

FARM AND DAIRY

AND
&
RURAL HOME

DEVOTED TO
BETTER FARMING
AND CANADIAN
COUNTRY LIFE

Toronto, Ont., August 22, 1918



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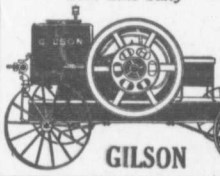
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B	14" x 5"	12-16	15-20 "	" " " "	700-800 "
E	11" x 4"	10-12	10-15 "	" " " "	800-900 "
G	11" x 5"	8-10	8-10 "	" " " "	900-1000 "
F	9" x 3"	3-6	4-6 "	" " " "	1000-1000 "

All International cutters are of the knife or blower type—simplest and requiring least power. All are equipped with a corn chute for feeding from the wagon. Steady power feed insures even cutting, silage packs properly and keeps. The low speed at which they run, and the safety devices on the machines insure the safety of the operator.

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EAST—Hamilton, Ont., London, Ont., Montreal, Que., Ottawa, Ont., Quebec, Que., St. John, N. B.

Western Irrigators Meet at Nelson

The Largest Gathering But One in Five Years

ONE of the most important gatherings having to do with food production in Western Canada has just come to an end at Nelson, B.C., where the Western Canada Irrigation Association held its twelfth annual convention on July 24, 25, and 26. The selection of the city of Nelson for such a convention is in itself an indication of the growing interest which Western Canadians feel in irrigation as a means of increasing agricultural production. Nelson is not in the arid or semi-arid belt, yet, even with the generous rainfall which prevails there, irrigation has been found to be of great value. The experience at Nelson seems to indicate that in years to come many districts which do not now recognize the need of irrigation will employ it extensively.

Hon. T. D. Pattullo, Minister of Lands and President of the Western Canada Irrigation Association for the season of 1917-1918, presided over the convention for its first day, and Hon. Senator Bostock, of Ducks, B.C., vice-president, presided during the following days. Among the visitors of note were Hon. Duncan Marshall, Minister of Agriculture, Alberta; Hon. W. R. Motherwell, Minister of Agriculture, British Columbia; John Oliver, Premier of British Columbia; Hon. E. D. Barrow, Minister of Agriculture, Victoria; E. F. Drake, Superintendent of Irrigation, Ottawa; Don H. Bark, Chief of Irrigation Investigation Department of the C.P.R.; M. S. Middleton, Victoria; James White, Assistant to the Chairman, Commission of Conservation, Ottawa; A. Griffin, Supt. of Operations and Maintenance, Eastern Section, C.P.R. Irrigation Block; R. H. Campbell, Director of Forestry, Ottawa; J. A. Grant, E. C. Markets Commissioner; Dr. Ernest Thomas, Vancouver, and many local authorities from districts in British Columbia. The accredited delegates numbered 182, besides many visitors, which, with one exception, is the largest attendance at a convention of the association in the last five years.

Although the purpose of the association is primarily to promote the production of food by means of irrigation, it is also deeply interested in the twin method of agriculture dry farming. It is now generally recognized that irrigation and dry farming, instead of being rival methods of agriculture, are really closely related, and in many cases both methods are practiced by the same farmer. One of the most interesting addresses at the convention was that delivered by Hon. W. R. Motherwell on the subject of dry farming. Mr. Motherwell strongly deprecated the agitation to bring every possible acre under cultivation. Quantity without quality was merely a waste of labor, and in some cases an actual loss of food, as seed was sown which never reproduced itself.

Hon. Duncan Marshall in a stirring address appealed for greater interest in live stock raising. The salvation of agriculture lay in good stock, and the best type of citizen which the country produced was the stock farmer. After the war there would be an inevitable slump in the price of grain, but the depletion which has taken place in the live stock supplies of the world would assure the stockman of continued high prices.

The necessity of making provision for meeting our national obligations which provision can be made only by increased production—was emphasized by Hon. John Oliver. Dry farming, irrigation, and every other method of production must be employed to this end. Financial problems after the war would be greater than during the war, and it was of

the utmost importance that the Canadian people should produce more and consume less. Other addresses of high order were heard, the speakers representing points from Ottawa to Victoria.

The Election of Officers.

Hon. Patron: His Excellency the Governor General of Canada; President, The Hon. Minister of the Interior of Canada; 1st Hon. Vice-President, Hon. W. R. Motherwell; Minister of Agriculture, Vancouver; 2nd Hon. Vice-President, Hon. Minister of Lands, British Columbia, Victoria; Hon. Minister of Agriculture, Alberta; 3rd Hon. Vice-President, H. Bostock, Ducks, B.C.; 4th Hon. Vice-President, G. R. Marlock, President of the British Columbia Association of Trade, Lethbridge, Alberta; 5th Hon. Vice-President, Hon. Minister of Agriculture, Executive, British Columbia, Minister of Agriculture, Victoria; 6th Hon. Vice-President, G. Sterling, Kelowna, British Columbia; 7th Hon. Vice-President, B. C.; Jas. Johnston, Victoria, B.C.; Walter Hackley, Medicine Hat, Alberta; F. H. Peters, Calgary, Alberta; A. S. Dawson, Calgary, Alberta; R. J. C. Stead, Calgary, Alberta; F. E. R. Woolston, Victoria, B.C.

Invitations to the association were received from Brooks, Alberta; Medicine Hat, Alberta; and Lethbridge, Alberta, at these respects the 1919 convention at those respective points. The invitation of Medicine Hat was accepted.

The following resolutions were adopted: That this convention desires to invite the urgent attention of the British Columbia Government to the spread feeling in the irrigation districts of that province that the irrigation systems in the British Columbia should be brought under government ownership and control.

That the Western Canada Irrigation Association respectfully request the British Columbia Government that, before passing any proposed legislation dealing with the water question, opportunity should be given to those interested to become familiar with the proposed amendments.

Whereas—The Policy of the Government of British Columbia in utilizing the ranges on the interior of the province to a much larger extent than hitherto, necessitates an unusual area of irrigated lands in order to provide winter fodder. And whereas—valuable breeding stock must be slaughtered because of turpitude. Therefore, be it enacted that the British Columbia Government be requested to consider making immediately extensive surveys as to the location of ranges well suited to irrigated lands, and steps be taken to bring said lands under water either by the Government undertaking the work, or by community work, or any other effective organization, but always under the control of the Government. The cost of this work to be a charge upon the land so irrigated.

That the association respectfully recommend to the British Columbia Government that enquiries be immediately set on foot to discover views in interior points well grass on the best for hay and the best means available for stock during the winter.

Submitted by the Comstock bridge water users association. Whereas—In certain provinces provision is now being made for establishing an association of users of irrigation waters requires that such association be assented to by the company or individual holding the irrigation rights. Therefore, that the Western Canada Irrigation Association (Continued on page 4)

We Welcome

Trade Increases

VOL. XXXVII

ONE of the best of the world lives on hard and Paris. These, usually during found the work was men-of-man-power, with the excruciating and in fact are grown if the work is all handled in the proper way. The work is not being done, the farm operation is work is done, efficient equipment

season of my last having bricks as a. As he went on to answer to my question considered a good idea mixed farming. "I have not yet decided as to the size of this one out the matter for a while. I am in favor of it, and at present my mind with horse power.

"Let us take the continued Mr. Good purpose walking plow more than one. The riding plow for the arrow plow will do. With one man's job, and leaves me alone around the farm were depending a. For instance, why at a round! I may be

"I have another plan I had it made especially for plowing. This plow is made in 1890 and I believe there is some type on farms used extensively.

"The Spring-Tow "For working up would place the risk first in my estimation touched cultivator, who preference is still for one can't imagine any other placement. It works as double disk harrow.

with the riding cultivator. These have left unweeded ground grass if there is Mr. Good passed it for the best tier of work. The line had been raked have a double disk at with a single disk at with a double disk at in a short time. If I have a cultivator and we, I believe I would ever, I have a smoothing a good load for three or four cultivator as a new used one for a number of use crop, and work



We Welcome Practical Progressive Ideas

& RURAL HOME

The Recognized Exponent of Dairying in Canada

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. XXXVII

TORONTO, ONT., AUGUST 22, 1918

No. 34

The Machinery on a 150 Acre Farm

Mr. W. C. Good Enumerates the Implements He Considers Necessary

ONE of the best worked farms in Brant County, Ont., is the 150-acre estate of Mr. W. C. Good, who lives on the old toll road between Brantford and Paris. I have visited Mr. Good several times usually during the summer, and have always found the work well advanced, and with a minimum of man-power. Practically every acre on the farm, with the exception of five acres in orchard, is variable, and included in it all favorable and the soil is good. The crops are grown in the rotation. Heavy crops are grown in the rotation. The dispatch with which the work is done, Mr. Good attributes largely to an efficient equipment of modern implements. On the occasion of my last visit, I found Mr. Good busy buying bricks as a foundation for a summer kitchen, as he went on with his work he enumerated in answer to my questions the implements that he considers a good investment for the man who follows mixed farming on 150 acres.

"I have not yet been able to come to a definite decision as to the place for the tractor on a farm the size of this one," said Mr. Good as he trowled out the mortar for the next brick. "At present I am leaning toward the tractor nor enthusiastically in favor of it. We have the horses anyway, and at present my implements are designed to be used with horse power."

"Let us take the cultivating implements first," continued Mr. Good. "A man needs one good general purpose walking plow. I don't think he has need for more than one. Then he should have a two-furrow riding plow for three or four horses. This two-furrow plow will do most of the plowing on the farm. With it, one man handles what was once a two-man job, and leaves me free to look after the special jobs around the farm, which would be neglected were we depending altogether on single furrow plows. For instance, while my man is plowing four furrows at a round I may be pruning in the orchard."

"I have another plow that I think a great deal of. I had it made specially to my order, and it is used principally for plowing hard ground for fall wheat. This plow cuts 16 inches wide, and 10 inches deep, and I believe there is a place for many plows of the same type on farms where fall wheat is grown somewhat extensively."

The Spring-Toothed Cultivator Favored. "For working up the land once it is plowed, I would place the riding spring-toothed cultivator as first in my estimation. My friend Drury has a stiff toothed cultivator, which he thinks a lot of, but my preference is still for the spring-toothed. In fact, I can't imagine myself getting along without this implement. It works splendidly in connection with our double disk harrow. We follow after the double disk with the riding cultivator and it levels the land which has been left uneven by the disk and tears out every weed that there are present."

Mr. Good paused for a moment to draw his line for the next tier of bricks. "I would never be bothered with a single disk harrow," he remarked when the line had been run to his satisfaction. "We have a double disk big enough to handle heavy work for four horses, but with it we cover a lot of land in a short time. If I had to choose between a spring-toothed cultivator and a double disk harrow, however, I believe I would take the cultivator. Finally, we have a smoothing harrow wide enough to make a good load for three or four horses."

In cultivating the growing crops, I consider a two-row cultivator an excellent investment. We have used one for a number of years on our 10 to 17 acres of late crop, and would not like to be without it.

It is easier to guide and does more effective work than the old-fashioned single-row scuffer. The scuffer is needed occasionally, however, and is a necessary part of the farm equipment."

A Remodelled Hoe Drill.

The second last row of bricks was nearing completion when I inquired about seeding implements. "I have never tried the disk drill," Mr. Good admitted, "although I have heard it highly recommended. I did, however, fix over my old hoe drill last spring and I consider that I made a great improvement in it. Previously we had difficulties with the hoese in the farm workshop. With the teeth forward more than they ordinarily are, and pointed them in the back made them more like the teeth on the spring-toothed cultivator. The hoe now cut through everything and the drill works fine. Ours is an eleven-spout two-horse drill. The ground on some of my fields is rather uneven, and a smaller disk adapts itself to these conditions better than a wider one. We use this same drill for corn planting, and have used it for mangel seeding. For the smaller seeds such as turnips and mangels, however, I prefer the hand seeder. We do not grow many roots, preferring to emphasize on corn for the silo, and for all the time it has been considered the hand drill a good investment and it does an extra good job."

Mr. Good was now on the last tier of bricks. "I read the articles by Messrs. Hallman and McKillican on hay-making equipment in the Farm Machinery Number with a great deal of interest," he told me. "I had figured on the investment in a side delivery rack and hay loader myself and decided that it would be profitable if I were handling from 100 to 200 tons of hay per year. Our crop runs from 60 to 80 tons of hay and we have not yet made the investment in either of these implements, though we have them under consideration. Of course, a wide cut mower, good-sized hay racks, and horse forks in the barns are not only necessary but indispensable."

"My binder is a six-foot cut. Our grain crops are usually heavy and the binder is a fairly good load for three horses. When I have to buy another

machine, however, it will be a seven-foot cut."

Electricity the Model Power.

During the past year Mr. Good has connected up with Hydro-Electric. All the buildings are now illuminated by electricity, and one of the most appreciated conveniences in the Good home is an electric range. Further use is now going to be made of the electric energy in doing the farm work. "I do not think there is any question but that electricity is the best farm power," remarked Mr. Good. "If a farmer has a tractor for field work he has a power already provided for heavy belt work. I myself am considering a portable ten-horse-power electric motor. For years our threshing machines have been getting bigger and bigger. Now the tendency is the other way and farmers, I believe, will figure more on doing their own threshing. A motor of reasonable size and a grain separator represent a heavy investment for a single farmer, and I think it is here we should have cooperation among neighbors. If I get the power I would invest in a silo filler as well; probably, too, a small grain grinder."

By this time the cement mortar had run out and we strolled out together to the stable to look at a couple of bunches of young cattle, which Mr. Good said, demonstrated the value of proper breeding. One bunch had been bred on the farm, and they were making splendid growth. Another bunch had been bought in at sales and they were not doing half as well on the same feed. Incidentally I noticed that there were at least 200 loads of manure in the barnyard. "There's one implement that I forgot to mention," said Mr. Good, indicating his manure spreader. "It is an implement that any man with a reasonable amount of stock cannot afford to be without. A possible exception might be where all the manure is hauled out and spread in the winter time. On this farm we have lots of straw, use lots of bedding, and the manure in the yard is always well tramped. I do not think there is any appreciable loss in fertilizing value of manure held over in this way for fall wheat."

"There is another thing that I must not forget to mention in connection with our farm equipment," added Mr. Good just before I left. "We have a farm workshop with its forge, anvil, and all other equipment necessary to keep the farm implements in shape. Every farmer is compelled to have more or less tools around, and if he has a properly equipped workshop he will find that he spends many very profitable hours therein."—F. E. E.

Paint the Car at Home

And Save Money—By Tom Alfalfa

WHEN passing through Toronto on the train a few days ago I saw a big sign over a carriage factory, "\$25 to paint your Ford." That night in Guelph I got into conversation with an old friend, who at one time kept store in our village, and I noticed that his Ford car, which stood at the curb, was resplendent in a new coat of paint. "What did it cost you?" I asked, with the frankness that is permissible between old friends.

"Just \$1.45 and my own time for several evenings," the job looked fairly good. Some time after this, as always related in Farm and Dairy, I called on Mr. W. W. Ballantyne of Stratford, The Forge, which has been on the road for five years, now had all the glister of a car just out of the factory. "No, it didn't cost us \$25," remarked Mr. Norman Ballantyne. "We just sand-papered to get the rust off (Continued on page 11.)"

Idle Machinery is Expensive

WITH the labor problem the most acute in the history of farming, the farmer must depend upon machinery to supplement the labor he will find unavailable. The Government is taking steps to insure that there will be no delay in delivering the thousands of cars of new implements needed during the war period and thereafter. In this connection here are a few pointers which the farmer would do well to keep in mind.

