

FARM and DAIRY

Rural Home

TORONTO, ONT.

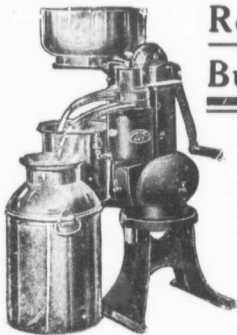
Orchard and Garden Number

March 14, 1917

Comm. of Conservation
Jan 15
Asst. Chairman

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Rome Was Not Built in a Day



That is a true if a somewhat hoary proverb. In all the realms of science, art and invention, nothing has ever been accomplished by any "sudden flash" of genius, but rather by the system of patient plodding and experiment, and the application of the wise man's principle of "line upon line, precept upon precept, here a little, there a little." That is the story of the development of the cream separator and the milking machine which finds its climax in the perfected

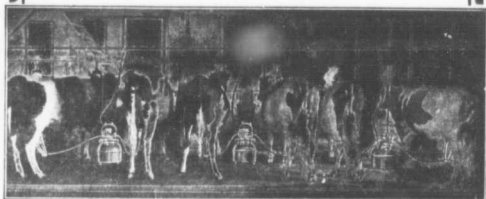
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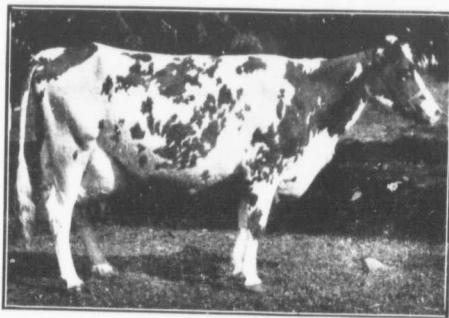
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Grandview Rose, a Great Ayrshire Matron in a B.C. Herd.

She is owned by Shannon Brothers, Cloverdale, B.C., and is the first Ayrshire cow in Canada with an official record of over 20,000 lbs. milk and 1,000 lbs. butter. Her record is 21,423 lbs. milk and 900 lbs. fat. This is equal to 23,000 lbs. milk record under no-handing rule. She was five years and 22 days old at the commencement of her test, and completed her record on January 31st, 1917.

The War on Orchard Pests

W. E. Biggar, in The Canadian Horticulturist

THERE never has been a year when disease has caused such loss, especially to the apple growers, as during the season of 1916, nor has there ever been a season when it has been so positively and clearly proven that it pays to spray. Practically all apple orchards where spraying was neglected were worthless, so far as this season's crop of fruit was concerned.

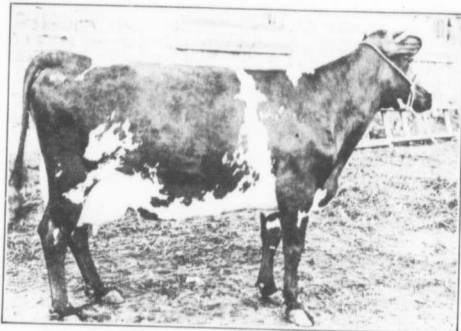
After careful observation I am convinced that the orchard that does not have to fight off disease, but has been relieved from disease by spraying, will be more vigorous and more likely to produce a crop next season than the unsprayed orchard will.

What means are there of controlling the pest of our orchards, aside from what the fruit grower can do? Our native birds are our best friends, and do more in controlling insect pests of the orchards than the average person realizes. It would be difficult to grow fruit successfully without the aid of our birds, even though the fruit grower put up a most determined fight to save his crop from destruction. I believe our birds destroy nearly one-half our insect pests. It is necessary that we do all that we can to protect our friends the birds from their enemies.

The enemies of our native birds are the English sparrow and the cat. Years ago there were great numbers of cave sparrows around every farmer's barns in this section. Their nests were so thick as to nearly touch each other, as they were built under the eaves of the barn. For some time I have not seen one of these birds. Where did they go? The English sparrow came and took possession of their nests and drove the cave sparrow away. Three years after the English sparrow came to my father's barns the cave sparrow had disappeared. One seldom finds the blue bird nesting where once they were numerous. The English sparrow has taken possession of their nests.

It is estimated that each cat devours at least fifty birds a year. If the boys from the towns and villages would shoulder their guns and go hunting cats, instead of shooting our birds, they would be doing a kindness to the farmer and fruit grower.

I would suggest that a tax be put on cats, the same as there is on dogs. It has been proven that children will contract diphtheria from cats. This alone should be sufficient reason for getting rid of them. Let me urge upon every fruit grower not to neglect spraying.



Milkmaid of Orkney—A 1916 Silver Cup Winner.

Mr. Harmon McPherson, Copetown, Ont., is the owner of this grand Ayrshire cow, which is the winning Ayrshire in the B. O. test in the 4-year old class. She has a record of 14,882 lbs. milk and 626 lbs. of fat and scored 14,121 points in the competition. She makes a new butter fat record by an increase of 4 lbs. This record wins for her a handsome silver cup which was presented to her owner at the Ayrshire Breeders' Annual Meeting held in Montreal last week.



FARM AND DAIRY & RURAL HOME



We Welcome Practical Progressive Ideals.

Trade increases the wealth and glory of a country; but its real strength and stamina are to be looked for among the cultivators of the land.—Lord Chatham

VOL. XXXVI

TORONTO, ONT., MARCH 1, 1917

No. 9

Renewing the Youth of the Farmer's Apple Orchard*

How the Neglected, Run-Down Orchard May Be Renovated—Instances in Which It Was Done—the Results

THE average farmer's apple orchard in Ontario varies in size from 25 to 200 trees, covering an area of from one-half to five acres, and consists of trees of practically all varieties grown for home and export use. In age the trees may vary from 10 to 60 years. In the majority of cases these orchards, for some years, have been sadly neglected and abandoned. They are badly in need of pruning, some trees having large scaffold branches with no fruit borne closer to the ground than 20 feet. In many instances the trees appear to have been butchered rather than pruned. Too many of the trees, which are covered with moss and rough, scurfy bark, are never sprayed, and as a consequence, are dying from the San Jose scale and oyster shell bark louse, and the fruit is affected with various diseases and injurious insects. The majority are in sod and are used as a paddock or pasture, where the stock may run at will; they may receive an occasional scant dressing of manure, usually piled around the trunk of the tree, and in many cases the farmer is debating whether he had better cut the trees down for fire-wood in order to utilize the land for a more paying crop.

Many of these old neglected orchards have reached such an age and condition that it would scarcely be profitable to attempt to renovate them, and perhaps the wisest plan in such cases would be to plant young trees. In many instances, however, they are capable of producing profitable returns if properly cared for to bring them back into good condition.

To prove that these neglected and abandoned orchards are profitable let me in a few words give the results of two demonstration orchards which I had charge of in the Counties of Northumberland and Durham in 1911, 1912 and 1913. These orchards were totally neglected as to pruning, cultivation and fertilization, and had never been sprayed. They were taken in hand, and during the three-year period were properly pruned, sprayed, cultivated and fertilized. Cover crops were sown. Accurate records were kept of all expenses and receipts, and the following is a summarized statement for the two orchards:

Durham County—72 trees, clay loam soil.					
	Yield	Selling Price.	Cost	Net Profit.	
	Hbls.	per Acre.	per A.	per A.	
1911	233	\$478.70	\$90.30	\$388.40	
1912	174	553.26	87.83	465.43	
1913	258	695.50	78.97	616.53	
Northumberland County—117 trees, sandy loam soil.					
	Yield	Selling Price.	Cost	Net Profit.	
	Hbls.	per Acre.	per A.	per A.	
1911	211	\$745.56	\$81.04	\$664.52	
1912	331 1/2	440.80	71.28	369.52	
1913	334	483.58	69.85	413.73	

This is an average of \$151.08 for the Durham county orchard on a clay loam soil and an aver-

R. S. DUNCAN, B.S.A., District Representative, Durham Co., Ont.

age of \$150.46 for the sandy loam soil in Northumberland county; or an average of \$170.77 per year in the two orchards for a period of three years.

Renovating An Old Orchard.

Assuming, then, that the farmer intends to renovate his orchard in the spring, perhaps the first operation he should perform would be pruning. There are no hard and fast rules to be laid

down as to pruning, and the operator must rely on his own judgment. There are a few general principles which the pruner must bear in mind, but each variety of tree has some general characteristics which must be considered. Speaking generally, the pruner must have some ideal in mind and prune always with that ideal in view. It is desirable to cut out all branches which interfere with each other and all weak limbs which might leave weak crotches. The top should be thinned out to permit of free air circulation and the admission of sunlight to assist in coloring the fruit. The results desired cannot be accomplished in one year, for in many cases the first essential is to make the tree produce new wood growth. The rule that summer pruning tends to the formation of fruit buds and spring pruning is conducive to wood growth must be borne in mind. The first year the trees should not be pruned too severely. The dead branches are cut out and the top thinned. In many cases it will be necessary to head back or "dehorn" the trees in order to induce new wood growth on the lower branches. This is especially true of trees with long bare poles or branches. This dehorning of from five to 12 feet will give the tree a more spreading effect, and in a few years fruit will be borne on the lower and new shoots which are induced to grow, and which can be used to almost completely transform the tree. In pruning, and where large amounts of wood should be cut out, it is advisable to remove only the dead wood and partially dehorn the first year, and then in the second and third years to complete the operation. All cuts of two inches or over in diameter should be painted with white lead and oil in order to prevent the entrance of disease-producing spores. Perhaps the trees will be moss-grown and covered with old rough, scaly bark. This should be scraped off with a hoe in the early spring in order to facilitate spraying operations.

Spraying Must Be Done.

Recent experiments and investigations have proved conclusively that practically all the orchard pests and fungous diseases can be controlled by proper and thorough spraying. In fact, spraying is absolutely essential to the health and vigor of the tree and to the production of clean fruit. Many regard the work as disagreeable and expensive, hard to understand and difficult to accomplish. A few general principles are easy to learn. It is not expensive, considering results. Spraying is an insurance—an investment. It pays well.

For the average farmer's apple orchard a good hand pump, fitted with one line of hose of from 20 to 30 feet, with two angle nozzles of the "Friend" type on a "Y," with a 10-foot bamboo spraying rod, ought to do efficient work. This



AWAKING.

WHEN the snow lingers on the ground in broken patches and grass looks up fresh and green beneath as it slowly disappears, it still seems a far cry to spring flowers and seed growing, for the alternate freezing and thawing is very trying to the garden temper, especially that of an impulsive-optimistic amateur.

At night there is no sign of change; the skies are dark, the air quite chill, the hotbed, closed too long, will grow spindling for want of air; some of them indeed already touch the glass and need all their strength to battle with the elements. But after a night is over, we awake some morning to find a marvellous change; the sun beams with a softened tone, there is a haziness in the atmosphere, the patches of snow have disappeared—"So, the winter is past." Somewhere in the distance a voice is singing:

"Where is the winter?
Under the snow,
Where is the snow?
Gone long, long ago."

And it certainly seems afar in the past that we had seen those patches of snow and felt the chill breeze, for there is an invitation in the very air to explore and enjoy and work in the fascinating environment of a Canadian garden.—Mrs. Annie L. Jack.

*An address delivered at the annual meeting of the Ontario Agricultural and Experimental Union, O.A.C., Guelph, January 10.

FARM AND DAIRY

March 1, 1917.

suffit costs about \$25 and will pay for itself in one year. If a two-man pump is used two lines of hose can be used to good advantage. For five acres or more a good power outfit is almost essential. In any case the pump should be placed on a wagon or cart, not on a stoebach, and a tower attachment should be rigged for reaching tall trees.

Briefly stated, one should spray with the wind and do as much of the tree as possible, spraying the other side of the tree when the wind changes. Aim to cover every portion of the tree, though don't waste the liquid. A good sized tree of 30 years of age requires from three to eight gallons of spray material for each spraying.

In regard to the cost of spraying let me cite the case of the demonstration orchard to which reference has been made. Accurate figures were kept, which showed that for labor and spray material the cost of spraying varied from 33% to 55% cents per tree per year for a three-year period.

Summary of Spraying Rules.

Every orchard should be sprayed as follows each season:

1. Just before or as the leaf buds are bursting. Spray with lime-sulphur, commercial or homemade, diluted one to nine or ten of water. No poison is necessary. This application controls San Jose scale, oyster shell bark louse, blister mite, and helps to ward off cankers and apple scab.

2. Just before or as the blossoms burst, or as pink begins to show in the leaves. Use lime-sul-

phur one to 35, commercial strength or Bordeaux mixture (4-4-4) and two pounds of arsenate of lead with 40 gallons of mixture. This application is to destroy bud moths, feeding caterpillars, casebearers, canker worms. It also helps to control apple scab and cankers.

3. Immediately after the blossoms fall and before the calyx cup closes. Use lime-sulphur, commercial strength, one to 40, or Bordeaux mixture (3-3-40) strength, with two pounds of arsenate of lead to 40 gallons of the mixture. This controls codling worms, plum curculio and apple scab.

In damp seasons it might be advisable to spray a fourth time, two weeks later, with the same mixture given for the third spraying.

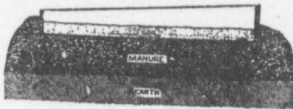
Keep the Soil Fertile.

To maintain the fertility of the orchard it should be manured each year. The quantities to apply per acre will vary according to the condition of the soil. Where it is possible to obtain barnyard manure a dressing of say five to ten tons an acre each year should give good results. The manure should not be piled up around the trunk of the trees. It should be distributed evenly over the ground, and the feeding roots of the tree extend out as far as the branches. The use of artificial fertilizers should be undertaken very cautiously. Their best results are obtained when used to supplement the farmyard manure and when used in conjunction with a leguminous cover crop and thorough cultivation.

Early in the spring the orchard should be

(Continued on page 8.)

the temperature up. The location should be on the sunny side of a shelter. A quantity of horse manure that has begun to heat, and that has been turned two or three times to ensure thorough mixing, is placed in a heap of the proper width and length and about two feet deep, being put in in layers thoroughly tramped. On top of this the frame is placed, the top sloping to the south about an inch to the foot. It is about a foot deep and is banked on the outside with



A Simple Form of Hotbed.

When a pit has been dug in this fall this is the easiest type to make.

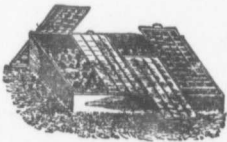
manure to provide additional heat. About six inches of good garden earth is then put in and the sash are placed in position on the top. The bed is then left for four or five days to allow the gases to escape; the sash being lifted a couple of inches at one end to allow for this. The high temperature may induce too rapid growth, but this may be checked by keeping the soil comparatively dry. Ventilation is the most important point to watch in the care of the hot bed, and experience is necessary to know how to ventilate. The sash must be raised every day; on cold, windy days, only about the thickness of a lath, but on warmer days they may be propped up with a block so that the air will circulate freely. The hot bed is used for growing the same plants as the cold frames, but it will bring them along earlier in the season. It is especially valuable for starting cabbage, tomato, celery, cauliflower and other plants, which are later transplanted.

The Construction of Cold Frames and Hot Beds

THERE are two classes of simple structures that can be utilized for forwarding the growth of garden crops in the spring—cold frames and hot beds. Of these, the cold frame is the simplest. It utilizes no heat except that derived from the sun. It protects young, tender growing plants from the cold weather and strong winds, being used to harden them off before they are transplanted to the open, to which they should not be removed until they are able to stand ordinary temperatures such as are likely to occur after transplanting time. The hot bed is like the cold frame, except that artificial heat is supplied from heating manure under the soil. Its use is to serve as a forcer. By its means some vegetables can be given a start of from four to six weeks over what they would have if planted ordinarily in the garden.

How to Build a Cold Frame.

A cold frame should be so located as to be well protected on the north and west by buildings, trees or a board fence. Ordinary storm windows are very satisfactory for covering the frame. For this purpose they are not generally needed until they can be comfortably dispensed with from the windows for the season. When they are used the size of the frame is regulated by them. Its width depends on the length of the sash, and its length will be such as to accommodate the number of sash required when placed side by side. The north side of the frame consists of a 12-inch board, and the south side of a six-inch board of the same length. Stout stakes are driven in at the corners to support these and the sloping end pieces, which are secured in place by nails. The frame is set about five inches into the ground and the earth



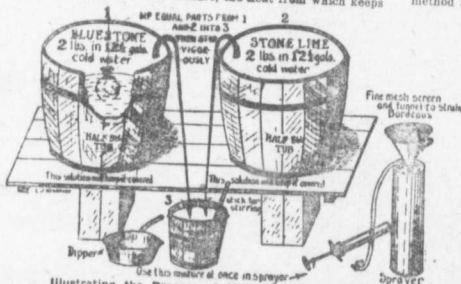
An Easily Made Cold Frame.

thrown out to the bottom of the boards and banked around the outside. The earth used for the seed bed should be the best garden soil available. It is well to have the bed slope slightly toward the south. The sash are held in position by small cleats on the outside of the frame, so that they can be readily removed. The frame is now ready for planting.

On severe nights additional protection from frost can be gained by covering the glass with mats or straw. When the weather is warm enough the sash may be removed in the daytime. Later in the season, frames covered with cotton may be substituted for the sash, as they provide better ventilation. Watering should be done frequently and ventilation carefully looked after. The cold frame is principally used for forwarding lettuce and other early crops, and later for starting melons, cucumbers and other tender plants.

How to Make a Hot Bed.

Hot beds resemble cold frames, but are built upon a bed of manure, the heat from which keeps



Illustrating the Process of Making Bordeaux Mixture.

How to Make Bordeaux

Where Only a Small Amount is Needed

SAW a 50-gallon barrel (vinegar or oil) and make two 25-gallon tubs.

Put two pounds of bluestone (called blue vitriol or copper sulphate) in a cloth sack and hang over night in one-half a tub of water (12½ gallons). Bluestone dissolves slowly. Hang it the night before so that the sack is just under the surface of the water.

Make a lime paste by slaking two pounds of fresh stone lime in one-half pail of water. Stir this into the half tub (12½ gallons) of cold water. Hydrated lime that comes in sacks will do, but is not so good. Use two and one-half to three pounds of hydrated if stone lime cannot be had. Then follow directions of the picture. This method makes 25 gallons of spray.

Where much Bordeaux is needed, use method of making strong stock solution by dissolving 25 pounds of bluestone in 25 gallons of water. Make a milk of lime, using 25 pounds stone lime to 25 gallons of water. These stocks will keep. Then one gallon of stock carries one pound of bluestone (or one pound of lime). To make 100 gallons of spray, dilute eight gallons of stock bluestone to 50 gallons, and eight gallons of stock lime to 50 gallons and pour together. Bordeaux may be tested to determine if enough lime is present by means of blue litmus paper. If blue litmus turns red, add more lime. With good lime, using the amounts given, no test is needed.



in an Orchard that Lived up to its Reputation Last Year, Yielding 1,300 bbls. from 365 Trees. In 1912 Mr. Kenneth Cameron, Bruce Co., Ont., won first prize of \$75 in the Ontario orchard competition, District No. 5. This year he packed 60 bbls. fancy fruit. Of No. 1 quality his apples graded as follows: Talmay Sweet, 100 per cent; Ontario, 100; Baldwin, 99; Ben Davis, 99; and Spies, 70 per cent. Mr. Cameron keeps his orchard in grass.

Planning and Planting the Home Garden*

A. H. McLENNAN, O.A.C., Guelph.

UNTIL the past two years few people would take the trouble of planting and caring for a garden. Even now many farmers neglect their opportunity of having a variety of fresh vegetables on their tables, preferring, in many cases, to buy rather than take the trouble of growing them. If they would remember that vegetables in 24 hours lose fifty per cent. of their quality, many of them would grow their own. Vegetables taken from the garden in the cool of the morning and prepared for the noon-day meal would soon convince the most skeptical.

The home garden may be divided into two classes, city and country. With the former, on account of lack of space, the gardener must use the most intensive methods, getting two or more crops off the same piece of ground in a season. In the country the land is more plentiful and the gardener need not use intensive methods. The rows should be at least 30 inches apart so as to permit of horse cultivation, but in the city all will be hand work. The first thing to do is to sit down and make a plan of the garden on paper. Many more gardens would be planted if definite plans were made beforehand, and with this definite information, the seed obtained therefor. Planning a garden at the time of planting, unless one is an expert gardener, has a tendency to discourage. It is well, after we have figured out how much space we can give to each crop, to order the seeds. This should be done early in any case, and more especially this year for the reason that the seed crop of many of the vegetables is very short, and the quality will be only fair. The one who orders early will stand a much better chance of getting his selections and will also get a higher grade of vitality in his seed. Many of the seedmen this year are cutting down on the number of catalogues which they are sending out, and for this reason it is necessary that one send in his name early to obtain one.

The Use of the Hotbed.

Plants like tomatoes, peppers, egg plants, melon and early cabbage are best started in the hotbeds, and for this purpose small gardeners are advised to use dirt bands and paper pots. The use of these two tends to keep the root system of the young plants within a given definite area, and when it is ready for planting we have a ball of earth attached to the roots; owing to this the

young plants feel but little the effect of transplanting, taking hold quickly on the ground, and thus gaining much valuable time.

The Use of Fertilizers.

