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Toronto, Ont., June 21, 1917

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Control of Contagious Abortion.

EDITOR, Farm and Dairy:—The experiment which we have been making in the Health of Animals Branch of the Department of Agriculture, with the object of finding a means of controlling contagious abortion in cattle, have resulted hitherto successfully, and I am permitted by the Minister, the Honorable Martin Burrell, to make them public.

Experiment I.

Four heifers, aged one year, were inoculated with our protective vaccine January 26th, 1915. The test of the blood of these heifers showed that one of them was already infected with the bacillus of contagious abortion, and all four were living in a herd in which the disease was known to exist.

The four heifers were bred on the following dates: April 21st, April 23rd, April 23rd, and December 18th, 1915. They all calved, the dates being respectively January 26th, January 26th, January 12th and September 11th, 1916.

Experiment II.

Ten yearling heifers were inoculated March 20th, 1915, four of which reacted to the serum of contagious abortion. They were bred after an interval of about three months. (Accurate dates cannot be given in this case, as the herd records were destroyed by the fire.) All became pregnant; eight carried their calves to full term and produced living offspring; two aborted.

Experiment III.

Four heifers—yearlings—were employed to test a method of employing a serum as well as a vaccine. With the first two the serum and vaccine were used simultaneously; with the second two, the serum was given ten days prior to the vaccine. When tested, the first two had reacted to the test; the second two did not react. The first two were bred December 6th, 1915, and August 25th, 1916, and both aborted—July 12th, 1916, and April 16th, 1916. The second two were bred December 23rd, 1915, and November 9th, 1915, and produced living calves September 20th, 1916, and August 5th, 1916. This experiment was unsatisfactory, and gave conflicting results, but shows that the simultaneous method of giving serum and vaccine did not prevent infected heifers from aborting.

Experiment IV.

In this experiment an effort was made to find out how far the vaccine treatment would prevent abortion in cows which had previously aborted. Eight cows were selected, ranging from two to seven years in age. All had previously aborted, one of them three times, the others once. All but one reacted to the test for contagious abortion. None were pregnant when inoculated nor bred afterwards until some weeks had elapsed. The result showed six cows produced living calves at full term; one cow proved to be barren and was slaughtered; and one cow reacted when the herd was tested with tuberculin and was slaughtered, having previously aborted.

The method used in this experiment was a double inoculation with a mild vaccine first, followed by a strong vaccine several days later.

Experiment V.

Four cows, aged two to seven years, and four yearling heifers were used. The cows had all aborted previously, one of them twice, the others once. Three of them reacted to the test for contagious abortion. All were treated by the double method, and were bred after a suitable interval with the following result: One of the cows, the one that had aborted twice previously,

aborted again. All the others produced living calves.

These experiments have resulted in obtaining 27 living calves from 34 cows and heifers in badly infected herds. This encourages us to hope that we have a really useful method of producing immunity to the disease, and we are anxious to enlarge our experience by extending our work to other herds.

With this object we now offer to treat free of charge a limited number of herds in which contagious abortion is present. Applications are requested to make application in writing to the Veterinary Director General, Ottawa, stating the number of breeding females in the herd. Applications will be dealt with in the order of their receipt. — F. Torrance, Veterinary Director General, Ottawa.

Grain Commission Appointed

THE Commission to control the grain production of Canada will be composed of Dr. H. A. Chairman; H. W. Woods, Alberta; S. K. Rothwell, Moose Jaw; T. A. Crerar, J. C. Gage, W. A. Bawlf, W. A. Matheson and C. A. Stewart of Winnipeg; William A. Best of Ottawa; Controller A. ney of Montreal, and L. H. Clarke of Toronto.

Dr. Magill is now Secretary of the Winnipeg Grain Exchange, but was for five years Chairman of the Grain Commission.

H. W. Woods is a prominent grain-grower of Alberta, President of the United Farmers of Alberta and the Canadian Council of Agriculture. S. K. Rothwell is one of the largest grain producers in Saskatchewan, and has been a candidate both for the Federal Parliament and the Provincial Legislature.

T. A. Crerar is Manager of the Grain-Growers' Grain Company, the largest grain purchasing and exporting concern in Canada.

J. C. Gage is President of the Winnipeg Grain Exchange.

W. A. Bawlf is a prominent grain dealer and a member of the Winnipeg Grain Exchange.

W. A. Best is Parliamentary representative of the Order of Locomotive Firemen.

Controller Ainey is well known in Montreal civic affairs and has been a representative labor man in that city for many years.

Lionel H. Clarke is a member of the Toronto Harbor Commission, and a prominent business man of that city.

W. A. Matheson is Western Manager of The Lake of the Woods Milling Company.

C. A. Stewart is a member of the firm of Stoddart & Stewart, Winnipeg, representatives in Canada of the British Wheat Purchasing Commission.

Waiting for United States.

Little action is possible on the part of the Commission until such time as a similar body is appointed by the United States, with similar powers to cooperate with the Canadian Commission. Pending the appointment of such an American Commission, the Canadian Commission will seek to keep prices on a parity with those in the United States.

The Commission has been granted great power and will have authority to fix grain prices on shipment from storage elevators, but not the price paid the farmer. They have power to take offers of purchase from the British and allied Governments and to determine what quantity to sell and the price required. They can take grain from elevators without the consent of the owner, and fix the price to him and to the purchaser. They can investigate the storage and accumulation of grain and remedy any unfair restraint of marketing.



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VOL. X

THERE consider as we raking, prop ling and sto cannot be m has no cont is very ess forecasts can tions. With there is no keep fully p the writer's very little at Important or entirely on weather will age of the j servers who gether and expert, local day in advan advantage of watch the w that his hay weather, wh The comm somewhat in should be cut farmers and d ence in qual market value. The should be har best quality grasses and t safe rule appl the grass just after the sheep, hay fro horses the lat When cut in make good, c hay is cured w secured by cu more mature, apt to be so bloom the hay The over-mat and its feedin uly less than stage of matur

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FARM AND DAIRY



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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., JUNE 21, 1917

No. 25

How To Make Prime Hay---By A. M. TenEyck

THERE are a number of important factors to consider in making hay of good quality, such as weather conditions, timely cutting, timely raking, proper curing, rapid and economical handling and storing, and careful stooking. Good hay cannot be made in wet weather—and the farmer has no control over the weather. Therefore, it is very essential that he consider the weather forecasts carefully in carrying on his haying operations. With the daily papers and telephone there is no reason why the farmer should not keep fully posted on weather forecasts, but it is the writer's observation that many farmers give very little attention to this point which is a very important one. Their habit is to depend almost entirely on their own judgment as to what the weather will be, when they might take advantage of the judgment of hundreds of weather observers whose observations, when brought together and interpreted by the weather bureau expert, allows him to give a very accurate forecast of local weather conditions for at least one day in advance. We urge every farmer to take advantage of the weather bureau service, and watch the weather, and time his hay-cutting so that his hay-making may be carried on in fair weather, when this is possible.

The common hay grasses and legumes differ somewhat in the stage of maturity at which each should be cut to make the best quality of hay, and farmers and feeders are learning that this difference in quality means not only a difference in market value but also a difference in feeding value. The stage of maturity at which grass should be harvested, in order to make hay of the best quality, varies somewhat with the different grasses and the use to which the hay is put. A safe rule applicable to all common grasses is to cut the grass just as it is beginning to bloom or just after the bloom has fallen. For cattle and sheep, hay from the early cutting is best, but for horses the later cutting is sometimes preferable. When cut in the early stage, grass is sure to make good, clean hay of prime quality, if the hay is cured well. Often a larger weight may be secured by cutting the grass after it becomes more mature, but the quality of the hay is not apt to be so good. If grass is cut when in full bloom the hay is sure to be more or less dusty. The over-matured hay is less palatable to stock and its feeding value per hundred pounds is usually less than the value of that cut at an early stage of maturity.

When to Cut Clover.

In order to make the most palatable hay of the highest feeding value, clover should be cut just when it is in full bloom, with a few of the blossoms turning brown. If it is cut before this stage, the hay will be lighter and more "washy," especially if fed to horses; while if the crop is left until the clover is mature, many of the leaves

will be shattered or lost in harvesting. This will be a great loss, for the leaves are the most nutritious part of the clover, as they contain nearly two-thirds of the protein in the plant.

To make the most palatable hay, timothy should be cut just as it is coming into bloom. When timothy is grown in combination with common red clover, it is necessary to cut the crop early in order to secure the clover before it becomes too ripe to make good hay. The hay cut at this stage is best for feeding cattle and sheep. Timothy should not be allowed to stand until in full bloom, since, if cut at this stage, the hay will be dusty and especially objectionable for feeding horses. To make the best hay for horses, timothy should be cut at the stage called "second bloom" which is really just when the grass has about ceased blooming and most of the blossoms have fallen. When timothy is cut at this stage, the greatest weight of hay is secured, and probably the greatest amount of nutrients, but the hay is more woody and less palatable than timothy cut earlier. The mature hay, however, is relished by horses, and horsemen consider it superior to the less mature hay because less "washy."

The most important factor in making good hay is favorable weather. Hay exposed to excessive rains, especially from the leguminous plants, such as clover and alfalfa, is greatly injured in quality and feeding value. Every farmer knows that hay is injured by rain and dew, which cause it to

blacken or bleach and mold; and take from it the natural aroma and palatability essential in hay of good quality, but not all are aware that hay which is cured too much in the sun, not only bleaches and loses leaves by becoming too dry, but also loses in palatability, weight, and feeding value.

When curing hay of any kind the aim should be to expose it to the sun no more than is absolutely necessary. The curing should take place to the greatest possible extent through the action of air and wind, while the leaves are sheltered from the sun in the windrow or cock. Hay cured in this way retains its natural color and other good qualities which make it nutritious and palatable to live stock.

How the Hay Cures.

To best understand how hay cures, let us observe how grass and clover grow: The water and plant food absorbed from the soil by the roots moves upward through the cellular stems, finally reaching the leaves which act as the stomach and lungs of the plant. Here the soil elements meet the air elements and in the presence of light, starch and other substances are produced which are returned to the various parts of the plant through the cell sap and finally stored or built into the plant tissues causing growth, while the excess moisture evaporates through the stomata or breathing pores which cover the surfaces of the leaves. It takes hundreds of tons of water passing through the plants in this way to grow a ton of hay.

The leaves seem to actually exert a sucking or pumping effect on the cell sap and continue their function of drawing moisture out of the plant, even after the stems are cut off, until the stems are fully cured, if the evaporation is not too rapid. If the moisture escapes too rapidly, as when the leaves of the cut plants are fully exposed to the hot sun, they quickly wither and die and their function of drawing the water from the stems ceases. It appears, therefore, that we should "make hay while the sun shines," but cure it with the leaves in the shade, in order to produce hay of the best quality.

Mowing and Raking.

It is not advisable to cut hay when it is wet from rain or dew. The moisture will evaporate more quickly from the standing grass or clover and hay which is cut wet is more likely to develop mold. A good plan is to start the mower in the morning as soon as the dew is off. When the hay has wilted, run over it with the tedder if the crop is heavy and needs lifting. After an interval of a few hours, in fair weather, before the leaves have begun to get dry and brittle, rake the hay into windrows. Keep the rake going as long as the hay is well wilted. The grass, clover,



Crop Prospects

SPRING sown crops in Ontario have improved greatly during the recent warm weather and the situation is promising. Clover, timothy and alfalfa are looking better and a fair hay crop may yet be cut. Some early corn has rotted in the ground, but the most of it was planted late and the acreage is greater than last year. In the Canadian West heavy rains have improved the crop situation and the far east also reports favorable growing weather. The fruit outlook is bright, although the apple crop will not be a heavy one. The milk supply to date is above the average. Tomatoes, potatoes and beans have all been planted in a greater acreage than last year.

When Blow Sand is a Menace

W. L. Smith Would Plant Pines

FIVE years ago this spring, W. L. Smith started in to reforest several small waste sections of his 50-acre farm in Durham Co., Ont. Each year a little planting has been done, until now there are 10,000 pines growing in the corners and on the hillsides of this small farm. Trees of the first planting have attained a healthy growth of five feet or more and sections of land that were worse than useless are producing the one crop that they can be made to grow profitably. Early this spring an editor of Farm and Dairy spent a pleasant half day with Mr. Smith and incidentally inspected the planted areas. We were particularly interested in the first planting made five years ago as we have been on the farm a few months after the work larger than a man's hand. This planting was made on a hillside that was largely blow sand. Had the hillside been left undisturbed, there was a danger that the sand would have gradually encroached on the flats below and spoiled a lot of good pasture. As it is, the hillside is now covered with a healthy growth of pines, which will serve the double purpose of holding the sand in place and producing a profitable crop of timber. After taking a photograph of the pines, which is reproduced herewith, we climbed over the line fence to inspect a field of similar light soil in progress of being blown away. It, too, would be much the better of reforestation.

A second planting had been made on the sides of the steep ravine which had previously been in corn and tomatoes. In this case, the land having been cultivated, the trees were planted after a preliminary harrowing. On the first hillside planted, however, deep furrows were plowed around the hill at intervals of four feet, to do away with the grass and the trees planted in the furrows. "The quickest way to plant," said Mr. Smith, "is to have three men on hand. The first man lifts out a shovel of earth. The second man carries a candy bucket with water in the bottom filled with the seedlings. He places the tree in position, the shovel of earth is thrown in around the roots, and then the third man comes up and tramps the soil in. With this staff, six hours' actual planting will put in 1,500 trees. Yes, the government supplies the trees free of cost."

Mr. Smith is conducting a dairy, fruit and poultry farm. The steep sand banks on which he has done his tree planting, could not be made to contribute profitably to any one of these three branches of the farm. In planting of pines, a good example has been set of conservation and utilization of farm resources. In another 20 years these plantings will have to be thinned and there will be some good timber available for the making of rafters, plates, etc.

Cooperative Wool Sales in Quebec

An Interview With A. A. McMillan

BOTH Ontario and Quebec are endeavoring to improve wool marketing methods. The procedure followed in the two provinces could not very well differ more widely. Ontario is starting on a provincial basis. There will be one central point to which wool growers all over the province will ship their products for grading and sale. Quebec, on the other hand, started to organize wool growers locally and even yet that province has not attained to the distinction of a provincial wool grading and sales center. It yet remains to be proved which of the two systems will accomplish the greater results. The work



Five Years' Growth on a Sandy Hillside.

On a 50-acre farm in Durham Co., Ont., Mr. W. L. Smith has planted 10,000 pines. He may be here seen in a grove planted five years ago this spring. The land is useless for any other purpose than reforestation.

in Quebec has been under way for a longer period. Mr. A. A. McMillan, of Macdonald College, having it in charge from the first. Recently I dropped into Mr. McMillan's office at the College and found him beaming all over with satisfaction and quite ready to talk. Before he told me anything of the growth of the movement, however, he had to tell me of their latest success.

"We have just had our most successful wool sale," he told me, "A week ago last Saturday at



This Land, Too, Needs Reforestation.

This land is just over the fence from the pines seen above. The white patches are blow-sand. —Photos by an editor of Farm and Dairy.

Sherbrooke, we marketed 120,000 lbs. of wool from six associations. Fifty to 60 per cent. of this wool will grade medium and sold at 66½ cents a pound; 15 to 20 per cent. below medium at 55½ cents; 10 to 15 per cent. coarse at 52½ cents; and two to three per cent. of rejects at 43½ cents. These are big prices. At our sales last year the top grades sold for 43 cents, second grade 42 cents, and third 41 cents. Wool growers who are still selling to private buyers have been getting 40 cents to 47 cents a pound for their whole clip and their average price has been only a little above our price for rejects. Probably they would not have been getting over 40 cents were we not in the field."

How the Movement Has Developed.

