reached for a telephone blank, and wrote:

"Agent, Westcott.—Don't sell pigs."

He then wrote Flannery a letter calling his attention to the fact that "the" pigs were not the property of the company, but were merely being held during a settlement of a dispute regarding rates. He advised Flannery to take the best possible care of them.

Flannery, letter in hand, looked at the pigs and sighed. The drygoods age had become too small. He boarded up twenty feet of the rear of

genus Sus of the family Suidae. He remarked that they were prolific and multiplied rapidly.

"They are not pigs," said the president, decidedly, to Morgan. "The twenty-five cent rate applies."

Morgan made the proper notation on the papers that had accumulated in File A6754, and turned them over to the Audit Department. The Audit Department took some time to look the matter up, and after the usual delay wrote Flannery that, as he has on hand one hundred and sixty guinea-pigs, the property of consignees, he should deliver them and collect charges at the rate of twenty-five cents each.

Flannery spent a day herding his charges through a narrow opening in their cages so that he might count them.

"Audit Dept.," he wrote, when he had finished the count, "you are way off; there may be one hundred and sixty Dago pigs once, but w&co up, don't be a back number. I've got eight hundred, now shall I collect for eight hundred or what? How about sixty-four dollars I paid out for cabbages?"

It required a great many letters back and forth before the Audit Department was able to understand why the error had been made of billing one hundred and sixty instead of eight hundred, and still more time for it to get the meaning of the "cabbages." Flannery was crowded into a few feet at the extreme front of the office. The pigs had all the rest of the room and two boys were employed constantly attending to them. The day after Flannery had counted the guinea-pigs there were eight more added to his

Morehouse home. At the gate he stopped suddenly. The house stared at him with vacant eyes. The windows were bare of curtains, and he could see into empty rooms. A sign on the porch said, "To Let." Mr. Morehouse had moved! Flannery ran all the way back to the express office. Sixty-nine guinea-pigs had been born during his absence. He ran out again and made several enquiries in the village. Mr. Morehouse had not only moved, but he had left Westcott. Flannery returned to the express office and found that two hundred and six guinea-pigs had entered the world since he left it. He wrote a telegram to the Audit Department.

"Can't collect fifty cents for two Dago pigs; consignee has left town; address unknown; what shall I do? Flannery."

The telegram was handed to one of the clerks in the Audit Department, and he read it and laughed.

"Flannery must be crazy. He ought to know that there's nothing to do in return the consignment here," said the clerk. He telegraphed Flannery to send the pigs to the main office of the company in Franklin.

When Flannery received the telegram he set to work. The six boys he had engaged to help him also set to work. They worked with the haste of desperate men, making cages out of soap boxes, cracker boxes, and all kinds of boxes, and as fast as the cages were completed they filled them with guinea-pigs and expressed them to Franklin. Day after day the cages of guinea-pigs flowed in a steady stream from Westcott to Franklin, and still Flannery and his six helpers ripped and nailed and packed—relentlessly and feverishly—at the end of the week they had shipped two hundred and eighty cages of guinea-pigs, and the express office seven hundred and four more pigs than when they began packing them.

"Stop sending pigs. Warehouse full," came a telegram to Flannery. He stopped packing only long enough to wire back, "Can't stop," and kept on sending them. On the next train up from Franklin came one of the company's inspectors. He had instructions to stop the stream of guinea-pigs at all hazards. As his train drew up at Westcott station he saw a cattle car standing on the express company's siding.

When he reached the express office he saw the express wagon backed up to the door. Six boys were carrying bushel baskets full of guinea-pigs from the office and dumping them into the wagon. Inside the room Flannery, with his coat and vest off, was shovelling guinea-pigs into bushel baskets with a coal scoop. He was winding up the guinea-pig episode.

He looked up at the inspector with a snort of anger.

"Waa waa-load more an' I'll be quit of thim, an' never will ye catch Flannery wid no more foreign pigs on his hands. No sur. They was the death o' me. Nixt time I'll know that pigs of whatever nationality is domestic pets—an' go at the lowest rate."

He began shovelling again rapidly, speaking quickly between breaths.

"Rules may be rules, but you can't feed Mike Flannery twice wid the same thim, whin it comes to live stock, dang the rules." So long as Flannery runs this express office—pigs is pets—an' cows is pets—an' homes is pets—an' lions and tigers an' Rokey Mountain are pets—the rate on thim is twenty-five cents.

"Well, anyhow," he said, "what if thim Dago pigs had been elephants!"



How Do Your Chrysanthemums Compare with This One?  
This novel "Mum" plant was shown at an exhibition at Cleveland, Ohio, a few months ago, where it won a \$250 prize. It had over 1,200 blooms, was 18 feet in diameter and six feet high. It was said to be the second largest in the world.

the express office to make a large and airy home for them, and went about his business. He worked with feverish intensity when out on his rounds, for the pigs required attention and took up most of his time. Some months later, in desperation, he seized a sheet of paper and wrote "169" across it and mailed it to Morgan. Morgan returned it, asking for explanation. Flannery replied:

"There he now one hundred and sixty of them Dago pigs, for heaven's sake let me sell off some, do you want me to go crazy? what!"

"Sell no pigs," Morgan wired.

Not long after this the president of the express company received a letter from Professor Gordon. It was a long and scholarly letter, but the point was that the guinea-pig was the *Cavia aparea* while the common pig was the

and by the time the Audit Department gave him authority to collect for eight hundred, Flannery had given up all attempts to attend to the receipts of the delivery of goods. He was hastily building galleries around the express office, tier above tier. He had four thousand and sixty-four guinea-pigs to care for. More were arriving daily.

Immediately following his authorization, the Audit Department sent another letter, but Flannery was too busy to open it. They wrote another and then telegraphed:

"Error in guinea-pig bill. Collect for two guinea-pigs, fifty cents. Deliver all to consignees."

Flannery read the telegram and cheered up. He wrote out a bill as rapidly as his pencil could travel over paper and ran all the way to the

### Scriptural Prophecies Explained

"Despite not prophesying..."  
1 Thes. 5: 20.

Thousands of earnest Christians believe that God is speaking to the nations through the great war in Europe. They are searching the Scriptures to see if prophecy has foretold a time such as this. The department has been started in farm and dairy for the benefit. From week to week, questions on prophetic subjects—and occasionally on other points—are well—will be answered. We do not desire our readers to look on these answers as final. There are so many schools of thought—even Protestant denominations—that no one answer will satisfy all. Our object is to lead our readers to do as did the servants of old (Acts 17: 11)—search the Scriptures daily to see whether the things are so. We do not undertake to answer all questions, but will endeavor to at least answer all those most commonly asked. Our answers will necessarily be brief and often they will be helpful and suggestive of lines for further study. Readers are referred to books for additional information. The books Department of Farm and Dairy, have been gathered from different sources and address nearly all the same questions may be asked by many, and the questions nor the answers will be long.

#### WHAT IS ARMAGEDDON?

Do you believe the present war in Europe is the battle of Armageddon or the beginning of it? If not, what is the Armageddon?

In our orthodox Protestant denominations there are two great divisions of thought, the Post-Millennials and the Pre-Millennialists. The Post-Millennialists believe that the world is growing better and that the present great war will serve to purify the nations and mankind from their sins and prove but the dawn of better things. Those who hold this view are not fighting for the battle of Armageddon. The Pre-Millennialists believe that mankind at large is not growing morally better, but that the good and the bad, the tares and the wheat (Matt. 13: 24 to 30), are developing side by side. In support of this view they point to such passages as St. Luke 17: 26 to 35, 2 Timothy 3: 1 to 4, 2 Peter 3: 1 to 4, and many others. Those who hold this belief claim that Christ is going to return to the earth suddenly (2 Thes. 2: 1 to 4, Matt. 24: 13). Shortly before His return, there is to be a great time of trouble on earth (Daniel 12: 1; Matt. 24: 21 and 22), preceded by great wars (Matt. 24: 6 and 7). The Pre-Millennialists believe that the present war in Europe but the beginning of the time of trouble; that, while we may have short periods of peace, conditions are going to grow worse rather than better; that as a result of this war the Jews are to return to Jerusalem in a state of unbelief and renounce their temple worship; that an antichrist will arise among them and ultimately persecute them; that many nations will unite and go up to Jerusalem to make war upon the Jews (Zech. 14: 23, Rev. 16: 16). While the armies are besieging Jerusalem, it is expected that Christ will appear suddenly (Matt. 24: 30) and fight on behalf of the people of Israel (Zech. 12: 8 to 10, and 14: 12 to 16). This, it is believed, will be the battle of Armageddon. It is to be followed by the millennium. Only a few out of many passages of Scripture have been quoted. This view of the Scriptures is held by leading theologians, including such well-known evangelists as the late Dwight L. Moody, Dr. R. A. Torrey, Wilbur Chapman, Dean (of the Moody Bible Institute, Chicago), John R.

Mott, the missionary leader, L. W. Mumball, Chas. G. Trumbull (of the Sunday School Times), and many others.

### Some Early "Fly Talk" With the Household Editor,

IT may seem rather early in the season to indulge in "fly talk," but really, when you come to think of it, this subject is of great importance, and we will afford to discuss it at any time of the year. Probably the real inspiration of this article, however, was aroused by hearing a familiar, though very annoying, buzz around a south window one sunny day not long ago. There was one of last season's flies, stretching his legs in the sunshine and apparently enjoying it quite as much as ourselves.

To our mind, the fly is one of our greatest pests around the farm home. Just so surely as summer comes around, flies are equally sure of having their flies in the house. Whether these flies are in evidence in countless numbers or just an occasional one, depends largely on our efforts to keep the pest under control.

It is really amazing that the flies come from that we see in some homes. We can call to mind at the present moment, homes in which we have been visiting, where the food on the dining table, which is actually black with flies,—in the milk pitcher in the gravy and on every article of food that was to be eaten. But not much you! Screen doors and windows were conspicuous by their absence, especially around the kitchen, where most needed.