All gardens should be well fertilized. The use of manure is very necessary because of the humus it adds to the soil and the development of the soil's physical condition. Many vegetables, however, require certain commercial fertilizers to assist their growth, for example, nitrate of soda on lettuce, and phosphoric acid on tomatoes. The preparation for gardens should be very thorough. A little extra lime in the spring of the year will often give a very decided increase in yield from the garden. At that time, although work may be pressing, an extra cultivation or two destroys many weeds and leaves the soil in better physical condition; it will yield more, and will be much more pleasant to work in.

In gardening there are certain rules that can be followed with advantage. It is well to plant the seeds twice as deep as their diameter. The soil should be firmed carefully, especially in warm weather. After firming, the soil should be raked carefully to produce a mulch; then it should be

well watered, but with as fine a spray as possible, so that there will be no trouble from packing the soil. It is also well to study the shade and sun requirements of the plant. Plants like lettuce require cool conditions, and if we are to produce head lettuce in the summer, it should be in the shade. Plants like cucumbers, melons and tomatoes require heat for their best development.

After the planting the two main things to take heed of are careful cultivation, as often as appears necessary, and careful watering. Most plants are, to a large extent, made up of water, and in order to be of the highest quality they require constant supply of water in the soil. This does not mean that they should be kept soggy or wet, as that condition is as bad as having no water at all. A constant supply, carefully applied, will more than pay for the extra trouble of its application.

In harvesting from the garden, it is always well to gather the crop in the cool of the early morning, unless they are wet with dew. There is an added quality to vegetables at that period of the day, which more than makes up for any trouble of gathering them as such an early hour.

Spraying Hints

MEASURE your spray tank. Too many people think they have a 100-gallon spray tank, when it holds only 80 imperial gallons.

Sixteen cents sprays a barrel of apples four times.

Spraying increases the quantity of apples at least 80 per cent.

Spraying increases the value per barrel of apples, tree run, by 70 per cent.

Spraying causes the foliage to remain healthy and the leaves to be retained late in the fall. The blossom of the following year depends largely on the tree retaining its leaves until well into November.

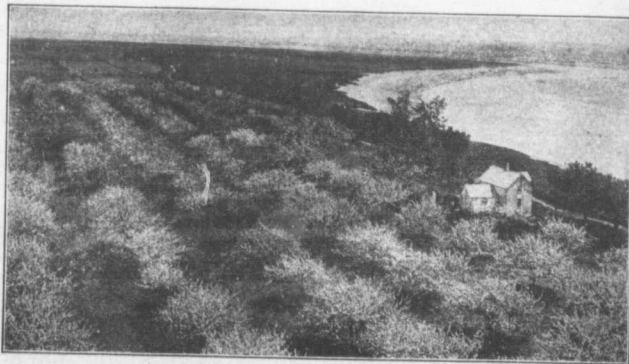
Do not use too strong a spray mixture.

Do not use arsenate of lime alone. Use it with lime-sulphur or Bordeaux mixture.

When using a poison alone, use lead arsenate.

Unless the orchardist has some permanent hay land on his farm, he must buy much of the feed for live stock, or carry on a double line of farming, requiring extra capital, extra labor and supervision.

The apple grower who has even a fair sized orchard must provide himself with a full line of orchard equipment in order to do his work properly.



An Apple Orchard in Bloom in the Land of Evangeline.

Instead of the "forest primeval" and the "murmuring pines and the hemlocks" flourishing orchards are now the feature of Kings County, N.S.

Photo on Willow Bank Farm, the home of R. S. Starr.

*From an address at the Experimental Union meeting, Guelph, last January.

Potatoes---A Crop the Ontario Farmer Neglects

The Tariff Drove Him Out of Them—High Prices Should Lure Him Back Again

ANDREW ELLIOTT, WATERLOO CO., ONT.

THE farmer is becoming more and more of a business man. He now refuses to grow crops that too often he has been forced to sell at a loss. This is true of the potato crop. Only a few years ago potatoes were a drug on the market at 15 to 20 cents a bag, and thousands of bushels were wasted or fed to stock. He was shut out from the only outside market by an almost prohibitive tariff, and although that obstacle has been removed, he has not returned to the growing of a crop that gave such unsatisfactory results.

For years Ontario has been a large importer of this most necessary staple. We import from British Columbia and the prairie provinces. From these, however, we can only import when we have famine prices. We also import largely from the Maritime provinces especially Carleton county in New Brunswick, which is not far from Aroostook Co., Maine, the largest potato county in the United States, which has produced over 20,000,000 bushels in a single year. The soil of these two counties is of the same character, composed largely of sand and broken stone, with a small mixture of clay. Fertilizers are used. The Carleton county farmer takes a piece of old sod, and with good cultivation produces from 150 to 400 bushels an acre. We also get potatoes from Nova Scotia and Prince Edward Island.

The Potato the Market Demands.
With a market for our surplus stock in the United States and a growing local demand, it is a mistake for farmers to longer neglect so important a crop. A large part of Ontario is ideal for growing potatoes, the only drawback being a shortage of men. The market demands a medium sized, smooth potato, the favorite for the eastern market being the Irish Cobbler for the early use and the Green Mountain as a late variety. The Cobbler is a vigorous grower and sufficiently

early, while the Green Mountain is a smooth potato with shallow eyes, on that account being much in demand for hotel and restaurant trade, where the peeling is done by machinery. Our agricultural experts tell us that seed potatoes, which have been dug some time before ripening, give the best results; that during the last week or 10 days of their life they largely develop the starch that furnishes food for the plant in its early life. In this regard, however, I differ from them, believing that all crops produced for seed should be thoroughly ripened.

Shall we plant small potatoes? That depends. If I find a hill that gives half a dozen or so large marketable potatoes, and has perhaps as many from the size of a pigeon's egg up, I would plant the smaller ones just as soon as cuts from the larger ones. They have been crowded out and not allowed to grow, but they have the large potato instinct. But if I find a hill with only one or two large potatoes and all the rest small, I know that they have the small potato instinct, and I would not plant them. Perhaps three-quarters of the small potatoes come from those hills that have no or few marketable potatoes, and so they should not be planted. Reject also all potatoes that tend to run to a point at the end, as this is an unfailing indication that they are running out or reverting to the original type.

Cutting and Planting.

If you take a potato and half it you will find that there is a centre stem, and that every eye is clearly connected with that stem just as a branch is with the parent stalk. The set should be cut so as not to sever the eye from the centre stalk, until well down. Cutting very small should be avoided, and each set should be as square and compact as possible.

Early potatoes should be planted shallow in



Harvesting "Hen-Fruit."

Poultry and orcharding go well together.



The Way They Roll Out in Alberta.

This crop yielded 1,486 bush. from a measured two-acre plot. There were scarcely any small ones among them. Photo on the farm of Hon. John Gordon, near Edmonton, Alta.

order to catch the heat, which gives them a quick start. Exposing the seed for a couple of weeks to light and heat will start a strong bud that will not easily rub off and that will bring the plant on earlier. It is well to plant later potatoes deeper, as they are then further from the scorching heat of summer. Ordinary scab can be prevented by treating seed with a formalin solution.

Strawberry Culture As Followed in the Clarkson District C. R. Terry, Peel Co., Ont.

SEVEN years ago I started to grow strawberries in the Clarkson district. It was my first experience in strawberry culture and I had to begin with a very weedy farm. I had to rely solely on the advice of my neighbors as to methods of cultivation, but have succeeded so well that now I devote practically all my time to the growing of strawberries.

I have planted strawberries on various kinds of soil, from the very dry to the very moist, but I have found that, after giving the same attention to the surface, we picked more berries in every case from land with quicksand subsoil. The plants in this subsoil will stand up better in dry weather and keep on bearing fruit where plants on other soils wilt. In the preparation of the soil I manure at the rate of about 25 tons to the acre. If at all possible I do all my plowing in the fall. Early in the spring I begin cultivation and keep the surface frequently stirred during the spring months.

The best time for setting out plants in this district is from May 15 to May 24. In the preparation of the land for planting, the soil is first cultivated thoroughly and then rolled to make it easier for planting. Plants are set from 18 to 24 inches apart in rows 42 inches apart. We always plant our rows with the aid of a line to get them straight, as this facilitates cultivation.

Immediately after planting, the patch is thoroughly cultivated. This is followed with the hoe to leave a fine mulch. The surface should always be kept loose. When the runners appear, we set them by hand to prevent the rows from spreading too much. All our berries are grown by the matted row system. We endeavor to have the plants at least three inches apart each way. It is well not to have plants too dense. Keep the cultivator going as late as possible. When the use of the hoe becomes impracticable, it is well to pull any stray weeds by hand. When hoeing



The Maritime Provinces Have Reaped a Rich Reward From Their 1916 Potato Crop.

—Photo in Kings Co., N.S.

during the summer, an effort is made to keep the soil up to the plants, to make a crown for the row. This prevents loss from ice during the winter.

Mulching the Plants.

We aim to cover the plants in the fall as soon as the ground is frozen solid. In many cases, on account of scarcity of labor, we are unable to cover them at this time, and so have to do this during the early part of March. If the covering has not been done in the fall, I prefer to cover just when the snow is nearly gone, rather than covering a lot of snow and having the fertilizer from the covering leach away. We use 16 tons of long, strawy manure to the acre for covering.

Do not be afraid of frost in the spring. We have found that if the first bloom freezes, another one will come on. If in an early spring the plants begin to grow through the covering, we go over the field with a fork and loosen the manure to prevent the smothering of the plants. After a couple of days the manure is removed from the plants, but left between the rows to act as a mulch and to prevent small weeds from growing. This also serves as a cushion upon which the pickers kneel during the harvesting season. Go after the weeds when they are young. If they get ahead of you and become large, do not pull them up at picking time. Otherwise you will allow air to get into the roots of the plants, which will cause a heavy loss in the crop. I have found it better at this season to merely cut off the weeds with a sickle.

It is not necessary to plow up a good patch of berries after one crop has been harvested. I usually take at least two, and very often three, crops of berries from a good patch. After we have finished picking the crop, I cut off the plants with a mower. These old plants are then raked off with a horse rake and burned. We plow a furrow on each side of the row, leaving the row but eight inches wide. The field is then rolled and cultivated. By this method I get almost as good results from my two and three-year-old patches as from those which have been newly set out.

White flies on house plants may be controlled by syringing the plants with "Nickotene." This is a commercial preparation which may be obtained from almost any seed firm. A half ounce bottle costs about twenty-five cents. Directions are given on the bottle. It is better not to use too strong a solution, and to spray every other day until the pests have been destroyed.

**Dust Spraying Orchards
It Takes One-Eighth the Usual Time**

Prof. Caesar, O.A.C., Guelph.

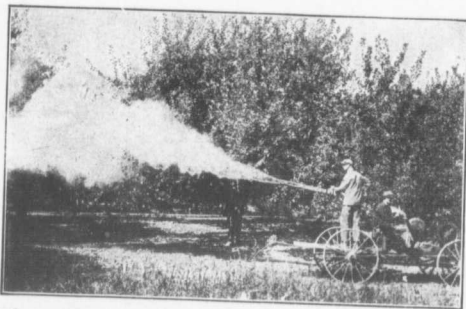
THE materials used in dusting fruit trees to control diseases and insects are 85 per cent. finely ground sulphur and 15 per cent. of the powdered form of arsenate of lead. Where there were no important insects to combat, the arsenate of lead is omitted, thus lessening the cost by a little more than half.

These substances are applied to the trees by

whereas large apple trees may require three pounds, or at least two and one-half. It takes some practice to determine when this amount is being used, but anybody can work it out for himself with a little care. On large trees it is easier to save material, and yet do a good job, if the lever is so set as to allow only a comparatively small amount of dust to come out, and if the rate of movement of the team is retarded. In our tests we found the dusting a little cheaper on very large apple trees, but the liquid spray cheaper on medium sized and small trees. The smaller the tree, the greater the difference in cost in favor of the liquid.

The chief advantages of dusting are: it is more rapid than the old way; it does not wet or burn the operator; it enables the fruit grower to treat his trees promptly to control the particular pest aimed at; extra sprayings, where necessary, can be easily made; the outfit is light, and fruit (for example, cherries) can be sprayed near the time of picking without danger of staining.

The chief disadvantages are: The dust in wet weather washes off much more quickly than



The Dust Sprayer in Action—Its Chief Advantage is that it is More Rapid than the Common Method.

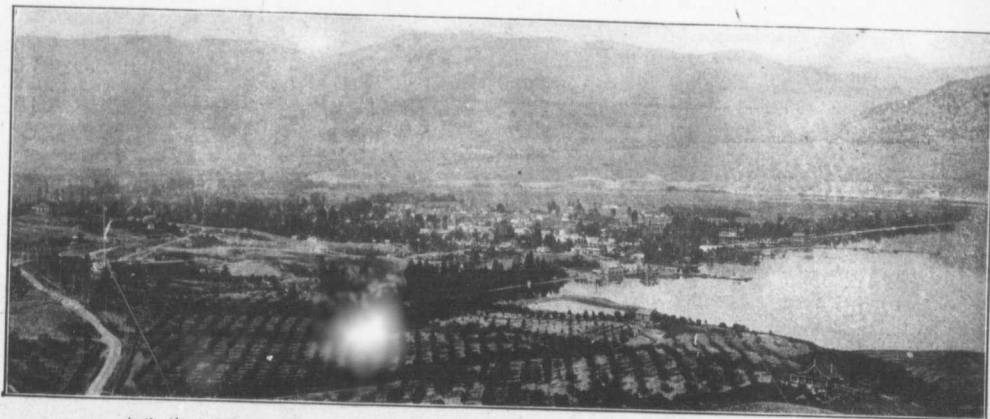
means of a blower, driven by a gasoline engine. The pipe is about three and one-half inches in diameter, and made of light galvanized iron. The dust is placed in a hopper, and the amount to be used is regulated by means of a lever. The dust should be blown everywhere through the trees and all the foliage covered. Calm or nearly calm weather should be chosen, and the team should be driven parallel to the direction of the wind. Large trees can be thoroughly dusted about eight times as rapidly as they can be well sprayed with liquid, but the difference in time for smaller trees is not nearly so great.

Amount to Use.

Small trees, like four-year-old peach or seven or eight-year-old plums, may not require more than one-quarter of a pound for each tree,

the ordinary spray mixtures; there is no real satisfactory substance yet for treating San Jose or oyster shell scale; no dust substance has been found that can be added to the other substances to control aphids or other sucking insects, and on small or medium sized trees the cost is greater than that of the liquid spray.

The general opinion of most of those who have used the dust spray in Ontario is that while dust spraying controlled codling moth well, it did not give so good results against apple scab as did the liquid spray. This is not true in all cases, however, as the writer with the usual number of applications after the leaf buds had opened, obtained almost as good results from the dust as from the liquid.



In the Heart of One of the Leading Fruit Districts of British Columbia. Penticton, at the foot of the Kootenay Lakes.

APPLE TREES

\$25.00 per hundred in lots of 400 trees and over, delivered at your nearest railway station.

You will never again, we believe, have such an opportunity to buy choice trees of your own selection of varieties. We have McIntosh, Snow, Roy, Baldwin, Wealthy, Duchess, Wagner, Ontario, and scores of other best varieties. Catalogue and fuller particulars on application.

There is no doubt that prices will be considerably higher in future years. Some nurserymen predict an advance of from ten to fifteen dollars per hundred. This is undoubtedly your last opportunity to buy trees at such low prices. We offer special inducements on thousand tree orders or over. All stock is extra fine, Government inspected.

E. D. SMITH & SON LIMITED
Nurserymen - WINONA, ONT.
Established 1882.

WRIGLEY'S

The Gum with Lasting Flavour



First Aid for the "Fighters and Home Guard"

It steadies the nerves. Gives long-lasting refreshment. Allays thirst. Its goodness is perfectly preserved by the sealed package.



Made in Canada

WM. WRIGLEY JR. CO., LTD.
Wrigley Bldg., Toronto

The
Flavour
Lasts



Kept right

You'll Find the Advertisers in FARM AND DAIRY advertising reliable goods. They want to know you; also want to know where you saw the Ad. When writing them don't forget to tell them you saw the Ad. in FARM AND DAIRY.

HORTICULTURE

Cultivation of the Grape

THE first operation in the culture of the grape in springtime is to plow away from the vines. This plowing should be done as early as the ground is fit to work, and care should be taken not to plow too deep for fear of injuring or exposing the roots. Three inches is a sufficient depth to plow. With some soils where a cover crop is not being plowed down, a thorough diskings would be sufficient and is much quicker. The soil should be worked up as thoroughly as possible and kept in a state of good cultivation until about the first of August in the commercial crop growing districts of the province. In the cooler districts cultivation should be stopped some time previous to the first of August. This stopping of cultivation is necessary in order to allow the vine plenty of time to mature and ripen the wood before winter sets in. It is advisable to sow a cover crop, such as the vines to mature and as ripen their wood by checking the moisture supply and also helps to maintain the humus supply in the soil. Some growers mulch the vines in the fall with straw manure, but the usual practice is simply to plow the soil up to the vines some time before winter, and then plow away again in the spring. If a cover crop is sown, this soil can be worked up to the vines during the summer cultivation and the cover crop allowed to stay on every winter if desired.

The McIntosh Apple

EVER since 1888, the McIntosh apple has been under test by the Experimental Farms system. In every severe winter when the Fameuse apple was injured, the McIntosh remained unharmed, thus proving that it is harder than that old variety from which it is supposed to have sprung. For a long time the McIntosh apple had the reputation of being a shy bearer, but in nearly thirty years' experience with it at Ottawa, it has been found to be one of the most productive varieties under test. It is an annual bearer, as a rule giving a good and medium crop alternately, the number of small crops being few. One McIntosh tree planted at Ottawa in 1890, from the eighth year after planting, yielded an average for 19 seasons of a little over three barrels a year.

It has been found by experiment that in Ontario, the McIntosh is self-sterile, or practically so and to ensure a good set of fruit there should be another variety blooming at the same time, growing near it.

The McIntosh apple is subject to the apple scab fungus, and in some seasons if the trees are not sprayed the production of No. 1 fruit will be small. This year, at Ottawa, it was found necessary to spray six times with lime-sulphur to ensure clean fruit, but the reward was a large proportion of No. 1 fruit in a year when there was a very small proportion of No. 1 grade on unsprayed or poorly sprayed trees. As a rule, three or four sprayings are sufficient.

Owing to its very high quality and the great beauty of the fruit, it is believed that the demand for McIntosh apples will be an ever-increasing one. Many relatively poor apples will have to give place to McIntosh. There is no other apple which commands as high a price in Canada, and in years of plenty the price of McIntosh apples is relatively high. At Ottawa, it is not in prime condition until Novem-

ber. It remains in fine condition until February, and in good cellars until March. In parts of Canada where the autumn is warmer than at Ottawa it ripens earlier and does not keep so late.

How to Make a Lawn

THE soil for a lawn should not be too heavy. A rich loam with plenty of humus is the most suitable. If the soil is very heavy a few loads of sand spread on the surface and worked in, will lighten it and provide almost ideal soil conditions. It is necessary that the soil be well drained and sweet. The test for acidity is litmus paper, which can be obtained from any druggist. Soil from a few inches below the surface is enclosed around blue litmus paper, and if this turns red, the indication is that lime is needed. Ordinary air-slaked lime is suitable for the purpose.

If humus in the soil is not plentiful, this can be provided by plowing down a crop of clover, or a heavy application of rather long manure. The seeding should be heavy and one of the lawn grass mixtures that are put out by reliable seed firms, is suitable. The foundation for the lawn seed mixture should be Kentucky or Canadian blue grass, and this should be supplemented with white Dutch clover. The seed is worked in with a rake, and the soil afterwards rolled with a heavy roller to ensure that the soil is firmly pressed around each seed. This rolling is important. Throughout the dry months, the lawn should be watered heavily—sprinkling is a little use—and as soon as the soil is dry enough that it will not stick, the roller should be passed over it. During the summer the grass should be kept down. In the fall a mulching with long straw manure is advisable, this being raked up and removed in the spring. Right top dressing of sand is recommended in the fall, especially if there is a tendency for moss to grow on the lawn grass. Where the grass appears to be weak a slight application of bone meal in the spring will be beneficial. It usually takes about two years to get a good stand of lawn grass.

The Farmer's Apple Orchard

(Continued from page 4.)

plowed three or four inches deep. The lands should be thoroughly cultivated up until the middle of June or beginning of July, when a cover crop should be sown. Should cultivation be continued too late in the season the trees may be kept growing too late in the fall and will thus be unable to ripen or mature their wood before winter sets in and winter injury will result.

It is not to be expected that a complete transformation of the old orchard could be effected in one year. The second season, the orchard should again be pruned, a dressing of manure applied, the trees kept thoroughly sprayed as outlined, the cover crop plowed under early in the spring, and the soil kept well cultivated until the beginning of July when seed should be sown for another cover crop.

Following this procedure we should expect the fruit to be better than the year before, but perhaps not until the third year should the trees be expected to bear heavily and the orchard be in good condition.

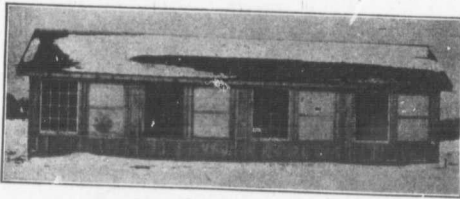
Has your boy attended the short course this winter? If so, let him work some of those ideas of his into the farm operations this spring.