This sale is a decided triumph for cooperative wool grading and marketing in Quebec. It puts the movement on a strong basis. We asked Mr. McMillan for a sketch of the growth of the movement. "We started our work in 1914," said he. "In that year we had 96 members. In 1916 the membership had increased to 975. Last year we had 1,116 members enrolled and this year there will be 2,000 to 2,500 farmers selling their wool through our associations. In all, 200,000 lbs. of wool will be graded and sold by 10 associations. "We have a number of grading centers in each association, but these are being gradually consolidated to the larger centers. The small centers, however, serve to give the movement a start. Farmers were not afraid to give us their wool when it was stored and graded right near home. For this reason, too, the small center had a greater educational value. Our members now have more confidence and they will forward their wool to the larger places."

"How is the work financed," I asked. "The associations pay all expenses," replied Mr. McMillan, "except the grading, which is done by the Live Stock Branch, Ottawa. My services, of course, are always at their disposal. The secretary-treasurer of each association will probably, in time, become business manager."

"Where are these Associations located?" "Most of them in the English-speaking sections, but about one-third of our members are French. "Is the work of the associations confined to wool marketing?"

Marketing Lambs Cooperatively.

"This is our main work," responded Mr. McMillan, "but lately we have taken up the marketing of lambs cooperatively. The associations sell either f.o.b. or off cars at Montreal or Ottawa. Last fall we handled 2,567 lambs and we advanced the price one and one-half cents a pound over what farmers had been getting before. We are also holding ram sales, at which we sell good utility stock at reasonable prices. These are really conducted by myself, but there is a one dollar selling fee to meet expenses. Our members have come partly from flocks of our members who have pure bred stock and partly from outside flocks."

This summary of the cooperative wool marketing movement in Quebec tells only of its success. Mr. McMillan also told me something of the obstacles which had to be overcome through the opposition of private buyers when the movement was first inaugurated. Its value now, however, has been so well proven that its future success is assured.—F. E. E.

Two kinds of sweet clover are commonly grown, the white and the yellow. The white is considered to have the greatest value both for hay and pasture. It grows larger than the yellow and is more leafy. The seed of the white sweet clover is of a bright olive color and about the same size as alfalfa seed. The seed of the yellow sweet clover is much the same size, shape and color, except that under the microscope it has a mottled appearance not unlike a turkey egg.

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When You Milk a Cow Production and Factors That Influence It

J. Hugh McKenney, Elgin Co., Ont.

DAIRYMEN are being continually exhorted to "breed, weed-and feed," if they would realize the possibilities of a good cow. Yet, with all this machinery coupled up and going smoothly, the system may not be without its breakdowns. One may practise all the latest intricacies of careful breeding and selection, feed a well balanced ration calculated to produce the maximum in milk yields and still the result shown in the milk pail be decidedly disappointing. It is one thing to put a cow in the proper condition to secrete a large quantity of milk; the ability to secure by the actual process of milking, all the cow is capable of producing is quite another matter. All milkers cannot, or at least do not, do it. There's a reason. The udder of a cow is a delicate piece of machinery and quite as sensitive to abuse or improper handling as a watch. Few dairymen, perhaps, realize this. Hence, to avoid losses, it is essential to know something of its structure and the part it plays in milk production.

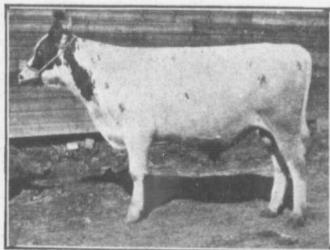
It is erroneous to suppose that the udder is simply a sack into which milk is poured during the day to be drawn off at night. The udder is just one large collection of cavities or milk secreting glands, lined by many epithelial cells or small pouches, and surrounded by a network of arteries and veins. Throughout the day these arteries are bringing the various constituents of which milk is composed, such as fats, proteins, water, ash, etc., to the outer surface of these small cavities where the epithelial cells select the material that will ultimately become milk. Along toward night these cells have collected their full capacity of milk producing elements and hold them available, but there is no milk.

When Milk is Secreted.

Not until the milker mounts a stool and begins the actual process of milking do the numerous cells in the udder start to give up their contents, which gravitate to the milk cistern in and above the teat. To prevent too rapid a flow and also to stop foreign material from working its way upward the bottom part of the teat is guarded by what is known as the sphincter muscle. The amount contained in the milk cistern at any time rarely exceeds a pint. At first the water content being less viscid passes through the cell walls more readily and in larger quantities than the solid particles of fat, protein and mineral matter. This explains the reason why the first milk secured is lacking in quality, that is, it contains comparatively little fat and other solids. The dairyman, having a fondness for the stable cat, has a ready remedy by seeing that his feline

friend is liberally supplied from these initial strippings. As the process of milking proceeds, the bulk of the water content is given off, the remaining fluid becomes richer in fat, casein and mineral matter. It has been found that these last strippings often test as high as ten or eleven per cent, while the first milk may be as low as one and a half per cent.

Now any dairyman will have observed that a cow will not always give her milk down readily. This is especially noticeable when her calf has been but recently removed, when she has been summarily hustled into the stable by a dog hanging to her heels, or persuaded to "hiss" with a few lattoos of a milk stool in close proximity to her ribs. The milk productive system of a cow is so constructed that she can retaliate, automatically withholding both quality and quantity. In fact, no cow will give her full capacity unless in response to nervous stimula-



The Grand Champion Ayrshire Male.

Auchinbay Sir Andrew, a Junior yearling, is one of the nicest bulls ever imported to this country. He is one of the recent importations made by R. R. News, of Howick, that figured so largely in the winnings at Ormstown.

tion. To do her best she must be in a pleasant mood. Many little things that are seemingly trifles make a difference in the milk yield and are inevitably portrayed in the milk cheque. For example, one cow objects to whistling, but likes singing; another has opposite views on the matter. Few, if any, to their credit, can be soothed with profane language, while many prefer absolute quietness to any form of entertainment.

The Good Milker Born Such.

There is no denying the fact that milking the dairy cow is a very important phase of her management. Even many who fully recognize this, have to admit that they cannot get as large yields from their own cows as some of their hired help. Like the production of music or poetry, the expert operator requires to be born such. There is little hope of the manufacturer article becoming



The Grand Champion Male of the Holstein Classes at Ormstown.

Pontiac Korndyke Het Loo, shown by Raymondale Farm at the Ormstown Fair, is the sire of Het Loo Pieterijde, the world's champion Jr. two-year-old in the seven-day class. He has character, substance and quality and was shown in excellent fit.

an ideal performer. At the dairy shows I have watched with a good deal of interest the men who milk the cows that are on test. These men are doubtless selected for this work because of their ability to get the last drop of fat and the last ounce of milk that the cows are capable of giving. Invariably they are rapid and business-like in their movements. Usually the slow milker is a poor milker and fails to secure the best results.

Of course there are many cows not over sensitive that will do well with the average man. But the highly nervous cow often among our best producers requires a specialist. Such a milker is careful to observe the many little details that appeal to the cow and help to produce a proper nerve stimulation. He will insist on milking his regular number of cows himself instead of changing about with other milkers. Moreover they must be milked in the customary order and at the same time each day. He will also see that by careful manipulation that the animal has been milked dry. Carelessness in this respect means considerable loss in succeeding milkings. The man who milks the cow has a greater influence on her capacity as a money maker than he is usually credited with.

Compound Interest

The Experience of a Tester

IHAVE heard a great deal in my time about cow testing. Most of it was flattering neither to the breeder nor to the tester. The general public seem to think that cow testing and R.O.M. work in particular is a game only for the initiated and some even go so far as to say it's a "shady" game at that. I admit that the young breeder gradually becomes more proficient as his experience increases, but I have yet to see after three years' experience as a tester and supervisor of tests, anything shady or verging to crookedness. The breeder's own record and reputation is just as valuable an asset as a high record cow. The two combined make for success. The seven-day test has been one of the most popular tests in the country. Young breeders making a start cannot afford the longer route to prosperity.

I must tell you about one young breeder who achieved a fair degree of success in a short time. About eight years ago this man purchased six head of pure bred Holstein cattle. These cows were, as a college professor would say, "mediocre" individuals—just average utility cows. The former owner had become dissatisfied with farm life and decided to move to town. Donald, for that was his name, secured the six matrons for

(Continued on page 21.)



Champanton Henny, Best Ayrshire Female in Milk at Ormstown.

This photograph does not do justice to a really fine cow. Champanton Henny has the straight, true type of the Ayrshire, and a perfectly balanced udder.

—Photos by an editor of Farm and Dairy.



Why Not Store Eggs?

By Jas. Currie.

WHY sell eggs today for 35c and pay 70c next winter? This is doubtful economy. The major part of our eggs are produced in the spring and early summer months at the same time that many other farm products are being marketed. It would be advisable to preserve a few dozen of these fresh summer eggs against a possible scarcity next winter. If you don't preserve them then, Mr. Packing-home-como will, and retail them to you for 50 or 60 cts., possibly more. This is the season when production exceeds consumption, and



A Portable Colony House.

This house, used on the farm of W. C. Shearer, Oxford Co., Ont., may be drawn to any place on the farm. When photographed by an editor of Farm and Dairy, it was the home of a big flock of Brown Leghorn chickens.

Packers are putting them in cold storage—getting ready to stow you next winter.

In the olden days our grandmothers always preserved a few eggs for the Christmas cooking. They used very different methods to ours of today. My grandmother used buckwheat flour to preserve hers. It was placed in a box in the cellar, and the eggs were buried in it. Today we have a more scientific and satisfactory way; that is, by using waterglass or sodium silicate. The liquid can be purchased at any drug store, and is mixed with water at the rate of one part of water-glass by weight to nine parts of water which has been previously boiled and cooled. The liquid is usually placed in an earthen or stone jar, and must be stored in a cool, airy place. Covers are necessary in order to prevent filth from getting in. Three or four inches of solution should be left over the top of the eggs.



Where Breeding Work is Conducted at the Ontario Agricultural College. Few practical poultrymen have the time to conduct extensive breeding experiments. Such work must be left to our agricultural colleges. The illustration shows some of the breeding pens at Guelph.

Kind of Eggs to Preserve.

Naturally we do not want to store bad eggs, or eggs that may go bad, hence some selection is necessary. Clean, unwashed, fresh and strong-shelled eggs must be selected. It is advisable to store the eggs every day, otherwise candling should be practised. This is doubly desirable if the male bird runs with the flock. The amount of waterglass depends on the number of eggs preserved. One gallon of the concentrate is sufficient for about 48 dozen eggs.

Ontario Poultrymen Meet

DELEGATES from all of the local poultry associations throughout Ontario met at Guelph last week to arrange the dates for holding the shows in various cities and towns so as not to conflict with each other in their district and to select capable judges who will work in a regular circle.

Mr. H. B. Donovan, of London, delivered a short but interesting address on the subject of feed for poultry, which is becoming more serious every day. He declared that there would be a shortage of between two and three millions of bushels of wheat this year in Canada and the United States, which meant starvation for some other countries; as a consequence feed for poultry such as they were accustomed to use would be next to impossible to secure and substitutes must be secured. He stated that buckwheat screenings, cracked corn and crushed oats had all been used with more or less success, but some of these things would have to be mixed with bran and other meals and that poultry would have to be educated to eat them. Mr. Geo. Robertson, of Ottawa Experimental Farm, gave some figures showing the result of the use of the new foods which were of a most satisfactory value.

Wheat, oats and corn are good grains to feed the laying hens, says the North Dakota Experimental Station. A dry mash is made up as follows: Three parts bran, two of middlings, two of cornmeal, two of beef scraps, and one part alfalfa by measure. Mix it well and put in a self-feeder or hopper. This can be kept before the birds all the time. Charcoal should also be kept before the chickens at all times.

A humane society had secured a down-town show window and filled it with attractive pictures of wild animals in their native haunts. A placard in the middle of the exhibit read: "We were skinned to provide women with fashionable furs."

A man passed before the window, and his harassed expression for a moment gave place to one of sympathy. "I know just how you feel, old tops," he muttered. "So was I."



One Way to Make Your Farm Pay Better

GET together with your neighbors and secure a first-class, modern road, connecting your property with the market, town and railroad. See to it that the road is properly maintained, and pay your share of the expense as a good investment that yields 1000 per cent. dividends.

Farms on bad roads double in value when the good roads come. When the value doubles, it means that the earning-power has doubled also, for the value is based on the earning-power of the farm.

Increased earning-power and value.

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Our 272 Egg Kind free.
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Order now for our well known S. C. White Leghorn Day-Old Chicks. Satisfaction guaranteed. Send for our booklet re Care and Feeding of Day-Old Chicks.

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Farm Management

The Provincial Farm Tractors.

EARLY this spring the Provincial Government purchased 28 farm tractors to aid in the greater production movement. The experiment was an interesting one and now the Minister of Agriculture, Sir Wm. Hearst, has issued a preliminary report as to the work that has been ac-

complished and some of their experiences with them. In each case the county demonstrator had direct supervision over the tractors and thus fairly accurate and authentic information was obtained. Nine different makes were experimented with in 21 counties and besides resulting in increased acreage, the farmers have been enabled to gain information as to the utility of the tractor on their farms or those of their neighbors.

Cost to the Farmer. The farmers were charged at the rate of 35c an hour while the tractor was actually engaged at work. To

this was added the cost of fuel. Kerosene was used in most cases, due to its cheapness. The actual cost has not been figured out in the preliminary report, but if the wide demand for the tractors by the farmers in any criterion of the cost and popularity, it must have been light.

Three bottom plows were used in all cases and in some cases disks. On wet land they did not prove very satisfactory, likewise on stony and rolling ground they were not effective. The acreage plowed per hour varied according to the type of soil and condition. The maximum was two-

thirds and the minimum one-third of an acre per hour. The acreage disked varied from 1½ to 2.4-5 acres. The final report of the minister on the details of the experiment will be looked forward to with much interest.

Sweet Clover Destroyed.

LAST year, when sowing peas, I seeded down sandy ground, "poor land," with sweet clover. Within the long dry spell, the peas died out and there was not much growth of clover. This spring, the clover sprouted well, but something, either a grub or blight, is attacking it and simply pulling it off to bare stalks, not leaving the sign of a leaf. Some leaves are half eaten, others have a few small holes through them, and others are left with a transparent film across them. Would like to know the trouble.—J. T. Mautoulin Island, Ont.

You should make a careful examination of the plot affected and find the offender. The margin of the plot should be examined when the work is being freshly done and the plants carefully looked over, also removing some of the surface soil. It is very possible that some species of cutworm is at work and feeds only at night. If so, the grasshopper remedy as given in my spray calendar, if applied late in the evening, would kill them. The best way would be to send me samples of the insects commonly found. It may be necessary to use a lantern at night to watch the feeding and discern the culprits. If you have no spray calendar, write to A. W. Baker, O.A.C., Guelph, for a copy, and he will forward it.—L. Caesar.

The Tractor in England.

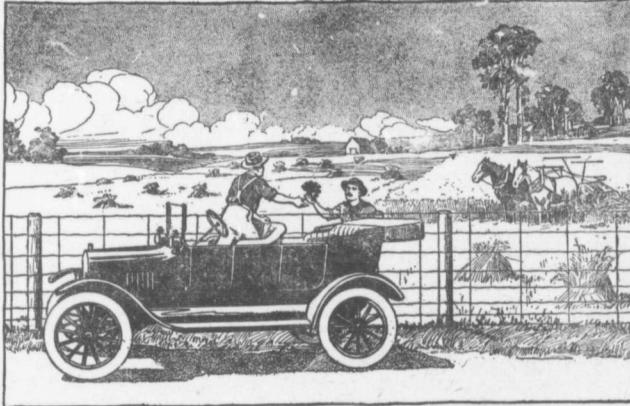
THE submarine menace and scarcity of bottoms last spring created a panic in the Old Country. Greater home production was demanded and one method taken to secure this was by using tractors. The Royal Agricultural Society has made its report on the work of these and in it emphasizes the efficiency of the tractor.