Another aggravating feature around these homes was, that one was continually finding dead flies all over the house—on the floor, on the window ledges, the pantry shelves, the tables and so forth, (for we will give these people credit for trying to kill the flies after the get into the house). Poison fly pads were used and they do this work very well, as can be testified by the number of flies one can sweep out of a room in a day after trying this method of destruction.

While the use of poison fly pads is quite common, we would like to emphasize most strongly the danger in using these poison fly killers. Last year we published some statistics, gathered by the Child Betterment Bureau of the United States, in regard to this danger, and we consider it well to again call to the attention of our folks to the startling conditions. From July to October, 1914, there were 46 cases of arsenical poisoning in children reported in the U. S. In 37 of these cases the children had had poison water from a saucer containing fly paper. From May to October, 1915, 26 cases were reported, a decrease of 40 per cent. This is attributed to the arduous campaign which was carried on by the Child Betterment League. The similarity of the symptoms of arsenical poisoning to those of cholera infantum, make it quite certain, however, that there were a great many more cases than reported.

We trust that all of our women folk will resolve this coming spring and summer to have a few flies as possible around the home by having screens on all doors and windows and by keeping everything as clean as possible, both outside and inside of the house, so that flies may not be attracted. Let us abolish poison fly pads for all time to come and instead, use sticky fly paper, such as Tangle-foot, to be used in the house. There are a number of things to remember this fly paper,—it eliminates the sweeping up of dead flies all over the house; when a number of flies are

trapped, the paper may be put in the stove and burned,—but the greatest blessing of all is that it does away with any danger of poisoning the little child who toddles around and is not old enough to realize the danger contained in these poison fly pads that may be within their reach.

### The Upward Look

Travel Series—No. 22  
Our Canadian Exhibit: Our Canadian Ideals.

"HE hath brought us into this place, and hath given us this land."—Deut. 28: 9.

Long before I attended the Panama Exposition, several people told me our own Canadian exhibit was the best of those of other countries, or states. As my informants were Canadians, naturally I smiled a little to myself and thought, "I am prejudiced. But when I reached the St. Louis Exposition, everyone I met there that had been to the Fair, told me the same thing, so I began to be convinced of the truth of these opinions.

As soon as I could, with much curiosity, interest and eagerness, I made my way to the much-talked-of building. One enthusiastic American even said it was not only the best inside, but outside, as well. As soon as I saw it and entered I agreed. Externally the building was stately, and with that combined beauty, gracefulness and dignity.

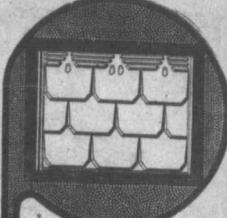
With a great panoramic view extended completely around the building illustrating the vast industries and productions of our wonderful land. There were fountains in blossom and in fruit; there were vast prairies, with tall elevators, and rapidly moving trains; many were the fly-bearing animals, even to five beavers. There were also many artistic pictures, depicting the resources of our land, so artistic and finished, that it was difficult to realize they were not done with paint and brush.

That was a proud day. All that exhibit promised much for the future material greatness of this great country, our country. But material greatness will avail our nation but little, unless with it comes cleanliness, purity, sobriety and godliness. To arise our high ideals for our land needs the time, thought, gifts, money, prayer of all those earnestly and honestly seeking to see that we must fight the wrong wherever it exists and under whatever form.

One of the greatest blots on countries in the social evil, from which our own fair Canada is not exempt. There is a very wrong idea that such matters must not receive publicity. But this terrible evil must be preached against and written about so that the innocent may be warned, the ignorant enlightened, the guilty shown the awful consequences of their sin.

One medical expert maintains in cholera infantum, the diseases resulting from this social evil overshadow all other infectious ones. It is a conservative estimate to say that fully one-eighth of all human suffering comes from this source. In New York City, one out of every five is probably afflicted to more or less degree. The saddest part of all is that the innocent ones may be contaminated. Disease should be feared like a plague. "It leaves in its wake sterility, insanity, paralysis, the blinded eyes of babies, the twisted limbs of deformed children, physical degradation and mental decay."

This is one of the terrible evils that each must do the utmost in his power to fight against to make our great country what it should be, this land of ours which God has so richly endowed.—L. H. N.



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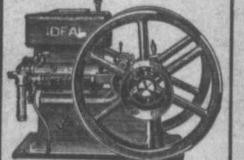
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## Success With Sweet Peas

Arthur Waller, Northumberland, Co., Ont.

**I** GROW sweet peas as follows: As soon as the ground is fit in the spring, I use a Planet Junior hand cultivator and plow out a furrow about nine inches deep. I then put in some well-rotted manure, sprinkle it with some fine mould, and sow the peas, covering them with about two inches of fine earth. This is pressed down firmly.

As soon as they begin to grow, I keep the ground well cultivated. I hill them up till the ground is level again.

The main point about growing sweet peas is the watering. All through the growing period I give them plenty of water.

The space between the rows is used for lettuce, spinach and radish. They are done by the time the peas begin to climb. I then spread the lawn clippings between the rows. This helps to keep the ground moist.

## Light in the Country Home

**I**N Farm and Dairy and other farm papers, advertisements of portable lamps and lanterns have been appearing for the last few months. These lamp advertisers are doing a good work for the rural community, and I would like to add a word to help them along, not so much to benefit the manufacturer as the people who may be thinking of buying their wares. For the man who cannot afford an expensive lighting system, electricity or acetylene for instance, and this class includes the most of us, these portable lamps, such as are advertised in Farm and Dairy, are O.K.

A few months ago I paid a visit to Mr. Henry Glendinning, one of the best known farmers in Ontario. One of the recent additions to the household equipment at Rosebank Farm, as Mr. Glendinning calls his home, was an up-to-date mantle lamp. Mr. Glendinning was so pleased with the strong, clear light given by this mantle lamp that he insisted on lighting one of their old coal oil lamps, such as are still found in the majority of farm houses, and of setting them side by side. First he extinguished the mantle lamp, and although there was a good sized burner on the ordinary coal oil lamp, the room seemed dark by comparison. Then the mantle lamp was lighted again and the old-fashioned lamp extinguished. Its light was not missed.

Shortly after my visit to Mr. Glendinning, I stayed over night with Mr. J. W. Logan, the well known Ayrehire breeder of Howick, Que. Mr. Logan had a mantle lamp of the same make, and he was just as pleased with his purchase as was Mr. Glendinning. There are only two of many mantle lamps that I have seen burning and giving the best of satisfaction.

A few weeks ago I became acquainted with a new style of portable lamp. Walking along a dark country road on one of my infrequent visits to the old home, I was surprised to see a blaze of light from a small cottage standing back from the road. My first impression was that the house was on fire, but the blaze was white and steady instead of yellow and flickering. Next day I learned that a brother of the woman in that house was a dealer in gasoline lamps in the United States, and he had sent one across to his sister. This lamp has no chimney, has a mantle burner, and gives a clear, strong light, estimated at between 300 and 400 candle power—much better light than the electric lighting of the average city home.

I don't know which of these two styles of portable lamp is the best. Both, however, are good and cheap, considering the light that they make and the fuel they save. They are a boon to school children who must study at night, to the old folks whose

light is failing them, and folks who, like myself, are in their prime, also appreciate a good light of a winter's evening.—F. E. E.

## Start Begonias Now

B. C. Tillett, Wentworth Co., Ont.

**S**OME of the finest begonias can be raised cheaply from seed, and if this is shown in boxes now and it will produce flowers in September. The soil should be coarse below, and plenty of drainage underneath, and very fine and even on the top. It should be firmly pressed down, well watered, and left for 24 hours. The seed is very small and should be sprinkled very thinly on the surface and lightly pressed with the palm of the hand. Do not cover it with soil. Cover the boxes with glass to check evaporation. The boxes should be placed under glass.

The seed takes some little time to germinate, but watering should not be necessary until the seedlings appear. The glass should then be raised, otherwise the tiny seedlings are liable to damp off. Plenty of fresh air and a fairly high temperature are the chief points in the cultivation of seedling begonias. They may be grown entirely in pots, or about the middle of June planted in the open ground.

## Simple Sprays for House Plants

John Call, Pest Co., Ont.

**T**HE necessity of spraying to keep down insect pests in connection with all horticultural pursuits, becomes more apparent every year. It is even more so with the house plant, on account of the more unnatural conditions of surroundings, such as a dry atmosphere produced by artificial heat and lighting, or perhaps an impure atmosphere produced from steam stoves or gas jets. The most frequent insect pest of house plants is the aphid, commonly called green plant louse. Then we have the red spider, thrip and many others. For convenience and economy, I would recommend as a preventative to the amateur grower the following sprays: Dissolve one ounce of any kitchen soap in a gallon of water. To this add a cupful of coal oil, keeping this well triturated with the syringe while application proceeds. This simple remedy is a wonderful cleanser of foliage.

It is a good idea to spray frequently with tepid water under pressure as a preventative against insect pests. The spraying or syringing of plants should be a distinct and separate operation from the watering. After the two operations, watering at the roots and spraying, are attempted at the same time, neither of them can be done successfully. Either the plants are soddened with too much water or perhaps missed altogether. Water the plants at the roots as required first, then do the spraying after. I have seen batches of small plants and many fine specimen plants badly injured by careless application of spray. A fine spray, thoroughly applied so as not to miss any part of the plant, is better than a heavy application only partially applied.

If the foliage of plants in bloom has to be sprayed, it is best to spray from underneath rather than over the top. The moisture will then reach the part of the foliage where insect pests are usually found, and it will not injure the blooms so much as overhead spraying. An angle nozzle on the syringe that will give an up-cast spray is the best for this purpose.

Filling for cake: Grated rind and juice of one lemon, 1 egg, 1 cup of sugar. Steam over boiling water until thick. Stir while steaming, then spread the layers.