"Machines make money for you when they are in use; they cost you money when they stand idle."

"A machine makes the greatest possible profit for its owner when it is used continuously for profitable work till it is worn out. Then it is really worn out—it does not rust or rot out."

"The average farm implement is only about half worn out by use alone. The rest of the wear is due to rust and decay."

"Acree count in the life of a machine—not years."

Bloat Prevention and Treatment

Suggestions by Dr. M. H. Reynolds

THERE is no absolutely sure prevention for bloat, but it can usually be avoided by careful management. It is much less likely to occur when cattle or sheep are turned out to a new pasture or given new hay of any kind if they are turned out at once after a hearty meal of the dry feeds to which they are accustomed, and not when the green feed is wet with dew or rain. After the animals have become accustomed to a pasture or forage, they are much safer if they can be let there continuously instead of being taken off and put back after several hours.

Every farmer who has cattle or sheep should have a trocar and know how to use it. Tapping is a very simple and a reasonably safe operation. There is nothing to it except to thrust the trocar through the left flank and into the paunch high up and well forward. When an animal is bloated enough to call for this treatment, the paunch fills the entire cavity in this region and nothing else could be struck in the place indicated. The trocar, which is simply a large needle, is withdrawn and the tube left in place. Medicine may be given through the tube directly into the paunch.

If the case is urgent, tap at once and then call a competent veterinarian. Sheep must be treated very promptly, as they are likely to die quickly when bloated.

If veterinary help is not quickly available, give aromatic ammonia and turpentine, one ounce each, in a pint of skim-milk, every half hour if necessary to a total of six doses, then a pound of salts and three tablepoonsful of ginger in three pints of water. Keep the animal off feed for several hours after the acute trouble has disappeared.

A promising and comparatively new treatment is formaline solution, about a tablepoonful in a quart of skim-milk for a cow and in proportion to weight for a sheep, given either by the mouth as a drench or through the trocar tube by means of a funnel and rubber tube directly into the paunch.

High Prices for Farm Products

But Are the Prices Too High?

SOME urbanites who know little about the farm and the difficulties and hard work with which the farmer and his family have to contend in raising crops and live stock are complaining about the high cost of living. When blaming the farmer and wanting a lower price fixed on the products which he sells, the question as to whether the farmer is getting too much for his wheat or other farm products is not a debatable one. He is not getting too much. He is only finally getting a fair return for his labor and investment. The prices of farm products are not higher on the average than the prices of manufactured products which the farmer has to buy. In fact, prices are exorbitant, it is due to our cumbersome and expensive methods of distribution and the result of manipulation and speculation on the part of dealers and middlemen and not because prices of farm products are too high.

The farmer has never received enough for his products. The general poverty of a large part of our farming country proves this. Farmers are more saving and economical in their living than any other class of people. They work harder and longer hours, as a rule, and yet, travel this whole country over and you will not see any great demonstration of wealth and luxury in the country, as may be found in any large city.

In so-called prosperous farming communities, the country homes are plain and unostentatious, and improvements though substantial are not extravagant, indicating only a careful, thrifty, hard working people. In the less favored sections, abandoned farms, decaying buildings, rotten fences and brush-covered fields speak louder than any words can as to whether there has been sufficient profit in raising wheat or other farm crops in comparison with the profit in other lines of industry.

We hope that conditions have changed permanently and that the farmer will henceforth receive a fair reward and profit; but even with the present high prices of farm products, it is not possible for

farmers to compete with other industries for labor, because the farmer has no assurance as to what his crop will be, and has no assurance of what price he will receive for his product after it is produced. Other industries can afford to pay the present high wages for labor because they know what they will produce and the price they will get for their products. The problem of securing sufficient competent farm labor to maintain and increase farm production, at a reasonable price which the farmer can stand, is a serious one, and no good solution has been offered for this difficulty other than to replace hand labor for the most part with machinery and mechanical power.—E. B. I. C.

His First Alfalfa Success

He Had a Flood To Thank For It

By L. Graber in "Country Gentleman."

HERE'S a case which proves the old adage that "It is all wind that blows no good." A damaging flood turned failing attempts at growing alfalfa on this man's farm into ultimate success. In Southwestern Wisconsin there are many little streams tributary to the great Mississippi River. Strange as it may seem, an overflow of one of these started a fire and at the same time started a farmer right with alfalfa. I'll tell it just as he explained it to me.

"Well, sir, I was pretty much discouraged with alfalfa until a year ago," he said. "In fact, it was the big fire that really got me started on the right road. See this fine field of fifteen acres? For two years I failed absolutely with alfalfa on this very piece of ground, and now it looks to me like two tons to the acre for the first cut. I probably threw away \$300 on my first two attempts just because I didn't know how and didn't make the trouble to find out.

"Our alfalfa always came up nicely, and in fall and early spring it would look very promising. But in May the blizzard stuff would turn yellow, stop growing, and weeds soon got the best of it. My hired man said it had the jaundice, and I guess he was right! I never knew what was wrong till I read about this liming business.

"It finally dawned on me that perhaps my soil was too sour; yet I couldn't understand why a soil that would produce seventy-five bushels of corn to the acre would not grow good alfalfa. But when we had the big flood a year ago the water got so high that it broke into the warehouse where a carload of fresh lime was stored. In slaking it heated so hot the building burned to the ground. Well, I bought all



Should the Silo Be Roofed?

In an article below, Mr. W. C. Shearer, of Oxford Co., Ont., shows how new concrete silos is illustrated herewith. It will be possible to put a roof on his silo. That the roof on Mr. Shearer's silo adds to its appearance cannot be gainsaid.—Photo by an Editor of Farm and Dairy.

"When it comes to using lime," I ventured, "Trug's Soil Acidity Test is a little more scientific and less expensive than the flood method! It tells you how to make alfalfa a success."

"That's right," he said. "It took two failures and a flood to get me into the lime game. If I had had this soil tested at the outset I would have been growing big crops of alfalfa for the last three years. I'll know better next time.

"In this day and age we farmers cannot afford to learn by experience alone. It costs too much in time, labor and money. The tuition is too high, especially when all these newer ideas have already been worked out in scientific tests by our experiment stations.

"But let me say this: It takes more than dry beltings to get these facts into operation. Even a flood would not convince some."

A Cement Silo and Its Cost

A Talk With W. C. Shearer, Oxford, Co., Ont.

THROUGHOUT the more northerly sections of Oxford County and up in Waterloo the big whitewashed cement silos add a very distinctive touch to the landscape. This is one of the few sections in Ontario, visited by the editors of Farm and Dairy, where whitewash is used liberally on the silos. The silo on the farm of Mr. W. C. Shearer in the former county is typical of the silos of the district. It is five feet inside diameter and 49 feet high. The foundation walls are two feet thick. The walls of the silo proper are nine inches at the base, tapering to six inches at the top. It is plastered inside with a mortar of two parts builders' sand and one part cement. Outside it is whitewashed with a pure cement wash. The work was contracted for at \$2.75 a foot. Mr. Shearer paid for the cement, drew the gravel and he shared the rest. He says that every silo in this county. His total cash expenditures were \$225, with an additional \$75 for the roof.

The roof, as the illustration will show, adds decidedly to the appearance of this silo, and is of a type that adds considerably to the capacity of the silo, the steep pitch allowing of the silage to be tramped thoroughly right to the top of the cement walls, and then allowing of a considerable space to be blown full of silage to take up the settling. The roof covers the east of the lumber, shingles, lath and paint. "I believe that every silo in this county should have a roof on it," says Mr. Shearer. "It prevents freezing to a large extent. One of our neighbors, for instance, has a cement silo similar to ours but minus the roof. In the coldest weather the silage froze over the whole surface and they were feeding frozen silage for weeks at a time. There was not even any sign of freezing in our silo in the milder winter weather and even in the coldest weather the silage did not freeze anything like as much as it is neighboring unroofed silos.

A two and one-half foot tile carries the drainage from the bottom to Mr. Shearer's silo, connecting with a field tile.



Wanted, a Mechanical Hay Loader that will also Handle Sheaves.

that waste lime and ashes for five dollars, and hauled it out and spread it. Covered the whole field with about three tons to the acre, but we ran out of lime down in this corner.

"You can see just where I put the lime and just where I didn't. Where we ran out of lime the weeds have run out the sickly alfalfa. This yellow growth in the corner looks just like the whole field did with my first two failures."

It was one of the clearest demonstrations of the importance and necessity of lime for successful alfalfa growing on sour soils I had ever seen. In the corner where no lime had been applied the alfalfa was thin to appearance, yellow, sickly, woody and only six to eight inches high. The rich green alfalfa on the balance of the field receiving lime was over two feet high. The difference was visible for a distance of one-half mile. I tested the unlimed soil with the Trug Soil Acidity Tester and it gave a sour reaction, showing lime requirement of three tons to the acre. The limed portion tested neutral, as the acidity had been counteracted by the lime

EVERY breed of a separate a for each cow, for is neither necessary of the principles of rations come more than his cows and h. available feeds guide to the feed and thus enable a good live stock. who has mastered the of experience. Who has learned by results. The principle ed down from fa three generations produce wonderful eye of the master development of m ed. Let no one th feeding has been regarded by the preserve their implemting these silos. It will be possible world has even kn a life-time in the

These newer pr the chemist, will determine the kind that each contain tion expert who ch these food material determine how im needed by the dif findings have all basis, and by ratho to determine the and the am kinds of feeds that ply these requirem

Food Nutrients a Function.

All feeds are com a large number of chemical compound compounds, or e compounds of the eral composition, said in the supply mal life, are term nutrients. Protein hydrates and fat

principle nutrients considered in com ration, although matter, water and equally as importan proper nourishment com

Protein—This is used to designate t compounds consist of nitrogen which may either in the feeds body of the animal milk produced. The protein is necessary to repair its muscles, its tissues, skin, h etc., and to carry tal life processes quantity it is an nutrient. The port can be digested is "digestible protein" Carbohydrates—"carbohydrates" is designate a group c that includes pal the starches ar They are mos sively found in su as corn, hominy and, and are used animal as a source of energy and fatty tissue.

Fats—Another group nutrients, commonly ed and included and oils. These f made up of the same cal elements as the hydrates and perform the same function animal body. Ho

Making Up the Dairy Ration

The Science of Ration Making is Simple When Understood *By C. R. George*

EVERY breeder of dairy cattle should know how to select feeds and compute a ration. Not that a separate and exact ration should be calculated for each cow, for the consensus of opinion is that this is either necessary or impractical. A thorough study of the principles of feeding and practice in the figuring of rations does, however, help the feeder to become more familiar with the feed requirements of his cows and the composition and qualities of the available feeds. This information will serve as a guide to the feeder in his every-day practical work and thus enable him to feed more economically. The good live stock feeders of the past have been men who mastered the problems of feeding by a life-time of experience. With them it has been an art. They have learned by making a trial and observing results. The principles which they learned were handed down from father to son, and through two or three generations of experience they were able to produce wonderful results. Then it was that "the eye of the master fattened his cattle." But with the development of modern science this has been changed. Let no one think, however, that the old "art" of feeding has been supplanted or that it can be disregarded by the present-day feeders. Rather let us preserve their methods and traditions, and by supplementing them with the more modern principles it will be possible to develop better feeders than the world has even known and to do so without spending a life-time in the making.

These newer principles are based on the work of the chemist, who can analyze our common feeds and determine the kind and amount of food nutrients that each contains, and upon the work of the nutrition expert who can not only find out what part of these food nutrients can be digested, but can also determine how much of the digestible nutrients are needed by the different classes of animals. These findings have all been reduced to a mathematical basis, and by rather simple calculations it is possible to determine the approximate requirement of an animal and the amount and kinds of feeds that will supply these requirements.

Food Nutrients and Their Function.

All feeds are composed of a large number of definite chemical compounds. These compounds, or groups of compounds of the same general composition, that may aid in the support of animal life, are termed food nutrients. Protein, carbohydrates and fat are the principal nutrients to be considered in computing a ration, although mineral matter, water and air are equally as important to the proper nourishment of the cow.

Protein—This is a term used to designate the group of nutrients containing nitrogen which may be found either in the feeds, in the body of the animal or in the milk produced. The animal uses protein to build and repair its muscles, connective tissues, skin, hair, horn, etc., and to carry on certain life processes, consequently it is a very essential nutrient. The portion that can be digested is termed "digestible protein."

Carbohydrates—The term "carbohydrates" is used to designate a group of nutrients that includes principally the starches and sugars. They are most extensively found in such feeds as corn, hominy and molasses, and are used by the animal as a source of heat and energy and to build fatty tissue.

Fats—Another group of nutrients, commonly termed "fats," includes all fats and oils. These fats are made up of the same chemical elements as the carbohydrates and perform much the same function in the animal body. However,

they are often grouped separately for the reason that the heat or energy-producing value of a unit weight of "fats" is approximately two and a quarter times that of the carbohydrates.

Total Digestible Nutrients—All these nutrients, including the protein as well as the carbohydrates and energy for the body in a source of heat and energy equal to the carbohydrates, while the value of "fats" is approximately two and a quarter times greater. For the sake of convenience in figuring rations, the energy-producing or fuel values of these nutrients has been reduced to or common basis, and the units of value are designated as pounds of "total digestible nutrients." The total digestible nutrients would thus include the digestible protein, plus the digestible carbohydrates, plus the digestible fat multiplied by 2.25.

The relative usefulness of the different feeds to the cow depends quite largely upon the amount of digestible food nutrients which each actually furnishes. The common dairy feeds vary widely in their content of the different digestible nutrients. This every feeder should become acquainted with and the composition of available feeds, so he can select the best and cheapest sources of his feed nutrients.

Requirements of a Good Ration.

Every good dairy ration should meet the following requirements:

1. It must contain a sufficient quantity of feed to supply the digestible nutrients necessary for the maintenance of the cow and the production of the normal milk flow.
2. The relative proportions or balance of these nutrients must be suited to the needs of the cow.
3. The feed must be palatable.
4. The grain mixture must have a fair degree of bulkiness.
5. The ration should have a slightly laxative effect upon the cow.

6. It should be made up of a variety of feeds.

7. The feeds used must meet the above requirements most economically.

A ration that is deficient in one or more of the above requirements will not give the best results. Consequently the feeder should be well acquainted with these requirements and know how to select feeds that will meet them and thus satisfy every need of the cow. The problem of supplying the proper amount and proportion of food nutrients to the cow can best be solved by using a feeding standard which gives the amount of nutrients required by a cow for both maintenance and production. Feeds can then be selected to meet these requirements on the basis of their chemical composition. The other requirements such as palatability, bulk, etc., must be met through the selection of feeds that have these desired characteristics.

Maintenance Requirement for Cows.

A maintenance ration is one that furnishes just enough nutrients to keep the mature cow at constant weight when not producing milk or developing a foetus. It represents the non-productive part of the feed and includes approximately one-half of the amount consumed by the average feeding standard to know the maintenance requirement so that the remaining nutrients that are available for productive purposes may also be known. The amounts of nutrients required for maintenance vary with the weight of the animal to be maintained as shown in the following table:

Weight of cow	Digestible Total protein, pounds	Digestible Total nutrients, pounds
800	..... 63	..... 133
900	..... 70	..... 145
1,000	..... 77	..... 157
1,100	..... 84	..... 169
1,200	..... 91	..... 181
1,300	..... 98	..... 193
1,400	..... 105	..... 205

*From "Feeds and Feeding," by Henry and Morrison, Audubon Publishing Co., Chicago.

Additional Requirement for Production.