The report says that they did their work easily and were light on the ground. A very narrow head land served for turning around. The average amount plowed was one acre per hour and 30 minutes. The fuel used was kerosene and at the rate of two and one-half gallons per acre. The committee is now urging the British Government to take steps to begin tractor construction in England, some from America.

Protection of Crops.

CROP protection means crop production. Canada loses over one hundred million dollars worth of her staple crops every year through the depredations of insect pests. A large portion of this loss could be prevented. As we cannot afford to lose the smallest portion of our grain and other food crops during the present critical period when the production of food is of supreme importance, the Dominion Department of Agriculture is making every effort to prevent, so far as possible, losses due to insect pests. Crop protection must go hand in hand with crop production.

Insect pests are not usually noticed or reported until they have caused considerable damage. Therefore it is urged that the closest watch be kept on all crops for the first appearance of any insect pests or damage. Immediately such damage is observed steps should be taken to control the outbreak in its incipient stage. If the pest or the method of control is unknown, specimens of the insect and its injuries should be sent at once to the nearest of the following sources of expert assistance: The Agricultural Colleges, the Provincial Departments of Agriculture or their local District Representatives, the officer in charge



Real Daylight Saving

In the harvest time every hour between daylight and dark is worth money to the busy farmer.

You get an early start in the morning intending to do a big day's work, but the

binder, mower or other implement breaks down and you must go to town for the repairs. If you have a Ford you are soon away and its speed clips two hours off the former three-hour journey there and back.

Count up the extra half days that a Ford will save you

during the rush of seeding, haying and harvest. You will find that the Ford will save you a week or more of valuable time on your necessary trips alone.

Many times you will want to take some produce along with you. Then your staunch

Ford is ready to carry a load of 1000 pounds. How handy this would be!

Once you own a Ford and find out the many ways you can use it for business and pleasure you will wonder how you managed without it.

The Ford is an economical investment, and a necessity on every farm.

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of the nearest Dominion Entomological Station, or direct to the Dominion Entomologist, Department of Agriculture, Ottawa, for examination; and advice in regard to control measures will be furnished without delay. Letters and packages up to 11 ounces in weight may be mailed to the Dominion Entomologist, "Free," but postage will be required on letters or specimens sent to the other sources of advice mentioned.

Do not delay reporting insect outbreaks or sending inquiries; delay may involve serious losses that could otherwise be prevented. Write immediately, or telegraph if the outbreak is serious. Clean farming, the securing of vigorous growth in young plants, and good cultivation are the best protective measures against insect attack. Keep all crops constantly under supervision for the first appearance of any damage in order that it may be checked without delay. Increased crop production involves increased protection against pests.

HORTICULTURE

Orchard and Garden Notes.

SOWING of beans and peas should be made now.

Cannas do best in a warm, rich soil. They require a great deal of water.

If you cut asparagus after June 20 you do so at the expense of next season's supply.

Trim the leaves over the cauliflower heads and tie them if you want white heads.

Surplus strawberries and raspberries should be canned.

Do not cultivate beans when the foliage is wet, as it is likely to promote rusting of the foliage.

Strawberries should soon be ripe. Have you made provision for saving the surplus fruit?

If you want rhubarb to continue good until well into the summer, pull out all blossom stalks, and, if the soil is poor, give liquid manure, or mulch the plants.

Keep the ground about shrubbery and perennials spaded and well cultivated all summer. It is well to work a space two or three feet around the shrub.

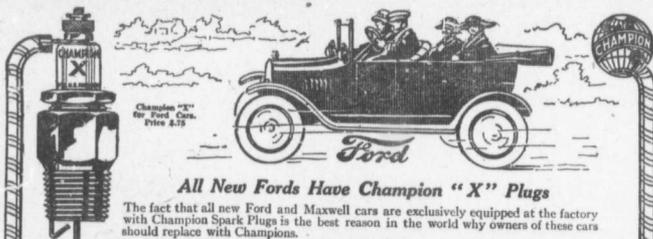
Water dahlias when they are budding heavily, if the ground is dry. This will apply to most flowering plants. They require the most water just at the time they blossom.

Cabbage needs frequent cultivation to supply moisture and air to the soil and also must have plenty of plant food in the soil. Hen manure makes a good fertilizer for cabbage. Scatter it over the ground and cultivate it into the soil.

Don't neglect to cultivate the garden. Weeds or no weeds, it needs to have the soil stirred frequently. This is where rainy new, as well as old gardeners, fall.

"Cash In."

ON every dairy farm where cream is sold, considerable skim milk is often left as a by-product. This is a valuable food that may be utilized in many ways. Converted into cottage cheese, used in cooking, or used as a beverage, it helps solve the high cost of living problem. It is a valuable feed for growing animals. Poultry and pure-bred stock, no doubt, pay the highest returns for skim milk. It has been found to be most efficient as a hog feed when fed with one-third its weight in grain. A hundred pounds of milk is then worth as much as one-half bushel of corn. Other stock pay less for the skim milk they consume.



All New Fords Have Champion "X" Plugs

The fact that all new Ford and Maxwell cars are exclusively equipped at the factory with Champion Spark Plugs is the best reason in the world why owners of these cars should replace with Champions.

The manufacturers selected Champions because they insure maximum efficiency in their motors—prevent loss of compression and are absolutely dependable in emergencies. The Champions illustrated were developed especially for service in Ford and Maxwell motors and efficiently meet their exacting requirements.



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Dependable Spark Plugs

Have been chosen as factory equipment by over one hundred motor car manufacturers with a combined output of eighty per cent of all automobiles made.

Be guided by the selection of the engineers who made your motor when replacing the Spark Plugs in your Ford or Maxwell.

Dealers everywhere sell Champions specially developed for every make of automobile, motor boat, gas engine or tractor.

Be sure the name "Champion" is on the porcelain—its your guarantee of "Complete satisfaction to the user—Free Repair—Replacement or Money Back."

Champion Spark Plug Co., of Canada, Limited
Windsor, Ontario.

All New Maxwell Cars Have Champion Regular Plugs



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CIRCULATION STATEMENT.

The paid subscriptions to Farm and Dairy exceed 27,000. 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 25,000 to 25,000 copies. No subscriptions are accepted at less than the full subscription rates. A thorough detailed statement of the circulation of the paper, showing its distribution by counties and provinces, will be mailed free on request.

OUR GUARANTEE.

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

Rogues shall not spy their trade at the expense of our subscribers, who are our friends, through the medium of these columns; but we shall not attempt to adjust trifling disputes between subscribers and honorable business men who advertise, nor pay the debts of honest bankrupts.

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.

The Railroad Situation

THE present railroad situation in Canada illustrates the danger the public incur when they allow private utilities to remain in private hands. A monopoly is in the nature of a monopoly; once established it cannot be depended upon to regulate rates, except between a few competitive points and the governments in all countries where private ownership is still in vogue have been forced to assume control of passenger and freight charges. When railway corporations, through over building and bad management, find that they cannot meet operating expenses, they naturally enough turn to the government that has assumed control of their rates and demand the right to increase their charges.

This is the situation in Canada at the present time. The C. N. R. and the G. T. R. are incapable of meeting their annual fixed expenses. They demand an increase of fifteen per cent. in both freight and passenger rates. At the same time the C. P. R., which would also share in this increase, is paying a dividend equal to twenty-two and one-quarter per cent. on the money actually invested in the road. Clearly, there must have been bad management and a great lack of good business policy in the construction and operation of the needy roads, when the C. P. R. is able, operating under the same conditions of labor and fuel shortage, to show such tremendous profits. Similar mismanagement would result in the bankruptcy of any private concern, but our railways, as semi-public institutions, ask for the right

to make the people pay for a business policy which has left them incapable of coping with present strenuous conditions.

Parliament will have to deal with the whole situation in the near future. More public aid in the form of direct cash subsidies or land grants should not be countenanced. The courageous course, and we believe the wisest course, for our government to follow, would be to nationalize all the railways of the land, dismantle sections of the present roads which are unproductive and useless, and operate all as one great public utility. There is good reason to believe that if such a course were followed, the venture would be profitable from the first, and that without any addition to the present freight and passenger charges. Ministerial assent to any increase in present rates should be withheld until the whole question can be thoroughly considered in Parliament.

Centralizing Highway Control

ANOTHER step is about to be taken to relieve rural tax payers of the control of their highways. A bill has been introduced at Ottawa entitled "An Act to Encourage and Assist the Improvement of Highways." This bill is introduced under the name of Mr. Cochrane and has government sanction. It provides, in brief, that the Dominion Government may grant to any province in aid of the improvement of the highways or bridges, a subsidy not exceeding such sum as may each year be voted by Parliament. Highways receiving such aid must be constructed according to specifications approved by the federal government, and provision must be made for future maintenance, this also according to federal standards. With the authority of the provincial legislature, the Minister of Railways and Canals may undertake the construction of any new highway, and may expend on that highway the whole or any part of the sum voted by Parliament for such subsidy to that province.

If this bill becomes law, which it probably will as the government now commands a majority in the Senate, there will be a serious overlapping of Dominion and Provincial jurisdiction, and the loose construction of the bill makes it possible to use the expenditures it authorizes in a purely partizan manner. Its wording, too, makes it possible for the Minister to use every cent of the millions that will be appropriated on the construction of an ocean to ocean highway, which, as a useful public work, has already been thoroughly discredited. The most dangerous feature of the bill, however, is that it will tend to still further centralize the control of our highways and remove the control of taxation more and more from the hands of the rural taxpayer. Such a course will lead inevitably to extravagance and waste in road construction, and in all probability will fix road construction upon the curse of indirect taxation. This tendency to centralize control of expenditures is one of the most dangerous tendencies of the times, and a tendency against which every taxpayer should protest vigorously.

Sir Wm. C. Macdonald

SIR Wm. C. MACDONALD, who died at his home at Montreal last week, was a shrewd, successful business man. Starting with nothing, he accumulated millions. This is as much as can be said of many of our moneyed men—but not of Sir William. He will long be remembered because he was more than a rich man; he was a public spirited citizen, ever anxious to help in any good cause. His main interest, aside from business, was in education, and he will go down in history as the first great exponent of the consolidated school system in Canada. To convince people of the practicability of the system, he established and maintained consoli-

dated schools at several points in Canada. Manual training in connection with public schools was another of his hobbies, and it was his money that established the first manual training schools in Canada. The greatest monuments that he leaves behind him, however, are Macdonald College at Ste. Anne de Bellevue, Que., and Macdonald Hall and Institute at Guelph, both of which institutions were founded by Sir William and paid for out of his private fortune. For these good works his memory will long be held in honor.

Oleomargarine

HON. MARTIN BURELL has announced that the government is considering favorably numerous petitions asking that the sale of oleomargarine be allowed in Canada. If the Minister is reported correctly, it means that the clamor of a few city newspapers and the insidious campaign of the packing interests, who hope to benefit by the removal of restrictions, counts for more with the government than the interests of some 700,000 farmers, almost all of whom are connected to some extent at least with the dairy industry.

The dairy farmer asks for no special favors. We are not afraid of honest competition. We have every reason to fear, however, that oleomargarine masquerading as butter will have a decidedly detrimental effect on the butter market. Oleomargarine interests have never been content to sell their product on its merits, and if Canadian authorities can head off the campaign of fraud and deception that has been practised in every country where oleomargarine is sold, then our legislators have more wisdom than we have cause to give them credit for. We would be glad of an announcement from Ottawa stating just how oleomargarine is to be kept in its own clothes, and dealers therein made honest by legislative enactment.

The Next Live Stock Commissioner

THE position of Dominion Live Stock Commissioner, left vacant by the death of the late John Bright, is still unfilled. Several names have been mentioned for the appointment in interested circles, but the name most frequently mentioned among disinterested parties who have the well being of our live stock industry at heart, is that of H. S. Arkell. For years Mr. Arkell has been the real brain of the Branch, and, in the opinion of Farm and Dairy, is more deserving of the appointment than any of those who have been mentioned for the Commissionerhip.

Mr. Arkell's early associations were with the pure-bred live stock business, his father being one of the most noted breeders of sheep in Canada, and one of the best farmers. To the training received in his early home, Mr. Arkell added that of a four-years' course in Guelph. Since his graduation from that institution he has been continuously studying the live stock industry in Canada, the United States and in Europe. He is an authority on all forms of state aid to agriculture. Above all, he is a sincere, conscientious man, with a talent for departmental work. Farm and Dairy has never heard Mr. Arkell express so much as a desire for an appointment to the commissionerhip. We have never mentioned it to him. We believe, however, that if the appointment is to be made on merit, Mr. Arkell can fill the position more acceptably to the live stock interests of Canada than any other man.

Shallow cultivation is one way of hustling the corn crop. The surface soil warms up and contains the most available plant food, so that is where many of the corn roots go. Deep cultivation will cut these roots, which results in a setback for the corn plant.

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The Cheese Situation Clearing Nicely

Trade is Settling Down to New Conditions—Prices Subject to Change—Western Buyers Unfortunate Position
By H. Bronson Cowan.

ALTHOUGH the manufacture and export of cheese in Canada will be conducted this year on a basis unparalleled in the history of the country, the trade is rapidly adjusting itself to the new conditions. These are war times. Everyone recognizes the fact. There is a universal disposition, therefore, to take sudden upsets in business ordinarily which would cause a storm of protest, in the spirit of willingness to put up with things that are doing much to make usual. There will be, however, less the machinery of trade run smoothly. Last week I spent a day in Montreal and had interviews with Mr. Jas. McGowan and Mr. James Alexander, member of the Cheese Commission, with Mr. Arthur Hodgson, of Hodgson Bros & Rowse, and Mr. R. M. Ballantyne, of Lovell & Christmas, two of Montreal's leading exporters, and brief chats with Geo. H. Barr, Jos. Burgess and Frank Singleton, of the Dominion Dairy Division. Dairy Commissioner J. A. Ruddick, was in the city for a few hours the same day attending a meeting of the Commission, which he conducted on the third member. Cheese was going forward in considerable quantities, and there was an evident abatement in the strain under which most members of the trade had been working during the unsettled condition of the trade that had prevailed for several weeks. Briefly the situation is as follows:

The cheese trade in Canada this year will be handled by the Cheese Commission, which is composed of Messrs. McGowan, Ruddick and Alexander. All three are giving their services without financial return. Mr. McGowan is a citizen of business man of wide experience, who is the repre-

sentative in Canada of the British Board of Trade.

The trade seems to have every confidence in the personnel of the Commission, which it is expected will handle this season from \$35,000,000 to \$40,000,000 worth of cheese.

From the farmers' standpoint there is going to be very little change in the method of selling cheese, that has prevailed hitherto. That is, cheese will be sold on the cheese boards just as usual. There will be, however, less fluctuations in prices than have been customary in former years, owing to the fact that the new conditions under which the cheese will be handled have largely eliminated the speculative element in buying.

"One point I would like you to make clear," said Mr. McGowan, "is that the price paid for cheese is not set by the members of the Cheese Commission, but by the British Board of Trade. The price paid is subject to change, and will be determined not alone by the supply and demand for cheese, but by the supply and demand for other food products as well, which, also, are controlled in Great Britain by the Board of Trade. While the margin allowed to the exporters in Canada, and the importers and dealers in Great Britain for handling the cheese will show but very little variation throughout the season, as the charges are practically fixed in character, yet the price paid for the cheese may move up or down in other years, if market conditions make such changes necessary."

This will be news to many dairymen, as there has been an impression in some quarters that the price that has

(Continued on page 19.)