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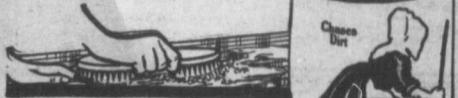
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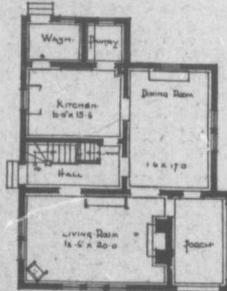
### A House for Town or Country

**B**ECAUSE no two of us think exactly alike, and what may induce one person to buy a house may decide another against taking it, Farm and Dairy House No. 4 is of an entirely different type. The back entry, which has been the distinguishing feature of the other houses, has in this case been omitted, and a more conventional main hall substituted for the benefit of those who do not care for the back hall arrangement.

Another difference is that the screened porch is at the front of the house, with doors opening from it into the living room and dining room, with the outlook over the front lawn.

It is a house equally well adapted to city or country use, and is distinguished by an unusual economy of room, not a foot of space being wasted in halls. Large pleasant halls with chairs and tables about are admirable in a warm climate, but in this country where the opening door in the winter time lets in a sweep of forty below zero air, the hall is not a place to be used as a sitting room, and the less space given to it the better.

It nearly always happens that the limitations of lumber and mortar make it necessary to have one bedroom either very small and poky or very badly shaped. All of the bedrooms in Farm and Dairy House No. 4 are a



GROUND FLOOR-

good size and shape, and each one has one or more closets.

Attractively decorated and furnished, it will prove to be one of the most convenient, comfortable and at-

tractive homes imaginable, while the exterior of it gives an impression of homeliness and coziness which it is the peculiar privilege of the moderate-sized house to impart.

#### Architect's Description.

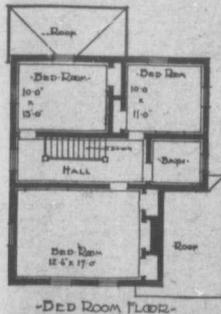
This house is one that is not too pretensions, but which can be made to fit most families. It is 23 feet by 22 feet outside, and has downstairs a large family or living room connected with the covered-in porch and the dining room, so that all three can be used for entertaining, and all three can be used separately from the other.

The fireplace is at the end of the living room, and should be built on square 6-inch by 6-inch dull-glazed tile with a wooden mantel.

Upstairs are two medium-sized bedrooms and one large room for the owner. This last room is well served with closets and a wardrobe, and at very little extra cost could be fitted with a fireplace. The house, as shown, should face the south-west, so that the winter sun will enter both the living room and the dining room and the majority of the bedrooms, and if the site selected for the building will not permit of this, reverse the plan to suit.

Build the exterior of shingles laid alternate courses 10 inches and 2 inches to the weather, and shingle the roof in the ordinary way. Fill in the half-timber work on the gables with lath and plaster, left very rough. The chimney can have a cement cap or can be finished with brick. Stain the walls a deep, rich, ruddy brown, and the roof a soft French green, and trim the woodwork in old ivory. The roof may be of shingle, metal or asbestos. The exterior may be of stucco finish and wallboard may be substituted for plaster on the interior if desired. Make the ceilings about 8 feet to 9 feet, and don't, on any account, leave out the freplaces. Use a good quality hot air furnace with generous-sized pipes, or a hot water or steam heating system, which are better still. The cost will be from \$3,000 to \$3,500.

This estimate of cost will be considerably reduced should the builder decide to do his own tamping, excavate his own cellar, and perhaps help with the work. It is a well known fact, for these reasons, that houses are built more cheaply in country than in city.



BED ROOM FLOOR-

#### WORKING DRAWINGS, \$2.00.

Complete working drawings for the construction of Farm and Dairy House No. 4, together with complete bill of materials and instructions for building, will be mailed to any address for \$2.00.

Farm Building Dept.,  
Farm and Dairy, Peterboro, Ont.

## No Burning, Clean Foliage, Fine Bloom and Finish SPRAY

Mr. C. W. Gurney, of Paris, Ontario, says that with Soluble Sulphur there is no burning, clean foliage, and fruit that hangs well and grows to large size. He states that like other sprays it must be applied in strict accordance to directions to avoid burning, but so applied it gives the best results.

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You handle a 100 lb. tin from your station, instead of a 500 lb. barrel. With Niagara Soluble Sulphur there is no leakage and loss. It does better work than Lime-Sulphur, and does it quicker.

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## A Good Idea! Use Windsor Dairy Salt

Made in Canada



157



**In Honor of St. Patrick**

By Marion Dallas.

"S your Irish full of gladness,  
Like the gleam of the sun's  
melow ray?  
If it is, my dear, there are two of us  
That are glad this Saint Patrick's  
Day."

This month, the day on which we may most easily plan to entertain our friends is St. Patrick's. We may celebrate on that day whether we are Irish or not, for no day in all the year lends itself so readily to wit and humor and wholesome fun as does the 17th of March.

Green of course is supposed to be the color of the old Emerald Isle, so this is the color used for all decorations. The wise hostess will have on hand a supply of last year's ferns, pressed, and these with a few flowers and a roll of green crepe paper makes everything look pretty and green.

**Capturing the Colors.**

As for games, one of the liveliest I know of is "Capturing the Colors." Stick up small Irish flags here and there about the room. Have someone play the piano and start all the guests marching in a circle, clapping hands. When the music breaks off suddenly, everyone must rush to capture a flag. When the music begins again, they immediately resume the march. This should continue until all the flags have been captured. The one holding the largest number wins the game. These flags may be made of green paper and pasted on to little sticks if no other flags are available.

**Potato Animals.**

Let everybody gather around the table on which has been placed peanuts, raisins, prunes, or other dried

fruit, with a bunch of wooden tooth-picks and a paper of wire hairpins. Each player receives a potato, out of which he must fashion an animal or goblin, using the peanuts and fruit for limbs, tails, and so on, according to his own design. At the end of a half hour the animals should be set out in array, and judges appointed to decide which is the best production.

**Pin the Shamrock on Paddy's Hat.**

Have someone draw an Irishman on a square of white muslin. Tack the square up in the open doorway. Blindfold the guests in turn, giving each a silk shamrock and instructing them to pin it on to Paddy's hat. The one nearest to it may be rewarded by some simple Irish novelty.

**Matching Greens.**

For this game secure six "samples" of different shades of green cloth or silk, and two good-sized squares of cardboard. Cut each sample in half, pasting one half on one square of cardboard and the remaining half on the other square. Mark one set of samples with numbers, the other with letters, taking care that the two pieces of the one shade do not correspond. To begin the game, one square is hung up at one side of the room, the other on the wall opposite. Paper and pencils are distributed, and each player is asked to indicate which pieces of material match, by writing down the number and letter. Thus: A-1, B-2, and so on.

**Rish Celebrities.**

A pleasant diversion would be a contest of famous sons and daughters of Erin. Write on a shamrock card for-every-guy the name of some celebrity. Jumble up the letters, for instance, O.H.I.T.L.G.S.M.D., leaving a space opposite for the correct arrange-



A Youthful Poultry Fancier.

2. Pur and part of the body below the ribs.
  3. Pur and moved rapidly in the air.
  4. Pur and mien or bearing.
  5. Pur and to take an attitude.
  6. Pur and a judicial action for the recovery of the right.
  7. Pur and range of vision.
  8. Pur and short for Silas.
  9. Pur and to run swiftly.
  10. Pur and a screen or shutter.
- The answers are: 1, Purlieu; 2, Purlou; 3, Purlieu; 4, Purport; 5, Purpore; 6, Purlu; 7, Purvius; 8, Purlu; 9, Purpore; 10, Purlu.

**A Slight Difference**

GRACE: "Oh Mr. Nocoynce, how lovely of you to bring me these beautiful roses! How sweet they are, and how fresh! I do believe there is a little dew on them yet."  
Nocoynce: "W-well, yes there is; but I'll pay to-morrow."

**A Cautious Owner**

PENNSYLVANIA farmer was the owner of a good Alderney cow. A stranger, having admired the animal, asked the farmer, "What will you take for your cow?" The farmer scratched his head for a moment and then said, "Look a-here be you the tax assessor or has she been killed by the railroad?"—The Argonaut.

**A Versatile Cow**

THE Toadville Tidings advertises a cow for sale as follows: "For sale—A full-blooded cow, giving milk, also three tons of hay, a wheelbarrow, a gindstone, two stoves, a scythe and a democrat wagon."

ment. After guessing the name, write it down in the correct way.

Partners might be found in this way. On one card have the jumble of letters, and on another have the proper name.

**A Purring Contest.**

But not everyone will be able to entertain on this day, so for those who wish some other ideas we suggest using the "pussy willow," which appears about the last of March. The invitations might be decorated with "pussy willows," and the rooms of the house could be artistically trimmed with the branches.

For amusement, have cards distributed with the following contest written on them. Each word has the prefix "Pur."

1. Pur and place or stead.

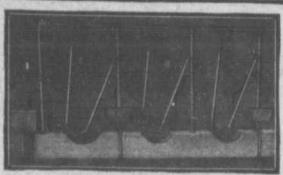
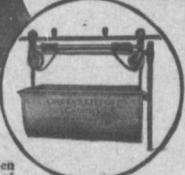
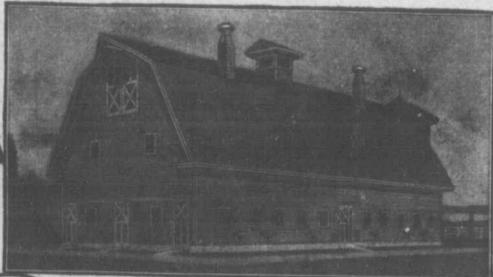
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FOR QUALITY FOR SERVICE FOR SECURITY



FILL OUT AND MAIL US THE COUPON FOR THIS FREE BOOK.

**Book of Barn Plans Free**

Louden "Barn Plans" is not a catalogue of barn equipment. It is a complete and valuable book of reference and instruction on barn construction. The 112 pages of Louden Barn plans is full of dollar saving information—the best of ideas gathered by the Louden Company during many years of barn building, and barn equipment experience. 31 representative designs for cow barns, horse barns, general purpose barns and hog houses. In addition, there are 32 pages devoted to general construction problems, such as concrete work, laying floors, roof construction, ventilation, etc.