After providing for maintenance, every milking cow must have an additional allowance for production.

Aside from her maintenance the function or process of producing milk is very similar to that of a factory. She consumes additional feed and manufactures it into milk. To make a pound of a given quality requires a rather definite amount of feed. To make two pounds of this same quality of milk will require twice as much feed. If, however, another cow manufactures a high or a lower quality of milk, she will require a corresponding larger or smaller amount of feed.

Table II. Additional Nutrients Required for Production.*

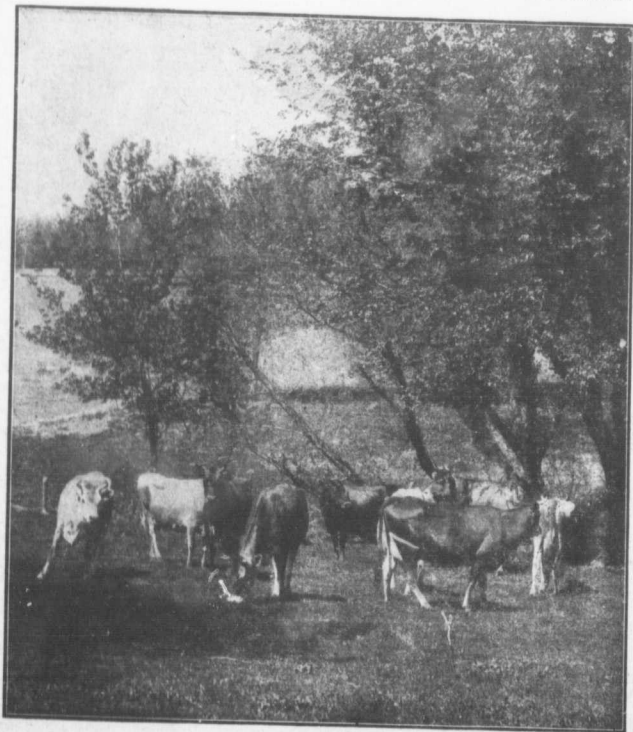
Percentage of protein	Digestible Total protein, pounds	Total nutrients, pounds
3.0%	.947 to .957	.988
3.5%	.859 to .861	.916
4.0%	.807 to .805	.848
4.5%	.807 to .803	.876
5.0%	.809 to .873	.802
5.5%	.807 to .873	.828
6.0%	.867 to .881	.854

*From "Feeds and Feeding," by Henry and Morrison.

The production requirement of a cow will, therefore, depend upon the quality and quantity of milk that she produces. The quality is determined by the per cent of butter fat that it contains and the quantity by the pounds of milk produced daily. Table II shows the amount of digestible protein and total digestible nutrients required for the production of one pound of milk containing different percentages of butter fat.

It will be noticed that the maximum and minimum amounts of digestible protein, that it is advisable to feed, are indicated in the

(Continued on page 16.)



Ration Making is Simple when Pasture is Abundant.

Farm Management

Europe's Labor—Our Machinery

By Henry G. Bell, B.S.A.

THE growing of wheat produces much more highly important food for each hour of man-labor put upon it, than do either potatoes or corn. When wheat yields 30 bushels to the acre, reliable figures show that one hour of man-labor produces one and two-third bushels of wheat. At prevailing yields, one hour of man-labor on potatoes produces about a bushel of that crop, while on corn, one hour of man-labor produces about one and one-quarter bushels. It is obviously a matter of labor economy to grow wheat.

By giving proper attention to all the factors which enter into successful wheat growing, much larger yields can be produced. This has been established, times without number, by efficient wheat growers of Europe. The average man is disposed to say that Europe had until lately an abundance of cheap labor, which fact in itself accounts for the 30 bushels of wheat per acre which Great Britain harvests, as compared with the 18 to 20 bushels per acre which are gathered in Canada. Cheap labor has its counterpart in our highly efficient farm machinery. By adding a horse to the team and by using wider plows, wider harrows, disk binders, etc., it is possible to reduce the man-labor required in raising wheat from 60 to 75 per cent. This is America's answer to European abundant and cheap labor.

Fertilizer Futurities

THE crop fertilized never consumes all the plant food given. The soil always and invariably holds part back for future crops, as every observing farmer knows who has seen the spots of larger growth in the small grass or grasses which have followed a hill-fertilized crop of corn.

Fertility tests conducted at the Ohio Experiment Station illustrate this point. For instance, in the five-year rotation on the home farm at Wooster one plot is fertilized only on the wheat crop, and the wheat has given a 20-year average increase for the treatment of 13.73 bushels per acre. The clover following the wheat has been increased by 583 pounds, the timothy following the clover by 210 pounds, the corn following the timothy by 744 bushels, and the oats following the corn by 3.64 bushels. In other words, 60 per cent of the value of the total increase has been found in the crop receiving the fertilizer, and 40 per cent in the four crops which ate at the second, third, fourth and fifth tables.

A Farmer Tries Seed Production

EVER since August, 1914, when the world went to war and America was deprived of its sources of seed supply, seed production as a native industry has been continually advocated. Mr. Moore, a graduate of the Ontario Agricultural College, who lives at Norwich, in Oxford county, has taken this propaganda so seriously that this year he is producing seed in wholesale quantities. He has ten acres in radish, three-quarters of an acre in Giant White mangels, one acre of Detroit Red beets, one acre of Golden Bantam corn, two acres garden peas, seven acres wax beans, besides a lot of onions, carrots and parsnips. "This is the fifth year since I first started in seed production," said Mr. Moore to an editor of Farm and Dairy, who stopped for a chat with him in his radish field. "The first year I had only crop enough to get some stock and see what it looked like. Since then the acreage has increased

each year and now I really feel that I am started in the business."

Mr. Moore is endeavoring to make his Canadian grown seed a little better than the best imported seed. He grows all of his own stock and carefully selects the best. For instance, in the production of mangrel seed, he selects the very best specimens from his mangrel field and from these large selected roots he grows the seed with which to produce his stockings. In table corn he follows the ear selection method of corn improvement. So far, Mr. Moore's chief difficulty has been to establish a satisfactory outlet for his garden seeds, but this year he will produce enough seeds to give more attention to the marketing end of the enterprise.

Liming for Clover

IN bulletin No. 213 of the Indiana Experiment Station, the following summary is made concerning the value of lime for growing clover: Clover will not thrive on acid soils. Liming is the only practical means of correcting soil acidity.

Three-fourths of the soils of Indiana are acid and in need of liming. About one-fourth of our soils is so very acid that clover fails almost every time it is sown.

About one-half of our soils is of slight to medium acidity and clover will fail whenever the weather conditions are at all unfavorable. Only about one-fourth of the soils of Indiana is well enough supplied with lime to enable clover to develop properly.

A liberal application of pulverized limestone or some other form of lime is needed to insure a clover crop on any acid soil.

Wherever clover fails to thrive, the soil should be tested for acidity. If the soil is acid enough to need

liming at all, at least two tons per acre of ground limestone or its equivalent in other forms of lime should be applied.

Ground limestone may be applied at any time, but the best plan is to apply it on plowed ground and disk it into the surface soil.

Lime will often produce immediate increases in grain and other crops, but the greatest benefit derived from it comes through increasing clover and other legumes in the rotation.

Following a good clover crop, it is possible to grow good grain or other crops.

The greater the proportion of legumes that can be turned under, either directly or in the form of manure, the easier it will be to maintain the fertility of the soil.

Lime is not a fertilizer. Manure or fertilizer, or both, should be used in addition to lime.

On seven experiment fields in different parts of the state, ground limestone has produced crop increases worth from \$10.50 to \$67.70 per acre per rotation of corn, wheat, and clover. The average net profit has been \$6.78 per acre per year, and \$2.68 per dollar invested.

Farmerettes Make Friends

WHAT do you think of the farmerettes in agriculture," was the very direct question asked by Dr. Riddell of the Trades and Labor Branch of Ontario's District Representatives of Agriculture when in conference at Guelph recently.

"I have nothing but words of praise for the farmerettes in Lincoln County," stated Dave Elliott, of St. Catharines. There are 250 in the county, chiefly housed in camps, which is, I consider the best method. They are mostly employed on fruit

farms where they work on the piece work basis, except in this picking, where they work for straight wages. A few are employed in mixed farming, some of whom were trained at Guelph, and I tell you they appreciate the training they got here.

"These girls are very quick to grasp what the work demands," supplemented Mr. Elliott. "They don't have to be shown ten or twelve times and some farmers have told me that they are superior to the S.O.S. boys."

"We have placed fifteen farmerettes on mixed farms in Norfolk county," stated District Representative Neff. "Three of these have returned to their own homes, but it was because of sickness there and not because they were sick of the job. The farmers are very much pleased with them and will be glad of more help of the same kind another year."

Dr. G. C. Creelman came out strongly for the farmerettes. "I have come right up from the penitents' bench, and declare myself a complete convert to the idea of women in farming," stated Dr. Creelman. "I thought at first that the farmerette in agriculture would be a laughing stock. I hesitated about establishing a training course for them at this institution. Twenty-nine of them came to Guelph. They did all of the heavy work in the stable and field and were willing to take early and late hours. Even the foremen around the farm, who at first did not want to have anything to do with them were soon admiring their endurance and the good work done. I am now so convinced of the position that women will occupy in agriculture that I am now accepting women for the regular course in agriculture in this province on the same basis as the boys."

"The only help that I had on my



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farm at one time this summer was a farmerette," stated Mr. Harry Street, who farms on the lakeshore of Ontario county. "She is a farmer's daughter of good physique. I am perfectly satisfied and expect that the work will improve as time goes on." Mr. Street believes that these girls may play an important part in harvesting this year's apple crop and he has already applied for three or four girls for that season. "I think it would be wrong, however, to encourage the idea that these girls can do as much as men," said he, "they are not paid as much and they should not be expected to do as much. We will not ask them to handle ladders of over 20 feet length. Men should be provided to carry the baskets, leaving the girls to pick only. Apple picking will conflict with threshing and fall plowing unless we can get women for the apple harvest."

The Ontario government is employing girls on a somewhat extensive scale for pulling the Ontario flax crop and they are making good. The farmerette is making friends on all sides.

FEEDERS CORNER

Feeding Grain on Pasture

THE high price of concentrates is worrying many farmers who have been accustomed in the past to feed a little concentrate to their dairy cows when on pasture. "What do you think about it?" an editor of Farm and Dairy asked Mr. M. L. Haley of Oxford county.

"I think it is a good thing to feed meal to the cows on pasture if they will eat it," replied Mr. Haley. "When cows are on good June pasture they won't have much use for grain. We have been feeding a little and the cows are beginning to eat more. This

grain feeding will keep them in good condition and in the fall they will be in a much better condition to start on a profitable heavy milk flow. I believe that even at present prices the extra milk from grain feeding will more than pay for the grain. We ourselves are feeding corn and old cake meal.

We called on Mr. Haley in the last week in June when pastures were at their best. "Just now," said he, "some of the cows are only getting a handful of meal. It is all they want. As pastures get short we will increase this to a maximum of seven or eight pounds per day. When pastures are short, too, we will feed some corn ensilage. Feed is high but milk is equally high."

New Facts on Feeding

BLANCHED rations are sometimes deficient in the elements which make for the best growth of animals. Reproduction is often affected by the ration fed to the cow.

A good roughage, preferably a legume hay, should be fed with wheat grain or its by-products to overcome their bad effects on reproduction. Even with a good roughage, wheat or its by-products should not be fed continuously to liberally or the offspring will be weak.

A wheat grain with wheat straw ration is in most cases fatal to both growth and reproduction. It will also produce weak or dead calves. So far as reproduction is concerned the same statement is true with a corn grain and wheat straw ration.

Due to its low mineral content, the over-abundance of a material like wheat straw in the ration is an important factor in premature births.

Weak or dead offspring may result from nutritional disturbances brought about by the continued feeding of certain natural feed materials.

Rations producing early delivery of offspring usually lead to the failure of the animal to clean properly, with

its attendant dangers of infection.

A complete ration cannot be made from the oat plant. Exclusive use of oat straw as a roughage for breeding cows will likewise produce premature, weak, or dead offspring. Corn stover, corn silage, or legume hay should replace part of the oat straw.

A complete ration can be made from the corn plant. It will show normal growth and reproduction.—University of Wisconsin.

Experimental Feeding Tests at Guelph

DURING the recent conference of agricultural representatives at Guelph, Professor Wade Toole, who now heads the Animal Husbandry Department, outlined a couple of experiments in prospect that will be of particular interest to those who feed lambs and beef cattle.

This fall Prof. Toole proposes to buy 24 lambs in this condition—eight bucks, eight ewes and eight wethers. These lambs will be fed through the winter, sold on the Toronto market and followed through the packing houses. The experiment will ascertain whether there is anything in feeding lambs, how much is lost in feeding bucks, etc.

A second experiment contemplates the purchase of 15 calves. Three of these will be pure-bred calves, which for some reason or other are not suitable for registration, but are of good conformation for the breed—Anagus, a Herford and a Shorthorn. Three will be grades of these breeds, three cross-breeds, three real crosses, and three of dairy breeding. These steers will all be carried for two years and the second year a duplicate test will be tried. The results will throw additional light on such questions as the value of the pure-bred sire, the influence of type and the relative gains of calves of dairy and beef breeding.

Honey Crop Report

THE Honey Report Committee of the Ontario Beekeeper Association met in Toronto on Thursday, August 23, 1918. Owing to the serious situation in regard to sugar for fall feeding, the Executive Committee of the Association was also called together for consultation. Reports were received from over five hundred of the members in Ontario and from correspondents in Quebec and the United States. The Ontario average per colony reported was 92.4 lbs.

The most disturbing feature in the market situation is the raising of the Canada Food Board that no sugar can be obtained for fall feeding. This means that from 25 to 40 per cent of the average crop must be held for feeding back to the bees. The losses in bees last winter were much heavier than normal owing to the unusual severity of the winter and lack of stores, and the committee urges all beekeepers to protect themselves against further loss by ample feeding this fall.

In view of these conditions, the committee recommends the following prices:—

Best quality light extracted, whole sale	.....	\$40 to \$75 per lb.
Best quality light extracted, retail	.....	\$50 to \$80 higher.
No. 1 comb, whole sale	.....	\$3.00 to \$3.75 per dozen.
No. 2 comb, whole sale	.....	\$2.00 per dozen.

At the present time the market is very strong both here and in the United States. All last year's crop is out of the retailer's hands. Enquiries have been received for large quantities for shipment overseas, but it is doubtful whether under present conditions in regard to sugar that any can be secured.

Beekeepers are cautioned not to sell second grade honey for table use, but to sell it to biscuit manufacturers. The prices recommended are for a 60 lb., 10 lb. and five lb. tins, the former

er being net gross weight should be guaranteed by commission. Wholesale price of the order should be terminating the.

After a recent session a Governmenting assembly avenue, laughing when he was held up. He held up his head, "Don't cut my brains, don't take my brains to I does take a Courier-Journal



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er being net weight, the latter being gross weight. The lower prices should be quoted to wholesale and commission men and the higher wholesale price to retailers. The size of the order and style of package should be taken into account in determining the retail price.

After a recent pay day at Washington a Government clerk was wandering aimlessly down Pennsylvania avenue, hugging his pay envelope, when he was held up by two footpads. He held up his hands, but began to plead, "Don't take my money. Blow out my brains, if you must, but please don't take my money. It doesn't take any brains to live in Washington, but it does take a lot of cash."—Louisville Courier-Journal.