U.F.O. Protests Against Higher Rates

At a special session of the Dominion Railway Commission held in Toronto on June 12, the application of the railways for a 15 per cent increase in freight and passenger rates, was the subject of public enquiry. The Railway Commission has no authority to grant such an increase without an examination of schedules in detail and the present effort is to persuade the government under the War Measures Act to take the step of granting the increase without admitting it to debate in Parliament. At the meeting held in Toronto to gain the views of the interested public, Mr. Gordon Waldron, represented the United Farmers, Peter White, K.C., the live stock men, and A. D. McIntosh, W. H. Bunting and President Shepherd of the Ontario Fruit Growers' Association, the fruit interests.

Vice president Hanna of the C.N.R., stated that the increased operating costs on his road this year will be \$6,000,000 and the 15 per cent increase in rates asked for would add less than five and one-half million dollars to the company's revenue. Vice-president Dainoff of the Grand Trunk, stated that the increase would not meet the increase in the cost of coal alone used by his company.

Representatives of the Toronto Board of Trade and the Canadian Manufacturers Association offered opposition to the increase, provided it was considered as an emergency increase only and that coal and a few other items were exempted from the general advance.

Mr. Gordon Waldron for the United Farmers of Ontario, contended that it was not the office of the Railway Commission to grant the request of the

railway. The matter should come before Parliament itself, where necessary enquiry could be made and adjustment and compensation arranged. The duty of Parliament was being shirked if the Railway Commission made the requested representation.

The representatives of the fruit interests produced figures to show that fruit growers could not stand heavier charges than were now being levied upon them. Their operating costs, too, have been increased to the point where they cannot make a profit, but they could not turn to the government for assistance as do the railroads.

Peter White argued that an additional tax on the live stock industry in the form of higher freight rates, would mean that meat would be higher and scarcer even than it is now. He closed his argument as follows:

"Nor do railroads need the advance in rates. The C.P.R. last year made a profit of 22 1/2 per cent on the capital actually invested in the road. True its cost of operation has increased since 1906, but net earnings have increased in equal proportion. Its net earnings in 1916 were the highest in its history. Its receipts per train mile last year were \$2.84, and its operating expenses \$1.76.

"Lumping all railways together their earnings last year were \$263,000,000 and operating expenses \$190,000,000. True all railways do not make a good showing, but that, as the Royal Commission says, is because some building has not been justified on commercial grounds. Is that a reason why \$40,000,000 a year should be levied on users of railroads at a time when one of the chief bodies of users, farmers, are being urged to increase food production?"



You need a new DE LAVAL SEPARATOR NOW

1st If you are still using some gravity or setting process of creaming—

BECAUSE YOUR WASTE is poorest and quality of product poor in mid-summer when the milk supply is heaviest.
BECAUSE TIME IS OF GREAT VALUE on the farm at this season, and the time and labor saving of the good separator counts for most.

BECAUSE THE SKIM-MILK IS poorest without a separator in hot weather, and often more harmful than helpful to calves.
BECAUSE THE WORK OF NEW De Laval Cream Separator is as perfect and its product as superior with one kind of weather as with another.

2nd If you have a very old De Laval or an inferior separator of any kind—

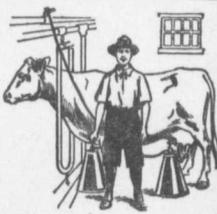
BECAUSE THE LOSSES OF THE poor separator from incomplete skimming and the tainted product of the hard-to-clean and insalubrious separator are the greatest at this season.
BECAUSE OF THE GREAT economy of time at this season in having a separator of ample capacity to do the work so much more quickly.
BECAUSE THE NEW DE LAVAL is so much simpler and more

easily handled and cared for than any other, and you can not afford to waste time these busy days "fussing" with a machine that ought to have been thrown on the junk-pile long ago.
BECAUSE THE DE LAVAL Separator of to-day is just as superior to other separators as the best of other separators to gravity setting, and every feature of De Laval superiority counts for most during the hot summer months.

These are all facts every De Laval local agent is glad of the opportunity to prove to any prospective buyer. If you don't know the nearest De Laval agency, simply write the nearest main office, as below.

THE DE LAVAL COMPANY Ltd.
LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA.
Sole manufacturers in Canada of the famous De Laval Cream Separators and Ideal Green Feed Silos, Alpha Gas Engines, Alpha Churns and Buttermats. Catalogues of any of our lines mailed upon request.
MONTREAL PETERBORO WINNIPEG VANCOUVER
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

"Water would rather stay home and milk than go away on a picnic!"



HOW to get along with less hired help, and yet escape the drudgery that drives boys away from the dairy farm—this is the problem that is being solved by the

EMPIRE Mechanical Milker

No one seems to like hand milking, yet every boy loves to run a machine. Here is a typical example of how it works out:

Dear Sirs—

AMHERST, N.S., Jan 5, 1917

Water, who was 16 years old, loves a machine, but hated to milk cows, so he bought the Empire Milking Machine that was shown at the Winter Fair at Amherst in 1915. It has given good satisfaction in every way.

We have milked at the rate of 40 cows an hour, but think it best not to exceed 32 as that leaves very little stripping to do.
One cow that only gave 21 quarts the year before, gave 29 quarts with the machine; two others that gave 22 1/2 quarts the year before gave 26 to 28 quarts this year when machine.

We have just one cow that refuses to give her milk down with the machine. The Water has taken full charge of engine and milker since it was put in and has never missed a milking—would rather stir home milk than go away on a picnic.
Geo. E. FREEMAN

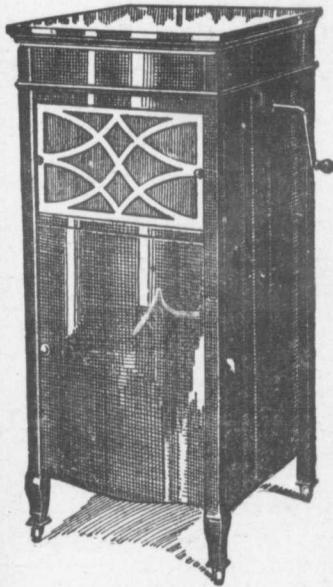
While overcoming the strongest objection to the use of the dairy farmer, the Empire Mechanical Milker is helping him to make more money. Why shouldn't YOU be one of them? Write for illustrated Booklet and full particulars to Dept. E

THE EMPIRE CREAM SEPARATOR CO. OF CANADA, LIMITED.
MONTREAL TORONTO WINNIPEG. 64

When You Write—Mention Farm & Dairy

Five Large Phonographs

Splendid Prizes in Breadmaking Contests at Rural School Fairs in Ontario



The Pathéphone

Five of these fine large phonographs, each with twelve records, given as first prizes in District Contests. Value, \$150. Size, 20" x 20" x 44" high.

Everyone can get Cream of the West Flour. If your grocer or dealer does not happen to have it, write to the Campbell Flour Mills Co., Ltd., Toronto, and you will promptly receive a letter telling you the nearest place to get it in your neighborhood.

Please note this: The winner of the Provincial prize in last year's contest competed against the winners in half the province. There were two Provincial first prizes. This time your chance of winning the chief prize are very much enhanced, for you compete for the Pathéphone, etc., within a district comprising only a few counties. Five Pathéphones are now packed up in Toronto ready for the names and addresses of the fortunate winners. The Province will be divided into five districts, and particulars showing the names of the counties, etc., in each district will be published in a future advertisement.

Here is the plan: First of all you compete at your local Rural School Fair. From among the first prize winners at the local fairs, the winner of the Pathéphone is selected. The judging for the district prizes will be done by Messrs. A. Purdy of the Department of Flour Testing and Breadmaking at the Ontario Agricultural College, Guelph. You see we have the approval of the Ontario Government for this contest.

Isn't it well worth while to start right away to use Cream of the West Flour. Whether you win a prize or not your time is well spent;

nothing makes you a good breadmaker sooner than to enter a contest. This is why parents everywhere urge their daughters to enter this contest. Here is the list of prizes—

Prizes at local Rural School Fairs—For the best loaf of bread baked with Cream of the West Flour the following handsome books are offered:—

- 1st Prize—Girl's Own Annual.
- 2nd Prize—Stories of Famous Men and Women.
- 3rd Prize—British Overseas.
- 4th Prize—The Queen's City Book.

Note.—Unless the entries number six or more only first and second prizes will be awarded. Unless the entries number ten or more so fourth prize will be awarded. Be sure to read full descriptions of these prizes in the report.

The District Prizes—If you win first prize at your local fair you automatically become a competitor for the Pathéphone without any further work on your part. One-half of the first-prize loaf is sent to Guelph to compete against the other first prize winners in your district. Remember that you are not only the winner in the province but against only the winners in the district.

- 1st Prize—Large Cabinet Pathéphone with 12 records. Your value, \$150.00.
- 2nd Prize—Set of "Dickens" Works, 18 volumes.
- 3rd, 4th and 5th Prizes—Cassell's Bread-Millers.

Note.—See full description of Prizes on opposite page.

At the Rural School Fairs to be held all over Ontario this fall, one of the greatest events will be the breadmaking contests, conducted under the auspices of the Campbell Flour Mills Company. The girls of the whole province will watch this contest with keenest interest, for \$2,000 worth of splendid prizes are to be won by girls between the ages of 12 and 18 years who bake the best loaves of bread with Cream of the West Flour. In this announcement we tell all about the conditions of the contest. Read them carefully; also read the full descriptions of prizes on the opposite page. Then decide to enter this contest, for every baking day counts between now and fair time.

For the Grand Prizes we offer five splendid big phonographs like the one pictured here. Isn't it a beauty! It costs with records, no less than \$150, and remember, we are offering five of these machines. You will agree that such a splendid prize is well worth any girl's while to try for with enthusiasm.

Think of the fine times you could have with this lovely instrument, your friends coming over of an evening to listen to big bands, orchestras and fine singers. Or you can stir things up by putting on a funny record if you like. Certainly the winners of these large cabinet phonographs will be the envy of the whole province. Make up your mind you are going to win. All you have to do if you wish to try for the phonograph and the other splendid prizes described on the opposite page is to bake one loaf of bread, under the conditions explained below, with

Cream of the West Flour

the hard wheat flour guaranteed for bread

If you are going to use good flour for your bread-baking, why not have "the very best"—Cream of the West. We know by long experience that it does make big, bulging loaves of the wholesome, whitest, lightest bread that will make you proud of your baking. If you could just see the enthusiastic letters of appreciation received by us from hundreds of people, who would not think of using any other flour but this, we would never need to hold these contests. We know that if you try it you will want to use our flour all the time. That is why it is worth our while to offer you that is guaranteed prizes, just to get you acquainted with Cream of the West—the hard wheat flour that is guaranteed for bread.

CONDITIONS OF CONTEST.

Every girl may compete, whether or not she attends school, providing that her 15th birthday occurs before November 1st, 1917, or her 18th birthday does not occur before November 1st, 1917.

One loaf of bread, to be baked from Cream of the West Flour, must be properly entered at your local Rural School Fair, 1917, accompanied by the part of the Cream of the West Flour bag which shows the face of the Old Miller. A certificate or entry form must be signed by the girl competing and by a parent or guardian. This certificate will state the name, date of birth, post office address and name of dealer from whom Cream of the West Flour was purchased. The entry form will also declare that the loaf was baked only by the girl in whose name the loaf is entered in the contest. These forms will be available at the time of the local Rural School Fair.

The breadmaking contest for the local prizes will be part of the local fair program. It will be judged and prizes awarded the same as for the other regular contests at the fair. The decisions of the judges will be final.

Not more than one entry may be made by each girl, and not more than one local prize awarded to the same family.

Each loaf must be baked in a pan about 7 1/2 inches and 2 inches deep, and divided into two loaves so that they can be separated at the fair. One-half of the loaf to be sent to the winners there, and prize be delivered soon after as possible. The remaining half of the loaf winning first prize will be shipped

afterwards to the Ontario Agricultural College, Guelph, where it will be judged by Miss A. Purdy of the Department of Flour Testing and Breadmaking. Loaves shipped to Guelph will, of course, not be returned.

The Local Representative of the Department of Agriculture, who has charge of the Rural School Fairs in his district, will attend to the shipping to Guelph of each First Prize Loaf from each fair. A container will be furnished him for this purpose, and that it is meant only to remember to have the loaves of bread in nearly uniform size as possible.

The Standard upon which the loaves will be judged will be as follows:—

1. Appearance of Loaf.....15 marks
 - (a) Color.....5
 - (b) Texture of crust.....5
 - (c) Shape of loaf.....5
2. Texture of Crumb.....10 marks
 - (a) Evenness.....5
 - (b) Siftiness.....5
 - (c) Color.....5
 - (d) Moisture.....5

Remember these when baking your bread. Each girl should practice baking as often as possible between now and the date of your school fair, but if possible, the loaf to be exhibited should be baked the day before the fair so that it will be fresh for shipment to Guelph if it wins a place in the Provincial contest.

The results of the District Contests will be announced as soon as possible after the conclusion of the Rural School Fairs in the Province.

Campbell Flour Mills Co., Limited, (West) Toronto

Descriptions of the Prizes In Bread-Making Contests

More than \$2000 in Pathe Phonographs, Attractive Books and Bread Mixers!



First District Prize.

The Pathephone we have chosen for the District Prizes is one of the best phonographs in the world and sells in Canada for \$135. Together with the twelve records that go with it, the total value amounts up to \$150. What a prize! How we wish we could exhibit this beautiful instrument in every neighborhood. Were it possible, there would surely be an avalanche of entries everywhere.

Of course there are other good phonographs that command a large sum of money. We chose the Pathephone for its magnificent reproduction of music in tone so true, so full, so interesting, as to create the feeling that living voice. Here is a wonderful phonograph, so perfect in its sound production that, if you did not see the instrument, it would be very hard to distinguish its music from the original human voice.

The Pathephone will play any flat disc record. Special needles are provided which permit of the best results being obtained. Just look at the design. The wood is rich mahogany, highly polished and beautifully finished—designed to go in harmony with the coolest furnished homes in the land. Inside are compartments for keeping the records.

Second District Prize— Set of Dickens' Works.

Why is it that people who know Dickens' stories not only once, but several times? Who can read about Oliver Twist's or Little Nell's extremely interesting adventures without being moved in the very depths of feeling? Few figures are more intimately loved than Mr. Pickwick and Sam Weller. They get more so every

time you read about them. The "Tale of Two Cities" is so gripping in its vivid descriptions of adventures and perils during the French Revolution, that you just want to read the whole book at one time. Everybody reads Dickens. It is indeed part of one's education, not to be neglected. And this set includes no less than eighteen beautiful volumes cloth-bound in blue with gold titles, good paper and clear type. The books are all profusely illustrated.

Third, Fourth and Fifth District Prizes— Cannock Bread Mixer.

When you use the bread mixer say it makes bread-making one of the easiest tasks of all in the home. A little child can easily turn the handle, and this little operation you will agree is a very much easier than handling many pounds of dough several times and kneading it. How simple just to put in the ingredients and let a child turn the handle for three do when you have a Cannock Bread Mixer. It saves flour, it makes the bread rise more in a short time, the Cannock Bread Mixer helps you make better bread with a fraction of labor—surely a splendid prize worth trying for.

First Local Prize— The Girl's Own Annual.

How is a great, big fascinating book just teeming with the things that girls love. Here you find studies and informative articles you have not read elsewhere. You find the latest news in the book of this book, for long before you were here, the editors were studying the literature wanted girls and the "Girl's Own Annual" has been a favorite all the years. And now, in this gripping war time it is more interesting than ever. Whatever your age, you will treasure

it. When you grow to womanhood you will continue to turn to it. Its appeal is to all, and it will take you a long time to read the last interesting story and article, for there are nearly 500 pages of stories, special articles about the world's famous people, descriptions of curious facts, stories and information about birds, animals—all the things that you like to read about. The stories of romance, love and helplessness to others are particularly fine. And these are instructive departments dealing with crocheting, sewing, fashions and modern problems. There are dozens of illustrations. Take up your mind now to win this book.