Louden equipment makes possible a clean, sanitary barn with a minimum of expense for upkeep. When cows are transferred from dark, dirty barns to Louden barns, the milk flow often increases from 15 to 25 per cent, and the labour of caring for the herd is reduced from one-third to one-half.

The cost of installing Louden equipment is surprisingly small, and is just as great an economy for the man with a half dozen animals, as for a man with a hundred. The percentage of labour saved is the same.

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Please send me copy of Louden Barn Plans, 1 request built (or remodel) barn for \_\_\_\_\_ cows and \_\_\_\_\_ horses. Barn will be about \_\_\_\_\_ x \_\_\_\_\_ ft.

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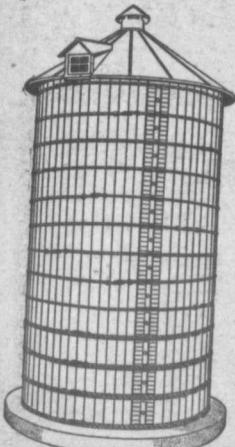
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Egg Cases and Poultry Coops supplied upon request.

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# A Good Dairy Farm—and Why

Dairy Cows and Crop Rotation Account for Productive Meadows

"YOU should visit Watson Bros., at Dunham, before you leave this section, a friend in Cowansville, in the Bedford district, informed me last spring. 'They have one of the most productive farms around here, and their meadows always look fine.'"

The latter part of the remark gave me the idea that Watson Bros. must be largely hay farmers. Hay farmers in Quebec usually grow little else than timothy, and their meadows, as I have seen them, are usually anything but fine. I wondered as I journeyed towards Dunham if I was to find an extra fertile soil or the intelligent use of commercial fertilizers as the explanation of good meadows. I found neither. The Watson meadows were unquestionably good, but the explanation of their luxuriant growth of timothy was the same as I would expect anywhere else in Canada—live stock and crop rotation. Watson Bros. are general farmers, with dairying as their main line, and their farm is so typical of many in the dairy sections of Quebec that it merits a brief description.

In all, there are 300 acres run by the two brothers, of which only 75 or 80 acres are workable. There is much stone in the land and a large part of the farm is rough. The unworkable sections, however, are largely covered with sugar bush, which is very far from being unproductive. Last year, one of the brothers informed me, they tapped 1,400 trees, from which they made 6,000 pounds of maple sugar, putting it all up in two-ounce cakes, and doing the work themselves. From further inquiries in the same district I found that the sugar bush, an appreciated source of revenue, and demands attention only when other farm work is not pressing.

"Good Meadows—and Why" we marked one of the brothers' but we think that is because of the way we look after them. Last year you raised anything at all, as we were without rain from the middle of April to July, but we had fair crops of hay, nevertheless. The explanation lies in this! We follow a rotation of crops three or four years. We milk about 34 cows, keep about 50 to 60 head of stock altogether, feed practically everything grown on the farm in our own barns, and hence have lots of manure for the valuable section of our farm. One year, for instance, we grew 4,000 bushels of grain."

At the time of my visit, Watson Bros. were preparing to plant corn, of which they use about 100 acres. This goes into an immense concrete silo, 40x36 feet. With the exception of a light dressing of manure for wheat, all the rest of it goes on the corn land, which is then followed by grain, either wheat or oats, seeded down. Sometimes three crops of hay are taken, before the land is broken up again. The first crop is almost all clover, but a certain proportion of timothy seed is always included as an insurance of crops for the second and third years.

The cows I found to be a rather mixed bunch, and the explanation of their lack of uniformity was given by one of the proprietors when he explained that a few years ago they had decided that they could buy cows cheaper than they could raise them. At that time they could, but in recent years they found that really good cows and heifers are almost unobtainable, and they are now starting to raise their own milking stock

again, and now have a pure-bred Holstein bull at the head of the herd. The cream goes to the creamery nearby.

A Typical Quebec Barn  
The barn on the Watson farm, which, by the way, was illustrated in Farm and Dairy some months ago, is typical of thousands in that province. It is built three stories high, the drive floor being right up in the roof, so that practically all the unloading of hay and grain is downhill into the deep bays at the side. Another floor runs the length of the barn directly under the drive floor, and this comes in handy for storage, really taking the place of an implement shed. Below this again is the basement, in which are the stables. The main barn is 50x80 feet on the Watson farm, 36x42 feet. All of the buildings on the farm are lighted throughout with acetylene gas. A small engine runs the cream separator, and nearby is the combined milk and ice house, built almost altogether of cement.

The Watsons have all the conveniences of a good rural village in minutes' walk from the farm. They are seven miles from the shipping point at Cowansville, but they do not find that so far away now as before they purchased their car. The road from Dunham to Cowansville is one of the finest in Quebec, and the Watson auto makes the trip in 30 minutes. "Hitch up in a team, and it takes you all day on the road," remarks Mr. Watson. "Consequently when we had to depend on the horses, we never got out at all. Now we think nothing of a trip to Cowansville."

It will be a grand day for Quebec farmers when her thousands of hay farmers start to establish good meadows by the same methods that have been adopted so successfully by Watson Bros.—F. E. E.

**FREE** to stockmen and poultrymen, our 50-page illustrated booklet on feeding, how to construct a house which will accommodate 100 hens, gives dimensions and measurements of common devices required. Deals with the remedial and preventive care of stock and poultry, and contains full information about Royal Purple Stock and Poultry Foods and remedies.  
The W. A. JENKINS MFG. CO., LONDON, CAN.

# A Big Demand for Maple Products



The "Pure Maple Law" is driving out adulterations. You can now sell your pure maple syrup and cream at better prices than ever before.

The supply is exhausted and 1916 will be an unusually good year for you to get a big share of the profits made on high grade maple products.

The Champion Evaporator makes the highest grade syrup and sugar faster, easier, and at less cost than is possible by any other method. Sold on easy terms. Write to-day for full information.

**Grimm Manufacturing Co.**  
100 Wellington St., MONTREAL.

## FOR SALE AND WANT ADVERTISING

THREE CENTS A WORD, CASH WITH ORDER

**WANTED**—At the Protestant Hospital for the Insane, Verdun, P.Q. Intelligent young women of good character to write and dictate. Two years' course, Diploma granted. For particulars apply to Dr. T. J. W. Burgess, Med. Sup't., P.O. Box 2323, Montreal.

**WANTED**—Three experienced farm hands. Married—early engagement. Wages \$32 per month. Free house, garden lot and summer wood. Situations open now—April Box 125, Niagara-on-the-Lake, Ont.

**WANTED**—To purchase, cheese factory within one hundred miles east of Toronto. Must have good shipping facilities. State full particulars. Box 4, Farm and Dairy, Peterboro, Ont.

**WANTED** to hear from owner of good farm for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

**MAN OR WOMAN WANTED** to distribute war literature. \$120 for sixty days' work in your community. Spare time may be used—Winston Co., Limited, Toronto.

**SITUATION WANTED** by assistant cheese and by det. maker; three years' experience.—Box 190, Farm and Dairy, Peterboro.

**THE FARMERS SEEDS FIFTY YEARS SERVICE**

1866 1916

Order now and get the first choice of our stock. Everything for the farm and garden. We pay rail way freight on all orders in Ontario. Cash order \$5.00. Our Golden Jubilee Catalogue is now ready. Write for one to-day. It is free.

<p><b>Gov't Standard Bush</b></p> <p>No. 1 Red Clover . . . 17.00 Extra No. 1 for Party . . . 17.00 No. 1 Red Clover . . . 16.40 No. 1 Red Clover . . . 16.00 No. 1 Alkaline . . . 13.00 No. 2 Alkaline . . . 11.00 No. 1 Timothy (Almost Pure) . . . 5.00 No. 1 Timothy for purity . . . 5.50 No. 2 Timothy . . . 4.45 No. 2 Timothy (slightly mixed) . . . 4.00 No. 1 Red Clover (Blue) . . . 5.25 Sweet Clover . . . 5.00 Allow 25¢ per bush for freight—Clover &amp; Timothy. We have a small quantity of Orisms or Variegated Alfalfa. If interested write for prices.</p>	<p><b>Seed Corn—Bags Free</b></p> <p>1914 and 1915 growth . . . 70 lbs Wisconsin No. 7 . . . \$1.89 Ballie's Golden Glow . . . 1.75 Lansing . . . 1.78 Whiting . . . 1.50 Longfellow . . . 1.50 N. Dakota . . . 1.50 Complan . . . 1.50</p> <p>(Bags Free)</p> <p>O.A.C. No. 12 Oats . . . \$ .85 O.A.C. No. 8 Oats . . . 80c</p>
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**GEO. KEITH & SONS SEEDS 124 KING ST. E. TORONTO**

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**The Makers' Corner**

Butter and Cheese Makers are invited to send contributions to this department, to ask questions on matters relating to cheese making, and to suggest subjects for discussion.

**The Dividend Question**

Jaas. Sorensen, *of the Dairy Record.*

WHEN all patrons of a cooperative creamery are also stockholders of the creamery, it is not very difficult to settle the dividend question, but in many creameries there are some non-producers who own stock and these don't object to a good dividend, the other fellow has to pay it. The best way of settling the dividend question is to decide right from the start that no dividend shall be paid, and simply pay a fair rate of interest to all who have money invested in the creamery. This is absolutely fair, both to the stockholder and non-stockholder, and a man has no kick coming if he receives a fair interest on his investment, and the patron owning no stock could not raise a valid objection to this either.

For the benefit of those who still believe in a big dividend, we might cite the case of a cooperative creamery which came under our immediate observation. This creamery had close to one hundred patrons and about half of the patrons were stockholders in the creamery. The stockholders were all patrons with few exceptions, which gave them the full benefit of the creamery as a market for their cream, but they also had full control of the affairs of the association, and when it was up to them to decide on the amount of dividend that should be paid, the temptation was too much for them, and this creamery paid from fifteen to fifty per cent. dividend for several years. Another bad feature was that it was decided that no milk stock should be sold because this would cut down the fat annual dividend.