Now is the time to lay plans for treating oats for smut. One pint of formalin to 40 gallons of water is the formula. Every grain should be thoroughly moistened in the treatment.



The Poultry House at Roycroft Farm

THE buildings on Roycroft Farm, the home of Mr. W. H. Shaw in York Co., Ont., are the last word in building efficiency and the poultry house is in keeping with other build-



An Up-to-date Poultry House on an Up-to-date Farm.

This house was designed by Mr. Gordon Manhard and is located on the farm of Mr. W. T. Shaw, York Co., Ont., of which Mr. Manhard is manager. It combines many unique and commendable features.

in these days. The windows in front of the house are half glass and half cheesecloth. This provides lots of light and good ventilation as well. The whole house was designed by Mr. Manhard. It is such a building as any handy farmer could put up without difficulty. It is made of matched lumber throughout and cost \$275. Plenty of light, good ventilation, and sanitary conditions conduce to winter egg production and winter egg production can beat almost anything except munition making as a money making proposition. The Roycroft Leshorns approve of the quarters that have been provided for them. They show their

ings. It is well built, convenient and up-to-date. There is nothing about it that should not be in every good poultry house and there is nothing required in a good poultry house that it does not contain. It reflects the business efficiency of Mr. Gordon Manhard, the manager of Roycroft Farm. In it, as in all phases of the work which he undertakes, everything, down to the last nail, is all as nearly right as it can be made.

The poultry house is 40 feet long and 20 feet wide. It faces the south and accommodates 100 hens. There are four pens, each 10 x 16 feet, and each holding 25 White Leghorns. There is a passageway four feet wide at the back. This passageway is the most important part of the building. Every bit of the work in cleaning out the house can be done from it. The dropping board, which is three feet above the floor, is accessible from it by a trap door and the droppings can be scraped directly into a barrow and wheeled away. A line of nest boxes on the floor at the back of the pen is accessible through another trap door. The eggs can be gathered without disturbing the flock and things are so arranged that this whole line of boxes can be taken out for cleaning. The hens enter the nest through a passage, entrance to which is from one end only. This keeps the nests dark and prevents the hens from developing an appetite for new laid eggs—an expensive habit

appreciation in their bright, clean plumage, their bright eyes, their alert, active manner and their frequent visits to the nests. Summer and winter they are on the job and especially in winter. Their ambition seems to be to outdo even the Roycroft Holsteins as revenue producers.

The Wooden Hen and Her Work

THE poultry business to-day—especially the market side—would be of very little consequence were it not for the successful work done by incubators and brooders. Such rapid strides have been made in this line that we now have artificial methods down to a science, and it would seem that there is little left for improvement.

The writer well remembers the birth of the broiler industry, and the crude methods employed. It was only about thirty years ago that attempts of any size were made to establish such a business. Where scarcely one hundred chicks were hatched and grown in those times, now over a thousand not only see the light of day, but find their ending in the market.

In the early days of artificial methods, it was believed by some reared were not so strong as those brought out by hens. There may have been some truth in that, for the



Breed for Health and Vigor

GUARD your laying hens and breeders against breed-down under the constant strain of producing. Nature's own perfect tonic and conditioner is

Pratts' POULTRY REGULATOR

12-lb. pails, \$1.25; 25-lb. pails, \$2.50; 100-lb. bags, \$9.00. Also in pgs., at 25c, 50c and \$1.00, at your Dealer's.

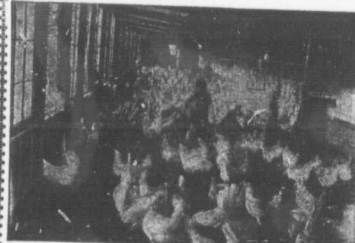
It regulates the blood, bowels and digestive organs, keeps the fowls robust, produces bone and muscle, red combs and wattles, fertile eggs and sturdy chicks.

Your Money Back if Not Satisfied.

PRATT'S Poultry Disinfectant is the safest and most economical liquid disinfectant and germicide on the market. Keeps down bad odors. Use it for spraying roosts, nests and dropping boards. 50c qt.; \$1.50 gal.

Write TO-DAY for Pratts New Book, "Poultry Wrinkles." It's FREE.

Pratt Food Co. of Canada, Limited
63M Clarence St., TORONTO. P-3



Get your order in early for S. C. W. Leghorn

Baby Chicks

or Hatching Eggs

from our vigorous winter layers. We will hatch 12,000 husky chicks this season. How many for you? Order now.

ROSEHEATH POULTRY FARM

F. R. Oliver, Proprietor.

Richmond Hill, Ont.

CHEESE-MAKERS!

Are you going to continue using high-priced imported Rennet Extract—or

Curdalac® (P. D. & Co.) and

Spongy Pepsin for Cheese-making?

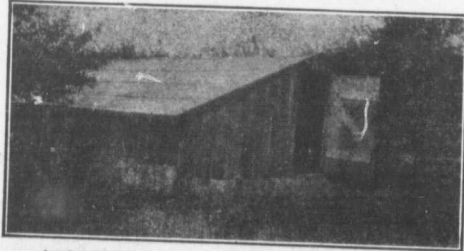
During the season of 1916 these two coagulants satisfactorily replaced Rennet in scores of factories; gave full yield of fine-flavored cheese, and with great saving in cost.

Ask the nearest supply dealer for information regarding the use of these products, also for prices and descriptive literature.

*The term "Curdalac" is used to distinguish the liquid milk coagulant manufactured by Parke, Davis & Co.

Walkerville, Ont.

PARKE, DAVIS & CO.



An O.A.C. Model House as Seen on a Durham County Farm.

This style of poultry house has been built on many farms in Ontario, the one illustrated being on the farm of W. L. Smith, Durham Co., Ont. It is 29 feet square and accommodates 100 laying hens.

—Photo by an editor of Farm and Dairy.

When You Write---Mention Farm and Dairy

March 1, 1917.

Ontario Farmers!

Existing war conditions demand that you give the question of seed special attention this year. Seed of desirable varieties and high germination power will be factors influencing yields.

If you have not secured your seed

LET THE ONTARIO DEPARTMENT OF AGRICULTURE HELP YOU.

Farmers having seed grain or potatoes for sale may forward samples to the District Representative's office stating varieties, price and quantity.

Farmers wishing to purchase seed are also invited to communicate with the District Representative's office, stating variety and quantity, and this office will endeavor to put them in touch with farmers having seed for sale.

In Counties where District Representatives are not established, farmers are invited to communicate with the Department of Agriculture, Parliament Buildings, Toronto.

W. H. HEARST,
Minister of Agriculture.



Get all the Cream with a Lily

YOU cannot expect to get all the profit from your cows unless you have a separator that skims clean. Why don't you make up your mind now to buy a Lily cream separator, for the Lily skims so close that it leaves hardly a drop of cream in each gallon of skim milk.

Besides saving money, a Lily separator saves a lot of work. It can be kept perfectly clean and sanitary with five minutes' work after each separation. The oiling is automatic. Renew level, then every bearing is oiled by the spray from the spindle drive gear. Nothing could be simpler.

Buy a Lily separator. It skims clean. It is easy to care for. It oils itself. It turns easily. It takes up little room in the dairy. It is a safe, sound, well-made machine, easily kept in perfect working condition. A responsible Company stands behind it. You can't get a better cream separator. Even though you are not in the market for a separator today, drop us a line so that we can send you full information about this high grade machine. It may save you money.

International Harvester Company of Canada, Limited

BRANCH OFFICES

WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.
EAST—Hamilton, Ont., London, Ont., Montreal, Que., Ottawa, Ont., Quebec, Que., St. John, N. B.

methods were so crude that delayed hatches seemed to be the rule.

With the march of improvement, however, it became known that the fault for poor results rested in the man in charge, rather than in the incubator. Inexperience—a lack of knowledge of the laws of incubation was the main cause. Then again the brooding system was very faulty—in fact, there is still room for much improvement in this line. For much-improved brooders were mere boxes with lamps underneath, sending forth a strong bottom heat. No wonder there were cases of leg weakness, bowel troubles, chills, colds and other troubles, that slew the youngsters about as fast as they were hatched.

We have today improved machinery. They are the efforts of years of experience and study. The student has also received a more practical insight into the requirements of the egg. To him no longer is the moisture problem bugbear, for he has been taught how to tell the condition of the egg and what it needs.

For years there has been great complaint about chicks being found dead in the shell. Why? It is a question that even to-day cannot be satisfactorily answered.

One writer some time ago said he solved the problem after five years experimenting. He reasoned that in natural incubation the eggs come in contact with the body of the broody hen. This is the source of heat. At the same time the eggs receive the "outside air" through the feathers of the hen, and through the porous walls of the nest.

In other words, the air is diffused through feathers and porous nest amongst the eggs without a draft. In an incubator the eggs lie on a tray in "hot air" only, and in a "draft" hot air contains much less oxygen than does cool air, consequently anything that inhales hot air has its digestion impaired and develops poorly.

This, says the aforesaid writer, is the main cause for chicks sticking to and dying in the shell. This is why the albumen, white of egg, instead of becoming a chick is formed into glue. This is why chicks are "freal and fast" and the draft or air finishes the deadly work.

The above theory may be the beginning of the solution, and while there are many reasons, the poultry world has not yet gotten down to fully understand what is the real cause. But the correct answer will some day be given.

Getting Hens to Set

Mrs. W. Walmsey, Norfolk Co., Ont.

I KEEP only Barred Plymouth Rocks, pure bred, of the laying strain. My flock last year averaged about 62. They laid 643 dozen eggs, of which I sold \$23.13 worth. It did not raise many young chicks, as I thought I had plenty of work to do and only sold 25, which brought me \$15.94. I also sold 40 hens for \$25.05.

I seldom have any trouble getting hens to set. My hens are very tame; that is one reason why I like the Rocks. Most of them will eat out of my hand. I get the nest box ready beforehand and put two or three china eggs in the nest. About dusk I go and get a hen that has tried to set for three or four days. She is handled very carefully and I turn another box over her for the night. About eight o'clock next morning I take the cover off. Then I put her feed and water down and leave her for about an hour. If she does not go back to her nest I put her on and shut her in again until the next day. Generally she will go back herself. When she keeps her nest without any more trouble, I give her good eggs.

CITY MILK SUPPLY

Distribution of Consumers' Money

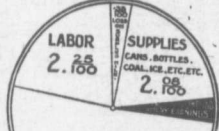
In a full page advertisement in one of the city dailies of Winnipeg, a large milk company, in announcing an increase in the price of milk from 10 to 11 cents, produced some interesting figures as to the distribution of the consumers' money amongst the different factors involved in producing and delivering the milk at their doors. The money received was distributed as follows:

Labor	6.06 cents
Supplies and Delivery, etc.	2.25 cents
Loss on Surplus Milk	2.08 cents
Crecent Creamery Earnings	.33 cents
	.28 cents

11 cents

This showed that of the 11 cents the producer received 6.06 cents, labor 2.25 cents while the profit to the company was slightly over one-quarter of a cent a quart. This shows that the company worked on a very narrow margin, and that its large income was only due to the large amount of milk which it handled.

In setting forth its claim that this margin could not with justice be narrowed, it was stated that there was



How the Money was Distributed.

This diagram, prepared by a Winnipeg milk company, shows how the money for milk is getting at 11 cents a quart was distributed amongst the various factors concerned in producing and delivering it.

nothing served on the consumer's table requiring anything like the comprehensive service that a good milk supply demands. In the first place, a continuous stream of milk must be kept flowing from the dairying districts of the country to thousands of homes in the city. It was necessary for the company's drivers to be at their doors at a specified hour every day, rain or shine, hot or cold, and there never was a time when they had not an entire day's supply ahead. Fresh milk was a perishable product, and unlike other commodities could not be jugged on the market, but must be turned over every day or its value was so impaired as to render it of little or no value. It was also claimed that no food product demanded so exacting a service or provided the distributor so small a net profit as milk.

While conceding that the margin of profit is narrow, it is difficult to understand why it should be necessary that almost half of the consumer's money must go for distribution purposes, while only 6.08 cents of the 11 cents goes into the pockets of the man who produced the article. The discrepancy is not accounted for by inefficient methods in the city dealer's plant. He has probably developed factory efficiency to as fine a point as any other manufacturer. The place for the greatest amount of economizing appears to be in the delivery, so long as half a dozen milk vans are found on every street in the city, the margin between what the farmer gets for his milk and what the consumer pays for it will be too wide.

Legislative Doings
Affecting the Farmers.

A bill, sponsored by Premier Hearst, has been introduced into the Ontario Legislature, providing for the reorganization of the Department of Agriculture. By its provision one or more Deputy Ministers of Agriculture, each of whom shall discharge such duties as shall be assigned to him by the regulations; and also for the appointment of a Commissioner of Agriculture, who shall have general supervision of the work of the Department, advising with and making recommendations to the Ministers on all matters referring to the advancement and encouragement of agriculture.

The object of this bill is to meet the situation that has arisen since the death of the late Minister of Agriculture Duff, in which the Premier has taken over the portfolio of Agriculture and President Croelmann has been appointed Commissioner with W. Reek, B.S.A., who has for the last two years been administering the federal grant in Prince Edward Island and acting in the capacity of Commissioner of Agriculture for that Province, as his assistant.

In the discussion on the Bill that took place in the Legislature, the opposition took the ground that the Government was piling up needless machinery for conducting the department; that there was a danger that cumbersome as to a direct and effective touch with agricultural interests; that the Minister of Agriculture should devote his whole time to the Department; that the position of President of the Agricultural College was important enough to require the full time of one man without having to divide his attention between it and the Commissioner's post; and that the whole matter was a temporary make-shift, the result of which would be that the Department would be less efficiently organized than it had been under the old arrangement. In approval of the new arrangement, it is argued that since the Department of Agriculture is now under the direct personal supervision of the head of the Government, it is looked upon as the most important portfolio on a business standpoint; that it is now, in fact, the chief department of the Government, receiving its first consideration, and that in the appointment of President Croelmann the services of the best agricultural authority available is brought to the Department.

Farms for Soldiers.

A Bill providing for the setting apart of territory for men who have been upon active military or naval service overseas since the outbreak of the war, was introduced by Mr. Ferguson of Grenville. This Bill also provides for the maintenance of instruction depots; for the forming of farm colonies; for the prescribing of settlement duties to be fulfilled by the applicants before the issue of the patent; for making advances or loans to soldier-settlers; for supplying them with machinery, tools, stock and assistance in building; for the encouragement of co-operation among the soldiers settled in these colonies, and for the erection of school houses and of public buildings for religious and secular gatherings.

Mr. Proudfoot introduced on February 19th, a Bill entitled the Preferential Voting Act, the object of which is to provide for voting in the election of any municipal officer, such as mayor, warden, reeve, councillor or alderman, wherein only one office is to be filled and wherein only one candidate can be elected, a preferential ballot

that, in the event of more than two candidates running for such office, will enable electors to designate their choice, not only by marking their ballot for the elector's first choice, but in subsequent choices, in the event of their first choice having been unsuccessful.

Butter Grading

The supplementary estimates include \$75,000 for the establishment of facilities for butter grading. It is probable that warehouses will be established at one or two points to which samples of chummings may be forwarded. Upon these, grade certificates will be issued.

The High Cost of Potatoes

By G. A. Gail.

A PROMINENT member of the staff of the Ontario Department of Agriculture recently gave an example of one of the reasons for the high cost of living in the cities, which emphasizes the need for farmer co-operation. During the latter part of

November last this gentleman was in a town on the main line of the C.N.R., about 200 miles west of Saskatoon, and noticed a farmer loading potatoes into a refrigerator car. They were good, sound, clean potatoes of the Cobbler variety. The farmer said that he received 50 cents a bushel, or 75 cents a 90 lb. bag for them. Curiously prompted the Ontario man to enquire into the cost of shipping these potatoes to their destination, Toronto, a distance of 1,000 miles from the point of shipment. The freight cost, he learned, was 58 cents per cwt., with an additional two cents per cwt. for heating the car—or a total net cost of about 55 cents per 90 lb. bag. Thus the potatoes laid down in Toronto cost \$1.30 per bag. At that time potatoes of the same quality as those in question were selling at about \$2 a bag wholesale, a profit to the middleman of 70c, or very nearly the total price received by the farmer.

The interesting feature of comparison is this. The farmer does all the real work. He owns or rents, and pays taxes, on the land which pro-

duced the potatoes. He is required to prepare the soil, provide the seed, plant it, then cultivate and harvest the crop. Finally, if he is lucky enough to save his crop—he has to haul it to the railway and load it into the car. For all this he gets the magnificent sum of 75c per bag, once a year. The middleman gets 70 cents for buying, receiving and delivering to the retailer, and gets his turnover about once a month. With proper co-operation among the farmers much of this 70 cents could be saved to them.

The milk buckets should be taken to the milkhouse or kitchen and sterilized at least once a day. Calves will soon begin to eat a little hay, and grain, like ground oats, should thereafter constitute part of the food ration.

The dressing percentage of hogs varies from 65 to 85 per cent. with an average of 75 per cent. Cattle vary from 48 to 70 per cent. with an average of 53 per cent. Sheep dress out 44 to 56 per cent. with an average of 48 per cent.

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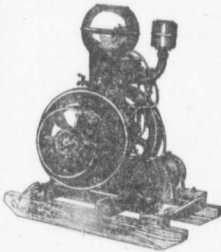
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For and Against the Dairy Standards Act

Le Us Advance

J. A. Ferguson, Leeds Co., Ont.

THE great trouble in this province with the dairy business is that it commenced without any system and very little general knowledge of dairying. The crude work done at first was proper way to overcome it after years. But after some time light began to dawn on some of the leading dairymen and they saw that some improvement in the manufacture of dairy produce was necessary. Work along this line was gradually brought about by looking to other dairy countries for information, and bringing in some of their skilled experts to impart their knowledge in the art to our makers. We, to-day, see the wisdom of this.

The other provinces, principally those in the west, saw the mistakes that were made in Ontario, and they passed dairy laws that were up-to-date. By the grading of cream, thereby educating both the producer and the maker, they have reached a high standard, so that when the dairy products of those provinces come into competition with our own the result is not flattering to Ontario.

The main features of the Dairy Standards Act are: payment of milk by the butterfat test; grading of cream and pasteurizing of whey. Why pay for your grain, fruit, pork, etc., graded or inspected? The dairy experts have shown by their work the past season that it is the only fair way to pay for milk, and also the only way to get a better quality of milk. The producer can readily see that it will be to his interest to take better care of his milk in order to get a true test. By doing a very little more work in cooling and looking after the sanitary condition of his milk, he will greatly add to the dairy produce of this province, and also receive greater remuneration for himself.

Why pasteurize whey? First, for sanitary reasons. It kills all germs; hances its food value; makes the milk easy easier to wash, and when gets an equal share of the fat. The food value of the whey, at the present prices of grain and all kinds of live stock, is no small item to the patron. The cost of pasteurizing whey is trifling compared to the benefits derived from it. The cost of pasteurization would not be over \$1 per ton of cheese, and the equipment to pasteurize it would not amount to over \$10 or \$15 per factory.

Now we have come to the parting of the ways. Are we going to advance or, as some say, "let well enough alone"? Advance by all means. A great reform in the past have met with opposition. The Dairy Standards Act is only justice to the producer. For example, 3.2 per cent. milk will not make as much butter or cheese as 3.5 or 4 per cent. milk. So it is just a matter of being honest with one another. I testing will do their work honestly. If not, they will not be long on the job. Why does Denmark lead the world in butter? By wise dairy laws, cooperation and education.

Cannot Get Accurate Test

G. B. Gordon, Elgin Co., Ont.

ALARGE number of patrons of cheese factories in Ontario are not dairy farmers. Dairying is a side line with them, and not half the returns of their herds are received from the factories. Now, if the expense of manufacturing increases, as it is bound to do if the act goes into force, a number of these will come to send milk, and if one-third of the pro-

ent senders stop, the other two-thirds will be forced to shut the factories. Mr. Publow claims we have too many factories, but I claim we want all our factories, but more milk, as we cannot afford to haul our milk five or six miles.

I believe payment by test would be the proper way if it could be done accurately. There is no man able to test all milk kept three or four days taken from milk which has travelled for two or three hours during hot weather. Milk which is in good enough condition to make good cheese, but put into the sample bottle might spoil the whole. I have known every sample in a factory to be spoiled, and that month's sheet marked by guess. Was that pooling? Does the Dairy Standards Act not pool the casein? Do you suppose a cheesemaker is going to take out and weigh fifty or sixty samples every morning and place every one in the right bottle without being paid for that work? Or do you suppose he is going to spend time with his samples and the milk waiting for him in the vat, possibly too ripe when taken in? His own is in the vat and largely depends on the quality of the article taken from the vat.