Second Local Prize— Stories of Famous Men and Women.

You have heard of the world famous Isora Tild, the sweet singer to whom Queen Victoria threw a bouquet of the Province of Manitoba. You have Bookham who risked her own life to save "British Prince Charles" when a pirate was out upon his head for leading a rebellion years ago—of Grace Darling and sixty-two nightingales, the heroine of history who won the Victoria Cross for her services on behalf of the British Empire—and the beloved Queen Victoria, in the most engaging language. And these are but a few of the great famous women who are told about in this lovely book. It is a large volume with many colored pictures and drawings, 320 pages, heavily cloth bound with gold titles.

Third Local Prize— Britain Overseas.

Isn't the building up of Britain's vast world-wide Empire suggestive of an abundance of interesting history? This book tells all about the Empire upon which the sun never sets, about its heroes who won it for Britain, their battles, their personal conquests and the Empire are composed. It tells about their customs and how they found contentment and nowadays under the benevolent rule of Britain. It tells of the great Empire in which Britain stands and how she has attained her present position. You want to know all about it. This splendid book is handsomely illustrated with pictures in many colors, is heavily cloth bound.

Fourth Local Prize— The Queen's Gift Book.

Our good Queen Mary has founded a haven in England for the brave soldiers who have been disabled, a place where they rest and recover from their wounds, and are fitted to help the good work. Great Britain's most famous women were glad to contribute their own splendid paintings and drawings as shown in all the original colors. There are Queen Doyce, Jerome, Gulliver, Arthur, Ernest Thompson, Mrs. Humphrey Ward and others. It is a splendid souvenir of the war. It is beautifully bound in blue, has 112 pages, and besides the pictures in many colors, is profusely illustrated with dozens of drawings.

No Competitions in Counties Named Below.

The competition is open to all parts of the Province where Rural School Fairs are held, except the districts of Rainy River, Kenora and Thunder Bay. These three districts are the only parts of the Province where school fairs are held under the auspices of the Department of Agriculture, in which this competition representative of the Department of Agriculture, Counties under the supervision of the Department of Agriculture. We regret, therefore, Counties under the supervision of the Department of Agriculture. We regret, therefore, Counties.

Decide Now.

If you are of the proper age, decide now, to practice with Cream of the West Flour, the splendid hard wheat flour that makes such splendid bread. Practice should encourage every girl to enter who can, thus stimulating interest in good bread-making. Get your dealer and know the West Flour from quality. Every baking between now and your rural school fair day may teach something that will help you win the Pathe Phonograph or one of the other splendid prizes. Decide now—Practice.

Watch for our next announcement which will give the districts into which the Province has been divided and the counties each district contains. Send in the coupon below for name of the nearest dealer who sells Cream of the West Flour.

See opposite page for conditions, etc.



THE GUARANTEED FLOUR

"Each loaf must be accompanied by part of bag which shows the face of the Old Miller."

CUT OUT AND MAIL THIS COUPON:

CAMPBELL FLOUR MILLS CO., LTD.

Please send me name and address of nearest dealer who sells Cream of the West Flour, as our regular dealer does not handle it.

Our dealer's name is.....

His Address.....

My name is.....

Address..... P.O.....

The Campbell Flour Mills Co., Ltd.
(West) Toronto, Ontario

(SEE OPPOSITE PAGE)

Keep this announcement for reference.



THE cynic is one who never sees a good quality in a man and never fails to see a bad one.—Henry Ward Beecher.

Winning the Wilderness

(Continued from last week.)

"THEN I won't listen to you. You are a flirt. Not satisfied with making one girl love you, you want to make all of us care for you."

"I know what you mean. I thought I loved Jo. Then I knew I didn't, and I felt in honor bound to keep her from finding it out. But that's a different kind of a business game. You can't play that game and win. I've learned a good many things this summer, and one of them is that Todd Stewart is the only one who really and truly loves Jo, and she cares as much for him as she does for anybody."

"How do you know?" Leigh asked as she leaned back now and faced Thaine.

"Because she doesn't know herself yet. She's too spoiled by the indulgence of everybody and too pretty. She wants attention. But I found finally, maybe mother helped me a little, that if she has Todd's attention she's satisfied. More, she's comfortable. She was always on thorns with me. Isn't that enough about Jo?"

"Well?" Leigh queried.

"No, nothing is well yet. Leigh, let me go away to the University. Let me make a name for myself, a world-wide name, maybe, let me fight on my frontier line and then come back and lift the burden you carry now. I want to do big things somewhere away from Kansas prairies, away from the grind of the farm and country life. Oh, Leigh, you are the only girl I ever can really love."

He leaned forward and took her hands in his own, his dark eyes, beautiful with the light of love, looking into the ambition of undisciplined youth.

"Let me help you," he pleaded.

"It is only sympathy you offer, Thaine, and I don't want sympathy. You said that because you couldn't win with me. Neither would it with me. I am happy in my work. I'm not afraid of it. The harder part is to get enough money to buy seed and pay interest, and Uncle Jim and I will earn that. I let you the mortgage must be lifted by alfalfa roots just as Coburn's book says it will be."

There was a defiant little curve on her red lips and the brave hopefulness of her face was inspiring.

"Go and do your work, Thaine. Fight your battles push back your frontier line, win your wilderness, and make a world-wide name for yourself. But when all is done don't forget that the world of your father and mother made here, and are making to-day, is honorable, wonderful; and that the kind of a Kansas farm, bordered round by golden sunflowers, is a real kingdom. Its sinews of strength uphold the nation."

"Where, you eloquent little Jayhawk?" Thaine exclaimed. "You should have been an orator on the side, not

an artist. But all this only makes me care the more. I'm proud of you. I'd want you for my chum if you were a boy. I want you for my girl now, and afterwards, Leigh, I want you for my own, all mine. Don't you care for me?"

"Couldn't you learn to care, Leigh? Couldn't you go with me to the broader life somewhere out in the real big world? Couldn't we come some time to the Purple Notches and

"Leigh, will you do two things for me?" he asked at length. The sad, quiet tone was unlike Thaine Aylet.

"If I can," Leigh answered.

"First, will you promise me that if you want me you will stand for me. If you ever find—oh, Leigh, ever is such a long word. If you ever think you can care enough for me to let me come back to you, you will let me know."

"When I send you the little sunflower letter Prince Quipp never answered you may come back," Leigh said lightly, but the tears were so near for the promise to seem trivial.

"What is the other thing?"

"I want you just once to let me kiss you, Leigh. It's our good-by kiss for ever. Hereafter we are only friends, old chums, you know. Will you let me be your lover for one minute up here on the Purple Notches, where the whole world lies around us and nobody knows our secret? Please, Leigh. Then I'll go away and be a man somewhere in the big world that's always needing men."

Leigh leaned toward him, and he held her close as he kissed her red lips. In all the stormy days that followed the memory of that moment was with him. A moment when love, in all its purity and joy, knew its first realization.

The next day Leigh Shirley made



The little girl shown in the illustration is Neva Stansell, who is three years of age and the daughter of Mr. J. L. Stansell, Elm Co., Ont. The dog is a lover of Ayrshires, which is quite evident from this illustration.

build a home for just our summer days, because we have seen these headlines all our lives?"

Leigh's head was bowed, and the pink bloms left her cheeks.

"Thaine," she said in a low voice that thrilled him with its sweetness, "I do care. I have always cared so much that I have hoped this moment might never come."

Thaine caught her arm eagerly.

"Not! No! We can never, never be anything but friends, and if you care more than that for me now, if you really love me—" the voice was very soft—"don't ask me why. I cannot tell you, but I know we can never be anything more than friends, never never."

The sorrow on her white face, the pathos of the great violet eyes, the firm outline of the red lips told Thaine Aylet that words were powerless. He had known her every moment from childhood. She never dallied nor flinched against the word he answer hesitated. The great violet eyes were very deep for words to argue against. And with Thaine Aylet was very proud and unaccustomed to being denied what he chose to want very much.

butter all the mornings, and in the afternoon she tried to retouch her sketch of sunflowers as she had seen the shadows dull the brightness of their petals in the valley below the Purple Notches.

The same day Thaine Aylet left home for the winter, taking the memory of the most sacred moment of his life with him out into the big world that is always needing him.

CHAPTER XVIII.

Remembering the Maine.

The Twentieth Kansas was fortunate in opportunity, and heroic in action and has won a permanent place in the hearts of a grateful people.

—William McKinley.

The sunny plains of Kansas were fair and full of growing in the spring of 1898. The alfalfa creeping out against the weeds of the old Cloverdale Ranch was green under the April sunshine. The breezes sweeping down the Grass River Valley carried a vigor in their caress. The Aylet grove, just budding into leaf, was full of wild birds' song. All the sights

and sounds and odors of springtime made the April day entrancing on the Kansas prairies.

Leigh Shirley had risen at dawn and come up to the grove in the early morning. She tethered her pony to graze by the roadside, and with her drawing board on a slender easel she stood on the driveway across the lakelet, busy for awhile with her paints and pencil. Then the sweetness of the morning air, the gurgling waters at the lake's outlet, once the little draw choked with the plum bushes, and the trills of music from the shimmering boughs above her head, all combined to make dreaming pleasant. She dropped her brushes and stood looking at the lake and the way to the wide level fields beyond, with the river gleaming here and there under the touch of the morning light.

She recalled in contrast the silver and sable tones of the May night when she and Thaine sat on the driveway and saw the creamy water lilies open their hearts to the wailing moonlight and the caressing shadows. It was a fairytale dream that night. It was plain daylight now, beautiful but real. Life seemed a dream that night. It was very real this April morning.

The young artist involuntarily drew a deep breath that was half a sigh and stooped to pick up her fallen brushes. But she dropped them again with a glad cry. Far across the lake, in the leaf-checked sunshine, Thaine Aylet stood smiling away.

"Shall I stay here and spoil your landscape or come around and shake hands?" he called across to her.

"Oh, come over here and tell me how you happened," Leigh cried eagerly.

Grass River people blamed the two years of the University life for breaking Thaine Aylet's interest in Jo Bennington. Not that Jo lacked admirers without him. Life had been made so pleasant for her that she had not gone away to any school, even after her father's election to office. And down at the University the pretty girls considered Thaine perfectly heartless, for now in his second year they were still baffled by his general admiration and undivided indifference toward all of them. His eager face as he came striding up the driveway to meet Leigh Shirley would have been a revelation to them.

"I happened" last night, too late to wake up the dog," Thaine exclaimed.

"I happened to run against Dr. Carey, who had a hurry-up call down this way, and he happened to drop me at the Sunflower Inn. He's coming by for breakfast at my urgent demand. This country night practice is such a kill a dog, and he's white as a sheet than ever, young as he is. He said he is going to take a trip out West and have a vacation right soon. I told him all my plans. You can tell him anything, you know. Besides, I'm hoping he will beat me to the house this morning and will tell the folks I'm here."

"Doesn't your mother know you are here?" Leigh asked.

"Yes, I wanted to come down early and tell the lake gourd. I have to leave again in a few hours."

The old impenetrable expression had dropped over his face with the words. And nobody knows why the sunshine grew dull and the birds' songs dropped to busy twittering about unimportant things.

"Do you always tell me good-by?" Leigh asked.

"No, never. And she could think of nothing else to say."

"Not always, but this time it's different. I'm so glad I found you. I should have gone down to Cloverdale, of course, if you hadn't been here, but this saves time."

(Continued on page 17.)

THE UPWARD LOOK

Three Wonderful Experiences.

THE ladies of the Winnipeg Presbyterial had arranged a series of meetings in Winipeg, Brandon, Portage La Prairie, and other places for me, about ten in all. On my way north by train I caught a severe cold which settled in my chest and throat. I knew the meetings the collections from the meetings to defray amount to about \$100; which would require my travelling expenses. Just before reaching Winnipeg, and when feeling quite ill, I was enabled to commit myself definitely into the Lord's hands, trusting Him to give me strength and voice for the meetings.

"The days that followed can never be forgotten, for the bodily weakness, fever, and throat trouble were not removed, except when I was to give my addresses. In each case, though so hoarse before and after speaking as to scarcely be able to speak above a whisper, my voice cleared for the address. For example, while the guest of Dr. and Mrs. G. W. Gordon (Ralph Connor) on the Sunday School Sunday night in Dr. Gordon's church. At the supper table my voice seemed entirely gone, and I asked Dr. Gordon to be ready to speak should I not be able to do so. Just before my time came, I slipped up on to the platform behind Dr. Gordon who was praying, and oh, how I cried to the Lord for help and courage, for the church was packed, even the Sunday School partition being opened to accommodate the crowd. As Dr. Gordon introduced me I stepped forward, possessed by a feeling of wonderful peace and confidence. It seemed as if I could almost feel One beside me, and never before had I felt so completely and only a channel. For one hour and five minutes I spoke so that every one heard distinctly, but when I sat down my throat seemed again to tighten. Dr. Gordon told me later that he had had a man purposely sit in the most distant and difficult part of the church to hear every word. So it was till the end of my appointments. In anticipation of further appointments I asked the Lord either to heal my throat, or provide a way for me to get a needed rest. A few days after my return to Toronto, four of the children were taken down with measles, and during the period I was thus forced to cancel all meetings, and my throat was quite recovered."

"On one occasion I was to leave home on a ten days' trip east to Montreal, Ottawa and other places. Just before leaving, word came that the children's Sunday School treat was to take place in my absence. My little Mary had no nice "best" dress fit for such an occasion, and I hoped to get a white woolen dress made for her before starting, but could not. I knew it would be impossible for me to make it while away with so many meetings, so I just prayed that the Lord would undertake for me in this matter. The very day before I left a lady called, saying she had so much wanted to help me in some way, and wondered if she could not do some sewing for me. It was with dim eyes but a grateful heart that I accepted her offer. Then she suggested my leaving her to make a dress for Mary. I left it all to her, and on my return I found that Mary had just the kind of dress I had planned for her—a white cloth one! There is nothing too small for His love. There is nothing too great for His power."

"We were at an out-station in the Wel Hevi district, holding special

meetings, when a letter was received from the senior evangelist at Chang Te, asking us to pray for his son, who had, in anger, given up his position as teacher in the boys' school at Chang Te, and was fast going to the bad. My husband wrote to this young man (whom he had known from a child), and asked him to visit us during the special meetings we were then holding. A day or two later the young man turned up, ashamed, and apparently only half willing to stay. We and the Christians kept praying for him, and within a few days he had broken down, confessing his sins. We persuaded him to go with us to our next series of meetings, and both my husband and I felt what a splendid help he would be to us in our work were he to give himself wholly to the Lord for the salvation of souls. For this we prayed. At the second series of meetings he again seemed deeply moved, and it was then the call came to him to preach the Gospel.

"His knowledge of English and his education in the mission schools, having graduated from the high school, fitted him for a much more remunerative position than a simple preacher; but the call was a real one. Firmly and quietly he gave up all his selfish ambitions, and for more than two years he has been my husband's right hand man, giving many proofs of the reality of his conversion and his whole-hearted consecration."—A continuation of incidents, as told by Mrs. Goforth, which go to show the wonderful power of prayer.

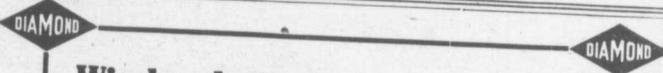
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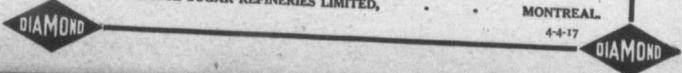
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HOME CLUB

Education of the Right Kind.