Western Irrigators Meet at Nelson

(Continued from Page Two.)
 dorses the recommendation of the recently formed Coaldale-Lethbridge Water Users' Association that legislation should be provided whereby water users within a territory served by irrigation waters be empowered to organize water users' associations without having first obtained the consent of the company upon a petition of a majority of the water users resident within the proposed district and that such water users' association be granted power to assess the irrigable land within the district for the purposes of the association.
 That this convention endorses a resolution recently passed by the Iron

Springs Local Number 172 of the United Farmers of Alberta, requesting the Dominion Government to carry on at once surveys, and investigations as to provide information as to the possibility and the probable cost of carrying irrigation water to as a great number of farmers as possible in the districts that can be supplied from the proposed diversion of the Oldman River west of MacLeod.

Farm surveys have demonstrated that large farms as a rule are most profitable. Not every man, however, is capable of managing a big farm. It would not advise the man who is below average on the small farm to get a bigger one. The chances are he would make a greater muddle of his business than ever.—Mr. Hawthorne, in charge of U.S. Survey Work.

No Milk for English Adults

GRREAT Britain is confronted with a scarcity of dairy products, chiefly the result of shortage in cattle feeds. Permits to buy milk are issued for certain classes of the population, including children under five years, invalids and nursing mothers.

The statement is made on excellent authority that "an adult cannot buy in London a glass of milk, even if willing to pay \$20 for it." Not only butter, but all kinds of fats are obtainable only in extremely small quantities. Some families are without any fats for nearly a week at a time. Ice cream disappeared from the market more than a year ago.



It Costs LIVES to Get Your Produce to Market



REMEMBER this about prices! Wheat is high, beef and pork are high, all the food you produce is high, because the 300,000 men of the Merchant Marine brave the perils of the submarine to carry your produce to market.

15,000 men of the sea have already given their lives in YOUR service. What will you do to relieve the wants of their widows and orphans?

Remember by Giving

In great measure we owe to the sailor our liberties as free citizens. Without his sacrifices we would not be enjoying national prosperity such as was undreamed of at the advent of the war.

Yet these men who are doing so much for the great cause—manning transports and hospital ships, as well as vessels carrying food—are not government em-

ployees, so that no provision is made for pensions, for separation allowances, or for relief for their widows and orphans.

Let us be just! We will contribute to the support of the widows and orphans of the victims of the submarines. Our cry shall be—"They shall not want."

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

The Call of the Land

MAN in his early thirties, a graduate of the
Ontario Agricultural College, and with a record
for achievement in the profession of
journalism, recently spent his two weeks of holidays
working on the farm of a friend. "It was quite a
tug to leave the farm and come back to office work,"
he confided to an editor of Farm and Dairy a few
days later. "I am looking forward to the day when
I will be living on my own farm, and have more
enthusiasm than before my holidays, that is to be
possible."

This young man is not one of your city farmers,
who sees visions and dreams of country life, with all
its advantages magnified and all its hardships
overlooked. He was brought up on a farm, and has
been closely connected with farming ever since
leaving college, although not actually engaged
therein. He knows that seasons are sometimes ad-
verse, that disease or misfortune may reduce re-
turns from livestock, and that markets are seldom
strong when crops are large. He sees farming as it
is and desires it. He feels the call of the land. He
is a "natural born farmer."

Then why is he not on the farm? Just lack of
capital. In the work in which he is engaged he gets
a good salary and is saving money. He will achieve
the ownership of a farm by way of his salary more
quickly than he would were he actually working on
the land. Farming is one of the few producing in-
dustries that as a rule fails to provide both interest
on investment and a fair return for labor. This
young man could not hope for as great returns for
his labor expended on land as the same energy and
ability is bringing him in another capacity. Were
the returns of farming what they should be, a young
man could start on the farm with little capital and
expect the farm to pay for both borrowed capital and

labor. The margin of profit, however, is not large
enough, and this young man and thousands of others
like him hesitate to embark in the profession which
they prefer above all others until they are in such a
position financially that they can afford to ignore
interest on investment if need be.

This is a serious situation, particularly at the
present time, when we are hoping that returned
soldiers in large numbers will go on the land, become
primary producers, and thus help in meeting our
great national obligations. It is a situation that
can be improved only by increasing the economic
returns of agriculture. We know of no way in which
this can be done, save by the removal of the legis-
lated disabilities under which our industry labors,
and of these the chief is the protective tariff.

Quebec Farmers to Organize

IT is good news that comes from Quebec. At a
congress of farmers held at St. Hyacinthe re-
cently it was decided to establish an organization
of farmers in Quebec, similar to the United Farm-
ers of Ontario and the Grain Growers Association
of the West. The opinion was expressed that Quebec
farmers have interests in common with the farmers
of all the other provinces in Canada, and that union
with them through the Canadian Council of Agri-
culture is desirable. A strong committee of twenty-
four prominent farmers was appointed to draft a
constitution for a provincial organization, and a fur-
ther meeting will be held at St. Hyacinthe on August
24th. This action has been taken after only a few
months of consideration, so evidently the cooper-
ative idea has developed rapidly in Quebec.

The ideal of a united agricultural people from one
end of Canada to the other is being rapidly con-
summated. New Brunswick has a flourishing and
growing organization. Quebec is about to organize.
The United Farmers of Ontario now enrols over 20,000
members. The Grain Growers' Associations of
Manitoba and Saskatchewan and the United Farmers
of Alberta already hold the reins of power in the
prairie provinces. In the far West the United Farm-
ers of British Columbia are pushing their organiza-
tion with enthusiasm and success. Only two small
provinces—Nova Scotia and Prince Edward Island—
have as yet made no definite move toward indepen-
dent organization, but there, too, we understand, the
subject is being discussed and action may be taken
at any time.

It is fortunate that farmers are now seeing as
never before the necessity of unified action. Already
the insensible powers that have ruled Canada for
more than a generation are laying their plans to
foist on the farmers, through the medium of the pro-
tective tariff, a large part of the burden of after war
taxation. Only a united people can save agriculture
from even heavier disabilities in the future than
those which have depopulated our rural districts in
the past. It is a satisfaction to record each new for-
ward move, which means a stronger and more united
front in defence of our industry.

The Drift to Ranching

THE Toronto Globe is much exercised over the
drift to ranching in some of the best agricul-
tural counties of Western Ontario. In Huron
and Middlesex, so our contemporary informs us,
more land has been turned to grazing than in the
broken counties of Durham and Frontenac. The
Globe would like to know why these things should
be.

In the first place, from our knowledge of the coun-
ties mentioned, we very much question if there is a
larger proportion of the cleared lands devoted to
grazing in the counties of Huron and Middlesex,
where almost all of the land is suitable for cropping,
than in the counties of Durham and Frontenac,
where there is much rough and broken land. Our
observations convince us, however, that in all of
these counties there is a tendency to seed down the
land and devote smaller areas to cultivated crops.

That this is so should occasion no surprise. It merely
illustrates one method whereby the farmer is ad-
justing his business to a diminishing labor supply.

Just how seriously we have drained our farms of
labor is not fully appreciated either by people gen-
erally or by our political leaders. It is safe to esti-
mate that 75 per cent of the last military draft came
from the farms of Canada. In one camp, the Colonel
in charge testified that 90 per cent of his men came
from the farms. This draft came on top of a large
loss of farm labor by voluntary enlistment, and an-
other equally large loss due to the high wages paid
in munition factories. As a result of all of these
losses Canadian agriculture is now even more seri-
ously undermanned than is English agriculture.
Speaking in the English House of Commons, Mr.
Prothero, a member of the Lloyd George Govern-
ment, declared that through the utilization of the
labor of German war prisoners on English farms
there is more labor on those farms to-day than there
was in November, 1910. And further, he asserted
that even with the recent coming out of 30,000
English farm laborers for military service only 25
per cent of the men between the ages of 19 and 31,
employed on English farms, had been taken.

Statistics are not available, but we feel sure that
since November, 1910, at least 25 per cent of the
men of military age has gone from Canadian farms,
and there are no German prisoners to take their
place, if men are more needed than food, then the
Canadian farmer will have no complaints to make
except in such cases where conscription involves
more personal hardship. But in the face of this
withdrawal of man power from the farms it is absurd
to wonder why there is a drift to ranching. The
wonder would be if the tendency were any other
way.

Compulsory Military Training

A FEW weeks ago Farm and Dairy spoke of its
stand taken by Major Mowat, of Toronto, in
favor of universal compulsory military
training for Canada. Now ex-President Roosevelt, speak-
ing before the Republican State Convention in New
York, has declared in favor of the same policy for
the United States. Commenting in a recent issue of
The Weekly Sun on the remarks of these two
brands, W. L. Smith writes as follows:

"One of the most disheartening things it is to ob-
serve here, save some men, who ought to possess
at least average intelligence, are to learn the most
patent lessons from obvious facts. Europe had uni-
versal military service before the war. Along all
frontiers men were massed under arms. In the in-
terior armades were filed to overflowing with mil-
lions of war. Everywhere people were thinking in
battalions and dreaming in army corps. War was
in the very air that people breathed. Across imagi-
nary lines were not neighbors but potential foes.
Under these circumstances it was only a question
of time when guns should begin to go off. If the mur-
der of an Austrian Prince had not started the co-
agulation on the Serbian frontier some other equally
trifling cause would have started it on some other
frontier. And still in the face of these facts, save
100 years of peace, due very largely, if not wholly,
to the absence of armaments, men on both sides of
the Canadian-American frontier are urging the cre-
ation of the very conditions here that are detrag-
Europe with blood."

Canadians have given of their best to this war. It
has been to us as to the democracy of the Old Land,
a war to end war. And yet right in our midst are
those who would feign fasten upon us the same sys-
tem as made a war in Europe inevitable. The or-
ganized farmers of Canada have no greater task
before them than to combat and nullify the ideas
and influence of these freetraders.

The first farm survey in Canada has demonstrated
the greater money-making power of the large farm.
Prof. Leitch recognizes, however, that the large
farm is not wholly desirable. "We hope to be able to
find those factors that will enable the small farmer
to make more money," he said recently. "The suc-
cess of our democracy depends on the largest pos-
sible number of men working their own land."

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Where Dirt Comes From

CITY health officials, when endeavoring to improve the municipal milk supply, generally lay most stress, when formulating systems of inspection, on the cleanliness of the cow stable and barnyard. The farmer with the clean stables and the clean cows gets the highest scores. Now along comes the University of Illinois with the statement that this is all wrong, that the most of the dirt in milk does not come from the stables or the cows, but that the main contamination is from improperly cleaned utensils. Their conclusions, after extensive studies, are summarized in a recent bulletin as follows:

"The fact that the dirt which falls into milk at the barn is readily visible in the milk has led to the conclusion that the barn is the principal source of the bacteria in milk. The results of this study, however, show that it is the utensils, rather than the barn, that are largely responsible for the excessive bacterial contamination of milk. The extent of the contamination of milk by the utensils is strikingly illustrated in one of the experiments in this study: when all the utensils commonly used for handling the milk at the barn and in the dairy were thoroughly cleaned, the bottled milk had uniformly only about 5,000 bacteria per cubic centimeter, but as soon as the steaming was omitted the bottled milk frequently contained several hundred thousand bacteria per cubic centimeter.

"The cans used for shipping milk are a particularly prolific source of bacteria when they are washed at the dairy and returned to the farm without being thoroughly steamed and dried. The number of bacteria usually added to the milk by such cans is many times larger than the number that would ordinarily get into the milk at the barn; the addition of a million bacteria per cubic centimeter of milk by such cans is not uncommon.

"A detailed comparative study of the effect of the various other utensils at the barn and at the dairy suggests that the greatest contamination comes from the more complex apparatus, such as the clarifier and the bottle filter. In one of the experiments in this study, it was found that pails added, approximately 11 times as many bacteria to the milk as the barn influences, the strainer one and one-half times as many, the clarifier 30 times as many, the cooler 10 times as many, and the bottle filter 60 times as many—a total of 112 times as many added by the utensils as by the barn factors.

"It seems to the authors that in an attempt to produce milk with low sugar content too much stress has been laid on practices of minor importance, and the influence of utensils poorly steamed and not dried has been commonly neglected."

The Housing Problem

SEVERAL Ontario cities and towns have a housing problem on their hands. War orders have concentrated business in a few centres. More families have crowded into those centres than there are houses in which to properly accommodate them. What are the cities going to do with this surplus population? Already the Ontario Provincial Government, having headed the problem over to the Organization of Resources Committee, a special housing sub-committee have drawn up concrete plans for providing greater housing facilities in cities and towns. "But the committee feels that it would fail in its efforts if it did not take very thoroughly into consideration, housing conditions in the rural districts of the province," Professor Sisson, a member of the committee, told Ontario's District Representatives when they recently convened at Guelph.

"There is no permanent labor supply in rural Ontario," stated Professor Sisson. "Until it is secured, we will have year after year, a lack of labor, farmers working too long hours and general discontent. I would call your attention to the fact that 50,000 houses are to be built by the government in rural England. How are we going to meet the need here?"

"I know of at least one Ontario farmer who hires several men, lives near a couple of good towns where there is 'such war work going on and yet has no labor problem,'" said Dr. G. C. Creelman in continuing the discussion on rural housing. "I refer to Will Dryden of Brooklyn. This spring several men. He had it announced that one of the factories in Oshawa that he needed these men and on the day appointed he went down and took his pick. The men were willing to leave positions where they were getting several dollars a day for the positions that Mr. Dryden offered them at \$40 to \$60 per month. The drawing cards were good cottages to live in, a garden, milk, etc. I believe that the rural labor problem is going to be solved in this direction."

"We have looked into this problem of rural housing in connection with some of our surveys," F. C. Nunnick of the Conservation of the Commission told the gathering. "We visited 100 farms in each of four counties. We found that the farm labor difficulty was being overcome most successfully by those who had houses on their farms for their help; suitable houses, I mean; some were not fit to live in. A good cottage, however, always enabled a farmer to get good help and keep it."

Mr. Nelson Monteith, ex-Minister of Agriculture for Ontario, under whose administration, the representative movement was launched, concluded the discussion on rural housing. "One of the first things I did on leaving Guelph to go back and run a home farm was to build a house for the hired help. It has been a good proposition. I have always secured a class of help that mingled with the society of the community and left only when they went on to farms of their own," said he.

Paint the Car at Home

(Continued from page 3.)

and then we applied the special body finish that we had gotten for the purpose and gave the top a coat of special top finish. I should say that the whole job, sand, papering and all, represented one and a half days' work for two of us. Cost of materials, \$1.50.

My own car looked pretty shabby so it was natural that the same subject came up for conversation when I ran in to see Peter Smith, who also lives near Stratford. "I have painted my car every spring since I got it," said Mr. Smith, "and that's about five years ago. This spring I got the paint for 90 cents at Eaton's, and it is a nice, easy job to rat in a holiday at."

I won't say that any of these cars has as smooth a finish or a finish that would bear as close inspection as a professional car painter would have given them. Seeing them pass on the road, however, one could not tell the difference from a professional's job. So now we have the top dried and the body finish and any quantity of sand paper. The next time we go out in our car there won't be a coat of rust on it to be abraded off.

Cheese Factory Burned

WHILE attending the meeting of the Cheese Board at Brockville, Norman Tackaberry was notified that his cheese factory, situated at New Dublin, caught fire and was destroyed. The factory was one of the largest and best equipped in the district. It received between 8,000 and 10,000 pounds of milk daily.

Are you going to be caught without a Silo this fall?

If not, you have no time to waste.

In a very few weeks your corn will be ready to harvest.