Again we have no way of checking off the fairness of the work done in regard to samples taken or done by the tester. Of course you will say that our banks depend on the honesty of their clerks and managers, but let them fall short in returns and see if they cannot be told of the fact, and our Government employees the same. But we have no way of following our men and until we have a better way I claim testing should not be made compulsory. You will say test for ourselves. Yes, farmers to-day have a lot of spare time on our hands, when one man has to take care of 150 acres and some 200 acres. Our dairy authorities claim you can't improve the low made the statement that we were sacrificing quality at the expense of quantity. What did he mean? The sanitary condition of the milk has more to do with the quality of fat than the percentage of fat has. Our export market to-day calls for cheese made from milk testing 3.3 per cent. fat. Do you know of a factory in Eastern Ontario testing below that? Or do you know of a cheesemaker who can take all the butter fat out of the milk? In conclusion, I think that a system twenty years, and the percentage using it has not increased, cannot be very highly spoken of. If it is such a grand stop forward, as some claim it to be, it does not need testing for the foresight of our dairy farmers in the past.

The Act Will be Beneficial

Jas. F. Ferguson, Carleton Co., Ont.

IF it is not a fact that nearly everything is bought and sold according to quality? If we go to market with a quantity of dressed chickens varying in quality from thing and scrawny to fat and plump, we do not expect as much for the thin as we do for the fat. The same can be said with regard to the dairy type steer and the beef type steer, although both may be fat. The same thing occurs with our hay and grain. Our apples, and other things are sold according to quality. No objection is raised—we do not expect anything else and we are satisfied. Why draw the line at milk and cream, one of the most, if not the most, valuable foods known to man?

It would probably be a safe prediction to say that if this Act is enforced, and competent, honest men do the testing, that ere long the Ontario farm-

er would be as contented and satisfied with the new conditions with regard to milk as he is with the other aforementioned products of the farm.

If not satisfied with the performance of his cow, the remedy is her hand. He can test his herd himself or join a cow-testing association and have the work done for him free. He will then know which cows to retain in his herd as breeders, and should be able ere long to build up a herd of good testers. Hitherto, the pooling system was in vogue, the only immediate incentive to test our cows was to satisfy our curiosity; with this Act in force there will be the added incentive of having our pocket-books better filled. The man who was far-sighted enough to see this legislation approaching and acted accordingly has no need to worry.

Some are worrying now about how to make ends meet. One very effectual way is to lessen the cost of production. The enforcement of the Act will, no doubt, make this possible in many cases, thus having a beneficial influence on the cheese industry of the province, as well as benefiting the farmer financially. The remedy is, of course, to eliminate the cow which does not pay for her keep. It is interesting to note the different producing powers of cows as shown in a table found in the report of Experimental Farms for year ending March, 1915. It seems that the poorest cow at Ottawa produced butter at a cost of 26 cents, and the best at a cost of 10.3 cents, and the best at a cost of 10.3 cents which can produce butter at 10 cents a pound. Least some may be led astray, however, it should be noted that feed was charged to the cow at cost of production rather than at market prices. It is also worth noting that the cow which produced butter-fat the cheapest did not produce milk the cheapest as she produced milk at a cost of 16 cents per cwt. more than the cheapest producer of milk. Under the Act the cow producing fat the cheapest will be the most profitable cow, and that the Act will work is proven by the fact that many factories have already paid by test for years, to the apparent satisfaction of most patrons.

Test System Unsatisfactory

G. B. Tupper, Oxford Co., Ont.

BELEIVE the Dairy Standards Act would be one of the hardest blows to the live stock industry of Ontario has ever received. Live stock is the chief source of wealth and prosperity in Ontario. To raise live stock new milk is needed, and it is better for the young things if it is not too high in butter fat. What we need in raising colts, calves and pigs is quantity, not quality. It has also been proven that milk not too high in butter fat is better for human food.

At an auction sale in this neighborhood some 20 head of cattle averaged \$118 a head; one three year old brought \$150. This was the highest priced animal at the sale. The majority of the herd were high-grade Holsteins. But the highest priced one was medium sized, with a dun-colored streak up the back. The rest of the body was spotted white, black and red. The barrel was rather small and she carried a round, tucked up udder. Why did she sell so? She had freshened two weeks' previously and the day before the sale her milk had tested four per cent. Now the people that bought her were considered good dairymen. They have a herd of good strong cows and have kept a pure bred sire of one of the dairy breeds for years. They have a few pure bred females. I asked them why they picked this cow; the reply

was "look at that head and the streak up the back, that is rich, like our old natives. They give rich milk. It proves out too, as this cow tested four per cent. and the test is what counts."

I have seen the books of two cheese factories. The land around them varies; some is excellent, but some is very poor. The dairymen on the light land keep from three to five cows, and they do not get much milk, but it is high in butter fat. The herd on the good land produce a lot of milk, but it is lower in fat. Experiment proves that feed does not increase the butter fat. Proper feed increases the flow of milk. Who adds to the wealth of the country, the man that produces the flow of milk or the man that produces a little butter fat? We have used many pounds of whey butter and it was good butter. I believe fat is essential in cheese making, how is it so much fat gets into the whey tank?

I have tested milk with a Babcock tester. I am convinced that the samples so tested should be taken before the animal heat leaves the milk and that the testing should be done with the milk warm. If the pooling system is wrong, how would the proposed change remedy matters?

We have been selling milk by the test for over two years and if it is not a lottery I know nothing about it. I have set to meet the man who has been selling milk by the test for two or more years that is really satisfied with it, or who can explain the variations in the test.

Our Export Bacon Business

THE export bacon business represents perhaps the safest and most satisfactory trade in which we may engage at present," says Mr. H. S. Arkell of the Live Stock Branch, Ottawa. "That Canada with its sides has enabled her to take the place of Denmark, to compete with Ireland, and, in the matter of price, to outclass the United States in the demand for his product. The significance of this statement will bear consideration. It means simply that Canada is in a position, if she can produce the necessary volume of hogs, to secure a grip on the British bacon market which should represent to her an annual revenue of millions of dollars in the years to come. Unquestionably, the Dominion will be faced with very serious competition after the war, but, if she makes good her hold at the present moment, she need have nothing to fear as her organization for this trade develops and improves. It is the view of those who have most carefully studied the situation that hog production in Canada is a safe business undertaking and should be developed into an industry out of which, by organization and systematization, may be developed, as in the case of Denmark, a great export trade."

The exports for the last four years are given by Mr. Arkell as follows: 1913, \$5,351,225; 1914, \$3,763,330; 1915, \$1,812,186; 1916, \$25,759,266. At the recent Service Department convention in Toronto, it was pointed out that Canada has a splendid opportunity for rebuilding in the British market a reputation as the producer of fine bacon, which had been slipping away from her. The suggestion was made that an organized effort be made to develop the production of the bacon hog in Canada and the name of Prof. Geo. E. Day was suggested as that of the man who above all others in Canada was capable of conducting such an educational campaign.

The measurement of the Live Stock Breeders' Association of the district of Beaufort has fixed on June 6, 7, and 8 as the dates for their eighth annual Live Stock Show.

Look the facts in the face

SUPPOSE you buy a cheap 300-lb. capacity mail order cream separator for \$60, and the machine lasts about two years. Then your separator is worn out and your cost has been \$30 a year.

Now, suppose you buy one of the highest priced separators—450 lbs. capacity, for \$100. This machine lasts perhaps five years. Cost per year, \$20.

You can buy the Viking Cream Separator, size C, capacity up to 600 lbs., for \$71.45. More capacity for less money; and the Viking with half-decent care will last ten years—cost per year only \$7.15. You have a larger machine of greater capacity, doing more work and better work in less separator that really saves you money—first when you buy it, and afterwards, every day you use it—the Viking.

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Deputation Waits on Government

At the annual meetings of the Shorthorn, Ayrshire and Jersey Breeders' Associations, deputations were appointed to wait upon the Minister of Agriculture for the Province of Ontario, asking him not to delay the bringing into force of the Dairy Standards Act. Arrangements were made to have a conference with Premier Hearst on Wednesday, February 21st. Accordingly, the different deputations met at the Parliament Buildings and were conducted to Mr. Hearst's office. Mr. W. W. Ballantyne was appointed to act as spokesman. In bringing the subject before the Premier, he said he felt an injustice had been done for many years to the dairymen who were producing high-testing milk and that if the putting into force of this Act were delayed it would be a still greater injustice to them. In answer to the statement that the farmers had not asked for the Dairy Standards Act, he contended that the Ayrshire and Jersey men in their annual meetings had repeatedly asked for such legislation. As to the trouble in getting the testing done, he said that the late Minister of Agriculture had in mind, when framing this Act, the amount of work that it would necessitate and that he had provided men in the instructors who were competent

the payment of milk in towns and cities on the butter fat basis. Mr. John McKee, Norwich, gave his experience with the Borden Condensary people, submitting figures to show that in one month's cheque he would save \$2045, if payment was by test. He said that he had been secretary of a cheese factory some twenty years ago, and they had paid for the milk delivered at the factory by test at that time; they found no difficulty in getting the work done satisfactorily. He also felt that the Act should go into force at once.

The Premier's Answer.

In his reply to the members of the deputation, Premier Hearst said that he was glad to listen to the representations of the different breeds upon this matter, and that the problem of the Dairy Standards Act was daily before them and receiving their earnest attention. He pointed out that in order to have any Act work successfully, two things were necessary. First, that the Act be a just one. Second, that the people affected by it give it reasonable support. He felt that the opposition to the Dairy Standards Act was such that if it went into force at the present time it would not receive the support it should. It would be necessary for dairymen to receive a certain amount of education upon the workings of the Act before

The Dairy Standards Act

Just as we went to press word was received that, in the Legislature last week, Premier Hearst introduced a bill to amend the Dairy Standards Act. This bill so amends the Act of the last session as to make it become effective on the proclamation of the Lieutenant-Governor, instead of on March 31st next, as the Act had intended. The postponement of the operation of the Act has been asked by the Eastern Ontario Dairymen's Association until a wide campaign of education as to the provisions of the Act has been carried out. There were no serious objections to the principles of the bill. When the Act would become effective Premier Hearst stated would not be for another year at least.

and who were in a position to do the work in the different cheese factories. Of course, other assistants would have to be appointed, but there would be no difficulty in getting this work done. Mr. Ballantyne presented figures, and the results of experiments in Canada and the United States, to show that the fat contents of the milk really represents its value for cheese-making. He would like to see the Act put in force upon the date set, and he believed the desirability of it would not be a fair thing to the dairymen of the province.

Mr. Alex. Hume, of Campbellford, another member of the deputation, stated that opposition to the Act was to be expected, but it had been conclusively proved when dairymen became acquainted with the workings of it and the advantages to be gained by it they readily favored the legislation. He stated that people all over the province were expecting for the Act to come into force at the time set and that he could not see any reason why it should not. He pointed out that now was the time when patrons of cheese factories needed this Act, because of the high price of cheese. If the Act had been in force when cheese was from 8 to 15 cents per pound there would not have been so great a gain to the patrons of the factories as there would be under present conditions. He felt that the Government would be only carrying out the wishes of the people by bringing it into force this spring.

Mr. B. A. Bull, representing the Jersey deputation, stated that if the Act were a just one he could not see any reason why it should not go into force at once, as well as one year or a number of years hence. He felt, however, that the Act did not go far, in that it did not provide for

their opposition to it would cease. He said that he was confident that the former Minister of Agriculture had this point in mind when he framed the Act, and set the time over a year ahead for it to come into force. It behooved every person connected with agriculture at this critical time to not do anything which would cripple production in any way, and he felt justified in putting into force any act that would have the least tendency to bring about this condition. The Dairy Standards Act was a radical departure from former methods and it affected a large number of persons. No definite promise was given as to whether or not the Dairy Standards Act would come into force in April, 1917.

Butter Grading to be Established

PLANS for a system of producing and marketing butter by grades at an initial cost of \$75,000, are indicated by the Ontario Government in the supplementary estimates. It is said the scheme will be similar to that adopted by Western Canada. A central grading station, probably with cold storage facilities, will be established and operated by the Department, and creameries will send samples of each day's churning to this station. The Department's experts will test the butter and indicate the grade of the output for the day. The station will help to pay expenses by storing butter when prices are low and selling out when prices are high. Grading will not be compulsory from the commencement, but it is thought the creameries will be ready to co-operate. Graded butter will command better prices than ungraded.

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NEW HIGH GRADE SEEDS

Asterum, the new big Comet Aster, pink, white or mixed. Pkg. 15c.

Mammoth Cosmos, crimson, white, pink or mixed. Pkg. 10c, 4 oz. 15c, lb. 50c.

New Red Sunflower, beautiful and showy. Pkg. 25c.

Scarlet Runners, popular climber. Pkg. 10c, 4 oz. 15c, lb. 50c.

Spencer Sweet Peas, good mixed colors. Pkg. 10c, oz. 25c, 4 cs. 80c, lb. \$2.40.

XXX Imperial Japanese Morning Glory, all colors. Pkg. 10c, oz. 25c.

Triple Curled Parsley, dwarf dark green. Pkg. 5c, oz. 20c, 4 oz. 50c.

Ninety-Day Tomato, smooth and firm. Pkg. 10c, 1/2 oz. 30c, oz. 50c.

Rennie's Mammoth Green Squash. 408-lb. specimen. Pkg. 25c.

Crimson Giant Radish, early crisp. Pkg. 5c, oz. 15c, 4 oz. 40c, lb. \$1.20.

Sensator Peas, large, luscious Dwarf. 4 oz. 15c, lb. 40c, 5 lbs. \$1.75.

Yellow Globe Danvers Onion (black seed). Pkg. 5c, oz. 25c, lb. \$2.10.

Rennie's Prize Swede Turnips, best for table or stock. 4 oz. 20c, lb. 65c.

Nonparal Lettuce, Canada's best for open air. Pkg. 5c, oz. 20c, 4 oz. 60c.

XXX Gourmays Parsnip, smooth high grade. Pkg. 10c, oz. 25c, 4 oz. 75c.

Stringless Refugee Wax Beans. 4 oz. 15c, lb. 50c, 5 lbs. \$2.25.

Rennie's Fireball Beets. Pkg. 10c, oz. 20c, 4 oz. 50c, lb. \$1.60.

All-Head Early Cabbage (solid heads). Pkg. 5c, oz. 30c, 1/4 lb. 80c.

Golden Bantam Sugar Corn (for table). Pkg. 15c, lb. 40c, 5 lbs. \$1.90.

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THE RURAL HOME
PUBLISHED EVERY THURSDAY



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The paid subscriptions to Farm and Dairy exceed 23,000. The actual circulation of each issue, including copies of the paper sent to subscribers who are but slightly in arrears, and sample copies, varies from 24,000 to 25,000 copies. No subscriptions are accepted without detailed statements of circulation of the paper, showing its distribution by counties and provinces, will be mailed free on request.

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We guarantee that every advertiser in this issue is reliable. We are anxious to do this because the advertising columns of Farm and Dairy are as carefully read by our readers, and because to protect them. Should any advertiser herein deal dishonestly with you as one of our paid advance subscribers, we will make good the amount of your loss, provided such transaction occurs within one month from date of this issue, that it is reported to us within a week after the occurrence, and that we find the facts to be as stated. It is a condition of our contract that in writing to our advertisers you state: "I saw your advertisement in Farm and Dairy."

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The Rural Publishing Company, Ltd
PETERBORO AND TORONTO

"Read not to contradict and to confute, nor to believe and take for granted, but to weigh and consider."—Bacon.

Let Well Enough Alone

THE laws of Canada are so framed that the burden of taxation is shifted from one industry to another until it finally reaches the farmer, where the shifting ceases and the paying begins. On almost all his purchases the farmer must pay twenty-five, thirty-five per cent. or more above the real cost of production to cover the amount to which the goods purchased are protected. If these are imported from other countries, the extra money goes into the public treasury, minus, of course, the cost of collection, which is enormous. If they are produced at home, it goes into private pockets of those engaged in other and less important industries. It is said that the tariff is designed for the farmer's benefit but what return has he for the money thus milted from him? The home market myth is exploded. The average farmer is not engaged in growing garden truck, the price of which is set in adjoining cities, but in the production of great staples, the prices of which are set in the markets of the world. A flourishing industrial center near him may rob him of the help of his sons or of his hired men, but it has little to do with increasing the price of what he has to eat. In so far as protective laws benefit those industries, the products of which he is a purchaser, they work detrimentally to him and the industry in which he is engaged.

With scarcely an exception, there are no protective laws which operate to the advantage of the farmer. One exception is the law regulating the prohibition of oleomargarine from competition with his butter. It is beneficial because it enables him to place his butter on the markets of the world with the guarantee that they are free from the contamination of this butter substitute. No sooner, however, do the great packing interests and other beneficiaries of protection,

FARM AND DAIRY

see that a time has arrived when the removal of this restriction would rebound to their own profit, but they begin snoving heaven and earth to deprive him of the one measure of protection. Protected as they are in a thousand ways, they at once throw the full weight of their influence into a fight to wrest this small advantage from him. If they succeed, farmers will begin asking why it is that they should be deprived of almost their only measure of protection, while the interests whose forces have been directed against him in this fight, still enjoy all the benefits that protection can bestow. Those interests may later awake to the fact that in pressing their advantage so far they have stirred up opposition that will make them long again for the palmy days when they had everything their own way except that they could not substitute margarine for butter.

A Difference in Social Values

MUCH of the opposition to the taxation of land values grows out of the inability of people to distinguish the difference between social values as these apply to land, and the values that are supposed to attach to other articles that are commonly taxed. People recognize that as population increases land values advance even more rapidly. Most people realize also that

Returns Coming in Rapidly

THE returns from Farm and Dairy's referendum on the Dairy Standards Act, the ballot forms of which were published in last week's issue, began coming in on Friday, the day following the date of the paper. At the time of writing, they are coming in rapidly. Arrangements have been completed for having the ballots counted and the results will be published next week. These will furnish a valuable criterion as to where the dairymen stand on the much discussed dairy legislation.

In this issue are published several of the essays which were entered in the competition for the best contributions for and against the Dairy Act. There are still many excellent contributions to be published. They will appear in succeeding issues, the plan followed being to publish those favoring the Act and those opposing it alternately. This will give the contributors equal opportunities of placing their views before Our Folks.

these increased values are not due to the efforts of the individual, but to the presence of the community at large, and that were the people to move away, the land values would disappear with them. When it is suggested, however, that these values should be taxed for the benefit of the community which creates them instead of their being allowed to pass into the hands of land speculators who anticipate increase in population, by buying land and holding it for the expected advance in value, objection sometimes is raised to such action on the ground that similar values attach to other lines of industry. It is claimed, for instance, that when a manufacturer puts up a building, and develops a large trade because of an increase in population, his enterprise should be taxed just as much as land values, and for the same reason, as the value of his business would disappear with it.

A great mistake underlies this argument. God created the land. He intended it for the use of humanity. Without land no person could live. Out of the land, and to some extent the sea, everything we need for the sustenance of life is produced. When a land speculator grabs and monopolizes land he takes what he did not create, and profits by withholding it from the use of those who would use it and benefit the community by so doing. He does not produce anything of value himself and makes his gain by taking from others something which their efforts did produce.

When a manufacturer puts up a building and

March 1, 1917.

sells boots, clothing or any other useful article, he himself creates something in the goods he manufactures which is of value, and thereby he benefits the community. He makes his gain by assisting the public to supply their needs. While it is true the presence of a large population is likely to help his business, he in turn helps that population by gathering together raw materials and manufacturing them into useful articles, thereby furnishing the community with needed goods. Incidentally he furnishes labor for others. The land speculator does none of these things.

When a poor immigrant comes to this country the land speculator makes it more difficult for him to obtain a farm or home by withholding from his use the land which he would be glad to use if he could obtain it at a price within his reach. Thus, the land speculator hinders his reach. The development of the country and imposes a burden on people who would be glad to work if they could have an opportunity of doing so. The manufacturer benefits by the coming of the immigrant to the country, but in turn he helps that immigrant by increasing the supply of the things which that immigrant needs.

It is absolutely unfair and unjust, therefore, to class the manufacturer with the land speculator, and to intimate that the conditions are parallel. The land speculator is a drone that lives on others; the manufacturer is a working bee which helps to sustain others by his work and enterprise.

Profit in Cows

MALCOLM H. GARDINER is responsible for the statement that there are 5,000,000 unprofitable cows in the United States; that one-fourth of all the cows in that country are kept at a loss. This authority goes still further and states that if it were possible to save the care and feed bestowed on such cows, it would amount to a saving of \$100,000,000 a year. The dairy farmers of the United States are wasting that amount of money annually on their unprofitable cows. American conditions are similar to our own, and these figures have a value for us.

Considering all that has been written and all the elaborate educational work that has been carried on to bring farmers to realize this waste, the wonder is that it still goes on. There are many owners of dairy cows who are paying no heed to suggested methods of improvement, and who are making no attempt to raise the standard of production. Many object forcibly to government action in passing laws affecting the products coming from their farms. They argue that it is taking away their liberties; that it is an unwarranted interference in business. They forget that for years they have been left free, and that the improvement in their dairy herds as a whole has not been what it should have been. We are still losing millions of dollars in this way. Only by working along similar lines can we hope to raise the standard of our dairy products to a plane where they will compare favorably with those produced by some of the other provinces. The Dairy Standards Act is designed to have this effect. If milk delivered at factories is paid for according to quality, the inevitable outcome will be the extermination of the extremely low testing cow, and there is sure to be a more profitable and better manufactured product made as these unprofitably low testing cows disappear.

The farming community has lagged behind, not in agriculture or in production, but in devising efficient methods of business in disposing and distributing its produce. It is only reasonable that the producer should control the distribution, cost and selling of his product, and see that there are not four or five illegitimate profits before the products reach the consumer.—E. C. Drury.