WHY do educated women not marry? The discussion which has been going on in the Home Club on this subject has been quite interesting. So far I have been a silent member, but I have at last screwed up courage to "speak out in meeting" in connection with this serious (?) problem.

Honestly, Home Clubbers, what did you think of that letter by "A Mere Man"? Wasn't it rather a shock to your mental serenity to know that we had a member in our Club who held such—well, queer views on the subject? Perhaps he has had some dealings with one of the "superior" type of educated women of whom he speaks of as being what is familiarly known as "squeelched" by her. He, therefore, bases his opinion of all educated women on his experience with one. It seems to me that the fact of a girl having a good education, makes it all the more possible for her to be the "chum" of her husband, while "A Mere Man" thinks education bans all likelihood of "chumminess" between husband and wife.

It is true that many educated women do not marry, and while I think the men are at fault in not seeking the educated girl as a life companion, there is also something wrong with our educational system. While the training in our public and high schools may be good so far as it goes, how much knowledge in the way of book-keeping does a girl receive? The girl who goes to high school receives training which fits her for entrance into the universities and from there into the professions. This training is good and will be helpful in many ways in after life, but the ability to conjugate Latin verbs or work out problems in algebra does not mean as much to the homemaker as the art of managing a home efficiently and keeping her husband healthy and happy. Could our public and high schools not stand to benefit by a little readjustment in the curriculum, so that more training might be given to our girls on this important part of their life work?

One reason why I think it so essential that a girl be educated along the line of homemaking, is because the more training one has for domestic duties, the less like drudgery will it seem. Education does not mean to fill one's head with a great many technical terms and theoretical ideas alone, but it gives a girl a larger vision, better judgment and reasoning power. And even though it is not possible to get a good grounding in the art of homemaking, I would say to the girls, "Get all the education you can anyway." And if such men as "A Mere Man" prefer the butterfly type—well, all we can say is, "You never can account for the tastes of some people."—Aunt Flossie.

A Patriotic Canadian, Nevertheless.

THANK you, Home Clubbers, for the interest you took in my hunt after a dish washer and a fireless cooker and for the suggestions offered. No, I have not succeeded, so far, in securing either one, and begin to think that they must be rare, in farm homes, at least. I am interested in the Home Club letters, and always turn first to that part of our good little paper.

"Sister Molly" has bravely taken the part of the educated girl, and I agree with her heartily. But perhaps "Mere Man" simply means to say that a man would not be likely to live

happily with a woman he felt to be much superior to him intellectually. Naturally his self-esteem would suffer, and as far as I can judge, that is very conducive to masculine discomfort.

We owe thanks to "The Doctor's Wife" for her good letter on the more production campaign. "Them's my sentiments, too," and there are one or two other things in the same connection I would like to mention, if I may. Did any of you attend the meetings called for the purpose of inspiring the farmers to more heroic efforts? I did, and the things that struck me most forcibly were: First, the scarcity of farmer speakers; and second, the abundance of that good advice which is so notoriously nasty to take, handed out by people who know no more about our business than we know about theirs. "The Doctor's Wife" strikes near the root of the trouble when she mentions the minority of farmer members of our legislative bodies. I think the very root is the inability of the ordinary farmer to speak for himself and his vocation in a public gathering. Can't we help to make our boys and girls more efficient in that line, so that in a few years we may have many with the ability and the self-confidence to set their views clearly and logically before any assembly?

Our women are being urged to increase to a great extent their supply of canned fruits and green vegetables, but we are given no satisfactory reason for doing so. No sale of surplus in home-canned goods can be guaranteed, for the amateur is pretty certain to make a failure of part of her work the first year at least. Why not let the beans and peas ripen? These have greater food value and are much more easily handled, while surplus is sure of a market, and surely now, when famine hovers near, is no time to experiment with foodstuffs.

The "Thrift and Economy" campaign is a good thing and much needed. Waste of any kind should be eliminated, but surely the big leaks should be stopped first. The business of the country should be conducted in business fashion, and when those higher up begin to show their willingness to "carry on," even at a loss, we the plow men have will gladly do our share. I don't mean to infer that farmers as a class are faultless, or that there are no slackers amongst us, but those twin virtues, thrift and economy, which seem to have appeared so suddenly on the horizon of the speaking and writing public, have been studied and practised as a necessity of life, for years and years, by those who are now being urged to try them, if they will come as a novelty to the advisers, rather than to the advised.

Please forgive me if I have talked too long, and believe me, in spite of strong talk and stronger feelings, a patriotic Canadian, and ever your "Merry Margaret."

Why Not Eliminate the Pantry?

Is a pantry really a necessity in the farm home? As far as I am concerned I "hate 'em doots." I read somewhere not long ago that "a pantry is an evil invention designed to make more work for women." Of course, some years ago, we would not dream of being without a pantry. Why, it was of almost as much importance as the stove itself. Large kitchens are the rule in so many farm homes that walking back and forth from pantry to stove or table uses up a great deal of energy, day after day. Because of this, it is an evil invention designed to mean that the stove should be on one side of the room, the pantry on the other, and the work table off in another direction. Nowadays kitchen-

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The Canadian Pacific Railway will, commencing Saturday, June 2nd, operate Great Lakes Steamship Express trains between Toronto and Port McNicoll on the following schedule, with first-class coach and parlor car, running throughout local stops.

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Leave Toronto 8.00 p.m., arrive Port McNicoll 5.15 p.m. each Wednesday and Saturday, connecting with the palatial C.P.R. Great Lake Steamships leaving Port McNicoll on above days at 5.45 p.m. for Saint Ste. Marie, Port Arthur and Port William.

Southbound.
Leave Port McNicoll Mondays and Fridays 8.30 a.m., arriving Toronto 11.45 a.m.

Great Lakes Service via Owen Sound is now in operation Steamship "Manitoba," leaving Owen Sound at midnight each Thursday for Sault Ste. Marie, Port Arthur and Port William. Full particulars from any C.P.R. Agent or W. B. Howard, District Passenger Agent, Toronto, Ont.

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ens are built more compactly and so arranged that when working one can reach the table, stove, cupboards, sink, etc., with as little walking as possible. If our kitchen happens to be a large one, instead of taking things as we find them without trying to make them better, we can set our backs to work and plan to make as many improvements as possible, according to our needs.

One splendid way of conserving steps is to tear the shelves and cupboards out of the pantry and set them in the kitchen, where they will be convenient to the stove and work table. Neat cupboards, painted to match the other wood work, do not detract from the appearance of the kitchen in any way. But what use will we make of the old pantry? It could be used as a wash room, or, better still, as a clothes closet, where the men may hang their coats and remove their boots after coming in from work. So often the coats and hats hang behind the kitchen door and the boots go behind the stove, and if a room such as the old pantry could be used for this purpose, it would fill a long-felt want. It would not be wrong, but it seems to me that a pantry is not a necessity in the farm home.

Winning the Wilderness

(Continued from page 14)

A pink wave swept Leigh's cheek, but she smiled a pleasant recognition of his thoughtfulness.

"I've come home to say goodby because I'm going to enlist in the first Kansas regiment that goes to Cuba to fight the Spaniards. And I must hurry back to Lawrence."

"Oh, Thaine! What do you mean?" Leigh's face was very white.

"Be careful!" Thaine caught her arm in time to save the light easel from being thrown over.

"Don't look at me that way, Leigh. Don't you know that President McKinley has declared war and has called for one hundred and twenty-five thousand volunteers? Four or five thousand from old Kansas. Do you reckon we Jayhawkers will wait till one hundred and twenty thousand have enlisted and trail in on the last five thousand? I would be against all traditions of the rude forefathers of the Sunflower State."

"Has war really been declared? We haven't had the papers for nearly a week. Everybody is so busy with the farm work right now."

Leigh stood looking anxiously at Thaine.

"Declared! The first gun has been fired. The call for volunteers has come from Washington, and the Governor has said he will make Fred Funston Colonel of the first regiment of Kansas volunteers, and he sent out his appeal for loyal Kansas men to offer themselves. I tell you again, Leigh Shirley, I'll not be the one hundred and twenty-five thousandth man in the line. I'm going to be right close up to little Fred Funston, our Kansas boy, who is to be our Colonel. I have a notion that University students will make the right kind of soldiers. There will be plenty of ignorance and disloyalty and drafting into line on the Spanish side. America must send an intelligent private if the war is to be fought out quickly. I'm that intelligent gentleman."

"But why must we fight at all, Thaine? Spain has her islands in every sea. We are almost an inland country. Spain is a naval power. Who ever heard of the United States being a naval power? I don't understand what is back of all this fuss." Leigh asked the questions eagerly.

"We fight because we remember the Maine." Thaine said a little boastfully. "We are keeping in mind the two

hundred and sixty-six American sailors who perished when our good ship was sunk in the harbor at Havana last February. If we aren't a naval power now we may develop some sinews of strength before we are through. Your Uncle Sam is a nifty citizen, and it was a sorry day for proud old Spain when she lighted the fuse to blow up our good warship. It was a fool's trick that we'll make Spain pay dearly for yet."

"So it's just for revenge, then, for the Maine horror. Thaine, think how many times worse than that this war might be. Isn't there any way to punish Spain except by sending more Americans to be killed by her fuses and her guns?" Leigh insisted.

"There is more than the Maine affair," Thaine assured her. "You know, just off our coast, almost in sight of our guns, Spain has held Cuba for all these centuries in a bondage of degradation and ignorance and cruel oppression. You know there has been an awful warfare going on there for three years between the Spanish government and the rebels against it. And that for a year and a half the atrocities of Weyler, the Captain General of the Spanish forces, make an unprintable record. The United States has declared war, not to retaliate for the loss of the Maine alone, awful as it was, but to right wrongs too long neglected, to put a twentieth century civilization instead of a sixteenth century barbarity in Cuba."

Thaine was reciting his lesson glibly, but Leigh broke in.

"But why must you go? You are only child!"

She had never seen a soldier. Her knowledge of warfare had been given her by the stories Jim Shirley and Dr. Carey had told to her in her childhood.

"It's really not my fault that I'm an only child. It's an inheritance. My father was an only child, too. He went to war at the mature age of fifteen. I'll be twenty-one before me." Thaine stood up with military stiffness.

"Your father fought to save his country. You just want gold lace and a lark. War is no frolic, Thaine Aydele," Leigh insisted.

"I'm not counting on a frolic, Miss Shirley, and I don't want any gold lace till I have earned it," Thaine declared proudly.

"Then why do you go?" Leigh queried.

"I go in the name of patriotism. Wars don't just happen. At least, that is what the professor at the University tells us. Back of this Spanish fuss is a bigger turn waiting than has been foretold. Watch and see if I am not a prophet. This is a war to right human wrongs. That's why we are going into it."

"But your father wants you here. The Sunflower Ranch is waiting for you," Leigh urged.

"His father wanted him to stay in

Ohio, so our family history runs. But Mr. Asher heard the calling of the prairies. His wilderness lay on the Kansas plains, and he came out and pretty near won it. At least, he's got some like success."

Thaine smiled, but Leigh's face was grave.

"Leighlie, my frontier is where the Spanish yoke hangs heavy on the necks of slaves. I must go and win it. I must drive back my frontier line where I find it, not where my grandfather found it. I must do a man's part in the world's work."

His voice was full of earnestness and his dark eyes were glowing with the fire of inspection. By the patriotism and enthusiasm of the youth of twenty-one has victory come to many a battlefield.

"But I don't want you to go away to war," Leigh pleaded.

"You don't want me here."

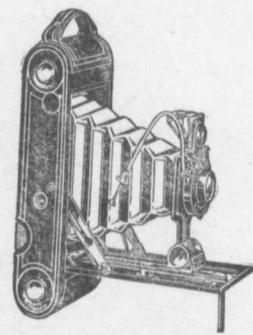
Thaine let his hand rest gently on hers for a moment as it lay on top of the easel; then hastily withdrew it.

"Has your alfalfa struck root deep enough to begin to pull up that mortgage yet?" he inquired, as if to drop the unpleasant subject.

(To be Continued.)

It's a wise law that provides that a woman shall take a man's name when she marries him. In many cases that's about all she gets.

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WITH the first indication of warm days, everyone is ready and eager to lay aside coats and get into summer array. And what an array of colors we see when people come out on dress and in their new costumes. Every observer of fashions (and what woman is not?) is impressed by that striking combination of color this season and the exceedingly bright shades which are receiving so much prominence. One of the strong features is the colored shoes with hose to match, or sometimes we see young girls with white shoes and dress and green hose, tie and hair ribbon. On account of the very short skirts, the hose and shoes form quite an important part of the costume, and of course must attract attention.

Girdles and belts this summer are loose and ornamental. They make little attempt to hold in the material and are set at a raised waistline, the regulation waistline or a lowered one. The peplum blouse shows itself quite persistently in the new summer dresses.

2080—Girl's Dress—It keeps most mothers busy sewing for the little girls who are usually so hard on their dresses, and here it is shown a simple, but attractive dress for the small child. The square neck and high waist are the style features of this frock. Four sizes: 1, 2, 3 and 4 years.

2095—Lady's Costume—There are so many dainty materials from which to fashion summer dresses, that it should not be difficult to select something which would be suitable for a costume made from this model. The yoke of blouse may be made from net, lace, nylon or any of the soft fine materials suitable for that purpose. This model calls for two patterns, 10 cents for each. The blouse comes in sizes from 34 to 44 inches bust measure, and the skirt from 23 to 35 inches waist measure.

1660—Lady's House Dress—To those

who are in search of an extremely plain style of house dress, this illustration herewith should prove acceptable. Of course, if desired, the sleeves might be made shorter and the neck cut lower, but some people do not care for low neck and short sleeves, and this costume should therefore appeal to them. Size: 34 to 44 inches bust measure.

2075—Girl's Dress—Is this not a dainty dress for the little miss? It is so loose and cool in appearance that we are attracted at first sight. The sleeves and body part of blouse may be made from contrasting material, also the large sailor collar. The striking pockets, too, add a distinctive touch. Four sizes: 6, 8, 10 and 12 years.

2085—Lady's Set—This combination of brassiere and drawers is practical and will no doubt find a ready place in the wardrobe of many of Our Women Folk. Such a combination may be made very simply or very daintily. Lace and insertion adds much to the dainty appearance of underwear, as does crochet work, and the woman who is handy with her crochet hook can fashion many beautiful additions to her wardrobe.

2094—Collars and Pair of Cuffs—Collars form such an important part of the outfit these days that we like to have as much variety as possible. Herewith we show two designs of collars and one pair of cuffs. If any of Our Women Folk can do hand-stitching on the sewing machine, they can add quite a chic touch to their pattern by finishing in this way. The pattern includes all styles illustrated, and is cut in three sizes: small, medium and large.

2078—Lady's Apron—Here is another neat apron, which will fit in splendidly for shipping on cover dresses which we wish to protect when preparing meals or doing odd jobs around the house after we have "dressed up" for the afternoon. Four sizes: small, medium, large and extra large.

KE...
It has been...
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Established 1824.

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FLEMING B...
88 Church St.

CHEESE-MAKERS;

Curdalac* (Liquid Coagulator) and Spongy Pepsin for Cheese-making

(P. D. & Co.)

Are the original peptic coagulators.

Are uniform and tested for curdling power.

Are made by the best known pharmaceutical laboratory in the world.

Have stood a full year's test in several hundred cheese factories, and are not an experiment.

Used properly, give a full yield of cheese of prime consistence and flavor. Cost less than Rennet extract.

Don't delay or experiment with novelties. Specify "P. D. & Co." and get a reliable product. Ask your supply dealer for information and prices.

*The term "Curdalac" is registered as a trademark in the U. S. Patent Office.

Walkerville, Ontario.

PARKE, DAVIS & CO.