Freight shipments these days are slow and uncertain. Unless you



place your order immediately for an Ideal Green Feed Silo

you may not get it up in time to handle your corn. This is a risk you can not afford to run.

Order your Silo now. Allow for freight delays and uncertainties. Give yourself time to erect it properly. If you put off this important matter you may find it impossible to use your corn this year.

Don't run this risk. Don't put off your decision any longer. Next week may be too late. Act NOW—TODAY, and when the snow flies this winter you will have the satisfaction of knowing that you are giving your cows a chance to make money for you.

THE DE LAVAL COMPANY, Ltd.

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

Sending Money to Soldiers

Those who have friends or relatives at the front, may wish to send money, but possibly do not know the best way to do so.

If time permits, the safest and most convenient method of making remittances abroad is the Bank Money Order or Draft, as issued by The Merchants Bank.

If, however, it is necessary to send money without delay, the Bank will arrange this by Cable Transfer.



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WRITE OR CALL AT NEAREST BRANCH.

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CALENDAR OF APPLICATION

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TRUE dignity is never gained by place and never lost when honors are withdrawn.—Massinger.

A Black Cat for Luck

By Mary Barrett Howard in Farm and Fireside.

O'HAGAN, his right arm in a sling, limped through the train shed at Chicago and swung himself, grasping the rail of the last car awkwardly with his left hand, on to the New York limited just as it moved slowly out of the station.

Just out of the hospital, the big policeman staggered a bit from weakness as he made his way to the smoker. Sinking into the nearest seat he lit a strong black cigar and drew a long breath.

"I'd oughta had a look in at Strike" he muttered worriedly. "But them doctors kept me there gaspin' till I pretty near missed me train."

If you are a reader of Chicago newspapers you may have heard of Strike, the black cat which a striker, during one of the perennial conflicts between capital and labor, had flung, no more convenient weapon being at hand, at the back of a scab motorman. Both cat and motorman, somewhat damaged, had been rescued by Officer O'Hagan, and the cat, after being produced in court as evidence against the striker, had been taken to police headquarters and adopted by the force as its mascot.

But Strike, as inevitably the black cat had been dubbed, while accepting the attentions of the other men with the air of bored indifference peculiar to his species, had attached himself to O'Hagan with an affectionate tenacity more commonly seen in dogs than in cats. The big policeman had reciprocated this feline devotion with an unhesitating ardor which had made him the butt of much good-humored chaff from his comrades. After a few caiming pulls at his cigar O'Hagan's handsome face cleared.

"I bet the fellows was tryin' to put one over on me," he reflected. "I ain't boob enough to fall for their talk about Strike missin' me so he's off his feed—they was just stringin' me."

Dismissing therefore the one flaw in his otherwise unalloyed happiness, the big man allowed the image of a blond girl to efface that of a black cat. Handsome Tim might have posed as a picture of the joy of life personified as he sat wrapped in dreams of pretty Pearl Dalloy, whom he was now on his way to marry. And in spite of the lame knee and useless arm that still bore witness to the extent of the injuries he received when he had dragged a pair of terrified horses from the rails of an approaching trolley car.

Fate had decreed that the occupants of the carriage drawn by the runaway were the wife and children of a very great man indeed who, although he was the eve of taking passage for England on an important

diplomatic mission, had waited to assure himself that the injuries of the big "motor cop" were not fatal, to deposit several thousand dollars in a bank to O'Hagan's credit, and to obtain a promise from the police commissioners that this humble hero on his recovery should be given two months leave of absence.

O'Hagan, to whom the rescue of women and children was something all in the day's work, at first flatly refused to be rewarded for an act that he regarded as merely his duty. It



A backyard garden at 517 King St. East, Toronto, typical of thousands of others in Canada that are helping to solve the food problem. In this garden are growing cabbage, beans, peas, turnips, beets, carrots and other vegetables.

was not until his nurse had advanced an argument to reinforce adjurations of his chief that O'Hagan was persuaded to accept his unexpected good fortune.

"Perhaps you don't deserve it, Mr. O'Hagan," the little nurse, who had grown fond of the big, patient fellow, said laughingly. "But you know a man who has saved the life of a black cat must expect all sorts of good luck to come his way, so you may as well make up your mind to it."

"Sure there's plenty believe the same," O'Hagan assented gravely. "And I'd be easier about takin' the money if 'tis to Strike I've owin' it, instead of to a man I've never set eyes on."

He had grinned rather shamefacedly at the laughter his speech elicited, but all the same he continued secretly to treasure the little nurse's suggestion, and before he left the hospital he had obtained a promise from the chief that Strike should be his wedding gift from the force. For the big motor cop's heroism had not only won for him fame and fortune, but

also had caused pretty Pearl Dalloy to reconsider her refusal to marry him; the highly dramatic versions of the accident which had been published in every paper in the country having brought forth a letter from his hitherto obdurate sweetheart, offering, under certain conditions, to abandon her decision never to consent to marry anywhere except in the great Eastern metropolis where she had been born and bred.

O'Hagan's idea of a blissful honeymoon would have been a stay of a week or two in New York and then a return to Chicago to invest his little fortune in a snug cottage in the suburbs, where he could enjoy the remainder of his leave in quiet domesticity. But pretty Pearl had stipulated that the whole two months were to be spent in New York, and Tim O'Hagan was humbly grateful to her for taking him on any terms.

A few hours after the train had pulled into the Central Station the big policeman, fresh and pressed from the tailor, smooth and perfumed from the barber, was holding pretty Pearl in his eager arms, and had made the discovery that in a dashing gown of tango red his girl was even more of a "peach" and a "queen" than she was that day when she had sent him away with the cruel remark that she wouldn't leave New York to live in Chicago for him "nor for any other fellow that ever came over the pike."

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Pearl's red lips set obstinately. "You promise," she insisted. "And listen, Tim O'Hagan, there'll be no cottage in mine. We've got in' to board I ain't goin' to housekeepin'—workin' myself to death gettin' meals an' washin' dishes."

The big man sighed, but love made him docile, and Pearl presently carried her point in another contest of wills.

"Say, Tim, you remember Mary Maloney?" she went on. "She's boardin' with us since her mother died, and I asked her to go out with us to-night."

"Sure, I remember Mary. She was one nice kid," O'Hagan said warmly. "But, dearie, what do you want her along with us for? I was thinkin' I'd got you all to myself at last."

"Oh, I know there's a crowd, but there's another fellow comin' with Pearl said carelessly. "Mary won't cost you nothin'. Hank Fink ain't no tightwad."

O'Hagan's handsome face reddened. "I ain't no tightwad neither," he protested. "But when I ain't no me girl for two years!"

"Ain't I telling you we can pay off? Pearl demands that we should go to have a bit of fun," she said craftily. "Poor kid, she's never got over Jasin' her mother, but she won't stir a step if you hand her the pitcher—Mary's awfully sensitive."

The big policeman melted instantly.

"Sure, I wouldn't do that now; sure I wouldn't," he murmured. "But who's Hank Fink?"

"He's a forewalker at Black & Company's. One awfully low, believe me."

Miss Dalloy omitted to mention that before the news of O'Hagan's good fortune reached her she had almost decided to marry the "swell" forewalker.

"I wonder what's got Mary she said. "Afraid of Hank in a bet. I'll catch her."

A moment later O'Hagan was holding the hand of a slim, pale girl, whose wide gray eyes were looking up at him with innocent adoring concern.

"Oh, Tim, was was you bein' bad?" she faltered. "The won't be lame always, you?"

"Sure I won't," O'Hagan laughed. "I'm feelin' fine, dandy, Mary, but I'll not be troottin' yet a while."

Big Tim was too blinded the little girl love to consider the even more remarkable by this girl, whom he had called his "little pal" while he

calm indifference the girl he was married had shown in making her proposal. The result was the possible effect of a long, tiresome journey on a man who had been in the hospital. He was equally blind to the fact that Mary Maloney, her smooth bright hair and low voice, her plain black coat and immaculate white lines beneath would have won an approving gaze from critical eyes which would regard pretty Pearl as a mere gown of tango red with amusement. However, he had been very fond of his little pal, and stood smiling down at her, and both her eyes and her smile were warm on until Pearl, who had peeped from the corner unnoticed, decided ushering in an amiable young man with puffy eyelids and air of extreme sophistication.

"Tim, meet Mr. Fink," she said with an involuntary glances of admiration at the forewalker, a "classy dresser," as she put it, times, on this particular night.

(Continued on page 11)

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THE UPWARD LOOK

That You May Not Sin

"In Him is no sin. Whosoever abideth in Him sinneth not."—1 John 1: 5, 6.

"To know," the apostle had said, "that He was manifested to take away our sin," and had thus indicated salvation from sin as the great object for which the Son was made man. The connection shows clearly that the taking away has reference not only to the sinfulness and freedom from guilt, but to deliverance from the power of sin, so that the believer no longer does it. It is Christ's personal holiness that constitutes His power to effect this purpose. He admits sinners into life union with Himself; the result is that their life becomes like His. "In Him is no sin." Whosoever abideth in Him sinneth not. As long as he abides, and as far as he abides, the believer does not sin. Our holiness of life has its root in the personal holiness of Jesus. "If the root be holy, so also are the branches."

The question at once arises, How is this consistent with what the Bible teaches of the abiding corruption of our human nature, or with what John himself tells us of the evil falsehood of our profession, if we say that we have no sin, that we have not sinned? (See 1 John 1: 8, 10.) It is just this passage which, if we look carefully at it, will teach us understanding our text it right. Note the difference in the two statements (ver. 8). "If we say that we have no sin," and (ver. 10), "if we say that we have not sinned." The two suppositions cannot be equivalent; the second would then be an unmeaning repetition of the first. Having sin in ver. 8 is not the same as doing sin in ver. 10. Having sin is having a sinful nature. The holiest believer must each moment confess that he has sin within him—the flesh, namely, in which dwelleth no good thing. Sinning or doing sin is something very different. It is yielding to indwelling sinful nature, and falling into actual transgression. And so we have two admissions that every true believer must make. The one is that he has still sin within him (ver. 8); the second, that that sin has in former times broken out into sinful actions (ver. 10). No believer can say either, "I have no sin in me," or "I have in time past never sinned." If we say we have no sin at present, or that we have not sinned in the past, we deceive ourselves. But no confession, though we have sin in the present, is demanded that we are doing sin in the present too; the confession of actual sinning refers to the past. It may, as appears from chap. II, 3, be in the present also, but is expected not to be. And so we see how the deepest confession of sin in the past (as Paul's of his having been a persecutor), and the deepest consciousness of having still a vile and corrupt nature in the present, may co-exist with humble but joyful praise to Him who keeps from stumbling.

But how is it possible that a believer, having sin in him—sin of such intense vitality, and such terrible power as we know the flesh to have—that a believer having sin should yet not be doing sin? The answer is: "In Him is no sin. He that abideth in Him sinneth not." When the abiding in Christ becomes close and unbroken, so that the soul lives from moment to moment in the perfect union with the Lord its keeper, He does, indeed, keep down the power of the old nature, so that it does not regain dominion over the soul. We have seen that there are degrees in the abiding. With most Christians the abiding is so feeble and intermittent, that sin continually obtains the ascendancy, and brings the soul into subjection. The Divine promise given to faith is: "Sin shall not have dominion over you." But with the promise is the command: "Let not

sin reign in your mortal body." The believer who claims the promise in full faith has the power to obey the command, and sin is kept from asserting its supremacy. Ignorance of the promise, or unbelief, or unwatchfulness, opens the door for sin to reign. And so the life of many believers is a course of continual stumbling and sinning. But when the believer seeks full admission into, and a permanent abode in Jesus, the Sinless One, then the life of Christ keeps from actual transgression. "In Him is no sin. He that abideth in Him sinneth not." Jesus does indeed save him from his sin—not by the removal of its sinful nature, but by keeping him from yielding to it.

And now another question will arise: Admits that the complete abiding in the Sinless One will keep from sinning, is such abiding possible? May we hope to be able so to abide in Christ, say, even for one day, that we may be kept from actual transgression? The question has only to be fairly stated and considered—it will suggest its own answer. When Christ commanded us to abide in Him, and promised us such rich fruit-bearing to the glory of the Father, and such mighty power in our intercessions, can He have meant anything but the highest, vigorous, complete union of the heart with the vine? When He promised that which will abide in Him He would abide in us, could He mean anything but that His dwelling in us would be a reality of Divine power and love? Was this way of saving from sin just that which will glorify Him?—keeping us daily humble and helpless in the consciousness of the evil nature, watchful and active in the knowledge of its terrible power, dependent and trustful in the remembrance that only His presence can keep the man down.

Beloved Christian! I do not wonder if the promise of that text appears almost too high. Do not, I pray, let your attention be diverted by the question as to whether it would be possible to be kept for your whole life, or for so many years, without sinning. Faith has ever only to deal with the present moment. Ask this: Can Jesus in the present moment, as I abide in Him, keep me from those actual transgressions which have beset the staid and the weariness of my daily life? Then cannot not but say, Surely He can. Take Him then at this present moment, and say, "Jesus keeps me now, Jesus saves me now." Yield yourself to Him in the earnest and believing prayer to be kept abiding, by His own abiding in you—and go into the next moment, and the succeeding hours, with this trust continually in your heart.

As often as the opportunity occurs in the moments between your occupations, renew your faith in an act of devotion: Jesus keeps me now, Jesus saves me now. Let failure and sin, instead of discouraging you, urge you still more to seek your safety in abiding in the Sinless One. Abiding is a grace in which you can grow wonderful, if you will but make at once the complete surrender, and then persevere with ever larger expectations. regard it as His work to keep you abiding in Him, and His work to keep you from sinning. It is indeed your work to abide in Him; but it is that, only because it is His work as Vine to bear and hold the branch. Gaze upon His holy human nature as what He prepared for you to be partaker of with Himself, and you will see that there is something even higher and better than being kept from sin—that is but the restraining from evil: there is the positive and larger blessing of being now a vessel purified and cleansed, of being filled with His fullness, and made the channel of showing forth His power, His blessing, and His glory.

Note—A selection from Rev. Andrew Murray's book "Abide in Christ," which may be secured through Farm and Dairy, if desired, for 60 cents.

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Training the Children

No. 5

The Play Instinct

Mrs. Lenore R. R. Nus.

THE play-instinct is inborn in all children the world over; it is nature's own method for developing the senses, the muscles and all bodily growth. Play is even more than this; it is the outlet of expression of the child's inner life. Many faults as well as virtues may be discovered while watching children at play. Perhaps a mother will find that her child is selfish or rude, and it is her duty to discover a generous disposition and a good temper in the course of a play-hour.

All play depends upon the physical condition of the child. A normal, healthy child plays all the time, is easily interested in his toys and as he grows older invents games with them. If a child plays but little, cannot easily be interested in his toys, will not play alone and will look first to his physical condition, then begin a course of training, or directed play. Start with a suggestion, "Why not build a high steeple?" or "Make another train with your blocks." Often, especially in the case of an only child, if mother can enter into the play-spirit and play hide-and-go or march and sing, or even build with the blocks, it is such a treat and often a real help in promoting a readiness to play alone when mother must go back to her work.