In Union There is Strength

How Should He Vote*

ASSUMING that both candidates are equally sincere, and waving all other questions than the one raised in "Farm and Dairy," I submit that the farmer should vote for the lawyer, for vote he must according to the test and cannot straddle the fence, like the farmer candidate.

The Farmer Should Vote for the Lawyer.

1. Because the lawyer has a definite, clean cut platform, on which he stands flat footed, and which represents in its entirety the farmers' wish. He is ipso facto one of them. If a platform test be made, then those who accept or become themselves traitors to their own cause. It is just here that the organized farmers may win or lose their Waterloo.

2. Because the farmer candidate lacks decision and should be left at home till he has thought himself out. He is not fit for leadership. Lloyd George could not use him.

3. Because the farmer candidate is not according to type. He is abnormal. He may till many acres, but in these days of enlightened farmers, every one of them worthy of leadership, should be an enthusiast attending their Institutes, securing wise decisions, and then fighting for them to the last ditch. If this farmer candidate has attended such gatherings, then he is plainly disgruntled and if he has not attended, he should be left at home till he becomes a farmer.

4. Because if the farmers' platform is right and worthy, he must believe that the candidate who accepts it is worthy of his support. The test sub-mitted is the farmers' own and they cannot dishonor it. Far better to be represented by an honest lawyer than by a renegade farmer who carries a gun, that is so constructed that if it goes off at all, will shoot round a corner.—Not a Lawyer.

*This article, submitted in the contest for the best article on the subject, "How Should He Vote," announced in our issue of Feb. 1, has been awarded first place in close competition. Other articles contributed will appear in this department in succeeding issues.—Ed.

Making Meetings Interesting

ONE of the problems officers of farmers' clubs have to contend with is how to make their meetings interesting so as to draw out their members. Many clubs spend too much time discussing the purchasing of supplies. This does not leave them enough time to deal with other matters of more general interest. At the recent convention of the Manitoba Grain Growers' Association, President R. C. Henders read the following extract from a letter he had received from the secretary of a local club. It carries its own message and was as follows:

"Three and four years ago our association spent a great deal of its time trying to save 60 cents on a barrel of apples, or a few cents per pound on wine or salt, or some other commodity. Now, we do not neglect these things, but we do not as the Association spend much time on them. We appoint a committee among our younger men to transact that business for us and the time of the Association proper is given to the study of the larger questions of social and economic conditions. I read him in reply, said Mr. Henders, "Thank God, you have caught my vision." Life does not consist in getting, but in service.

U.F.O. Organization Work

DURING the last week in December Mr. J. J. Morrison, secretary of the United Farmers of Ontario, addressed meetings of farmers in Western Ontario. Practical evidence of the interest the farmers of the district are taking in the great movement for organization that is so persistently spreading throughout the province, is seen in the fact that several new clubs were organized at these meetings with strong charter memberships.

On Dec. 27 the Elma Branch, near Listowel, Ont., was organized with 37 members. About 100 persons were present at the meeting, and a full slate of officers was elected. On Dec. 28 about 30 gathered to hear Mr. Morrison at Colborne in Oxford county. A club was organized and a full executive elected. The following day, at a meeting at Woodstock, the Delmer U.F.O. was organized. About 50 were present at this meeting, and a keen interest taken in Mr. Morrison's address.

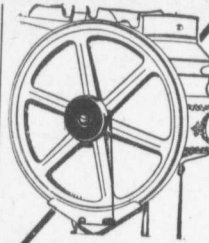
Sask. Elevator Co. Takes Over Trading

AT the convention of the Saskatchewan Grain Growers that was held in Moose jaw recently it was decided to turn over the trading end of the work to the Co-operative Elevator Company. This bodies have mapped out the transfer of the Saskatchewan Co-operative Elevator Company will take charge of the retail merchandising department that has served the majority of the farmers of their household and farm needs. The resolution was passed after several hours of consideration, and is one of the most important steps taken in the Province in recent years with regard to the farmers' movement.

The Canadian Council of Agriculture, which is composed of representatives of the United Farmers of Ontario and farmers' organizations of western Canada, has decided to affiliate with the Dominion Social Service Council and to appoint delegates or representatives to attend meetings of that body. The Social Service Council was organized largely by the various Protestant Churches in Canada with the object of improving social conditions in Canada. The presidents of the provincial farmers' organizations represented on the Council of Agriculture with the Secretary of the Council and Mr. G. F. Chipman, of Winnipeg, will represent the farmers at the meetings of the Social Service Council.

The Secretary of the Dominion Grange desires to find if there are any members or past members of the Order who were present at the inauguration of the Dominion Grange in London, Ontario, June 2, 1874, or who attended the first meeting held in Toronto, September 22, 1874. Any one who can give information on this point is asked to correspond with Mr. J. J. Morrison, 110 Church St., Toronto.

Every ton of grain sold at the elevator costs the farmer from which it is sold from \$5 to \$6 in fertility. Every ton of grain that goes to the stock yards in the form of meat animals costs the farmer on which it was fed from \$1 to \$1.20 in fertility. Every ton of grain which goes to the creamery in the form of butter fat causes a farmer loss of only 50 cents in fertility.



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NINE people out of ten turn the separator handle too slowly. Thousands of tests with experienced separator operators show this to be the case.

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If you haven't the spare cash right now, that need not stand in the way of your getting a New De Laval right away. We have an arrangement with De Laval agents which makes it possible for any reputable farmer to secure a De Laval on the partial payment plan—a small payment at the time of purchase and the balance in several installments—so that your De Laval will actually pay for itself while you are using it and getting the benefit from it.

Why not see the nearest De Laval agent at once? If you do not know him, write to the nearest office for our desired information.

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MONTREAL PETERBORO WINNIPEG VANCOUVER 50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER



INVITATION

We cordially invite all our many friends to meet us at our Annual Convention, February 28 to March 2. Come and hear what we have done in the past and hope to do in the future.

Our display of Cutters, Buggies, etc., will be at 125 King Street East, Toronto. On exhibition there we will also have a Dusting Machine. If you are interested in fruit growing you certainly want to see this machine.

We look for the corn situation to improve materially in the near future.

Reserve your order for Clover Seeds, Corn, etc. Get our prices on Cotton Seed Meal in car and less than car lots.

Send for our Catalogue of Farm Implements, Groceries, etc.

The United Farmers' Co-operative Co. LIMITED

"THE ONTARIO FARMERS' OWN ORGANIZATION" 110 Church Street Toronto, Ont.

OUR FARM HOMES



HONOR lies in honest toil.
—Grover Cleveland.

Winning the Wilderness

(Continued from last week.)

"Oh, Mr. Jacobs," was all Virginia could say, and, woman-like, the tears filled her eyes and ran down her cheeks.

"Tell the men to send a committee up here with their needs, listed," Jacobs said hastily, "or better, I'll go there myself the day after tomorrow. I want to see what kind of a claim Carey has pre-empted. Good-by, now, good-by."

He hurried Virginia to her horse and watched her ride away.

Down at the ford of Wolf Creek the willow brush fringed the main trail thinly for a little distance and half hid the creek trail, winding up a long canyonlike hollow, until a low place in the bank and a steep climb brought it up to the open prairie.

Virginia paused in this semblance of shade to let Juno drink. Her brown face grew radiant as she thought of the good news she was bearing to the waiting home-makers of the Grass River Valley. A song came to her lips, and as she sang a soft little measure she remembered how somewhere down a tributary to this very creek she had sung for help in pleading tones one cold hopeless day three years before. So intent was she on the triumph of the hour she did not even look up the willow-shadowed creek trail.

Dr. Horace Carey, coming in from a distant claim, had dropped into this trail for the bits of shade here and there and was letting his pony take its way leisurely along the side of the creek bed. There were only a few shallow pools now where the fall rains would soon put a running stream, and the doctor's way lay along the moist places the pony's feet felt noiselessly on the soft ground. As he rounded a bend in the stream he caught sight of Virginia, her face outlined against the background of willow sprays, making a picture worth a journey to see, it was such a hopeful, happy face at that moment. Dr. Carey involuntarily checked his pony at the sight. His own countenance was too pale for a Kansas plainsman, and he sat so still that the low strain of Virginia's song reached his ears.

Presently Juno lifted her head and Virginia rode away out on the Sunflower Trail, bordered now only by dead pest-ridden stalks. Suddenly lifting her eyes she saw far across a stretch of burned prairie a landscape of exquisite beauty. In a foreground lay a little lake surrounded by grassy banks and behind it, on a slight elevation, stood a mansion house of the old Colonial style with white pillared portico, and green vines and forest trees casting cool shade. Beyond it, heaving in mist, rose a mountain height with a road winding picturesquely in and out along its side. Virginia caught her breath as a great sob rose in her throat. This was all so like the old Thaine mansion house of her childhood years.

Sunflower Ranch' to-night, and these are our decorations for the ceremony. It is all we have now. But it is ours, Virginia declared.

And then she told the story of the bank failure at Cloverdale.

"The last bridge is burned surely," Asher commented as he looked across the table at Virginia. "This is the only property we have except youth and health and hope—and each other."

"And the old Aydelot heritage to stand for principle, and your mother's belief in the West and in you, and the Thaine stubbornness about giving up what they want to keep," Virginia declared.

"As our days so shall our strength be," Asher added, as he saw his wife's face bright with hope and determination, and remembered the sweet face of his mother as it had looked that night on the verandah of the old farmhouse by the National pike road. For a long time down by the willows thinly shadowing Wolf Creek a white-faced man sat looking out toward the west, where a horse and rider had vanished into the mellow tones of distance.

CHAPTER VIII.

Living by faith, which is the substance of things hoped for, is good for the spirit but reducing to the flesh. Yet it was much by faith that the frontier settlers lived through the winter after the grasshopper raid. Jim



Three Merry Berry Pickers at Clarkson in Peel Co., Ont.

back if he could see this as I see it," she questioned. "But I now he has seen it daily. I can tell by that look in his gray eyes."

It was long after moonrise when Asher Aydelot, watching by the corral, heard the sound of hoof-beats and saw the faint outline of a horse and rider swinging in from the northward as once before he had watched the same horse and rider swinging over the same trail before the cool north wind that beat back the September prairie fire.

"I have supper all ready. See what I found just for you!" Asher said as he and his wife entered the house.

A bunch of forlorn little sunflowers in a brown pitcher graced the table. They could scarcely be called flowers, but to Virginia, who had hardly seen a blossom through the days of drouth, the joy they brought was keener than the joy that the roses and orchids gave in the days of a later prosperity.

"I found them in the draw where the wild plums grow," Asher said. "How they ever escaped the hoppers is a miracle."

"We will christen our claim 'The

Shirley often declared in that time between crops that he could make a free meal a day on Pryor Gaines' smile. And Todd Stewart asserted that when the meat was all gone from their larder his family lived one whole week on John Jacobs' belief in the future of their settlement. For the hardship of the winter was heavy. But the saving sense of humor, the saving power of belief in themselves, and the saving grace of brotherly love carried them through.

The winter was mercifully mild and the short grass of the prairies was nourishing to the stock that must otherwise have perished. Late in February a rainfall began that lasted for days and Grass River, rising to its opportunity, drowned all the fords, so that the neighbors on widely separated claims were cut off from each other. March came raging in like a lion. All the rain turned to snow and the wind to a polar blast as the one furious blizzard of that season fell upon the plains and for many hours threshed the snow-covered land.

On the night before the coming of the blizzard the light did not go out in the Aydelot cabin. And while the

wind and rain without raved at door and window, a faint little cry within told that a new life had come to the world, a baby girl born in the midst of the storm. Morning brought no check to the furious elements. And Asher, who had fought in the front line at Antietam, had forced his way through a storm of Indian arrows out of a death-trap in the foothills of the Rockies, had ministered to men on the plains dying of the Asiatic plague, and had bound up the wounds of men who returned to the battle again, had found a new form of heroism that morning in his own little cabin—the heroism of motherhood.

"You must go for help, Asher," Virginia said, smiling bravely. "Leave the baby beside me here. We'll wait till you come back. Little Sweetheart, you are welcome, as if you did come with the storm, a little before you were expected." The young mother looked fondly at the tiny face beside her.

"I can't leave you alone, Virgie," Asher insisted.

"But you must." Virginia's voice was full of courage. "You can go as far as Pryor Gaines' and send him for you. Little daughter and I will be all right till you come back."

So Asher left her.

Pryor Gaines was waterbound across Grass River. Of the three women living east of the stream one was sick and one was kept at home with a sick husband, and the third had gone with her husband to Wykertown for supplies and was stormstruck somewhere along the Sunflower Trail.

"I must go for Jim. Any neighborhood is blessed that has a few good-hearted unmarried folks in it," Asher thought as he braced himself against the driving rain and hurried away.

When he reached home against the fire was low, the house was very quiet, and Virginia's face was white against her pillow.

"Our little daughter is asleep," she said, and turning away she seemed not to hear her husband's voice asserting her that Jim would bring the doctor as soon as possible.

The blizzard was just beginning in the early evening when Jim Shirley fairly blew down the trail from the north. He slipped into the kitchen and passed quickly to the next room. Asher was bending over his wife, who lay in a delirium.

Jim Shirley had one of those sympathetic natures that read the joys and sorrows of their friends without words. One look at Asher told him what had been.

"The doctor was away up Wolf Creek, but I left word with his colored man for him to come at once, and he'll do it," Jim assured Asher as he stood for a moment beside the bed. "I didn't wait because you need me."

Asher lifted his head and looked at Jim. As man to man they knew as never before the strength of their lives as friendship.

"I need you. She needs the doctor. The baby—"

"Doesn't need any of us," Jim said softly. "I'll do what I can."

It is no strange, unreal story of the wilderness day, this that followed out of a little life, where no rosewood grew for coffins nor forists made broken columns of white lilies and immortelles.

But no mother's hands could have been more gentle than the gentle hands of Jim Shirley as he prepared the little form for burial.

Meantime the wind was at its wilddest, and the plains were swirled in blinding bitterness along the prairie. The hours of the night dragged by slowly to the two men hoping for the doctor's coming, yet fearing that hope was impossible in the face of such a night.

"Carey has the keenest sense of direction I ever knew in a human being." (Continued on page 26.)

The Upward Look

The Treatment of Christ

AND sitting down they watched Him there.—Matt. 27:36.

As we read these words, the mind shrinks in horror over the heartless, the less cruelty of those murderers. Not only had they taken part in the dreadful deed preceding, but now, probably with curiosity and triumph the physical agony of that lonely figure. They watched the physical agony only, because of the great soul anguish, they could have no conception.

As we think we wonder how even they, the enemies of Jesus could do that. Yet have not we, who love Him, again and again caused Him grief and pain? We have, for fear of ridicule, been ashamed to show before others, that we were His followers. We have grieved Him by our silence, when a word for the right would have meant so much.

A mother was terribly burned and scarred in saving the life of her daughter. One day that daughter with a new friend met her mother face to face on the street. She named her by without the least look of recognition. We can imagine that mother's feelings; can we imagine our Saviour's feelings over an act, a repression, or an impression of disloyalty?

When we wonder and marvel at the heartlessness of those watchers, we need wonder at our own. We have grieved Jesus by our thoughts, which no one else knew but Him. We have hurt Him by many an action, which later we have bitterly regretted. How often and often we have pained Him by our lack of faith, by our unwillingness and slowness to take Him at His word, and let His power become a living power in our lives!—I. H. N.

Abiding Rest

A BLESSED rest of heart.
From doubting fear and sin;
A rest in Christ the risen Lord,
Who surely reigns within.

I'm glad this rest is free,
This blessed rest from sin.
This rest is free for you and me,
A living Christ within.

He seeks our wayward heart,
In earnest to come in;
Our heart to wandering ever prone,
Whose reigning power is sin.

I gave to Him my heart,
A rebel sinning thing;
I gave it, all the heart I had
It sorely needed Him.

My rest is deep and strong,
Abiding true and clean;
No darkness now, nor fear at all,
For Jesus reigns supreme.

Now open wide your heart,
Refuse not Jesus' word;
Admit Him now, He'll give you rest,
And bring eternal noon.—Sol.

Shall We Move to Town?

With the Household Editor.

IT is a common thing for the farmer and his wife to look forward to the day when they have saved enough capital to allow them to sell out and live in town for the remainder of their days. With this object in view they work very hard. The children grow up and start out for themselves and by and by the position has been reached where the farmer and his wife can retire and take life easier. Looking at the question from one standpoint, who can blame them for taking advantage of their hard-earned cash? There are

other ways, however, of looking at the subject.

If a couple moves to the town or city with the intention of taking things easy, oftentimes it is not long before they realize that the good time they had planned for themselves is not so rosy after all. The man finds himself with practically nothing to do and the easy life after his hard days of toil, has a tendency to make him discontented. Sometimes also, his health gives out under the unusual conditions of living.

One of the big reasons why they may move to town is in order that the wife may enjoy the household conveniences of the city, which they did not have on the farm. Yes, that is a feature does enjoy these conveniences fully. But here is another point. If the farmer and his wife have sufficient capital to retire and live on their income, why not instead of moving off the old farm, install these household conveniences in the farm home. They surely have enough money to provide the house with heating, lighting and water systems, and power to run the churn, washing machine, and so forth. Or if enough money has been made from the farm to retire, why not instead of moving to town, sell the farm with the exception of a few acres, and build a modern home, and install the labor saving equipment which would be found in a house in town. An automobile too, would fit in nicely here.

There are several things to commend this idea. If a few acres of land are retained, poultry, or a small vegetable or fruit garden can be handled and in this way the retired farmer has something to occupy his time and he and his wife are settled down in the community which they love. It is, therefore, not necessary for them to make a radical change in their mode of living, which would be the case were they to move to town. They have more time to devote to problems relating to community betterment and it is only natural for them to take more interest in the community where they have lived for years than they would do if they moved to town where conditions are different. What are the views of Our Women Folk on this subject?

Bettering Country Life

A COLORADO farm boy has offered these suggestions to parents who want to keep their boys and girls on the farm:

"Get good books, magazines and farm papers for the young people to read.

"Have some kind of a club for them to attend.

"Arrange matters so they can have a party or entertainment once in a while.

"Go with them to church every Sunday.

"Arrange it so they can have one or more picnics every year.

"Teach them to do all kinds of farm work by giving them a small tract of land for themselves and showing them how to raise their crops, and have them help you with your work.

"Give them a horse which they can ride or drive when they haven't anything to do or when they want to go anywhere.

"Teach them to love and be kind to animals.

"After they finish their school, send them to the state agricultural schools.

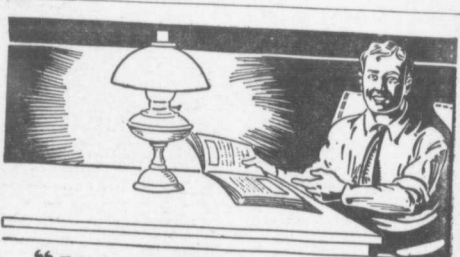
"Take time to teach them the 'how's' and 'whys' of farm work."

Presumptively it may seem for a lad to advise his elders as to the best ways of solving one of the hardest problems, there is no small amount of helpful common sense in the ideas of this boy who at some and in school has had a chance to see ways of bettering country living.—Exchange.



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DEPARTMENT OF FINANCE, OTTAWA
OCTOBER 28, 1916.

Testing Garden Seeds for Germination

Allice A. Ferguson, York Co., Ont.

THIS is a fascinating study for boys and girls. In fact, it is in line with their nature study and may be left to them. When once they begin, their interest will carry them through. While we buy garden seeds year by year, yet we grow many varieties, and often these may not have matured properly, or been cured perfectly, or there are many imperfect seeds. In order to know that the seeds we sow—whether home grown or purchased—are good reliable seeds, it is well to test them for germination. The following is a simple method:

Two soup plates are required and two sheets of blotting paper, ink-spattered, torn from a large sized pad will do nicely. Pour a little lukewarm water in one soup plate, cover with one sheet of blotting paper. Place the seeds to be tested in little groups—from two to six of each variety. Number or name so that no mistake will be made, especially if there are two or three varieties; cover with the second sheet of blotting, and turn the second plate over this, and place in a warm spot near the stove. The blotting paper absorbs the water sufficiently to keep the seeds damp, while the warmth promotes rapid growth. Examine daily and add a little water should the paper become dry. Some seeds will sprout in 24 hours, while some may require a few days. It depends upon the variety, and the age or strength of the seeds. It is funny to see how they grow.

After testing tomato seeds of different ages and varieties, I tried an experiment which worked so successfully that I have used it the second year and purpose using it again. I prepared a shallow box—a flat one with loamy earth which I had kept in the cellar all winter for the purpose.

When I examined the seeds daily, I picked out with a tooth pick the sprouted tomato seeds. With the flat end of the toothpick I made small holes in the earth, an inch or more apart. With the sharp end I picked up the sprouted seed and dropped it in the hole, seed end up, and covered very lightly with soil, watering gently with lukewarm water daily. In this manner I soon had boxes of tomato plants set in regular order. I kept the varieties separate. It was surprising how well they grew and the seed slowest to germinate came along all right. I usually have three varieties of tomato seeds on hand, and use only part of a packet of each, so that some kinds are two or three years old, but they all grow.