The trouble with this system of graft was, however, that it wouldn't stand the test of time, and the patrons who were not stockholders got wise to the fact that their own neighbors were robbing them of some real good money, and these non-stockholders finally served notice on the stockholders that the high dividend must stop or there would be another creamery in town. The final result was that the dividend was cut out altogether and only fair interest was paid on the stock. It was also decided to sell stock to anybody who had cream to sell, and true cooperation triumphed to the benefit of everybody in the community.

**Milk Can Regulations**

INFORMATION regarding the new Dominion law relating to the stamping of milk and cream cans, was requested by Mr. Mac. Robertson of the Belleville Creamery at the recent Eastern Ontario Dairy-men's Convention. Mr. Robertson had recently purchased some new cans and had to pay \$10 extra because they were stamped according to government regulations. Formerly, creamery men could buy eight or ten gallon cans without their being stamped to indicate capacity. Although creameries have to pay for the inspection of the cans they use, the new regulation is of no value to them because they pay for their cream by weight. As very little information seemed to be forthcoming at the convention, Farm and Dairy communicated with the Weights and Measures Branch of the Department of Inland Revenue at

Ottawa. The reply received from E. O. Wray, Chief of the Branch, is as follows:

"For the starting point of this regulation, I must refer you to Sect. 72 of the W. & M. Act assented to in the House, 1906. The Department latterly became aware that large numbers of American cans were coming into Canada, containing 33-1-3 lbs., yet these were everywhere regarded and used as eight-gallon cans."

"This raises a very important consideration. If payment is made by weight by dumping the milk—why the universal equivalent of 32 1/4 lbs. per eight-gallon can? Obviously the can is still a measure—an eight-gallon measure, to be filled by the producer, otherwise payment, with decimal coinage, would logically be made on the 100-lb. basis. But the can is the intermediary of trade, hence its equivalent in weight is given. The producer fills his cans to the neck, owned or sent to him, and looks for payment for eight gallons or 32 1/4 lbs. If he has filled 33-1-3 quart cans—quite undistinguishable from the 32 quart can, except under weight—what chance has he, if any, of receiving payment for the extra quart? In fact the very existence of the 33-1-3 quart can indicated the need of inspection. Enclosed please find copy of Circular G 1187 on this subject. An official amending circular will likely be issued in a short time, making the stipulation as follows:

(1) All dairy cans of the railroad type must be inspected and stamped before going into use as to accuracy of contents.

(2) Where such cans are used as 'carriers,' the milk and cream being bought and paid for by weight, no further inspection will apply, other than to see that such cans are not being used as 'measures.'

(3) Where such cans are used as measures of capacity—of which there are large numbers—periodical re-inspection will apply.

"Now if cream cans are exempt from subsequent inspection, why inspect at all? Because the same type and size of can is used indiscriminately for both milk and cream, and if the cream can was stamped, un-stamped cans would get into use for milk— with resulting prosecutions. The one inspection for such is no great hardship, and it will entirely prevent such doubtful cans as the present 33-1-3 quart can getting into use."

"If cans used as 'carriers' became 'dented' it is of great consequence as payment is made by weight. In such cases, if the can used as 'measure' is 'dented' to make its capacity 'short,' the offender, owner or user is liable to prosecution therefor, inspection and discovery of such measures being liable to be made at any time."

**A Sure Cure**

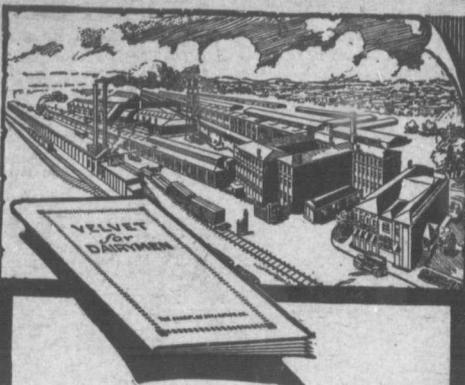
IT is related of a rural editor that he received this question from one of his readers:—

"What is the matter with my hens? Every morning I find one of them laid out stiff and cold on the hen-house floor."

Next day this answer duly appeared in the query column:—

"Your fowls are suffering from death. It is an old complaint. The only treatment that we can prescribe is burial."

A city milk dealer in Montreal was getting about the worst milk of any retailer in that city. He adopted the sediment test and the discs were sent back to the producers with a few remarks. In five months this man was getting the best milk in Montreal.—Geo. H. Barr, Chief of the Dairy Division, Ottawa.



**More Dairy Dollars**

We have found a way to bring you more dollars without increased expense. We call this new profit "velvet," because it comes so easily. Our new book, "Velvet for Dairymen" tells all about it.

Your separator is losing cream, no matter what the make. A famous experiment station says, "The use of the gravity can, a low speed of the separator, and an excessive rate of inflow cause heavy loss in butter fat." They have proven that 95% of all farm separators are turned below regulation speed. When the speed slackens, a lot of the cream escapes with the skim milk—and with the cream goes the profit.

The annual loss from imperfect separation is \$47 on the average farm and upon many farms it is \$100 and more. That's the tax you pay because you can't turn your separator at just the right speed all the time. But with

**THE NEW SHARPLES SUCTION FEED**

Separator you get all the cream at any speed.

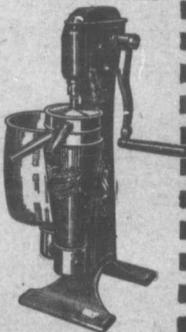
A wonderfully simple invention enables the bowl to drink in just the right quantity of milk to insure the closest possible skimming. You may turn slow and make the work easy or you may turn fast and get through quicker. You simply won't lose cream with the "Suction Feed."

You get smooth cream of an even grade whatever the speed of the separator. Uniform cream makes fancy butter that brings top prices.

The supply can is only kneehigh. There's no hard lifting to empty heavy milk cans.

The new machine has all the features that have made the Sharple's Tubular famous and many other new vital and exclusive features found in no other separator.

Send now for our new book, "Velvet for Dairymen," and learn how to secure this new dairy profit. Address Dept 77



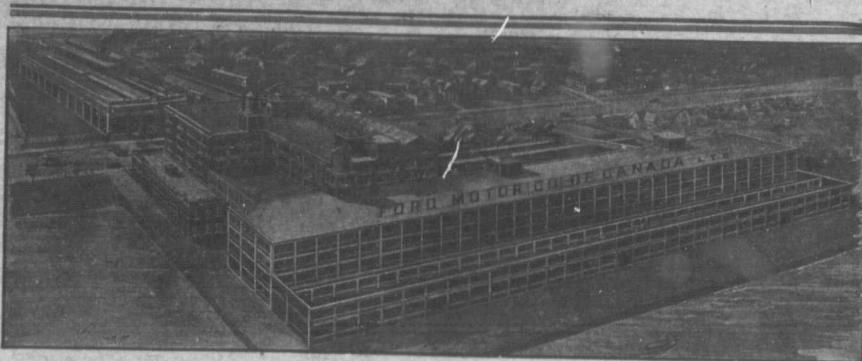
**The Sharple's Separator Co.**

Also Mechanical Milkers and Gasoline Engines

Toronto

Canada





## The Wagon Shop That Became the Largest Automobile Factory in the British Empire

Back in 1903, the town of Walkerville, Ontario, was possessed of a concern called the Walkerville Wagon Company.

If, on some day when business was not rushing, the general manager, Gordon M. McGregor, wishes to take a little stroll, he could walk around his shop in about 2 minutes by the factory clock.

Nobody would have believed at that time that this shop would, in a few years, develop into the largest plant of its kind in the Empire having a floor acreage of over 435,000 square feet and making 3 times as many cars as any other automobile factory in the British Empire. But so it has come to pass.

Through the efforts of Mr. McGregor and his Canadian associates, this wagon shop has been turned into the great Ford plant at Ford City, Ont.

The factory today is one of the industrial show places of Canada.

Here are the highest paid automobile mechanics in the Empire who put their best into the building of a car that has won its way into the confidence of the Canadian public.

Here are hundreds of machines designed by Ford engineers, which are marvels of the industrial world.

Many of them would do the work of an ordinary sized automobile company in a week or so, but because of the demand for Ford cars they are kept busy the year round.

Here a new Canadian Ford car is born every three and one-half minutes.

Here workmen are busily engaged in making additions so that the production cars may keep pace with the demand. There never has been a time since was began when gangs of men were not at work expanding the plant, literally building for the future.

Look in at the power plant and you will see two monster 650 horse-power gas engines. What a contrast to the early days when this story power was derived from the hind wheel of a Model "C" car!

In the immense heat treatment plant, Vanadium steel, the most expensive and best of steels, is heat-treated the Ford way. Here each steel part is especially prepared for the stress and strain it will have to withstand in the completed car.

The machine shop contains many wonderful sights for the visitor. There are long rows of very expensive gear cutting machines. And there is the great machine that mills 48 cylinders at one time! And another that drills 45 holes at once in a cylinder casting from side, top and bottom. Marvellous speed and equally marvelous accuracy!

Then there is the handsome office building in which close to 200 workers are employed. In all there are over 30,000 people dependent on the Canadian Ford Plant for their support.

In this plant the Ford car is constructed practically in its entirety— even the steel, as mentioned above, is refined here.

Furthermore, and here is a record rarely found in other large Canadian factories, all but \$16.88 worth of the material used in the making of the Canadian Ford is bought right here in Canada. Few products can lay claim to being so strictly "Made in Canada" as the Ford car.

Consider what this means to Canadian industry when it includes such immense purchases as 25,000 tons of steel, 1,500 tons of brass, etc.,

120,000 wheels, 200,000 lamps, and other materials in proportion. Practically the entire output of several large Canadian factories employing hundreds of workmen is taken by the Ford Plant at Ford City, Ont.

But great as this influence is for the increased prosperity of the Empire, it does not stop there. All over the Empire are Ford Dealers who are important factors in increasing the wealth and prosperity of their communities.

The spirit of faith in the future that has prompted the Ford Canadian Company to proceed with a policy of full-speed ahead in times that have seemed to many to require the use of extraordinary caution and conservatism, is a happy, progressive, enthusiastic spirit that is radiated in every city or town of any size in the whole Dominion and in the Empire over the seas through the Ford Dealer whom you will find there.