A sense of newness even with old toys makes them dear to a child. Children need change and variety because their power of concentration is not fully developed. This is the plan I use with success with my own little girl. Her box of dominoes, her nest of blocks and her box of building blocks (composed of 16 cubes), I keep on a shelf in a closet out of sight. I also keep some paper toys and toys out of sight. Then when the time comes, as it does so many times a day, when Little Girl says, "What's to do now, mother?" I go to the closet for a surprise. If I give her the blocks, it is always with a suggestion for making something with them. She now comes to me and asks for "a surprise, mother." When she tries of the blocks I have her pick them all up, ready to put away, before she can have another "surprise." Sometimes, days at a time, she does not ask for a surprise, and then when I do bring out the dominoes, for instance, she is as delighted as if they were brand new. Her dolls I separate in groups. If she has four, I put away two, and at the end of a week I bring out these two and put away the two she has been playing with. "If you follow this plan with all your toys, then and keep one set put away, you will always keep the little ones interested and happy."

Insurance Against Spoilage

WHEN canning products it is a good plan to set the jars aside for two or three days before storing them in the fruit cellar, and then as a means of special precaution try them in the following manner: Loosen the clamp and grasp the jar by the edges of the glass top. If the can leaks or if decomposition has set in, the top will come off. If the top stays on, tighten it up again with the assurance that it is O.K. If the top comes off it should either be set aside for early use or sealed over again.

Red fruits and vegetables should be stored in a dark place, as light destroys the color, leaving the food unattractive in appearance. If the jar and its contents have been absolutely sterile and the jar is entirely air-tight, the food will not be held in a warm place. If spoiling does occur, it will be due to one of the following

causes:—(1) Some flaw in the can, which makes it a so-called "leak-er"; (2) the presence of micro-organisms that have survived the cooking process in spite of all care; (3) a drying out of the rubber and hence the breaking of the seal.

In some factories where foods are canned in glass jars, racks are made for holding the jars upside down in an inclined position, thus keeping the liquid constantly in the top of the can and preventing the rapid drying of the rubber.

The Home Club.

"Easing Up" on Sugar

I WAS away for a day or two not long ago and I was rather surprised at the way sugar disappeared on the dining table of the home where I visited. In normal times I would not have thought anything about it, but in these days of sugar shortage the matter forced itself upon my mind. For instance, when having porridge for the morning meal, it looked to me like sugar with a little porridge rather than vice versa. Several members of the family took sugar in their tea and a liberal quantity at that. As I happened to help wash dishes after some of the cups I noticed sugar in the bottoms of the cups which was simply wasted. At dinner we had delicious fresh rhubarb pie which was quite sweet enough to my notion, but here again members of the family asked to have the sugar bowl passed and more sugar was heaped upon the pie.

Now in our home we are trying to "ease up" on sugar. We find that porridge or other breakfast cereals are quite edible with a small amount of sugar and good milk, and, also, that a teaspoon or at the most a teaspoon and a half of sugar is quite sufficient for a cup of tea well stirred so that it has an opportunity to melt. We used to be very fond of layer cakes covered with icing, both top and sides, and probably nuts added as well. Now, however, our layer cakes are few and far between and then they have but a small portion on the top. I find that by putting the nuts in the cake it is quite palatable without icing. If for the next six months every cake baked would be eaten without icing, think of the sugar which might be saved in this way alone. A layer cake may be put together with jelly, jam, date filling, etc., instead of icing. Sometimes I do make a nice icing with peanut butter to which sweetened chocolate and a little milk has been added and it is quite tasty.

A favorite cake at our house is boiled raisin cake as it does not dry out, and for that matter is usually eaten up too quickly to have a chance to become stale. It is made as follows: One egg, one cup brown sugar, one-quarter cup (or a little more) shortening, one cup seeded raisins. Cover raisins with water and boil for 20 minutes. Then use one-half cup water, liquid, adding a little more water if necessary, with other ingredients and two cups flour, one teaspoon soda, a pinch of salt and vanilla flavor. Bake in moderate oven.

Just one more point. Do any of my farm sisters add a few raisins when making corn meal gems or muffins? I tried it the other day and the variation is quite a pleasant one. I would like to hear from others who have worked out schemes for saving sugar, both on the table and in baking. I for one am anxious to see the supply of sugar loosened for the fruit canning season.—"Sister Mac."

Ted—"Pity the rain spoiled the game today."

Ned—"But you got a check, didn't you?"

Ted—"Yes, but to get off I had to use the best excuse I ever had in my life."—Judge.

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Two weeks later the stuffy parlor of wearing an oddity of look.

"It's us for Come Pearl," he announced.

Pearl protested ve a warm June night a cabaret to a Southerner, the quiet first policeman could ex-

was seen in the man not only carried his defeated Mr. Fink's police Miss Dailies.

"Not to-night, I find pleasantly. I got to talk over with Pearl.

Out of sarahat, but O'Hagan drew a pocket and directed attention to a certain big, clumsy finger

suggesting to which affected violently. An ing the man explaining, the girl at first then silently silent.

Presently O'Hagan the curly informant could join Miss Dailies Mary with a heavy

"Well, Mary, it's as she said," he said. "Oh, no, no, no!" "Don't give up, Tim, tomorrow."

"It's all over," O'Hagan said. "You'd ought to be knocked Strike."

Write for it at once to BOOK DEPARTMENT. THE Rural Publishing Co., Ltd. PETERBORO - ONTARIO

A Black Cat for Luck

(Continued from page 12.)

have caused Solomon in all his glory to hide his head abashed.

Pearl's plans for the evening included a dinner at one of the most highly gilded Broadway restaurants, to be followed later by dancing at a noted cabaret. O'Hagan offered no further objections, although before the dinner was over he was looking pale and tired, and he was limping painfully when the four young people entered the cabaret.

"Tim, I'll leave you an' Mary to talk over old times," Pearl announced lightly. "Mr. Fink wants to learn me the last new step. Believe me, he's some dancer."

"You're some dancer yourself, girl," retorted the gallant Mr. Fink. O'Hagan's honest blue eyes followed his sweetheart's yellow head and violent red gown somewhat wistfully. Then with an effort he turned to the girl who sat so quietly by his side.

"This suits me all right," he said, rising manfully. "But maybe you'd rather be dancin', Mary? I see a fellow over there I used to know. Shall I bring him here and introduce him?"
"Oh, no, Tim—please, I'd so much rather sit here with you," the girl said hurriedly. "If—if you don't mind."
"Sure I don't. This suits me fine," O'Hagan repeated.

So the two talked on and on while Pearl Dalley and Mr. Fink fox-trotted. Little Mary had a way with her which the worried lover found very soothing, and occasionally, when some reminiscence of the old days made her blush and smile, revealing perfect, dazzlingly white teeth and a singularly alluring dimple. O'Hagan almost forgot to wonder how much longer his promised wife intended to keep on dancing with that "fresh girl."

No suspicion of his sweetheart's love entered O'Hagan's honest mind, however, when other eyes proved to be only a repetition of the first. He thought it natural that a pretty girl should prefer fox-trotting with an accomplished partner. Mr. Fink to sitting tamely at the side of a disabled lover. But Mary Maloney, shocked at what seemed to her callous cruelty ventured to remonstrate with Pearl, and Pearl fiercely resented what she termed her friend's "freshness" in "buttin' in."

Two weeks later O'Hagan entered the stuffy parlor of the Dalley flat wearing an oddity stirred and excited look.

"As us for Coney Island to-night, Pearl," he announced.

Pearl protested vehemently. It was a warm June night, but she preferred a cabaret to a Sound steamer. However, the quiet firmness which the big policeman could exert when he chose was seen in the manner in which he not only carried his point, but also deflected Mr. Fink's attempt to monopolize Miss Dalley.

"Not to-night, Fink," O'Hagan said pleasantly. "I got somethin' I want to talk over with Pearl."

Out of earshot, but in plain sight, O'Hagan drew a newspaper from his pocket and directed Miss Dalley's attention to a certain paragraph with a big, clumsy finger. Then he said succinctly and to the point what she evidently objected violently. And so it went on, the man explaining, persuading, pleading, the girl at first angrily voluble, then sullenly silent.

Presently O'Hagan left her and after ten minutes informing Mr. Fink that he could join Miss Dalley at ten down by Mary with a heavy sigh.

"Well, Mary, it's all over between us," said Pearl, he said slowly.
"Oh, no, no!" gasped the girl. "Don't give up, Tim. She'll be sorry to-morrow."

"It's all over," O'Hagan retorted grimly. "You'd oughta heard the way she knocked Strike."

"W-what's Strike got to do with it?" Mary asked fazedly.

"Why, Mary, I told you about Strike an' how kinda worried I was on account of not gettin' to see him before I come away," O'Hagan reminded her somewhat reproachfully, for her sympathy had been most comforting. "And there was a place in the New York 'American' to-night askin' where was Tim O'Hagan, the big motor cop. You see, the boys don't know what hotel I'm stoppin' at, an' I ain't been writin' to nobody on account of no hand. And the paper says," the man went on huskily, "there's a black cat in Chicago that's dyn' for want of a sight of him."

"Ah, think of that now—the poor kitty!" exclaimed little Mary, aghast. "When do you start, Tim?"

"As soon to-morrow," O'Hagan said with decision. "But Pearl's kicked somethin' fierce when I showed her the paper an' asked would she go with me. We could get a license an' be married in the mornin'; but, gee, you'd think I was askin' her to jump off Brooklyn Bridge."

"It must of kinds upset her. Pearl is crazy about New York, and she wain't expectin' to leave for more than a month yet. You let me talk to her, Tim."

She rose impulsively, but a firm hand pressed her gently down again.

"Not on your life!" O'Hagan said quickly. "Pearl's throwin' me down twice, an' that's plenty."

"But she—she can't mean it," Mary stammered.

"She means it all right," O'Hagan said with amazing resignation. "And I sure don't want to marry a girl who has no use for cats."

Their eyes met, and a beautiful color flushed Mary's pale face at the remembrance of their first meeting, when the tall and stocky single-handed a crowd of young toughs who were tormenting a helpless kitten, in spite of the frantic efforts of a small girl to rescue it. O'Hagan had not forgotten, either.

"Gee! How you did stand up to them toughs, tryin' to fight 'em for the sake of a bit of a kitten! I guess you know, Mary, how I feel about Strike."

She murmured something inarticulately. And then the mirror happened. Looking deep into those wide, pitiful gray eyes the big man asked himself suddenly how he could ever have cared for pretty, selfish Pearl Dalley after having known this brave little pal of his. What a fool, what a bonehead, he had been!

"Oh, Mary, you sure are a dear little thing!" he murmured half under his breath.

Then as the lovely color in her cheeks deepened, O'Hagan said dazedly:

"Mary—Mary dearie, will you let me get the license for us, and go with me to-morrow? Wait, don't speak yet," he begged. "If you'll trust me I'll take you straight to me sister Katy and court you as never a girl was courted before until—until you say you like me well enough to set up housekeepin' with me—and Strike."

The laugh with which he concluded was shaky, even abject, for the hero of the Sunday papers was humbly un- aware that little Mary's heart had been his ever since that far-off day when he had won a fight for a small girl and a forlorn yellow kitten. There was a pregnant silence, and then Mary asked tremulously:
"Do—do you think you could ever forget her—if I did marry you, Tim?"

"I've forgot her already," O'Hagan shouted from the depths of an honest conviction.

A great passion of longing to touch

those smooth braids of bright hair, to press his lips to that sweet girl mouth, shook his mighty frame. But O'Hagan was one of nature's gentlemen, and he only laid his big hand on her small cold one with protecting gentleness.

"I ain't even goin' to ask you for a kiss, Mary—yet," he said. "Not till I get you a diamond engagement ring, an' then," he added, showing his white teeth in a joyous laugh, "we're goin' to be married to-morrow, Mary ma'ournee; but you ain't goin' to miss nothin' by bein' married first an' courted after."

Thirty-six hours later, back at headquarters in Chicago, O'Hagan was confiding in an emaciated black cat which was purring contentedly on his mighty shoulder.

"It sure is a black cat for luck, old boy. It's you that saved me from gettin' tied up to Pearl Dalley."

"But you bawled in just in time, old fellow, an' now I'm married to little Mary. He busted his face in his dumb friend's soft fur as he whiskered. "And she's the girl, Strike, to make home heaven for an old screw of a black cat and a big bone-head of a motor cop. It's no dream, Strike, neither, for—listen—now—before I come up here to report for duty she put her two arms around me neck and kissed me of her own free will. What d'you think of that, you old mascot, you?"

A Cemetery Bee

ONE day last month a number of people in our community gathered at the Friends' meeting-house at the cemetery for the purpose of paying their respects to the dead. Although haying had begun, and many of the farmers were extremely busy on the farm, all seemed to feel it their duty to their brave ancestors to take time from their work "even in war time" to spend a little while in beautifying the dear little cemetery.

When we think of some of the true men and women who have lived and worked for others, hewing out and building many of the houses which are still our homes, we are moved with a spirit of loyalty to the departed heroes. To-day, in this world crisis, we appreciate our departed heroes more than ever before. It was in this spirit that about 45 men and women worked to beautify the last resting place of their ancestors.

When the work was finished we stole a few minutes to read the inscriptions on the monuments and to bring to mind the sterling qualities of those whose last resting places were indicated. For instance, we read one inscription and recalled a noble woman who performed many, many kind deeds. She would leave her work and home every day for a whole summer and, dressed in homespun and her husband's high boots, would go through a wet swamp and back to wait on a neighbor who was ill of fever, and who had three small children to be cared for. This she did cheerfully, because all men are brothers. Many deeds of this nature were performed in those days.

All have gone to try the realities of another world, and we wonder if there will be any kind thoughts of us after we have been laid to rest in some quiet little spot where six feet of earth makes us all of one size. We wonder, too, if a good name is not rather to be chosen than great riches.

One of the men present spoke of the good work that the women of France are doing in decorating the graves of our brave Canadian soldiers, and that he thought it to be our duty to see that the graves of the brave heroes of other days were not neglected.

Supper was served on the grounds in front of the meeting-house and everyone went home feeling that they would be sure to be there again next year if their lives were spared.—The Doctor's Wife.

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Making Up the Dairy Ration

(Continued from page 9.)

above table. This variation in the protein requirement permits of considerable choice in making up the ration and enables the feeder to use the smaller amount when protein feeds are higher in price than carbonaceous feeds and larger amount when the protein feeds are the cheapest.

When the exact butter fat test of milk is not known, it can be roughly estimated on the basis of the breeding of the cows as follows:

Jerseys, Overseas or high grades of these breeds	6.0%
Ayrshires, Short-horns and mixed herds	4.0%
Holsteins or high grades of this breed	3.5%

Computing the Ration.

The process of computing a ration for a dairy cow consists of determining her requirements for both maintenance and production and of selecting feeds with the proper composi-

tion and in sufficient quantities to meet these requirements. The method can best be illustrated by actually working out a ration. Let it be assumed that a certain cow in a herd of Jerseys weighs 1,000 lbs. and produces 20 lbs. 5 per cent milk. By referring to Tables I. and II., it will be seen that the maintenance and production requirements for such a cow would be as follows:

Table III. Nutrients Required by 1,000-Lb. Cow Producing 20 Lbs. 5% Milk.

Digestible Total Digestible protein, nutrients, pounds	7.93
For maintenance	7
To produce 20 lbs. of 5% milk	0.94

Total nutrients required by cow (one day) 15.97
If corn silage and clover hay were available, a reasonable allowance of roughage for this cow would be 30 lbs. of silage and 10 lbs. of hay. The

amounts of nutrients contained in this allowance of hay and silage is as follows:

Table IV. Nutrients in Available Roughage Feeds.