When the hot bed or cold frame was ready to receive the plants they were transplanted into it, giving them more room than they have in the boxes we buy. Our main authority says the second week of June is the time to set tomato plants in the open for this section of the country and by that time the plants are in splendid condition and right along. Tomato plants repay for frequent cultivation.

The middle or March, or St. Patrick's Day, is said to be the correct time for sowing the seeds in the house. So the tomato seeds may be tested for germination about that time. For good results we must plant only the best seed. By testing in this way we can judge whether the seed is good or not. We have tested corn, mango seed, parsnips, vegetable oysters, tomatoes and different varieties of flower seed. Try it.

If I Were a Seed

By Freddie Gelinas, Sherbrooke Co., Que.

IF I were a seed going to be planted, I would like to grow to be an Oak tree, and as for location I would want some spot on the Quebec and Ontario boundary, so that my roots could spread equally on both sides and thus help to make a tighter joint between the two provinces. Growing in such friendly land I would hope to grow so tall that I could occasionally be favored with a touch of the sympathetic breeze blowing from the Maritime Provinces. After having attained my full growth and wanting to continue to be useful to my neighbors, I would gladly see the lumbermen take possession of me on one condition; namely, that he would respect my last will which should read as follows:—I bequeath my limbs to be used to keep the "Bonne Entente" firm and the body of the tree to help building a comfortable "Home" for some invalid soldier returned from the front.

Garden Pointers

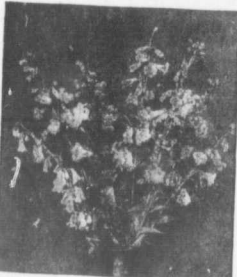
ONION seed grown in a hot bed or in the open may be transplanted with success, when the green tops are three or four inches high. Transplant in rows—the plants being about four inches apart. By using this method, less seed is required, or rather a little seed will go a long way. Cheese cloth, cotton or canvas, stretched over frames will do to cover hot bed or cold frame, though glass is preferable.

A hot bed is not a luxury, but a necessity. Every garden should have at least one hot bed for growing vegetable and flower plants. Now is the time to plan for one.—A.A.F.

Growing Summer Flowers From Seed

W. Hunt, O.A.C., Guelph

To secure a good display of summer flowers from seed, it is necessary to start operations early in the season. It is usually well on in May before much seeding can be done out of doors. This is more especially the case with many of the more tender kinds of plants, such as zinnias or nas-



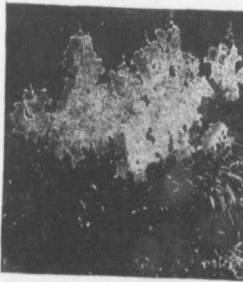
A vase of Pentstemon Glehnoides cut in July from seed sown indoors early in March.

turtium, which are easily checked or blackened by light frosts in spring. Seeds of most summer flowering plants grown out of doors at the time mentioned will, however, produce a supply of flowers in late summer, when perhaps those sown early indoors will be getting past their best. It is therefore advisable to sow a few kinds out of doors for late flowering purposes.

For an early supply of bloom during the summer, it is best to start a few kinds indoors early in the season, during March or early April. The flower garden will otherwise be dull and unattractive during the early summer months. This is especially true if plants from seed only are relied on to make a display.

Starting Early.

Among the varieties that should be started early indoors are petunias, verbenas, antirrhinum (snapdragon), pentstemon, salvia, ageratum, centaurea, cynnecarpa (dusty miller), pyrethrum (golden feather) and lobelia. The four kinds last named being of a dwarf



White Snapdragon, intermediate type. Photo taken in late July of plants from seed sown indoors late in March.

habit of growth, are useful for planting around the edge of flower borders. The lobelia does best where it does not get too much sun. The first named varieties are of a taller habit of growth (one to two feet) and are better suited for

the centre of flower beds or borders.

There are no summer flowering plants that can be raised from seed that will make a finer and more continuous display in the flower garden during summer than those named. The seed, however, should be started early indoors and the plants given ordinary care and attention. Petunias, verbenas and snapdragons give especially good results. All the plants named will also be found very useful for helping to fill up window and verandah boxes, rustic stands and hanging baskets. Being of a perennial or lasting nature, many of them can be successfully dug up in the autumn before frosts, and placed in pots or boxes for indoor window decoration during early winter. Those late in flowering, such as ageratum, snapdragon and pentstemon are especially useful for this purpose. A supply of cuttings may also be obtained from most of them, if the plants are kept in a cool window during winter.

Pansy seed may be sown in March or April indoors. These plants will give a quantity of bloom during late summer, even as late as November. If some loose garden rubbish and dry leaves are thrown over the plants late in the autumn before severe frosts, they will also give some flowers early the following spring. Pansies like a rich, light soil, and some shade in the middle of the day. A north border near to a fence or building—not under trees—suits them well. Black soil from the woods, and a liberal application of either cow or sheep manure dug into the soil before planting, together with plenty of water in hot weather, will produce fine large blooms and much better flowers late in the season than plants that were raised and kept in cold frames over winter.

Indoor Sowing.

Use shallow flats or boxes two to three inches in depth for seeds. Bore some half inch holes about six inches

apart for drainage. A layer of broken flower pots, coarse gravel, coal cinders, or lump charcoal sufficient to cover the bottom of the box is advisable. Empty tin cans, huddle fish boxes make good boxes for sowing seed or transplanting seedling plants into. Soak the boxes in water before using to dissolve any salt there may be in them. Flower pots or seed pans may be used to sow seeds in. Seeds may be started in a hotbed in March or April, or in windows, or even in a cold frame about the middle of April.

Soil.

A rather light, sandy soil, not too rich in fertilizers and of a fine texture is best to sow seeds in. Six or eight parts of light, loamy garden soil, or loamy sub-soil from underneath soil may be mixed with one part sand and one part leaf mould, or black soil from the woods. One sixth part of the



Garden Primroses for a shady corner in early spring.

whole of these of dry, well rotted barnyard manure, dry cow manure or pulverized sheep manure as a fertilizer

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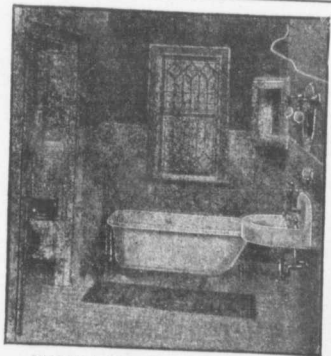
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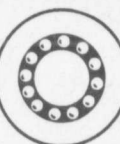
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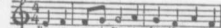
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mixed in with this will make a good soil to sow seeds in. Old soil used in hot beds, or old potting soil is all right in which to sow seeds.

The soil should be fairly dry. Place the coarse soil at the bottom, and about half an inch of fine soil on top. Press down firmly. Make the surface level, and barely half an inch below the top of the box to allow for water space.

Sowing Seeds.

It is best to sow broadcast very fine seeds, such as petunia, snapdragon, and portulaca seeds. These seeds should be covered lightly with soil. The coarser seeds such as zinnia, balsam and phlox may be sown in drills or broadcast. In boxes drills are probably best. The drills should be about one and one-half inches apart, and deep enough so that the seeds can be covered with fine soil to about three or four times the diameter or thickness of the seed. A drill about half an inch in depth is about the depth for the seeds laid in. Cucumber seeds should be covered with about one-quarter inch of soil. Castor oil beans should be planted deeper, covering them with about an inch of soil. A sprinkle of fine soil to barely cover the surface of the soil will help prevent the "damping off" or decay so common to seedling plants in hot beds.

Watering.

Water seeds carefully so as not to rinse them out of the soil. By spreading a piece of wet burlap (coarse sack-ine) closely over the surface of the soil before watering, a jug or picher may be used for watering seeds. The water should be allowed to soak into the soil before removing the wet burlap. Keep the soil in which seeds are sown moist, but not water-soaked. Give the seedlings all the air possible, especially in hot beds. A temperature of 55 to 60 degrees Fahrenheit will suit them. Shade the seed boxes from the hot sun until ready to transplant.

Transplant seedlings when three or four leaves have developed. Set them about one and one-half inches apart. Use shallow boxes not more than three inches deep. Plants are easier transplanted from shallow boxes than from deep ones. If small two or three-inch paper or clay pots can be had, the plants are better for planting out in the border from pots than from flats or boxes.

Hardening Plants.

Stand the boxes or plants out of doors about the middle of May, in mild weather to harden before planting out in the border. Shade them from the sun for a few days and protect from frost. It is a mistake to set out plants when the weather is cold and chilly. Better lose a day or two in time, than lose the plants. Hardening plants gradually from indoor to outdoor conditions is very necessary. It pays to do it.

Everyman's Garden*

W. White, Frontenac Co., Ont.

WE who are trying to locate in our neighbors a box of flowers, have no excuse for our vacation or avocation. As a business it is honorable and fairly remunerative; as an avocation it is all-absorbing. The more converts we can make the better for our land. Abroad the famous has not forgotten Gladstone's famous reference to Canada as "a land of perpetual snow and ice." We ought to make future English Premiers refer to Canada as "a land of sunshine and roses."

"A garden is a lovesome spot," says Sir Thomas Browne, "and may have as elaborate a garden as one feels inclined. But the average person, who is

*Extract from a paper sent in to the Ontario Horticultural Convention.

an amateur at growing things, must needs start with something less pretentious. They want something that will take only a portion of their time, and is inexpensive.

My garden last summer was nothing but a border of annuals, such as even a child might grow; such as the busy housewife of a large family might tend, or such as an old person might delight in. Annuals will grow in any kind of soil with a little stirring. My garden gave me delight, and I have no other excuse for these few lines but to pass my experience along to other amateurs. One season of actually growing the plants will give one more knowledge than he will obtain from many books.

Of course, it requires variety each year to keep up the interest in gardening. My garden consists of masses or groups of these annuals and nothing else: coreopsis, phlox, calendula, larkspur, zinnia, California poppy, cosmos and bachelor button. Here and there I planted a gladiolus. Some say that better results are obtained when these are arranged in color combination, but I have a fondness for grouping into or planting in masses. To my mind, all flowers look better in masses. It accentuates the beauty of even the humblest annual. But plant them as you fancy pleases. They are almost "fool proof."

In starting your garden, make a plan and stick to it. Do not try the hit or miss way of doing things. You



The Palm is ever popular for hallways or stair corners.

may start this garden of annuals in May, and by the 12th of July be wearing some of the flowers. Do not plant the seeds too deeply, and in late afternoons water them. Use the early flowering cosmos. Do not allow your annuals to go to seed.

These annuals may be planted and adapted to almost any available area of ground. They will bloom a long time, many until killed by frost. If they give you as much pleasure as I have derived from mine, I shall feel rewarded for writing these few lines.

"St Hubbard told me that he got a heap of work out of you when you was workin' fer him," said the farmer.

"Well, I allow he did," said the hired man.

"Yes. Fact is, I guess he just about got it all."—Boston Transcript.

"I wish I were you star," he said, dreamily.

"I wish you were," she returned, promptly, heroically showing a yawn.

"And why, dear one?" he asked, impulsively. "Why do you wish I were you brilliant orb?"

"Because," she replied, in cold, matter of fact tones, "because you brilliant orb is just about 11,000,000 miles away."

And he faded silently out like a mist before a summer sun.

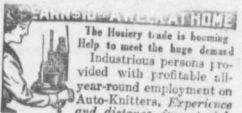
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Indications That Spring is Coming

IMPORTANT NOTICE

Farm and Dairy patterns shown in these columns are especially prepared for Our Women Folk. They can be relied upon to be the latest and include the most modern features of the paper pattern. When sending your order please be careful to state bust or waist measure for adults, size for children, and the number of the pattern described. Orders are filled within one week to 10 days after receipt. Price of all patterns to Our Women Folk, 10 cents each. Address orders to Pattern Dept., Farm and Dairy, Peterboro, Ont.



SPRING is coming! At least so it would seem by the number of pattern orders we have been receiving recently. We are quite busy sending off the orders for February at the time of writing, and we will have received about one month's worth of orders by the end of the month. This goes to show that our pattern department is a popular one with Our Women Folk, and that our patterns give satisfaction. When considering an order recently, one of our subscribers said: "I do almost all my own sewing and usually use Farm and Dairy patterns. They sure are a wonderful pattern order to which we would like to send our attention. Hardly a week goes by without our receiving very properly made out, either the bust or waist measurement is lacking, if the pattern is for adults, or the age if for children. It is imperative that we have along with the order, if it is necessary for us to write and request same, which therefore, that Our Women Folk will find in future pattern orders when sending in their orders."

1917—Girls' Dress. This costume is very chic for the young girl, and has several full plaited skirts and the neat over-bias. Head is used on this collar for trimming and large or small buttons can be used to advantage. Four sizes: 8, 10, 12 and 14 years.

1918—Lady's Shirt Waist. It is a good time now to make up some extra shirt-waists, and here we have an attractive attractive line, and is out of stitching

around the edge is a style feature this season, as much machine stitching is being shown. Seven sizes: 34 to 44 inches bust measure.

1919—Girl's Glimpse Dress. This little dress is made with a bust or waist measure for special occasions. Note the pointed pockets. These are being shown on the who chooses this model will be right up to date. Four sizes: 4, 6, 8 and 10 years.

1920—Lady's Dress with Heavy Lining. Here is a style which you will not doubt appreciate to many of Our Women Folk. It is nicely finished with silk material with a dainty vest of lace or geometric decorative. Six sizes: 32 to 42 inches bust measure.

1921—Lady's Apron and Sleeve Protector. When doing housework it is a length of time. Sleeve protectors faithfully help to solve this difficulty. The apron 34, 36, 42 and 44 inches bust measure.

1921—Lady's House Dress. Now is the time to secure materials at bargain prices. This week is a slight variation from others we have shown, and should therefore appeal to many.

1921—Costume for Misses and Women. Summer dresses which can be worn for the summer rush of work will save considerable worry for the busy housewife, and here is shown a dainty little costume. Three sizes: 16, 18 and 20 years.

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Beans, Davis Golden Waxor Butter.....15	.45
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Cabbage, Chester King, best keeper.....	.05	.30	1.00	..
Carrot, Chantenay, sweet and tender.....	.05	.25	.65	..
Cauliflower, S.B.'s Earliest of All.....	.15	3.00
Celery, Paris Golden, best of all.....	.10	.80	2.50	..
Corn, Golden Bantam, earliest, sweet.....10	.40
Cucumber, S.B.'s Perfection, prolific.....	.05	.20	.50	..
Lettuce, Toronto Gem, fine, heading.....	.05	.20	.60	..
Onion, S.B.'s Yellow Globe, finest.....	.05	.25	.65	2.10
Onion, S.B.'s Prize-taker, Red Globe.....	.05	.25	.65	2.10
Peas, Stratagem, large pods, vines 2 ft.....	.05	.15	.35	..
Radish, Sc't Turnip, White-Tip, earliest.....	.05	.15	.40	1.00
Tomato, Jewel, very early.....	.05	.35	1.00	..
Tomato, Success, large and smooth.....	.05	.35	1.00	..
Nasturtium, Dwarf, mixed colors.....	.05	.20	.60	..
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Of course, if one would just as soon have a low grade or off grade fence, he can buy the kind sold at a low price. That is his affair. If, however, good quality and permanency is desired in a fence he should buy ours or a similar good grade, at the small extra cost necessary.

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THE PAGE WIRE FENCE COMPANY
LIMITED.

WALKERVILLE, TORONTO, MONTREAL, ST. JOHN.

Winning the Wilderness

(Continued from page 20.)

ing." Jim assured Asher. "I know he will not fall us."

Inside the cabin Virginia's delirium was turning to a frenzy. And Asher and Jim forgot that somewhere in the world that day there was warmth and sunlight, health and happiness, and babies cooing on their mothers' knees. And the hours of the day dragged on to evening.

Meanwhile, Dr. Carey had come into Wykerton belated by the rains.

"The wind is changing. There'll be a snowstorm before morning. Bo Peep," he said wearily as the young colored man assisted him into warm, dry clothes. "It's glorious to sit by a fire on a night like this. I didn't know how tired I was till now."

"Yes, suh, I see glad you all is home for the night, suh. I sho' is. I got mighty little use for this yuh country. I see sorry now I ever done taken my leave of ol' Virginia." Bo Peep's white teeth glistened as he laughed.

"Any calls while I was gone?" Dr. Carey asked.

Bo Peep pretended not to hear as he busied himself over his employer's wraps, until Carey repeated the question.

"No, suh! no, suh! none that kaint wait till mawhnin', suh," Bo Peep assured him, adding to himself, "Flahd as he is, he's not gwine way out to Grass River (his blessed night, not if this huh 'stablishment. Not long's my name's Bone-ah-gees Peeperville, no, suh!"

Dr. Carey settled down for the evening with some inexplicable misgiving he could not overcome.

"I didn't sleep well last night, Bo Peep," he said when he rose late the next morning. "I reckon wa doctors get so used to being called out on especially bad nights we can't rest decently in our beds."

"I didn't sleep well, neuthah," Bo Peep replied. "I kep' thinkin' bout that man come heah for yuh yestehs. I jes wa'n't gwine to le' yuh go out again las' night."

"What did he want?" the doctor asked, secretly appreciative of Bo

Peep's goodness of heart as he saw the street full of whirling snow.

"He done said hit wah a maturity case."

Bo Peep tried to speak carelessly. In truth, his conscience had not left him in peace a moment.

"What do you mean? Who was it?" Horace Carey demanded.

"Don't be mad, Doctah, please don't. Hit wah cuz you all wah done wash out las' night. Hit wah Mistah Shulley las' night. Hit wah Mistah Shulley hit wah Mistah Asher Aydelot's wife."

"For the love of God!" Horace Carey cried hoarsely, springing up. "Do you know who Mrs. Aydelot is, Bo Peep?"

"No, suh; neveh see huh."

"She was Virginia Thaine of the old Thaine family, was it home?"

Bo Peep did not sit down. He fell in a heap at Dr. Carey's feet, moaning grievously.

"F' Gawd, I neveh thought o' him. I jus' thought o' you all, deed I did. Oh! Oh!"

"Help to get me off then," Carey commanded, and Bo Peep flew to his tasks.

When the doctor was ready to start he found two horses waiting outside in the storm and Bo Peep, wrapped to the eyes, beside them.

"Why two?" he asked kindly, for Bo Peep's face was so full of sorrow he could not help pitying the boy.

"Please, kaint I go with you all? I can cook beltch'n Miss Virginia, evah could, an' I can be lots of help an' you all'll need help."

"But it's a stager of a storm, Bo Peep," the doctor insisted, anxious to be off.

"Neveh mind! Neveh mind! Lemme go. I won't complain of no storm. And the doctor let him go.

It was already dark at the Sunflower Ranch when the two, after hours of battling with wind and snow and bitter cold, reached the cabin door. Bo Peep, instead of giving up early or hanging a dead weight on Dr. Carey's hands, as he had feared the boy might do, had been the more hopeful of the two in all the journey. The hardship was Bo Peep's penance, and right merrily, after the nature of a merry-hearted race, he took his punishment.

Jim Shirley, putting wood on the kitchen fire, bent low as he heard the piteous moanings from the sick room.

"Oh, Lord, if you can work miracles, work one now," he pleaded below his breath. "Bring help out of this storm or give us sense to do the best for her. We need her so, dear Lord. We need her so."

He lifted his eyes to see Horace Carey between himself and the bedroom door, slipping out of his snowy coat. And beside him stood Bo Peep, helping him to get ready for the sick room.

"I know Miss Virginia back in the South, suh. I done come to take keer of this kitchen department. I know jus' what she lak mo', suh." Bo Peep said to Jim, who had not moved nor spoken. "I see Mistah Bone-ah-gees Peeperville, an' I done live with Doctah Carey's family all mah life, suh, 'cept a short time I spent in the Jacobs House at Carey's Crossing. I see his custodian now, suh, and I know a few things about the cookin' department, suh."

(Continued Next Week.)

Let us ever be reaching out in our Women's Institute meetings by the use of helpful papers and discussions, for something that is going to help each one of us to improve our home life.—Mrs. W. J. Hunter, Brampton.

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.

Pasteurization a Simple Matter

J. A. Halpenny, Grenville Co., Ont.

I WISH to say a word with regard to the Dairy Standards Act. I am not a milk producer, but I speak from the experience I have had as a cheese manufacturer. In our factory there are 50 patrons, and as far as they are concerned it was not necessary to pass the act, for by both pasturizing the whey and pay by butter fat. The cost of pasteurization of whey I consider is money well spent.

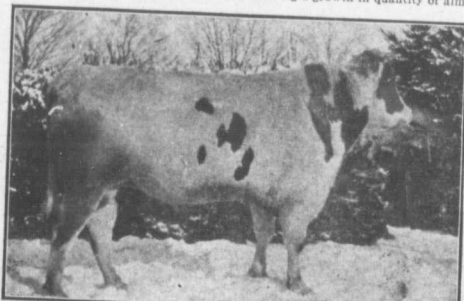
It was the custom in our factory for years to pasteurize the whey the first four months of the season. The idea was to have the sweet whey for their calves. Some of my patrons raise their calves on the whey and have had good results. It not only increases the value of the whey for feeding, but it keeps the tanks and whey in good sanitary condition. The whey is returned in the cans clean and sweet, leaving them easy to wash. The cost of pasteurization in our factory amounts to about 12½ cents a ton of milk. We do not elevate the whey for the reason that it takes more.