Besides this there are the nine branches in Canada and one in Melbourne, Australia, four of which have been rebuilt since war began at a cost of over \$1,000,000, that are powerful supports to these dealers in being elements of first importance in adding to the wealth and progress of the nation.

But, phenomenal as the development of the Ford Plant has been, its great success was not attained without its share of great difficulties.

The first three years of its existence were somewhat precarious. The first car was not shipped from the factory until six months after the company was organized. Nowadays, 20,000 cars would have been shipped in that time.

The first main building was a two and a half story brick structure and the entire plant occupied about one acre of ground. The machinery consisted of one solitary drill press.

But from 1910 on the business increased so fast that it was difficult for the plant capacity to keep pace with the sales and additional buildings and equipment were constantly being constructed and installed.

In 1911 the output was 2,400 cars, in 1912, 6,500 cars were built, and so on up to this year's estimated production of 40,000 cars.

The executives of the Canadian Ford Company make no consideration of the war. They are so thoroughly Canadian in their ideals that they take the prosperity of Canada and the triumph of Britain and her allies as accomplished facts.

No stops have been made in their plan for progress—not the slightest hesitation has been evidenced in developing this great Canadian Plant to its highest degree of efficiency on account of the war.

As evidence of this \$52,000 has been spent on new buildings at Ford City—a million dollars has been spent on new equipment—over a million dollars was expended on branches in four Canadian cities—and 900 men have been added to the payroll—all this in a belligerent country during the progress of the greatest war the world has ever seen.

In addition, the price of the Ford car has been reduced \$120 since that memorable August 1, 1914.

So then, this is the story of the wagon shop that became the great Canadian Ford Plant. An industry that is proud to say that it builds its product from Canadian material, with Canadian workmen and that backs its Canadian patriotism with its hard cash.

## Ford Motor Company of Canada, Limited, Ford, Ont.

Ford Runabout	..	\$480
Ford Touring	..	530
Ford Coupelet	..	730
Ford Sedan	..	890
Ford Town Car	..	780
L. o. b. Ford, Ontario		



All cars completely equipped, including electric headlights. Equipment does not include speedometer.

**OUR FARMERS' CLUB**

Correspondence invited.

**QUEBEC.**

**RICHMOND CO. QUE.**  
**DANVILLE, Feb. 21.**—We have had a heavy fall of snow, making good sleighing. The last few days have been very cold. Farmers are busy hauling logs, wood and ice. Pork has taken a rise to \$10.50, live weight; hay, \$30; eggs, 35c.; butter, 35c. Cattle are coming through the winter in pretty good condition. Every week thousands of cattle are shipped to the cities of Montreal and Quebec.—M.D.B.

**ONTARIO.**

**DURHAM CO. ONT.**  
**CAMPBELLTOWN, Feb. 21.**—So far this month has been very cold—50 below zero quite often. There is very little snow, which makes teaming difficult. Feed is fairly plentiful, except hay. Last season's big corn crop is helping the feed. The price of all kinds of grass seed is very high, which has a tendency to prevent farmers from sowing what they should or would. A large number of cattle have been shipped from here and

other parts near by. The high price of hogs has had a tendency to put a number of unfinished animals on the market. Butter, 35c to 36c; eggs, 35c; potatoes, \$1.50 a bag; beans, \$1 a bush; beef, \$11 by the quarter.—J. A. & T.

**PORT BURWELL, CO. ONT.**  
**WOLFORD, Feb. 21.**—The weather is cold. Farmers are busy teaming to ship to Port Burwell. Burdockseed is shipped at 75c. Sleighting is fairly good, which makes manure very bris. Fogs, \$9.50; butter, 45c.; eggs, 35c. Recruiting county and our best young men are leaving us for overseas service.—B.E.R.F.

**WELLAND CO. ONT.**  
**BRIDGEBURG, Feb. 13.**—The farmers are taking advantage of the good sleighing now to get their winter's work out of the way. The hay harvest is in full swing, owing to the present cold snap. Butter is 35c to 36c; eggs, 35c to 36c; beef, 11c to 12c dead weight, and 9c to 11c to 12c dressed; pork, 9c to 10c; scarce at \$1.50 a bushel; hay, \$10 a ton.—G. W. C.

**GREY CO. ONT.**  
**THORNHURST, Feb. 21.**—We have enough snow to make good sleighing. The weather has been very cold. A number of cattle and hogs have been shipped from Thornhurst during the last few weeks. Hogs were \$10 a cwt. Butter is

35c in Thornhurst and eggs, 35c. On Collingwood market, prices are a few cents higher. A number of concerts have been held this winter in aid of Red Cross work. Some of the schools have been closed on account of measles, and there has been a great deal of sickness in the locality.—M.R. C. P.

**QU'APPELLE, QAN.**  
**PORT QU'APPELLE, Feb. 12.**—We have had the worst winter to date for years and very heavy snowfall, with blowing and drifting every day through January. It has been extremely cold, 50.2 degrees below zero being lowest recorded. We are getting rather scarce as everyone has been feeding since the first week in November. Snow is too deep for grazing of any account. Railroads have been out of business on and off one eight-day stretch being without milk in or out. Prospects are for a late spring and plenty of water on land.—R. H. C.

**BRITISH COLUMBIA.**

**WESTMINSTER DISTRICT, B.C.**  
**MATCOU, Feb. 12.**—After some weeks of almost continuous winter weather, we are having at times with Chinook winds. Feed prices are soaring. There is a surplus of hay, grain and potatoes still in being offered for potatoes. Condition of potatoes in pits is quite uncertain. De-

mand for milk good at 22 to 23 cents a lb. butter fat. Vancouver delivery, and a 16-gallon can. Meat of all kinds is high. Horses are being bought for CHILLIWACK, Feb. 17.—We have had about six weeks of cold weather, but the weather is beautiful now and the snow is almost gone. Seed, in many places, is very scarce, nine carloads of alfalfa hay have already come to Chilliwack and sold at \$20 a ton; timothy hay, loose, \$15; pork, 25c; feed 54c. Cattle, on account of the shortage of fodder, are cheap, while milk and butter are high.—N.B.C.

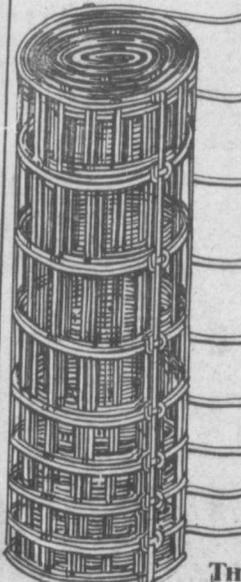
**Canadian Ayrshire Records**

THE following is a summary of the records of 663 Ayrshire cows and heifers that have qualified in the Record of Performance test from commencement to Dec. 31st, 1915.

1,202 mature cows gave a yearly average of 10,277.32 lbs. milk and 412.26 lbs. butter fat.  
 66 four-year-olds gave 5,281.50 lbs. milk, and 328.96 lbs. butter fat.  
 156 three-year-olds gave 4,340.94 lbs. milk and 344.29 lbs. butter fat.  
 273 two-year-olds gave 7,503.55 lbs. milk, and 302.27 lbs. butter fat.  
 W. F. Stephen, Secretary-Treasurer.

PRICE LIST				
No. of	Height	Spacing of	Price in Old	Ontario
posts	lines apart	lines	country	
6	40	22	61-7-81-9-9	28
7	40	22	53-7-73-8-2	30
7	40	22	53-7-73-8-2	31
8	42	16	6-6-6-6-6-6-6	37
8	42	16	4-5-1-7-8-9-9	35
9	48	16	6-6-6-6-6-6-6	40
9	48	16	4-5-1-7-8-9-9	40
10	48	16	3-3-4-5-1-7-7-8	45
10	48	16	3-3-4-5-1-7-7-8	45
10	52	16	3-3-4-5-1-7-8-9-9	45
11	48-55	16	3-3-4-5-1-7-8-9-9-9	49

New Ontario Prices on Request.  
 ALL FULL No. 9 GAUGE.



**Beware of the Too-Cheap Fence**  
 Get Page Fence for Permanence

PAGE Fence is always a safe purchase—a good investment. There is absolute proof of its superiority—of its lifetime durability. At least we can show you some that's been up for 23 years, and still without a break, still giving good service.

Beware of the too-cheap fence. Page fence prices are as low as they can be, unless

we cut down weight and quality. And that we will not do.

Fence bought from Page has only one price—only one profit, and that is most convenient. And Page quality is possible at Page reasonable prices only because it is sold direct from factory to farm. You don't have to pay agents' commissions or dealers' profits when you buy fence from us.

Send your order to the Page branch that is most convenient. Enclose cash, cheque, bank draft or express order. We will ship immediately. Freight prepaid on all orders of \$10.00 or more.

**THE PAGE WIRE FENCE COMPANY**

LIMITED.  
 1139 King St. W., 518 Notre Dame W., 41 Dock St.,  
 Toronto. Montreal. St. John.



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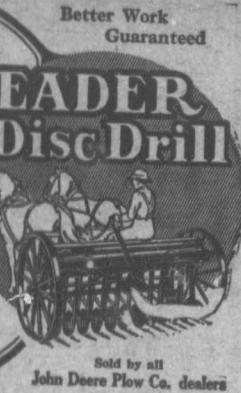
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OFFICIAL RECORDS OF HOLSTEIN-FRIESIAN COWS, FROM FEB. 1 TO FEB. 15, 1916.