FARMERS

SHIP
YOUR
WOOL
DIRECT
TO US

The Highest Prices Ever Paid for Wool Are Now Being Paid By Us

Mr. Farmer, you can get more money for your wool by sending it direct to us. In all probability it will come to us anyway at some time, no matter to whom you sell it.

For over thirty years we have been one of the largest buyers of wool in Canada. We could not continue in business for this length of time if we had not treated our customers fairly and pay top prices. We send your money the same day as wool is received, only deducting freight or express charge.

We are now paying for wool as follows:
Unwashed fleeces—fine 53c to 54c per lb.
Unwashed fleeces—coarser 51c to 52c per lb.
Washed fleeces—fine 67c to 68c per lb.
Washed fleeces—coarser 65c to 67c per lb.

Ship to-day or write us telling how much wool you have, if washed or unwashed, and breed of sheep clipped from. We will then quote you a straight price and send you shipping tags with full instructions.

John Hallam Limited
Toronto

Frost & Wood Mower



It's a sure crop getter, because it embodies 80 years' experience of Canadian Hay Crop conditions.

The F. & W. Mower is sure to give you splendid service for many years to come. It is very easy on your horses, and it's so perfected mechanically that it is always ready for work, and rarely calls for repairs or adjustments.

Think what it means to look out at a heavy, and perhaps tangled hay crop, and be able to say, "My Frost & Wood Mower will go through that alright." Most mowers will cut a nice, standing crop—your F. & W. will handle the other kind too.

Take Our "Internal Drive" Gear, for Instance—

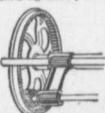
It transfers the power from the drive wheel to the cutter bar—it is on the inside, revolving in the same direction so that it never loosens, rattles or breaks its cogs. Heavy brass bushings guard against years of hard wear—splendid roller bearings make light draft—heavy, high-carbon steel cutter bar can be set in a second at any angle, and knives continue cutting even when raised to clear an obstruction.

Too many good features to even list them here. Let us send you our newest folder on F. & W. Mowers, Rakes and Loaders.

THE FROST & WOOD CO.
Ltd., SMITH'S FALLS
Montreal St. John

Sold in Western
Ontario and Western
Canada by

Cockshutt Plow Co., Limited
Brantford, Ont.



greatly increased demand for it after the war."

Little Speculative Buying.

While cheese will be bought on the cheese boards as usual, there will be, it was stated in last week's issue of Farm and Dairy practically no speculative buying. In other years, on a rising market, exporters have taken chances often and paid prices for cheese that later were not justified by market conditions. This has been a benefit to the farmers but a loss to the exporters concerned. There will be practically none of that this year. The cheese will be bought strictly according to quality, and will be graded in the factories by the buyers, just as usual. The buyers will have to take the chance of their grading being sustained by the inspectors of the Cheese Commission in Montreal.

(Continued next week.)

Experience With "Curdalac"

EDITOR Farm and Dairy: In reading the letter from Mr. Robert Gale re Curdalac, I felt that I could not let the opportunity pass of giving my own opinion of Curdalac as a coagulator. In giving my order for Curdalac I was led to believe that it was at least equal to rennet. If not a little better, so imagine my surprise when I did not get coagulation with 3½ ozs. of Curdalac per 1,000 lbs. of milk in less than 15 to 20 minutes. I notice Mr. Gale says that three ounces per 1,000 lbs. of milk gave him coagulation in 15 to 20 minutes. But is he satisfied with that? Ask him if any coagulant not giving coagulation in less than 15 to 20 minutes is likely to prove satisfactory in average conditions?

So far as the after effects of Curdalac go I expect it all right; at least I hope so, but I think that the majority of these makers who are using Curdalac, and who are intending to

give the best results and get the most out of the milk they are handling, are using more than three ounces per 1,000 pounds of milk, and are not content with one ounce in 20 minutes. Personally, I think Parke, Davis & Co. have some improvements to make before they have a satisfactory substitute for rennet. (Foot continued on page of each).—J. C. Cumiskey, Durban Co. Ont.

Rules Adopted by Cheese Commission

Editor, Farm and Dairy: As these seems to be some misapprehensions with regard to the rules adopted by the Cheese Commission to govern the purchase of cheese for account of the British Board of Trade, I will be pleased if you will publish the following explanation.

The rules referred to apply only to the transactions between the Commission and the dealers or exporters, do not refer in any way to the purchase of cheese on the boards or elsewhere by the dealers. There is nothing in the rules which should necessitate any change in the practice heretofore followed in handling the cheese shipped up to the time the cheese arrives at Montreal, and is ready for shipment, except that the Commission requires that the cheese shall be at least 10 days old before it leaves the factory.

Something has been said about the grading of the cheese by the Commission. The Commission will do no grading. The inspection by the Commission is simply to see that the cheese offered are in accordance with the invoice. This inspection is not intended to be used in any way as a basis of settlement between the buyers and the factories. I want to make that point quite clear. The grades which the Commission recognizes in the purchase of cheese is in accordance with classification followed heretofore by the export trade, and the inspection by the Commission does not introduce any new feature into the cheese trade.—J. A. Ruddle, Dairy and Cold Storage Commissioner, Ottawa.

Wool Grading at Guelph

ONTARIO wool grading scheme is an assured success. During the course of a visit to Guelph where the wool is now being graded, Mr. R. W. Wade of the Live Stock Branch, who has the scheme in hand, made a statement as follows:

"When the wool growers decided to send their wool to Guelph," said Mr. Wade, "they expected that perhaps 100,000 pounds would be sent here, but there is already here over 200,000 pounds in the building, and it is expected that another 100,000 will be shipped here inside of the next few days. The entire quantity of this wool will be held open until June 23."

Mr. Wade says that this wool represents about one-sixth of the wool produced in Ontario, but that it is the best one-sixth. There is hardly any grey or black wool, but it is mostly all of the highest market grade, and is valued in the neighborhood of \$100,000.

U.F.O. District Conventions

DISTRICT Conventions of the United Farmers of Ontario, for which definite dates have been arranged, will be held as follows: Brantford, June 27; Ingersoll, June 28; Tilbury, June 29; Exeter, July 2; Listowel, July 3.

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How to Make Prime Hay

(Continued from page 5.)

or alfalfa, mowed late in the afternoon, should be raked the next morning.

Good hay may be made by evening mowing, since dew will not blacken green hay and even a light rain during the night may not damage it much, but dew or rain falling on the green hay in the evening does seem to favor the development of white mold. Cutting only during the forenoon or until 2 p.m., and raking into windrows before sundown is preferable, provided a farmer can handle his crop properly enough in this way. The use of a wide cut mower is a great advantage in securing timely cutting with the least expense of time and labor.

Proper Curing.

Hay should be cured in the windrow or in the cock or bunch rather than in the swath. If the hay is cured in the swath with the leaves largely exposed to the sun, the leaves will become dry and withered while the stems mature. Hay raked in this condition will not cure evenly and is likely to be put into the stack or mow in a poor condition, which may cause it to curd or mow burn.

If the hay is raked while the leaves are still partly wet (just well watered), the leaves will continue to pump the hay to cure out fully and evenly. Alfalfa or clover cured in this way should keep better in the stack or mow and will also retain more leaves, thus increasing its palatability and feeding value.

Timely raking is an important factor in the proper curing of hay. If the hay is left in the swath until it is dry and brittle, the leaves become very hard to handle. The alfalfa or clover plant is about 40 per cent. leaves and contains almost twice as much protein as the stems and are the most palatable part of the hay. It is possible by bad handling to break and shatter 50 per cent. of the leaves which will approximately reduce the feeding value of the hay 40 per cent. The side delivery rake is superior to the dump rake in a light, loose windrow with the stems largely outside and the leaves inside where they are shielded from the hot sun but exposed to the air and wind by the raking. The moisture is rapidly evaporated. Thus, the leaves retain their function of drawing the water out of the stems longer and the stems are cured, without rain, the leaves are larger, without rain, and a "prime" quality of hay results.

It may make little difference in the raking of the hay, whether the rake follows the mower directly (left hand delivery) or turns all the way around the field in the opposite direction to the mower (right hand delivery), but there should be an advantage in placing all the hay lifts and turned.

When hay is put up with a hay loader, the side delivery rake is most necessary in order that the rake and the hay loader may follow the mower in regular order so the hay is cut and cured. Good hay may be made with a dump rake when the plan is to bunch or cock the hay for hand pitching.

Bunching and Cocking.

Perhaps the best hay may be made by curing it largely in cocks rather than in windrows, where it is more exposed to the sun. Also hay in the windrow is more exposed to injury by the rain and dew than hay in the cock. On

account of the shattering of leaves and the tendency to bleach, the loss from curing clover in the swath and windrow is likely to be the greater than the loss from curing grasses in this way. Rain not only kills value, but the lowering its market value, but the following value of the hay may be very much decreased.

Recent experiments by the United States Department of Agriculture have shown that when partially cured hay was exposed to heavy rains, a large percentage of the soluble food substances, including a large part of lime, was removed, in one instance, decreasing the feeding value of the hay over 40 per cent., besides reducing its palatability.

If hay is raked before the leaves are dry and placed in cocks, the leaves continue to draw moisture out of the stems and the hay cures evenly, retaining its green color, and is largely protected from damage by rain. Clover and alfalfa well cured in the stack or mow.

Windrow Curing.

A large part of the hay made in the United States and Canada is cured either in the swath or windrow or with the horse-rake. When a farmer has a large amount of hay to put up, it is better to do it in the most rapid and economical way. Putting hay directly from the windrow is not only a saving of labor, but it is profitable, so that the danger of loss by exposure to the weather is of less importance to cure timothy and clover hay in the swath and windrow, and to put it on the wagon by means of the hay-loader, which makes the work more rapid and does away with the hard work of pitching hay. In the large alfalfa and prairie-grass meadows of the Western States, the common method is to use sweep-rakes, by which the hay is taken directly from the windrow to the stacker.

Where a large amount of hay is made, it is almost necessary to handle the crop by one of these methods. The method of curing hay in cocks is more applicable to the small farmer and to farmers who live in the vicinity of large cities, where the market price of hay makes it profitable to handle it in this more expensive way.

It is now becoming very common practice in the more humid sections where the method of farming is intensive rather than extensive, to protect by covering the cocks with canvas or paper caps, which are manufactured and sold to be used especially for this purpose. There is little question of the practicability and economy of such a practice on small farms, and perhaps the same method may be profitably used for putting up alfalfa in a large way, especially if the plan is to handle the alfalfa in the field. The canvas covers should be preferred, since they may be more durable and are more easily stored than the paper caps.

Handling and Stacking.

The practicing operator will judge when hay is fit to stack by observation and handling, but a curing test may be readily applied by twisting a sample of hay in the hands, as the stems begin to feel clothes, until moisture exudes, the hay is cured and ready to stack. Grasses cure much more quickly than do alfalfa and clover. The time of time required for curing grass hay will depend upon the kind of grass, upon the degree of

maturity, and upon the weather conditions. Most grass hays may be cut off day and stored the next. It is even possible to cut grass in the forenoon and stack the hay in the afternoon.

Because hay requires rapid handling, it is not necessary to cure grass hay in the cock in good weather. In very good plan to make the hay somewhat green, cock it, and allow it to wither in the cock. Grass hay will shed rain much better in the cock than will clover or alfalfa.

Clover, alfalfa or mixed hay cured in the windrow, should be ready to stack in 24 to 48 hours after raking, depending upon the weather conditions and the maturity of the hay when cut. If the hay is cocked soon after raking, it will require a little longer to cure. Windrowed hay frequently bunched with the rake a few hours before stacking. This is an advantage in hand pitching and sweep raking. Also it may prevent the hay from becoming too dry and may favor more even curing, especially if the ground or bottom of the windrow is damp. It is an advantage also to bunch cured hay which must lay overnight. The bunching protects the hay from dew, and in this way it may be handled earlier in the morning.

Hay is much more apt to be injured by the moisture in it than by the general rule: Hay should not be raked or bunched or stacked when there is moisture on it either from dew or rain, because such hay will almost surely mold in the cock, and is very apt to heat and blacken or burn in the stack or mow. An exception to this rule may be made in case the hay has become so dry that the leaves break and shatter badly in stacking. Hay in this condition should be handled in the morning or in the evening, when it will be tough and less inclined to weather. If the hay is a little green, it should be handled in the middle of the day, when the conditions are most drying.

Compound Interest

(Continued from page 5.)

\$50 each. These cows were uniform, even if they were mediocre. Such was Donald's foundation stock. Time advanced and I heard little or nothing of our friend. Three years ago I received a call to make a test at Donald's farm. Things are changed. The cows have multiplied and increased to a huge herd. In all he had about 50 head of pure bred stock, cows and calves. The old foundation cows had been prolific, and I was happy to see he had been lined up fat and sleek at the bright end of the stable. Of the younger cows, some had had two calves, others just one calf, and my, what a splendid array of stock! The young ones were just as smooth as apples. Their lines were straight, due to careful feeding; probably the herd bull helped.

The test cows, six in number, the limit the law allows one man to supervise, were duly admired and estimates made as to their possibilities. One heifer, Sadie Mac by name, impressed me very much, and like all testers, I proceeded to take a profound interest in making six fairly good records. At each test, except the night one, the family assembled and waited for the result. Sadie Mac went straight, she would sneak out to the stable when any one witness might have seen him bedding her off a little better, smoothing her off. She did not give her a taste of water. Sadie Mac got a best that was going. So the work went along. We talked records morning, noon and night. That was three years ago. Two

years ago I was again called to make a test at Donald's farm. The stable was running over with stock. Calves were tied in the barn floor and in the alleys, in the wood house. "No mistake," said Donald, "I must get rid of some of this stuff or else build another barn."

Then last year I received a catalogue saying that Donald would hold a dispersion sale of 80 head of cattle. This was a blow to me, but I knew it would have to come. The farm was literally over run with Holstein cows and calves. It was my misfortune not to be able to get to the sale. An eye witness, however, supplied me with the details. About 60 head of cows and calves were sold, and Donald was ahead of the game by about \$16,000. This was some jump, eh? His initial investment was \$300. After seven years this had accumulated to \$16,000; moreover Donald had reserved some of the best stock to begin with. One could almost call it Holstein interest instead of compound interest. T. H.

Purchase of Army Remounts

FOLLOWING the action by the Imperial Government in deciding to again undertake the purchase of remounts in Canada, a conference was held on Friday, June 8th, between the British Remount Commission and representatives of a number of horse breeders' associations, at which information was given by the Commission regarding the purchasing of remounts for the British Government. General Neill, a Canadian, has been appointed a member of the Commission, by the Imperial Government, to arrange for assembling the horses. There will be Central Depots for the inspection of horses located at the chief centres of the horse industry throughout Canada. Inspections will also be made, however, at country points when sufficient horses can be assembled. The purchases at present will be limited to Artillery and Transport Horses. All horses must be sound, of good conformation, free from blemishes and broken to harness or saddle. They must be between six and nine years of age; the minimum required for Artillery horses is 15.2 to 16 hands and the weight between 1,200 and 1,350 pounds.

A committee from the associations was appointed to confer with the commission regarding matters in which they might be mutually interested.

Senator Owens Dead.

SENATOR W. P. Owens died at his residence, Montreal, on June 8th, aged 77. Senator Owens was born in Argenteuil Co., Que., May 15, 1840. He was postmaster, councillor and mayor of Chatham in his native county. Later he moved to Montreal and went into business and was a member of the Quebec legislative assembly and a Senator since 1896. The late Senator Owens will be best known to Farm and Dairy readers because of his connection with the Canadian Ayrshire Breeders' Association, and a breeder and exhibitor of pure bred Ayrshire cattle. His farm, which was sold a few months ago, was at Montebello, Que.

An extra convention of the British Columbia Dairymen's Association will be held on Friday and Saturday, June 22 and 23, at Kelowna, B.C.