The cost of installing the apparatus for pasteurizing is just for the piping and that would depend on the distance the tank is from the boiler. I use a three-quarter inch pipe from the boiler to the centre of the whey tank, using a "T" in the bottom of the tank. I reduce the "T" to half an inch, extending a foot of pipe each way. It is necessary to have the piping covered to protect it from the cold air. The tank should also be well covered. I use cedar for covering as the steam rot a other wood very quickly.

Pasteurizing Whey a Benefit

A. G. Wittle, Prescott Co., Ont.

I HAVE pasteurized whey for the last eight years and find it a great benefit to the flavor of the cheese as well as making the whey better for feeding purposes. The cost of pasteurizing is about fifty cents per ton of cheese, and the cost of instalment would be about five dollars. I consider pasturizing of whey a great help to raise the standard of the cheese and have no hesitation in saying the paying for milk on quality basis, as Mr. Fublow has been advocating for years,



Colantha Fayne Butter Baron.

The splendid sire owned by W. B. Poole, Ingersoll. He was first at Ottawa as a two-year-old in 1916, and second at London in a class of 13 as a yearling in 1914. He will be offered at auction on March 14th at Mr. Poole's sale. He is a sire that is a sire.

would also help to raise that standard. The three strongest points in improving the quality of cheese are: (1) Have the milk delivered cool and clean; (2) Have the whey go back in the cans properly pasteurized; (3) Pay the patrons on the quality basis. This has been my practical experience for years.

Extremes Should Be Avoided

EDITOR, Farm and Dairy:—Our experience, and I think that of the dairy generally, is that milk testing high in butter fat does not make the solid-bodied keeping cheese that is made from lower testing milk and which is the preference on the English market. I do not mean by this milk testing under three per cent. I am quite aware that experts state that just as solid a bodied cheese can be made from 5 per cent. milk as from say 3½ to 4 per cent. milk; but this is not our experience. Possibly it may be done; but my claim is that it is not done. I know of a factory that divided their milk this year and shipped each week's make under a separate mark; the maker was first class, but the two lots could not be shipped to the same party at the same price and give equal satisfaction. Knowing these facts I felt it my duty to give them.

I thoroughly believe that milk should be received and paid for according to test, but the factorymen generally are not yet prepared for this. Makers need instruction as to testing and farmers need education as to values. Multiply the test by the amount of milk, and the farmer will get a figure which will indicate the value of his cow; always bearing in mind that the cow giving the largest quantity of milk provides a certain extra amount of whey or skim milk with which to feed the calves or hogs. I think farmers should avoid extremes, either in high testing or low testing.—A. A. Ayer.

Dairy Progress in Manitoba

THE year 1916 was a very satisfactory one in Manitoba dairying. The crop report of the Department of Agriculture shows the total value of dairy products marketed within the province during the year to have been almost four and one-half million dollars, the value being placed at \$4,482,258. This shows an increase over last year of more than 16½ per cent. Part of this increase in value and part of it from the higher level of prices, comes from the greater amount of dairy products produced. The growth in creamery production is particularly gratifying, the 1916 creamery butter make totalling 6,774,510 pounds, showing a growth in quantity of almost



Not—and if you have a Sharples Suction-feed Separator you don't have to, for it skims equally clean whatever speed you turn. But with every other separator you must turn the crank at just exactly the speed stamped on it, or you will lose cream—every time! The wonderful Sharples Suction-feed varies the milk feed in direct proportion to the separating force—never more milk in the bowl than it can perfectly separate.

All other separators have a fixed milk feed. Thus when turned below speed much of the milk runs out without being perfectly separated, and some gets into the cream, making it thin and uneven. Thousands of actual tests have proven that 19 out of 20 persons do turn too slow most of the time, and that everybody turns too slow some of the time. Get a

SHARPLES SUCTION-FEED CREAM SEPARATOR

- the only separator that skims clean at widely varying speeds
- the only separator that delivers cream of unchanging thickness—all speeds
- the only separator you can turn faster and finish skimming quicker
- the only separator with just one piece in the bowl—no discs, easiest to clean
- the only separator with just one pipe in the bowl—no once-a-month ciling system

Sharples is positive insurance against carelessness and its consequent cream waste. We realized that it was far from sufficient that a separator could skim clean when properly handled. It was vitally necessary that it should skim clean—even when improperly handled. If any of the old-style fixed-feed separators would adopt a device for the purpose of notifying the operator when he is turning too slow, it would be an acknowledgment of the vast superiority of Sharples, which automatically prevents losses from irregular turning instead of simply announcing them. Write today for catalog to Dept. 77.



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Write for FREE Booklet "D" and Learn Why you can't afford to be without this simple machine.

H. F. BAILEY & SON - Galt, Ontario
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BUY YOUR SEED EARLY

The supply of good reliable seeds of all kinds is very limited this year. Be sure and make it a point to get your orders in early so as not to be disappointed.

We pay railway freight on all orders of \$25.00 or more in Ontario and 12c per Quebec.

SEED CORN	Black Ontario Crowned	Crib outed	Gov't Standard No. 1 Red Clover	No. 2 Red Clover	No. 1 Alsike	No. 2 or 3 (No. 1 for purity)	No. 1 Timothy	No. 2 (Old No. 1 for purity)	Alfalfa—Montana Crowned	(Old-World) Crowned	Ont. Variegated No. 3 (small No. 1)	Lewins's Grimm	North-West (Green)	O.A.C. No. 21 Barkey, registered	O.A.C. No. 21 Barkey	Mercur's Spring Wheat	Goose Wheat	Marquis Spring Wheat	Pur Clover and Timothy	1 lb. 50c for each cotton bag required.	Green socks free.
Wisconsin No. 7	42.15	2.60	\$12.50	\$14.50	12.50	15.00	5.50	5.50	12.00	14.00	25.00	25.00	25.00	2.00	2.00	2.00	2.35	2.35	2.35	1.00	1.00
Golden Glow	2.15	2.60																			
White Cap	2.15	2.60																			
Longfellow	2.35	2.85																			
N. Lakota	2.35	2.85																			
Compton's	2.35	2.85																			
O.A.C. No. 72 Oats, un-registered	1.75																				
O.A.C. No. 72 Oats, un-registered	1.85																				
Banner Oats registered, (in sealed bags of 2, 4 and 8 lbs.)	1.60																				
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One Year's Progress

Nineteen-thirteen was a golden year in the history of The Mutual Life of Canada.

The following figures show the advance made in one year of the Company's history—

Paid to Policyholders	\$2,456,607.	Gains over previous year	\$480,798.
Income	\$5,613,273.	Gains over previous year	\$640,491.
Assets	\$29,361,063.	Gains over previous year	\$5,450,816.
Surplus	\$4,505,151.	Gains over previous year	\$341,907.
New Assurances	\$15,376,377.	Gains over previous year	\$1,618,390.
Assurance in Force	\$109,645,581.	Gains over previous year	\$5,853,851.

So successful was the Company that after meeting its numerous war claims in addition to ordinary mortality, it was found possible to pay the same liberal profits in 1917 as in ordinary years.

In war-time or peace-time The Mutual steadily advances in size and strength.

The Mutual Life

Assurance Company of Canada
 Waterloo, Ontario

When You Write—Mention Farm & Dairy

13 per cent, as well as two cents higher selling price. The price quoted this year is 31 cents, which is worked out on the known figures for several representative creameries at country retail figures, at which much of the butter of the centralized creameries is sold. It is felt, therefore, that the figure quoted are very conservative.

Growth in dairy butter production, while welcomed as an indication of increased dairy enterprise, is always checked by the fact that when dairy enterprise develops in any district up to the point where a creamery can operate, the establishment of a factory is encouraged. Dairy butter this year has found an unusually active market, and the quoted average price of 25.2 cents to producers finds its corroboration from various sources.

Cheese making shows an increase in volume of over 21 per cent, with 20 per cent of a boost in price. Manitoba has reached the stage where its cities call for so much milk and sweet cream that the waste of these two, as marketed, amounts to considerably more than one million dollars. The table covering the dairy products marketed—exclusive of those consumed in the farmer's own home—is as follows:

Product	Pounds.	Price.	Total Value.
Creamery Butter	6,574,510	\$1.0	\$2,058,998.10
Dairy Butter	4,423,289	22.5	1,114,653.32
Cheese	880,728	18.0	158,531.04
Total	11,878,527		\$3,312,297.56
Milk	45,401,043	2.2	998,823.84
Sweet Cream, in lbs. butter fat	478,242	36.0	172,167.12

Butter Prices and Consumption

THERE is an interesting principle in economics with regard to consumption that has an important bearing on butter. According to this principle, with some commodities the consumption is about the same whether the prices go high or low. A person would not eat about the same amount of salt, for example, according to the price was 50 cents or \$20 a barrel. On the other hand the consumption of some commodities varies about in proportion to the price. When eggs are 15 or 20 cents a dozen, enormous quantities of them are consumed, but when they reach 50 or 60 cents a dozen, consumption is materially reduced, and would almost totally cease, but for the use they are put in to in baking.

Applied to butter, we find that this principle works out in this wise: At average prices about the maximum consumption is reached. When prices become low, the amount consumed is slightly greater, but the increase is nothing like in proportion to the decrease in price, and it is not materially increased, no matter how low the price falls. On the contrary, as prices soar above the average, consumption decreases almost in proportion to the increase in price. When the price becomes very high, as at present, consumption is almost wholly cut off in some quarters. It is to the interests of the dairymen, therefore, to have prices maintained around the average, and it is in this regard that the storage facilities serve one of their most important functions. When prices are low, butter is taken up and stored; this buying, which as far as the market is concerned is increased demand, tends to steady prices and prevent them from going too low. When the make falls off the stored butter is placed upon the market, and this, as far as the market is concerned, is increased supply, and prevents market prices from soaring too great a height. The tendency of cold storage, therefore, is to keep prices around the average, and which level almost the maximum amount of butter is consumed, and which are therefore the most satisfactory from the combined standpoints of consumer and producer.

The Butter Maker of 1917

F. M. Showers, Lambton Co., Ont.

WHAT the old must give way to the new, is a saying that applies to both man and methods the world over; and just as the modern dairy machinery has replaced the old-fashioned, so the man of that age must disappear. We believe that we stand on the verge of a great new development, and we feel that the manufacture of dairy products will contribute in no small measure to that development.

Believing this, then, what kind of man must the butter maker be in order to be efficient? In the first place I think he should be a trained man, for we never heard tell of any professional man making a success without some amount of training. Many of our butter makers to-day are men who have nothing but practical training, which may be all right as far as it goes, but we need the theory as well as the practice to make an efficient man. So then, our 1917 man will avail himself of the splendid opportunities offered by our agricultural colleges.

He must also be a man capable of

Product	Pounds.	Price.	Total Value.
Creamery Butter	6,574,510	\$1.0	\$2,058,998.10
Dairy Butter	4,423,289	22.5	1,114,653.32
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Sweet Cream, in lbs. butter fat	478,242	36.0	172,167.12

discussing questions that may arise in connection with farm work, because, as I have said before, times have changed and the patrons of creameries no longer look upon a maker as a mere machine, but rather as a highly respected citizen who has entered the community. As such, he must mingle with them in their social life and be able to converse intelligently on farm questions from the farmer's viewpoint as well as his own. He should ever have the good of the business at heart and be ready by forceful argument and demonstration to drive home the necessity of producing a good raw material.

Of necessity, the 1917 butter maker must have high ideals regarding the business of manufacturing that raw material just a bit better each day than the day previous. I feel we cannot afford to leave undone any detail, however small, that will in any way tend to make Canadian products the finest in the world. So let us as butter makers this year, and in the years to come, feel that we have an important duty to perform in the building up of the community in which we live. Let us seek by honest, straightforward business principles the highest point attainable, knowing we will reap our just share of the reward and also be rendering a great service to the country and Empire as well.

Canada's Cheese Exports

H. S. ARKELL, Assistant Dominion Live Stock Commissioner, gives the following figures as representing the cheese exports of Canada for the last four years:

1913	\$20,697,144
1914	\$18,948,511
1915	\$19,247,603
1916	\$27,495,607

Mr. Arkell further states that Canadian cheese is standard for all countries competing for position in the United Kingdom, and that a permanent outlet for this product on the British market is assured.

Don't dampen the boy's enthusiasm over some thing he has heard at the farmers' institute meeting. Let him put it into practice. The crop that will be none the worse of a little enthusiasm.

Talks With Our Folks

By George A. Gail, Manager of Circulation, Farm and Dairy.

EVERY boy scout wears a handkerchief around his neck, and one of their daily rules is that no scout may tie the ends until he has performed one good turn to some one else that day. The knot on the handkerchief is the record of a good deed we can all wear at all be scouts, but we can all wear the handkerchief in spirit at least—and endeavor each day to tie at least one knot in it.

We think some of our subscribers must have been trained as scouts. Mr. W. L. Saunders, of Simcoe County writes:—"I value every issue of Farm and Dairy and always recommend it to any dairy farmer requiring a good dairy journal." Mr. J. W. Kelly, of Haldimand County says:—"While we are not now living on the farm we still like to read Farm and Dairy, after which we hand it to a neighbor." Mr. Geo. E. Miller, of Wellandport, Ont., writes:—"I take Farm and Dairy and two other farm papers, but when asked by my neighbors which I prefer I always speak in favor of Farm and Dairy." These subscribers are doing us a good turn and we appreciate it. They are also rendering real service to their friends by putting them in touch with the interesting and useful information contained in Farm and Dairy. Every issue is of some value to every dairy farmer, but one issue alone may contain some fact or piece of information that will mean dollars saved or earned to you or your friend.

Farm and Dairy is growing in stature. Last year it was fourteen per cent. larger than the preceding year. This means it had 155 more pages throughout the year, an average of three pages per week, yet the price remained the same. Each subscriber received that much more actual reading matter for his money. This year we expect to surpass last year in volume and quality. Farm and Dairy is indeed a full dollar's worth.

This week we received a letter from a subscriber asking why it was that only his name appeared on the address label. For the benefit of those who do not know how papers and magazines are mailed, we will explain. The name only of each subscriber is printed on the label. All copies of the paper for the same post office are rolled in a bundle and addressed to the postmaster. On receipt of the bundle the postmaster opens it and distributes the papers therein to the respective subscribers. The notation on the label immediately following the name, indicates the month and year when the subscription expires. It also constitutes a receipt for payment of subscription up to the date given. Look at your label and see that it is correct. If not, let us know.

Stick to the Bacon Hog

"FARMERS, stick to the bacon hog." This was the keynote of the address given by Mr. Duncan Anderson, of the Federal Live Stock Department to a representative audience of farmers at Braxton, Wellington Co., Ont., recently. Mr. Anderson was connected with the Better Farming Special that is touring Western Ontario. He told how between the year 1896 and 1904 the Canadian bacon hog had gained favor and supremacy on the British market. After that, home demands and other causes produced an indifference on the part of Canadian farmers and packers as to the value of the British market, and the supply became very irregular. Consequently, bacon from Denmark began to take the place of Canadian

bacon, and soon the Danish product held the market, a condition which existed up to 1914. Following the outbreak of war a better market for the time opened up to Denmark in Germany, and there the Danish bacon was sent. Simultaneously the Canadian packers again began to cultivate the British market, with the gratifying result that Canadian cured bacon is again in great favor over there. During the year 1915, Ontario hogs alone brought in the enormous sum of \$15,000,000 from the British market, and the returns of 1916 show every indication of nearly doubling that amount. Mr. Anderson emphatically warned

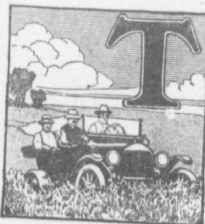
the farmers against changing from the bacon type hog to the heavy fat type. The latter type is produced in large quantities in the corn districts of the American Middle West. The farmer who goes in for heavy fat hogs has to meet the competition of these producers and receives a lower price per pound for his hogs. Quoting from the market report of the day, Mr. Anderson showed that the heavy fat type hog was last week selling on the American market at \$10.50 a cwt., while the bacon type the same day brought \$13.25 a cwt. on the Toronto market. He further pointed out that the heavy fat type is deceptive in appearance,

not being as heavy as might be supposed. This could be easily proven by putting a piece of the fat in a dish of water. It floats. A piece of lean meat the same size will sink to the bottom, proving a heavier weight. Likewise the bacon hog is really much heavier than it appears. This is important to the farmer when selling hogs by weight.

Answering a question, Mr. Anderson said that with the right type and regular supply, the hogs when dressed, weighing from 160 to 200 lbs., and properly finished, we can hold the British market both now and after the war.

-G. A. G.

A Car of Proven Quality



THE Ford car has been on the market twelve years, surely long enough to have proven its high quality. There is nothing experimental about it. Every part has stood the test of time and proven its stability with hard service. No other car has ever approached the durability records of the Ford.

No matter what price you pay for a car you cannot get one with a stancher chassis. Government Laboratory tests have shown that the different parts of the Ford car are superior to those in any other car. Ford Vanadium steel has never been equaled in strength.

If you want a car that can plow through deep mud, sand and gravel—that can cross fields, corduroy roads and ford streams—that can climb the steepest hills with ease—that will give the greatest mileage all year round with the least expense and care—then there is only ONE car for you—The Ford.

Ford

Touring - - \$495

Runabout - \$475

F.O.B. FORD, ONT.

Ford Motor Company of Canada, Limited

FORD - - ONTARIO

Solving the Cheese Box Problem

Janes & Co. Make Boxes According to Government Specification.

IN view of the present cheese box problem, considerable interest attaches to an announcement of Messrs. C. B. Janes & Co., of Orillia, who are making cheese boxes according to the Government specification issued two years ago, but not yet enforced. In the past cheese makers have experienced great difficulty in finding a box strong enough to stand the wear and tear of a railway journey. In fact until the Government issued a certain specification for the making of a cheese box, demanding that all boxes should be made with tongue and groove headbands, a reliable box for the shipment of cheese could hardly be found.

That it is the intention of Messrs. Janes & Co. to manufacture these boxes will come as a welcome announcement to many of the readers of Farm and Dairy, who are directly interested in the cheese making industry and the solving of this problem and production of a reliable box. The address of the firm is Messrs. C. B. Janes & Co., of Orillia, Ont. who will be glad to send information and prices to any of the readers of Farm and Dairy who care to write.—Adv.

STEEL CHEESE FACTORY EQUIPMENT

Patented
Steel Cheese Vats—Agitators—Steel Whey Tanks—Storage Tanks—Whey Weighers—Steel Cream Vats—Heavy Smoke Stacks.

The Steel Trough & Machine Co., Ltd.
Tweed, Ont.

SHIP YOUR BUTTER & EGGS

—to us. We are not commission merchants. We pay net prices and result promptly.

THE WILLIAM DAVIES COMPANY LIMITED
Established 1854. TORONTO, ONT.

Churn For Sale

Success—Thousand pounds, used two seasons, half price.
TORONTO CREAMERY,
9-11 Church St., TORONTO.



A Sure Prize Winner

Windsor Dairy Salt

THE CANADIAN SALT CO., LIMITED

Notes, Queries and Answers

Curdled Milk

I WOULD like a good cure for a cow that gives curdled milk from two teats. Mrs. G. K., Pontiac Co., Que.

This is due to inflammation of the quarters. Keep in comfortable stall, exclude from drafts and cold. Bathe the quarters long and often with hot water and after bathing rub well with hot camphorated oil. Milk four or five times daily, until the milk becomes normal.

Periodic Ophthalmia

I HAVE a year old colt which is having trouble with its eyes. They become clouded or blurred, then the discharge for a week or two and comes back soon again. I am feeding her good hay and straw and she has a good dry place to lie down. Her appetite is good. She is kept in a light box stall.—H. A. A., Durham Co., Ont.

Your colt suffers from a constitutional disease called "Periodic of Specific Ophthalmia." The attacks cannot be prevented and in all probability she will eventually become blind from cataract. All that you can do is treat each attack. Get a lotion made of 10 grains sulphate of zinc, 20 drops fluid extract of belladonna and two ounces distilled water. Bathe the eyes well with hot water three times daily, and after bathing, put a few drops into each eye. Keep (during the attack) in comfortable, well-ventilated stall, excluded from drafts and strong sunlight.

Calculating Cordwood in Trees

RECENTLY you gave directions for estimating the amount of lumber in standing timber. Is there any way of estimating the number of cords in a stand of hardwood?

The following table, prepared by the Harvard Forestry Branch, gives the estimated number of cords in trees of various diameters and heights. It is based on actual measurements:

Diameter Breast-high.	Total height in feet.		
	35	40	50
6	.042	.049	.061
7	.065	.079	.094
8	.083	.102	.118
9	.101	.122	.147
10	.117	.136	.179
11	.131	.151	.211
12	.143	.163	.243
13	.154	.175	.259
14	.164	.185	.274
15	.173	.194	.284
16	.181	.202	.288

Cow Purchased at Sale

I BOUGHT a cow at an auction sale. It was stated in the ring by the proprietor and auctioneer that she was three years old. After I got her home I looked at her carefully and found she was six or seven years old. They said she weighed 1500 lbs. milk and tested 3.4. Can I sue them to take back the cow and refund the price paid as she was not what they represented her to be.—Subscriber, Oxford Co., Ont.