Digestible Total Digestible protein, nutrients, pounds	8.00
10 lbs. clover hay	8.31
30 lbs. corn silage	—

Total nutrients in roughage feeds 15.90 15.40

By comparing the amount of nutrients in the roughage feeds with the nutrients required by the cow (Table III.), it will be seen that the roughage provides more than enough for maintenance, but not enough more to produce all the milk. Subtracting 1.09 lbs. of protein in the roughage from 1.9 lbs. required, and 16.4 lbs. of total digestible nutrients in the roughage from 15.97 lbs. required, leaves .81 lbs. protein and 5.57 lbs. of total digestible nutrients yet to be provided.

If corn and oats were available on

this farm, they could be used in the

Table V. Nutrients in Home-Grown Grains.

Digestible Total Digestible protein, nutrients, pounds	4.856
Grain feeds	—
4 lbs. corn	2.425
2 lbs. oats	1.431

Total nutrients in home-grown grains 4.856

By substituting the amount of nutrients provided by the corn and oats from the amount required in the grain ration, it will be seen that 316 lbs. of digestible protein and 734 lbs. of total digestible nutrients are yet needed. A feed containing a very high per cent of protein will be necessary to supply these nutrients in the correct proportion. Consequently one pound of cottonseed meal could be selected to complete the grain ration and it would then contain the following amounts of digestible nutrients as shown in Table VI.

The comparison between the amounts of nutrients supplied by this ration and the amounts required by the cow show that her requirements are fully met. It is not always an easy task, especially for the beginner, to select a grain ration that will supplement the available roughages and supply the right amounts of nutrients.

Table VI. Digestible protein, nutrients, pounds

Feeds	4.856
4 lbs. corn	2.425
2 lbs. oats	1.431
1 lb. cottonseed meal	1.000

Total nutrients in grain ration 4.856
Total nutrients in roughage (Table IV.) 15.97
Total nutrients in daily ration 15.916
Total nutrients required (Table III.) 15.97

It will be helpful to know and use the ratio between the digestible protein and total digestible nutrients. This is determined by dividing the pounds of total digestible nutrients by the pounds of digestible protein, and is expressed as follows: 1 to 3.3. This ratio means that for every pound of digestible protein there are 3.3 lbs. of total digestible nutrients. The high protein feeds have a narrow ratio and the low protein feeds a wider ratio. For example: Corn has a ratio of 1 to 11.4, oats a ratio of 1 to 7.3 and cottonseed meal (38.5 per cent protein) a ratio of 1 to 2.3. In making up a ration as has just been done, it was found in Table V. that the grain ration still lacked 316 lbs. of digestible protein and 738 lbs. of total digestible nutrients. The ratio between these nutrients is 1 to 2.3 (7.38 divided by 3.2 equals 2.3). To provide the nutrients in this proportion required, a feed with a very narrow ratio and consequently cottonseed meal was selected.

There are also a number of rule general rules regarding the amount of feed required for maintenance and production that will be of help in selecting a trial ration.

1. A cow will consume about ten pounds of good dry roughage for each 100 lb. live weight or one pound of dry roughage and three pounds of silage for each pound of milk.

2. To provide for maintenance, a cow should have 2 1/2 lbs. of leguminous roughage or,

A liberal amount of leguminous roughage or,

A full feed of carbonaceous roughage, including corn silage, or pea mixture.

3. To provide for production:

Feed 1 lb. of grain mixture per lb. for each 3 lbs. of 3% milk, 2 1/2 lbs. of 4% milk or 2 lbs. of 5% milk, or,

If silage is fed in addition to the leguminous roughage, consider one each 3 to 4 lbs. of silage will provide for 1 lb. of milk and reduce the protein requirements accordingly.

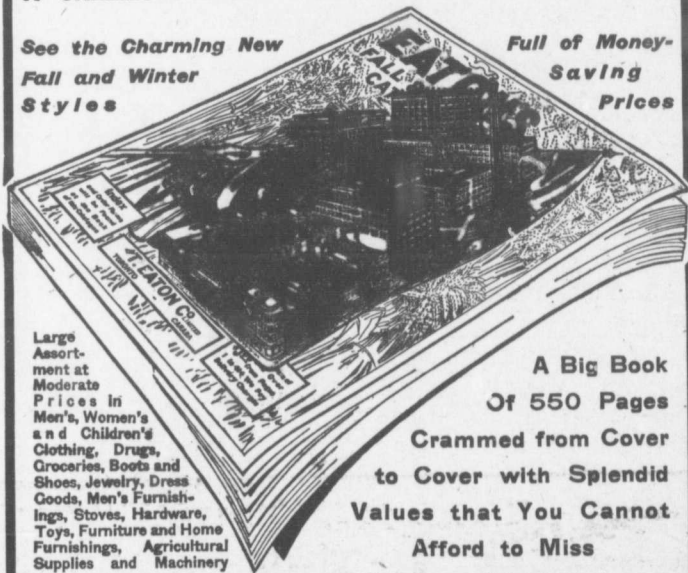
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The Makers' Corner

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

Mutual Interests

THERE has been a remarkable change in the creamery business since the close of the harvest separator. A change in the dairyman's relationship to the creamery was one immediate result of the introduction of the farm separator. Before this period dairymen gathered at the creameries daily. At these morning meetings the progress of the creamery, the quality of its product, and various other subjects relating to the industry in general were discussed.

As the number of separators used on farms increased the practice of delivering milk and cream each day was discontinued by many of the patrons. Consequently, the morning gatherings of the patrons were held less frequently. Some dairymen brought their cream to the factory twice a week. Others found that it was more profitable to devote their time with their herds at home than to deliver cream to the factory.

As a result a practice was established which provided that the creamery would collect the cream. Of course, these changes were an advantage to the dairyman; nevertheless, his personal interests in the affairs of the creamery gradually decreased as he probably only visited the creamery once each month, and in many instances the patron ships to a creamery that he has never seen.

At the present time the mutual problems of the dairyman and the creamery operator must be met by both parties, in spite of the fact that the large scale creamery business makes it impossible for the buttermaker to meet his patrons personally.

Nowadays, the progressive dairyman follows the progress of his creamery by studying the creamery reports. These statements give the dairyman information concerning the financial status of the creamery, if he happens to be interested in it as well as a record of the quality of the product which is being made. In case the dairyman is not satisfied with the results obtained at the creamery, it is the duty to inquire into the affairs of the plant. The possibilities are that the buttermaker is obtaining unfavorable results due to the fact that the equipment is in poor condition. It may be that incompetent labor is responsible for inefficiency at the creamery.

In the majority of cases, the above mentioned reasons are not responsible for a poor grade of butter. Poor cream is a predominant factor which results in the production of an inferior grade of butter. When cream of poor quality is received at the factory, the operators are obliged to give their patrons instructions relating to the care and handling of cream. It is always well to remember that such information is valueless unless given in the proper spirit.

The dairyman will furnish a better grade of cream when he has a general knowledge of the creamery butter-making process. With information of this nature, the dairyman is in a position to understand the value of producing milk under sanitary conditions. He will also understand the importance of keeping cream in sterile bottles and at a low temperature. From the buttermakers' standpoint, it is very essential that the dairyman understand the effect of certain feeds upon the quality of butter made.

Creamery operators can assist their patrons in many ways. The leading men of the creamery, regardless whether or not they are patrons,

should advocate cooperative buying of feed. That is, if there is an advantage in collective purchasing of the particular feed under consideration. As a rule, there are many advantages in purchasing on a large scale.

Sometimes the producers go to their factories for information concerning certain feeds and methods of handling and feeding their stock. At other times patrons seek information relating to breeds of cattle and methods of developing herds under their particular conditions. The creamery should be in a position to furnish information of this nature. If, however, the creamerymen are unable to furnish their patrons with direct information on such subjects, they should be in a position to refer their patrons to other sources of reliable information.

The interests of the dairyman and creamery operator are dovetailed in such a manner that a practice which is detrimental to the dairyman is also detrimental to the creamery. A speedy recognition of this fact is one of the main factors in establishing progress and prosperity in a dairy section. Clean cream and a high grade of butter are of mutual interest to the producers and manufacturers of dairy products. A first-class butter is always sold at a higher price than the inferior product and, consequently, a creamery that can turn out a uniform high grade product over a long period of time is in a position to pay its patrons a high price for good cream.—J. C. Marquart in Pacific Dairy Review.

Utilizing the Skimmilk

COTTAGE cheese is easy to make and utilizes skimmilk and good grades of buttermilk. A yield of 15 pounds of cottage cheese from a hundred pounds of skimmilk can readily be obtained, or a mixture of two parts of skimmilk and one part of buttermilk will produce the same result. The wholesale price varies from about four and a half cents a pound during the early summer to seven cents during the winter. The total cost of manufacture, including labor, coal, power, water, package, and depreciation on equipment, is about eight cents a hundred pounds of skimmilk. Therefore, when cottage cheese is sold at six cents a pound, the net receipts for a hundred pounds of skimmilk are 88 cents. (6x15)—8.

Where a condensery is within a reasonable distance, the creameryman usually can sell his skimmilk there at prices ranging from 50 cents to \$1 a hundred pounds. It is unfortunate that some creamerymen insist upon fighting a condensery because it sends into their territory for milk. A condensery as a rule can pay more for milk than a creamery can for cream, and the creameryman, therefore, usually has a losing fight. However, the creameryman receives the farmers' milk and sells the skimmilk to the condensery, or makes it into cottage cheese. He should be able to meet, or very nearly meet, the price paid by the condensery. Creameries that are in competition with condenseries or city milk dealers, therefore, find it greatly to their advantage to offer the farmer a market for his skimmilk. In fact, the success or the very existence of many creameries so situated depends upon the proper marketing of the by-product.

The reasons, then, why the creameryman should make a special effort to convert skimmilk and buttermilk into human food products are: 1, To increase the available supply of human food; 2, to provide a good market for his patrons' skimmilk; 3, to get more frequent delivery, therefore, better quality of milk, separator cream; 4, to meet the competition of condenseries and city milk plants.

Full information on the manufacture of cottage cheese is supplied in Circular 23 of the Dairy and Cold Storage Branch, Ottawa. This circular is free to all interested.

BRUCE'S RECLEANED SEED WHEAT

We offer for early orders, cash with order. Do not delay as the demand will be large. Help win the war by growing wheat.

Wheat, Abundance—White grain, straw stiff, bald head, hardy and heavy yielder—an old favorite.

Wheat, Dawson's Golden Chaff—White grain, straw stiff, bald head, hardy and heavy yielder—an old favorite.

Wheat, Michigan Amber—Red grain, straw stiff, bald head, hardy and heavy yielder—an old favorite.

Wheat, Red Hook—Red grain, stiff straw, banded head, very heavy yielder and very hardy—a great favorite in Michigan.

Wheat, Red Wave—Red grain, straw stiff, bald head, hardy and heavy yielder—a great variety.

Full Ryte, Roman—Much heavier yielder than old sort and better in every way. Introduced by Michigan Agricultural College.

Price of all above, 100 lb., \$1 the \$1.25, postpaid. By express or freight at purchaser's expense, peck \$1.05, 1/2 bushel \$1.25, bushel \$2.50, 5 bushels \$12.75, 10 bushels \$25.00.

Timothy—No. 1, G. S. \$2.50; No. 2, G. S. \$2.75; No. 3, G. S. \$3.25 bushels; by freight at purchaser's expense.

Rags extra—Jute, 5 bushels, 50 cents each; Cotton, 2 1/2 bushels, 60 cents each.

Where order amounts to \$50 we will pay freight to any Ontario point.

We have good stock Abundance, and Dawson's, and expect

Common Ryte. Other varieties are offered subject to

United States allowing their export.

Write for our Wheat Circular with prices of Wheat, Timothy,

Barley, Potatoes, Peas, etc.—FREE.

John A. Bruce & Co. Limited Seed Merchants
Hamilton, Ont.

Think It Over!

LIFE is uncertain—death is not. If your life is prolonged you will endeavor to make an adequate provision for your wife and children. But there is no guarantee that life will last until that aim is attained. Think it over!

In past years so much suffering resulted from the premature death of husbands and fathers that societies were formed for the protection of the widows and orphans of those members who might die "before their time." These societies or funds developed into our modern life insurance companies—the strongest financial institutions in the world. Have you availed yourself of this means of protecting your home? Think it over!

The Mutual Life is well-established, prosperous, and so economically conducted that its dividends rank with those of the best companies on the continent. It is also a purely mutual, people's company, established for your benefit. The Mutual's membership numbers nearly 60,000 living under the protection of our policies. Is your household included—Think it over!

The Mutual Life

Assurance Company of Canada
Waterloo, Ontario

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O.K. POTATO OUTFIT BARGAIN

One O.K. Cutter, One No. 15 Disc Planter, Four-row
Sprayer, No. 1 Digger, all in first-class working order.
\$175.00 takes the outfit!

P. DILL DUBLIN ONTARIO

Mention Farm and Dairy when Writing

moved out of the country more rapidly. On country farms there has been little business done, as buyers show a strong tendency to reduce their bids and salesman refused to part with their cheese at the prices offered. The Dairy Commission is paying the following prices: No. 1 cheese, 35¢; No. 2, 33¢; No. 3, 31¢.

CHEESE BOARDS.

Brookville, Aug. 15.—2491 white and 452 colored, 40 boxes of 25 lbs. each offered; Kingston, Aug. 15.—642 white offered; 300 sold at 23 1/2¢. No sales. Alexandria, Aug. 16.—41 boxes of white offered; 254¢ 64¢. No sales. Nassau, Aug. 16.—Boxes boarded. 23 1/2¢ bid. No sales. Campbellton, Aug. 15.—375 boxes offered. 190 sold at 25¢; balance refused at 25 1/2¢ and 23-24¢.

Pictou, Aug. 15.—490 boxes of balance boarded. 64¢ boxes sold at 23 1/2¢; cheese unaltered. 190 tons, Aug. 15.—786 boxes boarded, all white. Price bid, 27 1/2¢. No sales.

LIVE STOCK.

There has been a slightly better demand for the good to choice cattle at the Union Stock Yards this week. Really choice export steers and heifers have, if anything, sold at better prices by a few cents per cent. On the same market medium and common cattle became a little draggy toward the close of the period under review and quotations for these grades declined slightly, though almost imperceptible at times. The market has been checked by even quotations, compared with the three previous seven-day periods, which witnessed many fluctuations in values.

Table with columns for animal types (Heavy steers, good cows, Butchers' steers, etc.) and prices. Includes sub-sections for 'BULLS' and 'CALVES'.

20 Holstein Farm, Woodville, Wayne, 2326, 10y. Im. 2041; 472 1/2 milk, 1430 lbs. fat, 17.44 lbs. butter. J. J. Davis, Ingersoll, Ontario. Sr. Four Year Class. 1. Colony Lady Aggie Newman, 20386, 4y. 2041; 472 1/2 milk, 1434 lbs. fat, 3.17 lbs. butter. 20-day record: 234.0 lbs. milk, 74.31 lbs. fat, 10.24 lbs. butter. Colony Farm, Woodville, Ontario. Jr. Three Year Class. 1. Katie Alabokker, Page, 3467, 3y. 4m. 1641; 493 1/2 milk, 16.47 lbs. fat, 20.47 lbs. butter. C. C. Haviland, Wilsonville, Ontario. 2. Cloverdale Wopsy Poach, 37109, 3y. 174 1/2 milk, 16.42 lbs. fat, 19.23 lbs. butter. W. C. Curran, Cambridge Bridge, Ontario. 3. Daisy, 37771, 3y. 164; 267 1/2 milk, 13.69 lbs. fat, 17.11 lbs. butter. R. H. Davis, Oak Ridge, Ontario. 4. Centrowood Johanna Hengerfeld, 4865, 3y. 1m; 285.2 lbs. milk, 11.79 lbs. fat, 14.7 lbs. butter. J. J. Davis, Ingersoll, Ont.