I have been a subscriber to Farm and Dairy for two years and know as any that I like your paper very much better than any other farm papers I have seen.—A. Beaton, Parry Sound Dist., Ont.

account and quality of receipts is said to be improving every day. Toronto quotes creamery, 31c to 37c; creamery prints, 36 1/2c to 37 1/2c, and cheese dairy Montreal quotes creamery, 31c to 37c; second, 37 1/2c to 38c. The regulation of prices by the government has taken, as the exporter's statement has taken, all the fun out of the cheese business, and prices are practically uniform. Toronto quotes new large 2 1/2c and extra 2 1/2c, and price at Montreal for finest westerns and Easterns is about 2 1/2c. Prices at country boards are given below:

Cheese Board Sales.
 Brockville, June 14.—Colored 1,500, white 1,750; total, 5,240. About 3,800 sold at 21c.
 Kingston, June 14.—290 boxes white and 67 boxes colored sold at 21-16c.
 Stirling, June 14.—925 boxes colored, 21 1/2c; selling at 21-16c and the balance at 21c.
 Victoriaville, Que., June 15.—2,500 sold at 21 1/2c.
 Boston, June 15.—2,305 boxes sold at 22 1/2c.
 Lewiston, June 15.—1,145 boxes sold on the curb at 21 1/2c. On the corresponding date last year 1,091 boxes were boarded, 501 colored and 590 white, the price being 18 1/2c.
 Alexandria, June 15.—566 white cheese sold at 21-16c.
 Vancouver, June 15.—1,230 boxes of white and 1,035 colored offered; 457 boxes sold on curb at 21-16c, balance sold at 21c.
 Perth, June 15.—1,800 boxes sold at 21 1/2c.
 Listowel, June 15.—2,945 cheese; highest bid on the board was 20 1/2c, at which price some sales were made on the street.

LIVE STOCK.
 Receipts of cattle were less than the previous week but trade was slow and druggery. The decline on Monday of 50c on choice heifers was maintained throughout the week. Warm weather is lessening consumption and packers profess to be well supplied with meat. Calves sold briskly, as did yearlings and lambs. Hogs declined another 6c, and further declines are looked for. Quotations follow:

Choice heavy steers.....	\$11.00 to \$11.65
do good.....	10.75 to 11.00
Butchers' choice.....	11.00 to 11.85
do good.....	10.25 to 10.75
do common.....	9.75 to 10.25
Butchers' bulls, choice.....	10.00 to 10.75
do good.....	9.50 to 10.00
do medium.....	9.25 to 9.75
Butchers' choice cows.....	10.00 to 10.40
do medium.....	9.25 to 9.75
Feeders, 500 to 1,000 lbs.....	9.00 to 9.60
do medium, 700 to 800 lbs.....	8.75 to 9.25
do small.....	7.75 to 8.25
Stockers, 700 to 900 lbs.....	7.00 to 8.25
do medium.....	6.00 to 6.50
Canners.....	6.25 to 7.75
Milkers, good to choice.....	9.00 to 12.00
do com. and medium.....	6.00 to 8.00
Springers.....	6.00 to 12.00
Calves, year, choice.....	12.50 to 15.00
do medium.....	10.00 to 11.00
do grass.....	6.00 to 7.00
do heavy fat.....	8.00 to 10.00
Spring lambs, ewe.....	17.00 to 18.50
Sheep, yearlings, choice, clipped.....	11.50 to 12.00
do heavy, ewe, half up, clipped.....	8.50 to 10.00
do heavy and bucks.....	9.00 to 9.50
do culls.....	4.00 to 6.00
Hog, fed and watered.....	15.50 to 6.00
do off cars.....	15.75 to 6.00
Clipped sheep are selling \$2.50 per cwt. less than wool sheep.	

W. A. McELROY'S SALE.
 M. R. W. A. McELROY'S big sale at Chesterville, June 14, was crowded with fine weather, a large crowd and good prices for most of the stock. The cattle were in good condition and were backed by breeding that it would be difficult to find anywhere. The sale opened with a short address by Prof. R. S. Arnold, of the C. E. F., of Ottawa. Mr. Thos. Irvine, Wheatster, was in his usual good form and sold the considerable enthusiasm was aroused in the selling of choice heiferettes of Hillside, a beautiful straight 2-year-old heifer with large capacity. She quickly ran up above the \$1,000 mark and finally disposed of the Allison Stock Farm for \$1,475, the highest price received at the sale. Forty-one head, all ages, sold for \$11,445, an average of \$284.50 a head.
 Dr. Kol Mutual Comd. (best interest), \$500, W. Willoughby, Smith's Falls; Emma, Dutchess Homestead, \$300, Neil Sangster, Oranstown, Que.; Sedie, Teale, Dr. Kol, \$140, R. C. Graham, Cobden; Lillie, Dr. Kol, Lockport, \$500, W. Willoughby; Rosy Bonanza, \$250, W. Willoughby; her son, Hillside Court Bonanza, \$150, R. O. Morris, Milton; Rosebud, \$150, J. Buzart, Chesterville; her son, Kingston; Huckelberry Invader, \$150, J. Buzart, Winchester; her daughter, \$120, J. D. Deeks, Morrisburg; her son, \$125, Baker Bros., Portsmouth; Franny Bon-

gas Countess, \$165, Wm. Johnson, Cass Bridge; Queen, Hortense, of Hillside, \$1,475, Allison Stock Farm; her daughter, \$150, Andrew Fawcett, Inkeraman; her son (win), \$200, G. A. Goodfellow, Lamb; her son, \$100, A. McNeil, Oranstown; Patricia, Neithard, Korndyke Lady, \$450, her, \$175, Wm. Cameron, Armprior; her daughter, \$165, H. Craig, Howick; Major Connor De Kol, \$125, T. B. Greer, Queen; Edie, J. Thompson, Hudson; her daughter, \$145, Andrew Fawcett; Hillside Lily May, \$200, H. H. Craig; Admiral Lockman of Hillside, \$350, S. Hopwood; Lady Lockman Hopwood, \$425, J. Cross, Chesterville; Edna Hopwood, \$250, H. H. Craig; Cobden; Daley Huckelberry Homestead, \$200, J. D. Dain, Morrisburg; Corvold, \$250, I. Cross; Fancy of Hillside, Korndyke Jewel, \$200, Geo. Redick, Morrisburg; her son, \$100, Fred McIntosh; Bogart; Hillside Mercedes De Kol, \$215, J. W. A. Cameron; Countess Clothilde, \$150, H. H. Castleman, Danville; Bonnie Echo Lyons, \$225, Allison Stock Farm.

Postal Card Reports
 Correspondence invited.
 GREY CO., ONT.

THORNHURST, June 12.—We are having lovely weather; a good shower last week and the cows are all milking well. Butter is 30c and eggs 35c. Grain crop is looking well. Farmers are busy preparing their root crop. Everybody seems to be hot.—C. P.

ESSEX CO., ONT.
 AMHERSTBURGH, June 4.—The farmers here are busy planting corn. Owing to the heavy rains last month and good weather, a lot of corn had to be planted over again, and seed is very scarce and high; also all kinds of meat. I had a high school boy and his went home sick after the first day's work on the farm, so I had another boy now. I am always glad to read the letters in Farm and Dairy from the different parts of Canada.

HIGHLAND LAKE FARMS
 Here are the bulls we have for sale at attractive prices:
 1. Born May 17, two dams average 35.62 lbs.
 2. Born March 17, two dams average 34.16 lbs.
 3. Born March 17, two dams average (1 at 3 yrs.) 34.23 lbs.
 4. Born March 17, two dams average (1 at 3 yrs.) 33.12 lbs.
 These are sons of AVONDALE PONTIAC EXCITE, our herd sire (under lease), a son of MAY D'HO SYLVIA, the world's record cow. Only one other 41-lb. bull in Canada.
 Send for extended pedigrees and prices on these and others, a few of excellent females for sale.
R. W. E. Burnaby Farm at Step 55
 Venice Street Road **Jefferson, Ont.**

CLEAR SPRING FARM HOLSTEIN HERD HEADER
 Korndyke Burke Het Lob, No. 21608, born April 19th, 1914. Grandson of butter in 7 days. To avoid in-breeding, have decided to let him go. He is right in every way; and a first-class individual. I invite inspection, or correspondence, regarding this bull.
J. C. JAKES MERRICKVILLE, ONT.

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

Registered Holsteins
 Bulls from one month to 17 months old for sale. All from our grand herd sire, Echo Segis Payne, whose sire is half-brother to Segis Payne Johanna. If you need a well backed bull write at once.
JOHN M. MONTLE, Sunnyside Stock Farm STANSTEAD, QUE.

CLOVER BAR HOLSTEINS
 A choice bull calf born March 17, 1917, whose three nearest dams average 30 lbs. butter in 7 days and 100 lbs. milk a day; also a few others from R.O.M. dams.
P. SMITH, R. R. 3, STRATFORD, ONT.

RIVERSIDE HOLSTEINS For Sale, Choice Young Bulls, sired by grandson of Pontiac Korndyke, and a brother of Pontiac Lady Korndyke, a 30.2 butter in 7 days, 156.92 lb. 30 days—a world's record when made. Also females bred to "King."
J. W. RICHARDSON, CALEDONIA, ONT.

40-Lb. Blood

The time has come when you must have 40-lb. blood to lead. Breed your best cow or heifer to SIR SADIE KORNDYKE SEGIS, a bull backed by 40-lb. blood and persistent 30-lb. production. He has Dairy type producing sires and dams to back him up. We are breeding 60 of our own cows. Book your cows to day.

A. D. FOSTER & SONS
 Bloomfield BELL PHONE
 WELLINGTON Ontario

Information Practical and Timely, For The Housewife

The necessity of conserving every ounce of food this season gives the matter of Home Canning a new significance and an increased importance.

An abundance of vegetables and fruits for the table is made practicable by home canning; and it is profitable to individuals and to the nation alike.

Preserved Vegetables and Fruits

Give variety to the diet.
Have an important food value.
Improve health and lower doctor bills.
Take the place of more expensive foods.
Liberate larger supplies of food grains and meats to be exported to our Allies.

Therefore, the woman who can find time to preserve what would otherwise be wasted or who will sell or give away what is not required for her own use, will be doing a valuable patriotic work, and will be promoting the health and comfort of her own family.

Expensive Equipment is not necessary.

It is quite possible to do successful home canning by using only such equipment as the farm and home may easily provide. A wash boiler or a pail with a close fitting cover and a wooden or wire rack to keep the jars from touching the bottom, makes an excellent "hot-water bath" outfit.

Canning Fruit in a "Hot Water Bath"

Make a syrup using the following proportions of sugar and water:
For strawberries and sour cherries 2 cups sugar to 1 cup water.
For peaches and plums 2 cups sugar to 1½ cups water.
For pears, peaches, sweet plums, sweet cherries, raspberries, blackberries, 2 cups sugar to 4 cups water.
Sterilize jars by placing them in cold water and bringing the water to boiling point.

Pack prepared fruit in sterilized jars, fill with syrup, place covers in position, but do not screw down. Set jars on rack in boiler and pour warm water into the boiler to come nearly to tops of jars.

Cover and cook until fruit is cooked through. Allow about 20 minutes after the water begins to boil for soft fruits like berries, cherries, peaches, plums, and from 20 to 40 minutes for hard fruits such as apples, pears, quinces.

Remove jars from boiler. Fill to overflowing with boiling syrup. Seal and screw down tops.

Canning Vegetables

Vegetables are canned in the "hot-water bath" in much the same way as fruits, only the sterilization is more difficult. Either of two methods may be followed:

One-Day Method: By the one-day method of sterilization we mean placing the jars in the canner and heating them continuously at the boiling point or above it, for several hours. Usually if this heating is continued long enough the vegetables will keep.

Intermittent or Three-Day Method: The jar is taken out of the canner at the end of an hour's boiling. The clamp or rim is tightened and the jar is set aside to cool until the following day. Do not let the vegetables cool off in the canner, as this results in over cooking. On the second day, the clamp is loosened or the rim unscrewed, the jars are placed in warm water deep enough to reach within an inch of the tops, and they are left until they have been boiled an hour, at the end of which time they are again removed.

On the third day the hour's boiling is repeated in the same way. The three-day method is advisable when peas, beans, corn and greens are canned. Sometimes certain organisms, on these vegetables, go into a restive or spore form in which they are not easily killed by boiling. If, for example, there are spores in a jar of peas, they will probably not be killed by one hour or even three hours of sterilizing. So, after an hour's cooking, we set the jar aside until the next day, and as it gradually



The Cannyery Packed Tomato

cools, conditions become just right for these spores to germinate. Most of them quickly change to an active or vegetative form, in which it is possible to kill them by boiling. The second day, these vegetative forms are killed. It is barely possible, however, that some of the spores may not have reached the vegetative stage during the first cooling, and so have not been killed by the second boiling. For this reason we take the added precaution of sterilizing the third day. A longer cooking period for a single day is less trouble and perhaps it requires less fuel than the three-day method, but the intermittent method is absolutely safe. It is for the housekeeper to decide which method she wishes to use and then follow explicitly the directions for that method.

Preserving Vegetables in Brine

String beans, cucumbers, etc., may be kept for winter use by packing in a brine in stone crocks. The two common methods of doing this are:

(1) To pack the vegetables in the crock and cover with a concentrated salt solution made by stirring salt in a pail of water and continuing to add salt until the water will not dissolve any more. Pour off the clear brine; add more water to the salt in the pail, and continue until the vegetables are completely covered. Place a weight on top to keep the vegetables under the brine, cover the crock and set in a cool place.

(2) Pack like sauerkraut. This method would not do for large vegetables like cucumbers which could not be packed tightly. Place a layer of vegetables in a crock, sprinkle with salt as in making sauerkraut. Pack solidly, place under a weight and keep in a cool place.

Preservation of Eggs in Water Glass

Eggs should be preserved now when the production is greatest and the price is lowest. Eggs preserved in water glass can be successfully kept for as long a time as one year. They are practically as good as fresh eggs for all cooking purposes. The commercial water glass solution may be obtained from any drug store. Water glass in the form of a powder is now on the market. It can be dissolved in a definite quantity of water, as stated in the directions on the package, and for this reason is more reliable than the commercial solution, which varies in concentration.

Pork Sealed in Dripping

Beef, chicken, or fresh pork may be canned quite as easily as vegetables. A very easy and satisfactory way to preserve fresh frying pork is to slice and fry the meat, cooking it almost as much as you would for immediate use. Place the pieces in layers in a stone crock, pouring hot fat over each layer and making sure to have the top completely covered with fat. This makes a seal under which the meat will keep perfectly. It is better to use small crocks for this purpose, however, as the meat does not keep long after the seal is broken.

For immediate and complete information regarding any of the following write the Office of the Commissioner of Agriculture, Parliament Buildings, Toronto, Ontario

Rules and Recipes for Canning Fruits. Raw Canning of Small Fruits and Rhubarb. Sugarless Canning. Fruit Jams and Relishes—Apple Butters. Preserved Fruits. Jelly Making. The Canning of Vegetables. Simple Equipment for Home Canning and Commercial Outfits—How to Use Tin Cans. Recipes for Vegetable Canning. Preserving Vegetables in Brine. Sauerkraut, Pickles. Canned Meats and Soups. Packing Eggs in Water Glass. Drying Apples and Small Fruits. The Storing of Winter Vegetables.

The Department of Agriculture, Women's Institute Branch, is issuing a bulletin on "The Preservation of Food—Home Canning" giving detailed information on the foregoing points. It may be secured upon application in the near future. Send your name in now.

Ontario Department of Agriculture
Parliament Buildings, Toronto

SIR WM. H. HEARST
Minister of Agriculture

G. C. CREELMAN
Commissioner of Agriculture



The Home Canned Tomato