- Mature Class, Over 27 lbs. Butter. 1. Madam Pauline Canada, 16499, 5y. 1m. 11d.; 47.6 lbs. fat, 11.72 lbs. butter. 2. Madam Queen, 17142, 5y. 1m. 11d.; 49.6 lbs. fat, 11.81 lbs. butter. 3. Nathalie Clothilde Perfection, 14873, 10y. 6m. 24d.; 52.4 lbs. fat, 12.64 lbs. butter. 4. Lakewood, 17296, 5y. 1m. 11d.; 48.2 lbs. fat, 12.58 lbs. butter. 5. Helene Kest, 17497, 5y. 1m. 11d.; 52.4 lbs. fat, 12.55 lbs. fat, 12.39 lbs. butter. 6. Helen Netherland Dekol 2nd, 14666, 6y. 1m. 29d.; 60.7 lbs. fat, 12.69 lbs. fat, 12.69 lbs. butter. 7. Four-Year Class, Over 22 lbs. Butter. 1. Colony Model Emma, 20097, 4y. 6m. 15d.; 50.7 lbs. fat, 12.39 lbs. fat, 12.39 lbs. butter. 2. Dayna Clothilde of Avondale, 15023, 4y. 10m. 11d.; 49.3 lbs. fat, 12.49 lbs. fat, 12.49 lbs. butter. 3. Ethel Brookville, 15294, 4y. 5m. 12d.; 47.7 lbs. fat, 12.15 lbs. fat, 12.15 lbs. butter. 4. Countess Clay Mechanite, 21103, 4y. 1m. 4d.; 45.7 lbs. fat, 11.81 lbs. fat, 11.81 lbs. butter. 5. Three-Year-Class, Over 18 lbs. Butter. 1. Lakewood, 17296, 5y. 1m. 11d.; 47.6 lbs. fat, 11.72 lbs. fat, 11.72 lbs. butter. 2. Lakewood, 17296, 5y. 1m. 11d.; 47.6 lbs. fat, 11.72 lbs. fat, 11.72 lbs. butter. 3. Imperial Doralice Poeh, 22500, 5y. 1m. 21d.; 50.3 lbs. fat, 12.43 lbs. fat, 12.43 lbs. butter. 4. Elsie DeKok of Fairview, 15843, 5y. 7m. 23d.; 45.7 lbs. fat, 11.67 lbs. fat, 11.67 lbs. butter. 5. Alice Smith, 22247, 5y. 1m. 17d.; 45.2 lbs. fat, 11.68 lbs. fat, 11.68 lbs. butter. 6. Three-Year-Class, Over 17 lbs. Butter. 1. Calamity Snow Mechitilde 2nd, 20707, 5y. 1m. 1d.; 52.3 lbs. fat, 12.29 lbs. fat, 12.29 lbs. butter. 2. Shandauer, Cynthia Canada, 24125, 5y. 5m. 6d.; 51.6 lbs. fat, 12.42 lbs. fat, 12.42 lbs. butter. 3. Payne Segia Countess, 22322, 5y. 1m. 9d.; 47.2 lbs. fat, 11.75 lbs. fat, 11.75 lbs. butter. 4. Lakewood, 17296, 5y. 1m. 11d.; 47.6 lbs. fat, 11.72 lbs. fat, 11.72 lbs. butter. 5. Lakewood, 17296, 5y. 1m. 11d.; 47.6 lbs. fat, 11.72 lbs. fat, 11.72 lbs. butter. 6. 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# CALDWELL'S

## Raise Calves Without Milk

Caldwell's Calf Meal enables you to sell your whole milk, yet raise as good or better calves. Tests prove it without an equal for "weaning-up" purposes.

# CALDWELL'S

## Calf Meal

Is rich in protein and furnishes a complete substitute for whole milk. Analysis shows Protein 15 to 20%, Fat 7 to 10%. The high quality ingredients are guaranteed to the Government and Libased, Wheat, Oat, Corn, Locust Bean, Pea and Molasses Meal in correct proportions to ensure best results.

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## "They Look Good to Us!"

Did you ever notice what the daughters of Pontiac Herms are doing? We have 18 of them that we must breed to something else. We might consider an offer for this grand old bull. He is as hale and hearty as ever at 10 years of age. Write to us at once.

E. B. MALLORY, Bay Side Stock Farm, BELLEVILLE, ONT.

## AVONDALE HOLSTEIN BULLS

SIX BULLS 8 to 12 months from high record dams and sired by our KING PONTIAC and PIETIE (35.60 lb. dam) bulls. We are offering bargains to make room for our new arrivals, and are selling for several younger ones from dams with 27 to 37 lbs.—two sired by MAY ECHO SYLVIA'S GREAT SON. Address—

H. LYNN, Avondale Farm, R.R. No. 3, BROCKVILLE, Ont.

## VILLA VIEW HIGH-TESTING HOLSTEINS

Now is the time to buy a son sired by King Segis Alacrita Calamity; the \$2,000 35-lb. show bull, sired by the \$50,000 bull. Only three youngsters, three months old to offer, at prices that should move them quickly. Do you know bred to King. We also have for sale one bull ready for service. Dam, Daisy of Netherlands No. 100, 15.61 at 2 yrs. Sire, King Segis Walker; his 5 nearest from our station.

ARBOGAST BROS.

SEBRINGVILLE

ONTARIO.

**LAKEVIEW STOCK FARM, BRONTE, ONT.** Breeders of high-offer for sale Choice Young Bulls of various ages, all sons or Grand-sons of Her, latest Can. Cham., 20 dy, butter cow, 8 mo. after calving, and is a half-bro to L. Dutch, Artin, Can. Champ, 3 yr. old butter (34.56) lb. butter in 7 days. Terms to suit purchaser.

E. F. OBLER, Proprietor.

T. A. DAWSON, Manager.

## SIRES READY FOR SERVICE

To-day we are offering several good quality sires ready for work. One of these is out of a sister of Hot Leo Egan (18.2 at 5 yrs.); a daughter of the 18, and according to quality. Write us about your needs. We have also some very fine young sires from record dams. They are sired on by the Leavens Furtelle great herd sire, King Segis Alacrita Spofford, the sire for service but they are open to your purchase if you are seeking the best in Holstein blood.

JAB A. CASKEY,

MADOC, ONT.

## LYNDALE HOLSTEINS

Bulls from 9 mos. to 12 mos. old; some sired by "King Urns," others by "King Pontiac Artis Canada"; all from R. M. dams. Also a grandson of "tace."

BROWN BROS.

LYN, ONT.

## Clear Spring Farm Holsteins

We are now offering two bulls ready for service, 12 and 13 months old, sired by Sir Floyd Korndyke (1629). Grand-son of Nator DeKok 4th, 794 lbs. milk 7, test, one, Lady Waldorf DeKok 3rd (2318) making 47,483 lbs. as a mature cow. Her dam has a record of 38.39, and her sister 35.23, as Junior 17-month old; the other, Rose Marling DeKok (2776) making 16,575 lbs. as a two-year-old. Also a few young cows due to freshen in March and April and very priced very reasonable for quick sale. Visit us, or write, (1 mile from C. P. Station).

J. C. JAKES,

Clear Spring Farm,

MERRICKVILLE, ONT.

## "Correspondence Solicited"

"Drop us a line" giving your address and age at nearest birthday, and we will send you a complete Life Insurance Prospectus indicating the special plan most suitable to one at your time of life.

We have studied every phase of the life insurance question, and will be glad to give you the benefit of a long experience. There will be absolutely no obligation resting on you to act upon any of our suggestions.

If you have dependents who would be in need in the event of your death, you require life insurance, or rather they require that your life should be insured.

Our aim is to furnish the largest amount of insurance at the lowest possible cost.

## The Mutual Life

Assurance Company of Canada  
Waterloo, Ontario

### THE W. S. SHEARER SALE.

THIS sale of pure bred Holsteins of W. S. Shearer, Listowel, was a decided success. Twenty animals were disposed of by C. F. Yandell, Auctioneer, and L. H. Lipsett, Stratfordville, Sales Manager, in a very little over an hour at an average price of \$143.38.

Burnside Tidy Korndyke, 3 yrs., \$115; Christie Grange, 5 yrs., \$105; Princess Grotel De Koll, 4 yrs., \$175; Daisy Grotel De Koll, 3 yrs., \$180; Ploesie De Koll, 4 yrs., \$185; Roseland Countess Josephine, 4 yrs., \$175; Roxey of Roseland, 4 yrs., \$145; Georgia Grange, 2 yrs., \$215; Dutchland Grange, 2 yrs., \$115; Listowel Grange, 2 yrs., \$115; Marie Marcella, 1 yr., \$170; Hannah Grange, 1 yr., \$195; Violet Grange, 1 yr., 2 mo., \$100; Harriet Grange, heifer calf, \$95; Mercena Grange, heifer calf, \$60; Majorie Grange, heifer calf, \$60; Rosarden Lad, 1 yr. old bull, \$115.

### SALE DATES CLAIMED.

Dispersion sale of registered Holsteins, Elias Ruby, Tavistock, March 5. Oxford District Holsteins Breeders' Club, March 15.—W. B. Thompson, R. H. No. 7, Woodstock, Sec.-Treas.

The Belleville Breeders' annual sale of Holsteins at Belleville, March 30. Allison Bros., Chertseyville, sale of Holsteins, April 5. Complete dispersion sale of 100 head of pure bred Holsteins, May 2.—W. C. Stevens, Phillipsville. The annual sale of Holsteins at Avondale Farm, Brockville, will be held May 17. Brockville District Club, sale of Holsteins, about 75 head, May 18.—G. A. Gilroy, Secretary.

## LAKESIDE AYRSHIRES

A select lot of young bulls, all sired by Auchanbar Sea Foam (Imp.) 5775 (8565), Grand Champion at both Quebec and Sherbrooke, from Record of Performance Dams. Write for catalogue.

Proprietor: GEO. H. MONTGOMERY, Dominion Express Bldg., Montreal.

Manager: D. MCARTHUR, Phillipsburg, Que.

## For Sale—A Fine Holstein Bull Calf

Dam doing extra good work in R.O.P. test. Sire, Ouyville Sir Teake Colantha, also two fine Canadian bred Clydevale Stallions and some fine Canadian bred registered Clydevale dams. Price reasonable.

MICHAEL A. ARBOGAST, Finview Stock Farm, R. R. 3, Stratford, Ont.

### KING SEGIS PONTIAC WAYNE

A fair individual, born Dec. 6, 1914. His dam, Elmdate Mabel, a 100-lb. 4-year-old, with 23 lbs. butter. His sire, King Segis Pontiac Duplicate, a son of R. M. HOLTYR.

