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Vol. LIII.

LONDON, ONTARIO, JANUARY 17, 1918.

No. 1321

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The Farmer's Advocate and Home Magazine

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ESTABLISHED
1866

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LIII.

LONDON, ONTARIO, JANUARY 17, 1918.

1321

EDITORIAL.

Labor grows scarcer daily but the farmer is more determined than ever that production shall not wane.

Canada's total net debt increased over \$250,000,000 last year and at the end of November was \$958,000,700.

Both the Fuel Controller and the people would be better satisfied with a little more fuel to control.

Unnecessary industry, in a time like this, exists at the expense of those industries of vital importance.

Spring is still a considerable distance away, but it would be a wise precaution to secure all necessary seed supplies early.

Probably the most necessary and most neglected item in the general care of the breeding stock through the winter is exercise.

If you have a woodlot work up into wood all the dead trees and down stuff. The coal shortage may not be over with this winter.

Convention reports give thousands the benefit of the helpful hints brought out in discussion which would otherwise reach only a very few. Read them carefully this year.

As the months go by the situation in regard to the supply of choice breeding stock from a world standpoint grows more acute. Hold the good breeders and keep them busy.

Germany is finding it rather a difficult task to make peace with revolutionary Russia. There is no peace in Russia, and even a German-made peace could not last there very long.

In this issue a Huron County correspondent deplores the "whining and Rip-Van-Winkle" ways of some farmers' organizations. All should get down to business and make the best of all available machinery to help on the great work of agriculture.

"Allan McDiarmid", in this issue, outlines a plan whereby vast acreages in the West might, in his opinion, be brought under cultivation. The Minister of Agriculture, an expert authority on grain growing in the West, will know at once whether or not the plan is feasible. If it is, no doubt action will be taken.

The average man is not as careful in his reading as he should be. The other day we received a complaint from a subscriber that we had not reported a certain convention, when, as a matter of fact, the convention in question got two full pages prominently placed in our issue of December 27, under a three-column head in bold-face type.

Some papers are talking compulsory production on the farms. Who is to be compelled? Farmers have done and are doing their utmost. Perhaps compulsion might be applied to help for the farms, but the idea of compelling farmers to produce, intimating that they have been loafing on the job, would meet no favor with thinking people who understand the situation, whether they live on the land or elsewhere. Better results would come from giving the producers full credit for what they have done and then attempt to evolve some system to send help to carry on the good work on the land.

The Experimental Union.

In another Department of this issue appears the report of the 39th annual meeting of the Ontario Agricultural and Experimental Union. The "Union", as those who know it best call the organization, has done a vast amount of experimental work in the years which have passed since the organization took shape thirty-eight years ago. The co-operative work in agriculture has been conducted for thirty-two years, during which time there have been 88,604 distinct tests made throughout the Province, or a yearly average of almost 2,769 separate tests for the entire period and each experiment took anywhere from two to ten plots. There has been a steady increase in the number of experimenters since 1886. For the ten-year period 1886-1895, the average number of experimenters per annum was 566. This average increased in the period 1896-1905 to 3,186, and from 1906-1916 it was 4,262; while in 1917 it was 4,299. These experiments, covering the different varieties of farm crops, different quantities of seed per acre, selected grains for hay and fodder, the application of commercial fertilizers, the eradication of weeds, the testing of cattle for tuberculosis, and the re-forestation of waste places have worked untold good in almost every community Ontario over. Ontario has had three abnormal years. Labor has been very scarce; yet, realizing the importance of getting all possible out of the land, farmers, in increasing numbers, have conducted co-operative experiments. They desire to know what is best for their own soil and are ready to experiment to find out for themselves.

The Convention just closed was a good one. Topics of interest to all farmers were discussed. You can reap the benefit of the discussion by reading the report on another page. You can help on the good work by joining the Union and carrying on an experiment in 1918.

The Principles for Which the Allies Fight.

Premier Lloyd-George, in a recent speech at a British Labor Conference, made the frankest and fullest statement yet uttered in connection with Britain's war aims. Three conditions of permanent peace were outlined as follows:

"First.—The sanctity of the treaty must be re-established.

"Second.—There must be territorial settlements based on the consent of those governed.

"Third and last.—There must be created some international organization to limit the burden of armaments and diminish the probability of war."