1. Hella Grandeur, 35618, 3y. 5m. 741; 376 1/2 milk, 13.24 lbs. fat, 17.21 lbs. butter. 14-day record: 728.3 lbs. milk, 54.46 lbs. fat, 20.97 lbs. butter. R. M. Hothy, Port Perry, Ont. Jr. Two Year Class. 1. Colony Vronka Price, 4164, 2y. 2m. 1241; 278 1/2 milk, 10.14 lbs. fat, 12.67 lbs. butter. 30-day record: 1120.5 lbs. milk, 75.04 lbs. fat, 24.14 lbs. butter. Colony Farm, Woodville, Ontario. 60-day record: 2319.7 lbs. milk, 39.40 lbs. fat, 24.14 lbs. butter. Colony Farm, Woodville, Ontario. 2. Colony Aggie McKinley, 4157, 2y. 1m. 139-day record: 7128.8 lbs. milk, 513.68 lbs. fat, 207.1 lbs. butter. Colony Farm, Woodville, Ontario. 3. Colony Aggie Peterje, 38774, 2y. 1m. 164. 30-day record: 13059.9 lbs. milk, 432.56 lbs. fat, 207.1 lbs. butter. Colony Farm, Woodville, Ontario.

A BRISK DEMAND.

M. H. R. Hothy, of Port Perry, reports more than the usual demand for well bred animals, both males and females. He has a number of bulls, including John and Noble Metcalfe, Bowmanville, both of which were sold to Mr. Hothy. He also has a number of cows, including the only bulls in Canada bred by a 40 lb. butter cow, the Ormsby Jane King, a brother to the 525.00 bull, both of which were sold to Mr. Hothy. He also has a number of calves, including the only calves in Canada bred by a 40 lb. butter cow, the Ormsby Jane King, a brother to the 525.00 bull, both of which were sold to Mr. Hothy.

Holstein News

OFFICIAL RECORDS OF HOLSTEIN-FRIESIAN COWS FROM JULY 1st to 31st, 1918.

1. JONNEMA Johanna of Riverside, 30366, 10y. Im. 2041; 472 1/2 milk, 14.31 lbs. fat, 17.44 lbs. butter. 14-day record: 1420 lbs. milk; 47 lbs. fat; 59.14 lbs. butter. 20-day record: 2502.5 lbs. milk; 94.48 lbs. fat; 118.3 lbs. butter. 60-day record: 6612.0 lbs. milk; 186.67 lbs. fat; 230.5 lbs. butter. W. C. Husock, Chippewa, Ont. 2. Manor L. H. Gordon, 37379, 4y. 1m. 174; 341 1/2 milk, 16.42 lbs. fat, 21.63 lbs. butter. Kenneth S. Goodenrich, Clarkson, Ontario. 3. Mercedes Lakol Queen, 24726, 5y. Im. 174; 341 1/2 milk, 20.31 lbs. fat, 26.93 lbs. butter. 14-day record: 306.1 lbs. milk; 36.40 lbs. fat; 45.2 lbs. butter. C. C. Haviland, Wilsonville, Ontario. 4. Sylvia Sops Poach, 32666, 5y. Im. 174; 341 1/2 milk, 16.42 lbs. fat, 21.63 lbs. butter. E. H. Purcell, Brantford, Ontario. 5. Machine Lady Dakol, 25809, 6y. Im. 2041; 472 1/2 milk, 20.31 lbs. fat, 26.93 lbs. butter. Wm. Stock, Tavistock, Ontario. 6. Colony Alma Korndyke, 26311, 3y. Im. 174; 341 1/2 milk, 16.42 lbs. fat, 21.63 lbs. butter. Colony Farm, Woodville, Ontario. 7. Hallowell's Pride, 11609, 6y. Im. 174; 341 1/2 milk, 16.42 lbs. fat, 21.63 lbs. butter. J. J. Davis, Ingersoll, Ontario. 8. Jurkeye Hengerfeld No. 14643, 3y. Im. 174; 341 1/2 milk, 16.42 lbs. fat, 21.63 lbs. butter. M. H. Hothy, Port Perry, Ontario. 9. Margaret Laura Herford Stock, 21887, 9y. Im. 2041; 472 1/2 milk, 14.31 lbs. fat, 17.44 lbs. butter. N. H. Davis, Oak Ridge, Ontario.

LAKE VIEW HOLSTEINS. Every male or female offered by us are either sons or daughters of these wonderful cows. No other herd in Canada has such a record. 21 cows average 100 lbs. milk daily and 23.85 lbs. fat; 16 cows average 25.25 lbs. butter in 7 days; 9 average 34.92; 3 average 35.83; 3 average 40.56, and one made 41.06. We offer for sale a show bull 3 years old, mostly white, with a Dutch-Jack coloration, six months and from Lakeview Leastrange, 74.9 lbs. milk, 28.06 and to Lakeview L. Calamity Rose, the world's highest producing 2-year-old with first calf. This bull can be bought right, on terms to suit purchasers. Remember he is the only bull in Canada whose 7 O.C.B. sisters hold 3 Canadian and 3 world's records for butter. Photo and extended pedigree on application. MAJOR E. F. OSLER, Prop. T. A. DAWSON, Manager Lakeview Farm, Bronte, Ont.

Herdsmen Wanted. I am open to engage an experienced herdsmen to handle my well-known Holstein herd. I want a man experienced in R.O.C. work, to develop a modern live more and winter. We have five 30-lb. cows now and First-class house and pleasant surroundings, near Toronto. Apply by letter first. R. W. E. BURNABY JEFFERSON, ONT.

Bull Calf of Royal Breeding. Born Dec. 27, 1917. He is a beauty, a show animal. His sire's seven nearest dams average over 30 lbs. butter in 7 days, his 11 nearest over 25, and his 23 nearest over 27 lbs. butter in 7 days. His dam, a Korndyke heifer, is a grand producer. Price, \$100. Write or come and see him. JOHN M. MONTLE, Prop. Sunnyside Stock Farm STANSTEAD, QUE.

CLOVER BAR STOCK FARM OFFERS. A few choice young bulls for sale, from heavy producing dams, sired by a son of Prince 32. Write now for description, photo and price. R. SMITH R. R. NO. 2. STRATFORD, ONT.

His 2 Nearest Dams Average 38.82. His dam, sire's dam, grand sire's dam and great grand sire's dam, average 38.09 lbs. butter in seven days, and over 112 lbs. milk butter cow, which was bred by the same sire and dam as the other bull in Canada. His name is ORMSBY JANE BURKE. His services may be availed by Cows and heifers in calf to him for sale. If you need a HOLSTEIN BULL write us. R. M. HOLTBY, R. R. No. 4, PORT PERRY, ONT.

THE EDGEWELL CHAMPION HERD OF JERSEYS. Write us about your next best sire. We now have sons of our present herd sire, Edgeley's Bright Prince, who is a son of Canada's Champion bull cow, Sunbeam we have. We are pleased to show our herd at all times. JAMES BAGG & SONS (Woodbridge, C.P.R., Concord, G.T.R.) EDGEWELL, ONT.

CHOICE YORKSHIRE HOGS AT RIGHT PRICES. Bore and sows, all ages, from best prize-winning strains—a few good bred sows, also younger stock. E. C. White Leghorn eggs for hatching—Bar-16; \$10 per 100. White Leghorns, Barred Rocks, R. I. Reds, \$1 per egg, 50 each. White Leghorns, Barred Rocks, R. I. Reds, \$1 per egg, 50 each. W. A. KING MILTON, ONTARIO.

ELMCREST AYRSHIRES. Herd Sire—Glenhurst T. F. Mares, sired by Lassman's Comet. Young stock for sale, all ages, at reasonable prices. One exceptionally good yearling bull. Write for SANDILAND BROTHERS, WILMINGTON, ONTARIO.

PLEASANT VIEW AYRSHIRES. Young calves, either as several from R. O. P. cows. It will pay to come and see or write for prices if wanting anything in choice Ayrshires. A. HENDERSON R. R. No. 4 ATHENS, ONTARIO.

THE OLD SUMMER HILL FARM. The home of the highest priced Canadian bred Oxford mare ever sold in Canada, sold to a Missouri man for \$300. We have for sale 250 Oxford ewes from 1 to 8 years old, 50 selected 7y. to 2y. rams for show or breeding purposes, 100 rams and 100 ewe lambs of superior quality and a limited supply of ewes fitted for show purposes. We sold a show flock to H. B. Currie, of Castor, Alta., which won last year's 1st on 7y. ewe, 1st on ewe lamb, Champion ewe and Reserve, and a 1st on calf competing against two stocks from Ontario. They were bred and raised by this firm. Also we have for sale 40 Shrop. ewes, Duroc Jersey swine of the best breeding, and recorded, young boars and sows ready to wean at moderate prices. Address all Correspondence to Peter Arkell, Bus. Mg., Box 454, Teeswater, Ont. When in need of a herd header remember our cows have always won a fair share of prizes in the dairy tests, having won the Canadian Ayrshire Breeders' Association prize on three occasions. Herd headed by Fairview FRED. S. BLACK & SONS AMHERST, N. S.

FREE-FOR-ALL

Farm and Dairy Grain and Vegetable Contest

Peterboro, Ont., September 12, 13, 14, 1918

19 Classes — 76 Cash Prizes

Any Farmer or Member of Family in Ontario or Quebec is Welcome to Compete. No Entry Fee. You do Not Have to be a Subscriber to Farm and Dairy.

Read Rules and Conditions Carefully

How nice it would be to say, "I won the First Prize at the Farm and Dairy Grain and Vegetable Contest."

PRIZE LIST

WHEAT (FALL)	
(Not less than one peck to be submitted.)	
1st Prize, \$10.00;	2nd, \$5.00; 3rd, \$3.00; 4th, \$2.00
WHEAT (SPRING)	
(Not less than one peck to be submitted.)	
1st Prize, \$10.00;	2nd, \$5.00; 3rd, \$3.00; 4th, \$2.00
WHITE OATS	
(Not less than one peck to be submitted.)	
1st Prize, \$10.00;	2nd, \$5.00; 3rd, \$3.00; 4th, \$2.00
BARLEY	
(Not less than one peck to be submitted.)	
1st Prize, \$10.00;	2nd, \$5.00; 3rd, \$3.00; 4th, \$2.00
RYE	
(Not less than one peck to be submitted.)	
1st Prize, \$10.00;	2nd, \$5.00; 3rd, \$3.00; 4th, \$2.00
BEANS	
(Not less than one-half peck to be submitted.)	
1st Prize, \$10.00;	2nd, \$5.00; 3rd, \$3.00; 4th, \$2.00
PEAS	
(Not less than one-half peck to be submitted.)	
1st Prize, \$10.00;	2nd, \$5.00; 3rd, \$3.00; 4th, \$2.00
CLOVER	
(Not less than one quart to be submitted.)	
1st Prize, \$10.00;	2nd, \$5.00; 3rd, \$3.00; 4th, \$2.00
ALSIKE	
(Not less than one quart to be submitted.)	
1st Prize, \$10.00;	2nd, \$5.00; 3rd, \$3.00; 4th, \$2.00
TIMOTHY	
(Not less than one quart to be submitted.)	
1st Prize, \$10.00;	2nd, \$5.00; 3rd, \$3.00; 4th, \$2.00

ALFALFA	
(Not less than one pint to be submitted.)	
1st Prize, \$10.00;	2nd, \$5.00; 3rd, \$3.00; 4th, \$2.00
SWEET CLOVER	
(Not less than one pint to be submitted.)	
1st Prize, \$10.00;	2nd, \$5.00; 3rd, \$3.00; 4th, \$2.00
POTATOES	
(Not less than one-half bushel to be submitted.)	
1st Prize, \$10.00;	2nd, \$5.00; 3rd, \$3.00; 4th, \$2.00
JUNIOR CLASSES	
Open Especially to Women, and Children 18 years of Age and Under	
CORN (GARDEN SWEET)	
(Not less than one dozen cobs table corn to be submitted.)	
1st Prize, \$5.00;	2nd, \$2.50; 3rd, \$1.50; 4th, \$1.00
BEETS	
(Not less than ten samples to be submitted.)	
1st Prize, \$5.00;	2nd, \$2.50; 3rd, \$1.50; 4th, \$1.00
TURNIPS	
(Not less than one-half bushel to be submitted.)	
1st Prize, \$5.00;	2nd, \$2.50; 3rd, \$1.50; 4th, \$1.00
CARROTS	
(Not less than one peck to be submitted.)	
1st Prize, \$5.00;	2nd, \$2.50; 3rd, \$1.50; 4th, \$1.00
CABBAGE	
(Not less than three heads to be submitted.)	
1st Prize, \$5.00;	2nd, \$2.50; 3rd, \$1.50; 4th, \$1.00
PUMPKINS	
(Not less than two samples to be submitted.)	
1st Prize, \$5.00;	2nd, \$2.50; 3rd, \$1.50; 4th, \$1.00

RULES

- All entrants in the FREE-FOR-ALL Grain and Vegetable Contest, conducted by Farm and Dairy will be governed by the following rules:—
1. Any person may compete in as many different classes as desired, but no entrant can compete for more than one prize in any one class.
 2. Any article entered for competition must be the bona fide property of the person or persons entering same and must have been grown or produced during the present year by the person or persons exhibiting same, and if any doubt arise on the subject proof will be required. The Judges shall be obliged to cause any exhibitor, with reference to whom such doubt exists, or with reference to whom any such notice has been given to make a statutory declaration of compliance with the terms of these rules. Any person or persons shall enter any article for exhibition, as grown or produced by himself or herself, when the such has not really been so, he or she shall forfeit any and all prizes which may have been awarded to them, and shall be precluded from exhibiting in the future.
 3. All entries are required to be made on or before Thursday, the 6th day of September. All entries must be sent by parcel post or express, prepaid, to the Circulation Manager of Farm and Dairy, Peterborough, Ont.
 4. Should there be only one exhibitor in a class, such exhibitor shall only be entitled to one prize in said class, but in case the judges do not think the article exhibited is worthy of the 1st prize, they shall use their own judgment as to which prize to award such exhibitor, and their decision shall be final.
 5. Upon the discovery of any fraud, deception, or dishonest practice, either in preparation, ownership, or of any representation concerning any article exhibited, which may have affected, or may have been intended to affect the decision of the Judges, Farm and Dairy shall have power to withhold payment of any prize awarded, and may publish the names of such persons, or not, as may be deemed most expedient.
 6. The 1st prize ticket will be red; the 2nd prize ticket blue; the 3rd prize ticket white; the 4th prize ticket yellow. Tickets and prizes will be mailed to prize winners not later than September 20th, 1918.
 7. Grains and vegetables exhibited must be the growth of the current year. Grass, alsike and clover seeds may be the growth of the current or previous year.
 8. Every person or persons, MUST write their name, address, name of specimen entered and class to be entered in, and enclose with each and every specimen entered. DO NOT FAIL TO DO THIS. Make it as plain as possible.

CONDITIONS

Persons contesting for these prizes must advise us not later than the fifth day of September, 1918, advising us as to what classes they are going to enter. You can enter as many classes as you wish, only one entry in each class. No one is barred. We want the ladies and children to get after these prizes, as no doubt many of you are far better gardeners than your men folks. All samples must be delivered to Farm and Dairy, Peterboro, Ont., not later than Tuesday, September 10th.

Address the **MANAGER OF CIRCULATION** for Any and All Information Desired
It Will Be Our Pleasure to Answer Questions