PORT PERRY.

**RIVERSIDE HOLSTEINS** For Sale, Choice Young Bulls, sired by King Johannes Pontiac Korndyke, a grandson of Pontiac Korndyke, and a brother of Pontiac Lady Korndyke, 38.02 butter in 7 days, 156.92 lbs. in 30 days—was record when made. Also females bred to "King."

J. W. RICHARDSON,

GALEDONIA, ONT.

## KORNGOLD STOCK AND DAIRY FARM

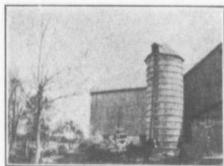
IMPROVED ENGLISH YORKSHIRES—Young Sow 4 months old; also a few Boars and Sows 2 months old.

F. J. McCALPIN, Korngold Stock Farm, GANANOQUE, ONT.



### Farming in Manitoulin W. G. Runnalls, Manitoulin Dist., Ont.

THE illustrations herewith show the barns and silos of W. O. Runnalls and N. A. Runnalls. The silos, which were built in 1914, are being filled again, using gasoline power, a six h.p. engine running a 10-inch Papec cutter and blowing it into the 35-foot silos at a fair rate. The Manitoulin District of Northern Ontario has been considered doubtful as a corn growing part of the province, but during the past three or four years competitions in growing



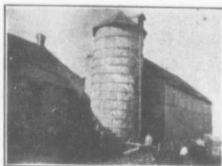
Another Manitoulin Silo Filling.

This silo, too, is 12 by 35 feet and is a source of both pleasure and profit to its owner, N. A. Runnelle, Manitoulin Dist., Ont.

an acre of corn have proven that it can be grown very successfully, and yields from 12 to 24 tons per acre as the result of these trials.

There have been few silos in the district, only two or three of cement, put up about six or seven years ago, but our farmers are beginning to realize the advantage of silage as a cheap feed to help carry over the stock during the long winters, and as a result quite a number are planning to erect silos soon. In the township of Barrie Isand, there were four built last year and four more this season, and three in the adjoining township of Gordon, also six in the township of Robinson.

Some are stave silos, several others



A Silo Filling on Barrie Island.

This silo, owned by W. O. Runnelle, is 12 x 35 feet, and this season was filled with a good crop of White Cap Yellow Dent. Silos are coming into their own in the Manitoulin District of Ontario.

scantling frame, lath and plastered inside, and either plaster or lumber outside, while a number of others are made with three-ply of elm for hoops and two-ply lumber inside. All are giving good satisfaction so far.

The Manitoulin is a splendid cattle and sheep raising part of the province, there being large sections of rough lands which produce good pasture at almost no cost to the settlers. Many farmers have from 30 to 70 sheep, and some with 100; the profits are very satisfactory in these times of good prices. There is not very much dairying yet as there has been no creameries running for some years. Beef cattle have been taking the lead, but some have been trying the Holsteins with varying success.

Hogs like to wallow in the mud, but it does not necessarily follow that a hog wallow is a good thing to have. Lots of shade is to be preferred.

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GALVANIZED IRON VENTILATOR

SELF-SUPPORTING SECTION-BUILT ROOF, PATENT ROOFING

OBLIQUE-BUILT WINDOW OR HATCH THROWS LIGHT DOWN INTO SILO, FITS CLOSELY AND OFFERS NO WIND RESISTANCE

HOOPS 5/8 IN. IRON RUN THROUGH SPECIAL BENDING MACHINE

MALLEABLE IRON TIGHTENERS UNBREAKABLE

8-IN. THREAD HEXAGON NUTS

DOOR FRAME BEVELLED AND RABBETED TO FIT DOORS

HEAVY 3x6 DRESSED CROSS BEAM, GIVING MOST DURABLE AND AIR-TIGHT DOOR

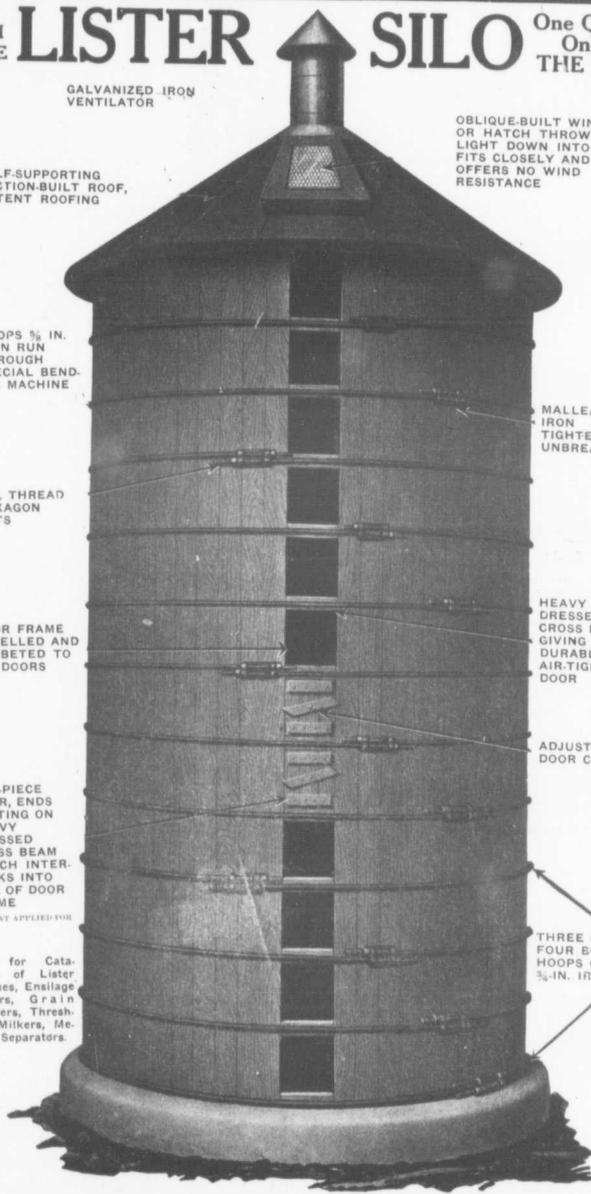
ADJUSTABLE DOOR CLAMP

ONE-PIECE DOOR, ENDS RESTING ON HEAVY DRESSED CROSS BEAM WHICH INTERLOCKS INTO SIDE OF DOOR FRAME

PATENT APPLIED FOR

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THREE OR FOUR BOTTOM HOOPS OF 1/2-IN. IRON



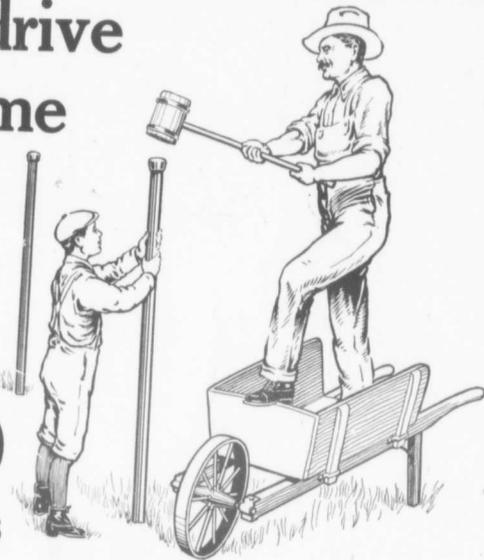
Write for particulars to Department K

## R. A. LISTER & COMPANY, Limited

58-60 Stewart Street TORONTO, ONT.

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If we could drive  
our point home  
as easily  
as you  
can drive  
**STANDARD**  
Steel Tube Fence Posts



you would sell yourself these great  
improvements in farm fence building

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is "Cut out the waste in farm fence building." Why dig a hole three times too big for a wooden post, then stick the post in, fill up the hole and have the post rot to pieces in a year or so and have to go through the whole performance again? Why do it? Especially when the new way is so much better. With Standard Steel Tube Fence Posts a line is driven as easily as though they were tent pegs. Once in, they are anchored for all time. They hold tight. They can't wobble and they won't sag. They can't burn and of course never breed crop-ruining pests like the cedar posts. Ask the men who use them. They'll tell you fence building is cheaper, easier and a better job when you use STANDARD STEEL TUBE FENCE POSTS AND WIRE FENCING.

### Our Prices:

Sometimes we think fence advertisers in general must know very little about farmers. Everyone claims "The lowest prices"—as though that meant anything to a farmer who is on to his business. We believe. Figures talk louder than words. We believe you believe the same. We therefore ask you to get our price list and let us figure it out together, but without any generalities. Let's get down to brass tacks on the price question. Just send us the coupon and let us quote YOU. That's fair, isn't it?

### Our Guarantee:

Guarantees count a lot this year—more than ever before. Steel is way up. Galvanizing materials are sky-high. The tendency is to skimp. Don't buy skimped fence. It's the most expensive there is, no matter what the price. Our usual guarantee goes this year as always before—"FULL GOVERNMENT STANDARD NO. 2 GAUGE WIRE PERFECT GALVANIZING STANDARD EXCLUSIVE KNOT—"THE TIE THAT BINDS."

### Your Move:

We ask you to send the coupon for our catalogue and fence prices. Compare them. Compare the goods. Compare the guarantee. Then give your order to the firm that deserves it. Fair and square, isn't it? All we ask is the return of the coupon, then it is up to you. Tear it off, sign it and mail it to-day, to the

**Standard Tube & Fence Co., Ltd.**  
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We invented the knot that is now being used on practically all farm fence. Our present device has as many advantages over the imitation, as the original invention had over the old method. We get a gradual curve to our knot that protects the galvanizing from injury. The knot itself holds like an English bull-dog.

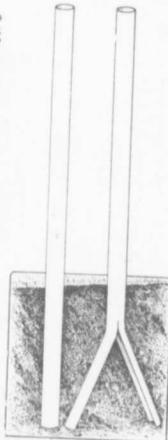


The Standard Steel Post Hook. This illustration shows perfectly how tight and even the fence wire is held. With Tube Posts and these Hooks you can cut out the worst part of fence building—hole-digging and staple-driving.

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