If the purchaser purchased a cow at an auction sale on the representation of the proprietor, or the auctioneer, or either of them, that the cow was three years old and that it turned out afterwards that she was six or seven years old, he may return the cow and demand a refund of his money from either the proprietor or the auctioneer and may sue either one for same.

Cheese Boxes for the 1917 Season

We make the STANDARD BOX as demanded by Railway Commission.

Factories at
Ingersoll,
Cavanville,
Peterboro,
Belleville,
- Ont. -

Take no chances with any other.

Write us for prices delivered to your station.

C. B. Janes & Co., Limited
Orillia, Ont.

Sweet Cream Wanted

We offer to farmers, within easy shipping distance of Toronto, a good permanent market for Sweet Cream.

Highest Prices Paid

PRICE'S DAIRY

255 Queen St. East, Toronto

LAKEVIEW HOLSTEINS

Are still in the lead. The latest Holstein year book shows that they held a Canadian Records for butter, and Lakeview bulls have won all honors possible at both Toronto and London Exhibitions, 1916 and 1916. Now we are offering several richly bred young fellows that are looking forward to the fall fairs, and we have decided to give \$25.00 in gold to the man that buys the 1917 winner.

Don't miss this opportunity. Act quick and plan to spend a day at Lakeview. Terms cash or time.
Major E. F. OSLER, Prop. Bronte, Ont. T. A. DAWSON, Mgr.

KING SEGIS ALCALTRA CALAMITY, No. 20449

(THE \$2,000.00 BULL)
At the time of his purchase a great many people said, "He will never pay for himself." His first crop of bull calves are nearly all sold. Have they paid for him? They have realized the nice sum of \$4,100. Besides, he has 33 daughters and a second crop of bulls coming. We have only one over 18 months, but he is nearly ready for service. His own milk 12 dam has 21 lbs. at three years.

ARBOGAST BROTHERS SEBRINGVILLE, ONT.

HIGHLAND LAKE FARMS

Jointly with J. Alex. Wallace, of Simcoe, we have leased for the season the great young bull, AYONDALE PONTIAC ECHO, son of MAY ECHO SYLVIA, 41 lbs. butter in seven days, 142 lbs. milk in one day, and other age records for milk production. Two fine sons, one of 30 lbs. of serviceable great KING SEGIS. The other from son of the \$35,000 bull. Both grand from. Send for pedigrees and prices.
R. W. E. BURNABY (Farm at Stop 55, Yonge St. Radial), Jefferson, Ont.

RIVERSIDE HOLSTEINS

For Sale, Choice Young Bull, sired by King Johanna Pontiac Korndyke, and a brother of Pontiac Korndyke, 25.92 butter in 7 days, 165.92 lbs. 30 days—world's record when made. First females bred to "King." J. W. RICHARDSON, CALEDONIA, ONT.

HOLSTEINS

Could spare 10 cows or heifers bred to the Great Bull KING SEGIS PONTIAC DUPLICATE. Have one yearling bull and calves from 10 months down. Myrtle, C.P.R. Manchester, G.T.R.
R.M. HOLTBV. Port Perry, R. R. 4

HOLSTEIN BULL WANTED

Breeders done with their aged bull. One strong enough for present light service. Guaranteed sure calf, week old. Give record. A.R.O. daughters. If satisfactory, cash with order. Only best need apply.

JOHN OUGHTON & SONS,
Box 131, Stonewall, Man.

FAIRMONT HOLSTEINS

For sale, Two bulls ready for service, sired by King Segis Alcatra Calamity whose ten nearest dams average over 20 lbs. butter and also most 4.95% fat from R.O.M. dams, also four heifers in calf to King due in April.

PETER S. ARBOGAST,
R.R. No. 2 - MITCHELL, Ont.

TWO SONS OF PONTIAC HERMES

No. 1.—From a good producing half-sister of Lulu Keyes. His grand-dam also related to the May Echo family. Three individuals. Light in color and a fine milk. Delivered anywhere in Ontario, Price, \$145, delivered anywhere in Ontario.

No. 2.—From a 16,000-lb. half-sister of May Echo Verbeke. A little more black than white, straight and well grown, over a year old. Price, \$145, delivered anywhere in Ontario.

E. B. MALLORY

R. R. No. 3 BELLEVILLE, ONT.

WHITE AND COLUMBIA WYANDOTTES, LIGHT BRAHMS, S. C. WHITE LEGHORNS, S. C.
Michael K. Boyer, Box 23, Hamamton, N.J.

19 HEAD OF 19 HEAD
Complete Dispersion Sale
HIGH-TESTING REGISTERED
HOLSTEIN CATTLE
THURSDAY, MARCH 15th, 1917
BURGESSVILLE, ONT.

The animals offered are young and in excellent condition, many of them having splendid records. A few of them are NETHERLAND FRANCY, a wonderful cow, that will freshen before the sale; MELBA CALAMITY ABBEKERK, who has a 2-year-old record of 17.11 butter, best day's milk 65 lbs. She has two daughters also in the sale that give even greater promise than herself. NELL'S PIETERTJE and 5 other 2-year-old heifers of excellent promise. These animals are of the kind that would win in almost any show ring, and offer a rare opportunity to your herd. Trains will be met at Norwich East and Woodstock, G. T. R. stations, morning of day of sale. Luncheon served to those from a distance. Catalogue will be ready for issue in a few days. Write or phone.

Moore & Dean
Auctioneers

Elias Snyder
Burgessville, Ont.

months after freshening. Her sister, Royalton Dekol Violet, gave 113 lbs. one day and 12.7% in one year, while one of her other sisters' official butter record average 21.15 lbs. in seven days.
This young bull's dam has an extra high R.O.P. test, averaging 6.55 per cent. of fat for six months on grass.
A number of the older cows have good official records. Look up the advertisement in this issue and write for a catalogue.

Mature, 8,600 lbs. milk, 400 lbs. butter fat.
The Jersey men feel that this new standard will work much more satisfactorily for the breed. It will be noticed in all but the two-year-old class the milk standard is lowered. In every Jersey cow selection have to produce 65 lbs. milk in a year in order to qualify. The Jersey men are more progressive as far as butter fat production is concerned.

JERSEY NEWS

BLOOD "BREEDS ON"

HERE are some of the records Mr. H. H. Gee, of Hagerstown, Md., has made with the descendants of "Sadie Mac", which goes to prove that "blood breeds on" "Sadie Mac 2nd", a daughter of "Sadie Mac 1st", holds the record for yearlings, producing 5,446 lbs. milk and 481 lbs. of fat, being more than double the fat and 3,000 lbs. more milk than required.
"Lady Edith", a granddaughter of "Sadie Mac", holds the record for two years old, producing 11,094 lbs. of milk and 1,013 lbs. of fat, being double the milk and more than double the fat required.
"Sadie Mac's Sunbeam", another daughter, commencing the test at 2 years and 14 days, produced 2,049 lbs. of milk and 185 lbs. fat, being nearly 4,000 lbs. milk and 450 lbs. fat more than required. She made this record under very ordinary conditions, not getting any grain the last five months of her test.
"Sadie's Miss Polo", a granddaughter, and only two years old, is giving forty lbs. a day at the present time.

JERSEY R.O.P. STANDARD.

AT their annual meeting held in Toronto recently, the Jersey breeders decided to raise the standard of their Record of Performance Test. It was pointed out by a number of members that the amount of milk required for Jersey cows to qualify was out of proportion to the pounds of butter fat. This seems strange, as with other breeds the trouble in many cases is to get butter fat enough. The Jersey is primarily a butter fat producer. Some instances were cited where the butter fat record was in the hundreds of pounds beyond the necessary amount to qualify, yet the milk yield was only a few pounds. The older standard demanded milk testing less than four per cent., the figures given herewith being the amounts required in each class:
Two-year-old class, 5,000 lbs. milk, 218 lbs. butter fat.
Three-year-old class, 6,600 lbs. milk, 257 lbs. butter fat.
Four-year-old class, 7,500 lbs. milk, 297 lbs. butter fat.
Mature class, 8,500 lbs. milk, 337 lbs. butter fat.

The proposed new standard will demand milk testing five per cent. butter fat in each class, the amounts required for to qualify being:
Two-year-old class, 5,000 lbs. milk, 275 lbs. butter fat.
Three-year-old class, 6,000 lbs. milk, 300 lbs. butter fat.
Four-year-old class, 7,000 lbs. milk, 350 lbs. butter fat.

AYRSHIRE NEWS

Farm and Dairy is the leading exponent of dairying in Canada. The great glory of the members of the Canadian Ayrshire Breeders' Association are readers of the paper. Members of the Association are invited to send items of interest to Ayrshire breeders for publication in this column.

AYRSHIRE COWS AND HEIFERS THAT HAVE QUALIFIED IN THE R.O.P. TEST FROM DEC. 9 TO JAN. 15.

Mature Class.
Lady Jane, 8095, 12,400 lbs. milk, 786 lbs. fat, 4.05% fat, 365 days. A. Turner.
Rosella May, 34116, 10,549 lbs. milk, 124 lbs. fat, 4.92% fat, 365 days. Rev. James Hill, 2941.
Flavia 2nd of Ottawa, 23107, 10,180 lbs. milk, 291 lbs. fat, 3.83% fat, 320 days. Dir. Ex. Farms, Ottawa.
Lady Lily, 57147, 10,150 lbs. milk, 124 lbs. fat, 3.95% fat, 333 days. A. S. Dennis, Stewiacke, B.C.
Lady, 26295, 10,014 lbs. milk, 292 lbs. milk, 3.82% fat, 359 days. W. J. McGee, Moose Creek.

Princess of Silver Springs, 23725, 5,512 lbs. milk, 265 lbs. fat, 2.72% fat, 342 days. John W. Rodden, Ontario.
Flavia 3rd of Ottawa, 25105, 8,600 lbs. milk, 242 lbs. fat, 3.55% fat, 324 days. Dir. Ex. Farms, Ottawa.

Four-Year Class.
Rosa, 31884, 12,013 lbs. milk, 485 lbs. fat, 2.78 fat, 365 days. Roy W. Dulitt, Cardigan, P.E.I.
Wainhill White Rose 3rd, 28507, 9,160 lbs. milk, 376 lbs. fat, 4.64 fat, 300 days. A. S. Turner & Son.
Dorothy, 29151, 9,149 lbs. milk, 362 lbs. fat, 3.95% fat, 313 days. W. A. C. Strong, Gorrie.

Three-Year Class.
White Lady of Craigville, 22, 41142, 7,445 lbs. milk, 345 lbs. fat, 4.03% fat, 308 days. C. C. Isaac, 2456, 2456 days.
Millered Daisy 2nd, 38874, 8,309 lbs. milk, 215 lbs. fat, 3.79% fat, 342 days. T. J. McCormick, Rockton.

Two-Year Class.
Lady Alice of Ingleswood, 40465, 12,098 lbs. milk, 500 lbs. fat, 4.12% fat, 265 days. Wilson McCormick & Sons, St. Ann's, Springbank, 47564, 9,978 lbs. milk, 404 lbs. fat, 4.05% fat, 365 days. A. S. Turner & Son.
Lady Flora of Springbank, 41070, 3,107 lbs. milk, 281 lbs. fat, 4.18% fat, 365 days. A. S. Turner & Son.
Nancy, 40643, 8,597 lbs. milk, 347 lbs. fat, 4.50% fat, 365 days. J. A. Gamon, Comox, B.C.

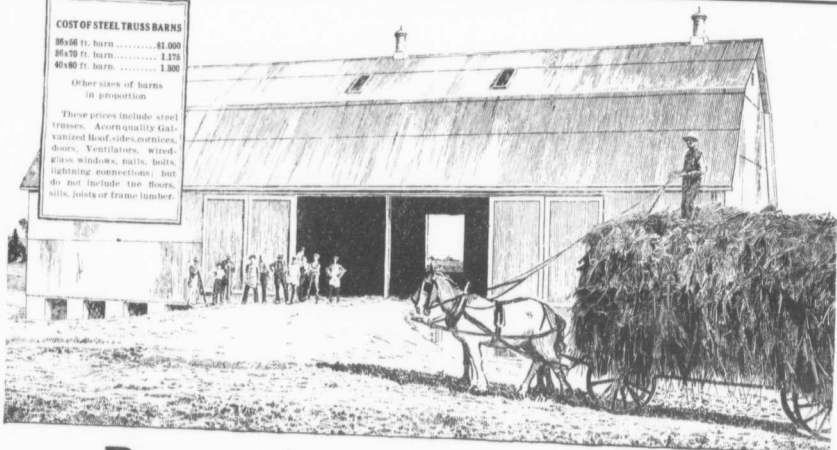
Lady Jewel of Springbank, 41195, 8,461 lbs. milk, 345 lbs. fat, 4.05% fat, 349 days. A. S. Turner & Son.
Della of Ingleswood, 40465, 8,308 lbs. milk, 344 lbs. fat, 4.12% fat, 355 days. Wilson McCormick & Sons.
Clover Ridge, 40986, 8,126 lbs. milk, 308 lbs. fat, 3.78% fat, 345 days. Wilson E. Dryden, Cowansville, Que.
Sweet Breeze, 4623, 7,729 lbs. milk, 319 lbs. fat, 4.29% fat, 330 days. David Aulworth & Son, Dundas, Ont.
Dewdrop of Springbank, 49647, 6,870 lbs. milk, 281 lbs. fat, 4.02% fat, 305 days. A. S. Turner & Son.
Bertha, 46631, 6,940 lbs. milk, 304 lbs. fat, 4.27% fat, 320 days. Bert R. Brown, Little York, P.E.I.
Princess Patricia, 48330, 6,968 lbs. milk, 277 lbs. fat, 4.01% fat, 345 days. Bert R. Brown.
Blissom, 46417, 6,563 lbs. milk, 265 lbs. fat, 4.02% fat, 345 days. Bert R. Brown, Huntington, Que.
White Rose, 35031, 6,232 lbs. milk, 257 lbs. fat, 4.12% fat, 355 days. J. A. Gamon.
Flavia 2nd of Ottawa, 35866, 6,167 lbs. milk, 353 lbs. fat, 5.72% fat, 311 days. Dir. Ex. Farms, Ottawa.

W. F. STEPHEN, Secretary.

Holstein Cows Excel All Others

Proof is Found in 100,000 Official Tests For Productive Yield of Milk, Butter and Cheese. No Other Breed Can Equal Them For the Production of High Class Veal. When Age or Accident Ends Their Useful Lives, Holstein Cows Yield a Large Amount of Good Beef.
W. A. Clemons, Sec'y., H. F. Assn., St. George, Ont.

COST OF STEEL TRUSS BARN	
86'x6' ft. barn	\$1,000
86'x7' ft. barn	1,175
40'x30 ft. barn	1,300
Other sizes of barns in proportion	
These prices include steel trusses. Acorn quality gal- vanized roof-sides, rafters, doors, Ventilators, wired- glass windows, nails, bolts, siding connections, but do not include the floor, sills, joists or frame lumber.	



Barns that are Landmarks

EVERYONE knows the place with the Preston Steel Truss Barn—the fine, neat, sturdy, prosperous-looking building. Everyone admires it. No one can miss it. It stands out in all the surrounding country.

Built for a lifetime, these staunch, sturdy barns. They defy the mightiest wind. Heavy rainstorms cannot hurt them. Lightning leaves them absolutely untouched. Not even fire can menace a barn so closely armed with metal at every point of exposure.

They give strength, safety, security. They relieve the farmer of every fear of loss. They are perfect barns—barns for business-minded farmers to own.

Built by Barn-Building Experts

The enormous resources of a big, fireproofing industry are now used for building these better farm buildings. The old style timber barn is now being replaced. We are showing farmers how to build barns good for all time, barns that reflect prosperity—and wise buying.

Save Costly Labor

To-day these barns are a greater boon than ever. Labor is scarce. Labor is costly. The old-time way of barn-raising is quite out of the question.

But a lightning-proof Preston Steel Truss Barn can be put on your place complete inside of two weeks. Five to ten men is the largest gang you will need. Little worry for you or the womenfolk.

We meet the labor difficulty for you. The gang work is done at the factory. All the planning, measuring, cutting are done here by experienced brains and money-saving machines.

**Preston
STEEL
TRUSS
BARN**

No Dead Space—Designed by an Expert

An expert barn-builder of international reputation will draw up the plans for you—to meet your own special needs exactly. His experience in building over 300 barns should help you greatly.

You'll be proud of this weather-proof barn. You'll like to work where every square inch is open and clean. No timbers will occupy or kill valuable space. Everything will be compact, dry, clean, well-lighted. No barn could offer a sturdier resistance to stress and strains of storms—and yet there is not a piece of timber that one man cannot lift.

Every day's labor, every hour's delay means much to you. That is why we feel you will give the Preston Steel Truss Barn serious consideration.

Valuable Information and Expert Advice on Barn Building—FREE to every Farmer

You can learn a good deal from the information printed in a book we gladly send you for the asking. You can learn more by writing to our barn expert, who is at your command. Our whole organization stands behind him, ready to help you.

There are hundreds of farmers who can tell you of our barn building achievements. They are proud of their metal-clad barns because they are so fine and convenient. They are satisfied with them, too, because they know they are a good buy—absolutely beyond comparison with the old unsafe, rough and ready style of barn.

You will feel an even greater confidence in our work if you let us put you in touch with these proud and satisfied owners.

Above all, don't hesitate to ask our advice. We wish to be at the service of every farmer who thinks of building a barn this year.

(Signed) C. DOLPH

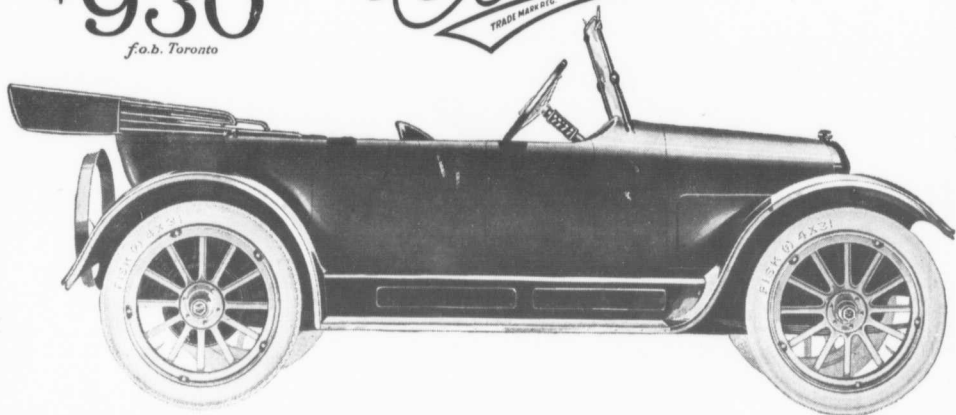
President.

The Metal Shingle & Siding Co., Limited, Preston, Ont.

Makers of Preston Ready-made Buildings, Implement Sheds, Storage Buildings, Garages
FACTORIES—PRESTON, TORONTO, MONTREAL, WINNIPEG, SASKATOON, CALGARY

The Light Four
5 Passenger Touring
\$ **930**
f.o.b. Toronto

Overland
TRADE MARK REG.



A Comprehensive Line of Automobiles All New Values

From your point of view this announcement is most important.

For herein we set forth the achievement toward which the Willys-Overland organization has aimed for the last eight years.

This achievement in a word is the completion of our gigantic organization to a point where we could make and market a comprehensive line of automobiles under one head.

One executive organization,

—one factory management,

—one purchasing unit,

—one sales expense,

—one group of dealers, plan, produce and sell the entire line.

Buying power is concentrated. Costs are distributed over all these cars. The savings are tremendous.

As a result we are producing cars of exceptional quality—and marketing them at unusually low prices.

Every car is built to a rigid standard of performance, comfort and appearance.

The new Light Four at \$930 is a striking example.

It has good style—built low with harmonious and full sweeping body lines. It is a beautiful car in every sense of the word.

The motor is powerful, quiet and of sturdy construction. The turning radius is short. The car has a quick acceleration and is built to tour safely and comfortably from the Atlantic to the Pacific.

And with all these good qualities it rides beautifully. The soft cushions, the long resilient cantilever rear springs, the large tires (31x4) and the proper balance in construction absorb all types of jolts—the choppy cobblestone, the cuppy macadam and the heavy ruts and thank-you-ma'ams of the highways.

Yet this is but one of the new Willys-Overland values.

Never before have the economies of vast production been available for buyers of every class of car.

And the Overland Policy of greater production, higher quality, lower price is exemplified in every model and type.



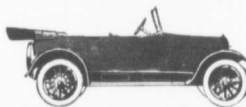
Two Passenger Roadster
Light Four, 104 in. wheelbase, 5310



Four Seater Sport Model
The Country Club, 104 in. wheelbase, \$1050



Big Four Roadster, 112 in. wheelbase, \$1170
Light Six Roadster, 116 in. wheelbase, \$1360



Big Four Touring, 112 in. wheelbase, \$1190
Light Six Touring, 116 in. wheelbase, \$1380

All prices f. o. b. Toronto
Prices subject to change without notice

Catalogs on request. Please address Dept. 921

Willys-Overland Limited

West Toronto, Can.

Willys-Knight and Overland Automobiles
and Light Commercial Cars