Going further into the question, the British Premier held that the Allies are not fighting for the destruction and disruption of Germany, nor to destroy Austria-Hungary or Turkey, nor yet to alter or destroy the imperial constitution of Germany—the latter change would have to come from the people of Germany. The Allies are not trying to take Turkey's land from the Turks, and would be willing, according to the British Premier, that the inhabitants of the German African colonies be placed under an administration acceptable to themselves to prevent exploitation for the benefit of European capitalists and of European governments. The Allies fight, said Mr. Lloyd-George, for the complete restoration of Belgium; for reparation, as far as possible, of devastated towns and cities; neutralization or internationalization of the Dardanelles; reconsideration of the the great wrong done France in 1871—a direct reference to Alsace-Lorraine; establishment of an independent Poland; separate national conditions in Arabia, Armenia, Mesopotamia, Syria and Palestine. The Russian question was left to the people of Russia to settle for themselves.

All these things should be sufficient to show the world that in so far as the Allies are concerned, the fight is not a war of aggression. Such a statement should strengthen

Russia; should show all neutrals more clearly than ever before the real aims of the Allies and should begin to penetrate the minds of the Germans and their sympathizers. There is no sign of aggression in the principles as set forth by the Prime Minister of Great Britain. The only objection to them the German can have will be that he doesn't want to repair the wrongs committed. He never can fully repair but in so far as is possible he should be bound to do it, and when the German people see the manner in which they have been misled a different story will come out of Germany. Lloyd-George's speech should start them thinking. It should prove a long step toward peace. It should strengthen the hands of the Allies and cause every citizen of the Allied countries to do all in his power to uphold what is right and must eventually prevail. When the great men of all nations are ready to act upon the principles laid down in this speech, then a permanent peace will be brought about.

Fair Play For All in 1918.

As Canada gets down to business for 1918 the people realize more than before that the only thing that matters just now is the winning of the war. But to win the war a broad consideration must be given to all matters of national economics, and it may be necessary to make some changes. There may be need of more compulsion, although the general public hates the term. It sounds better to say "more universal service." A Toronto weekly says compulsory production must come, and in an article on this subject says, after berating stockmen who asked a reasonable profit on producing pork, that: "The sooner the Government makes it clear that every ounce of farm production must be delivered, irrespective of profits, the better it will be for the good name of this country. If the young men may be conscripted to fight, surely it is right and proper to commandeer every farm or ranch and all sources of food supply. There has been altogether too much price-fixing which invariably insures a handsome profit, and not enough compulsory production irrespective of profits."

Production from the farms of Canada cannot be materially increased without more men on the land. Just where these can be obtained without upsetting other necessary industries none of the country's officials have yet been able to decide. We quite agree that "every ounce of farm production must be delivered," but consistently maintain that in war as well as in peace the farmer must live, and to live must have some profit. Producing with no profit would not stimulate effort and compulsion applied on such a basis would result in absolute failure. The only means the farmer has of making a living is by producing at some profit. How long would any other industry or business stand for compulsion to produce at no profit? If it is necessary that the farmer work for nothing, or less, why is it not necessary to apply the same principle to all other lines of endeavor? Will munitions manufacturers produce without profit? Will makers of farm implements or machinery produce without profits? Will makers or doers of anything whatever increase production unless some profit is forthcoming? Not at all, and no one blames them. It is all nonsense to suggest such a thing. We agree that profits should be limited all the way around to a "reasonable" basis which will give all a living in the best interests of the nation. It may be possible, too, for the Government to take over thousands of acres of idle land in Western Canada and secure by "conscription for the farms" men from other callings to work the land. It has been suggested that a large number of foreigners of enemy countries might be used to work this land. It has also been suggested that unnecessary industries be closed for the duration of the war and the men now engaged therein sent out to work on the land. One thing is certain, little more can be expected from the men already on the land. They are doing their utmost and are ready to keep it up. They are competent and patriotic farmers and are not seeking to become million-

The Farmer's Advocate

AND HOME MAGAZINE.

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aires or immensely wealthy out of this war. If they can secure the help they'll make the best use of it, but inexperienced help is not very satisfactory under present-day farming conditions which call for men who can handle machinery. Farming in 1918 requires trained men. The only reason farmers asked to be safeguarded in the hog proposition was that they had lost out before at the pig game and so had little confidence, and changing to pigs made it necessary to change farm plans so that increasing hogs meant decreasing something else of vital importance. No one can show that farmers as a whole have made, even in 1917, unreasonable profits, and farmers as a class are not complaining. They are ready to do their share as they have done it in the past without any thought of compulsion being necessary. Anyone who would hint that the farmers of Canada have been holding up on production since the war began in order to boost prices doesn't know anything about farming conditions and what has been accomplished.

We are started in 1918. If the Government can take over any considerable acreage of untilled land in the West and bring it under cultivation no doubt the Hon. T. A. Crerar, who knows the West as well as any man can, will take hold of the proposition. We feel sure he will work every plan that seems at all feasible. For the farmers already on the land, we can say that from a long experience in dealing with them and from years of intimate knowledge of farming in all its phases, and knowing what they have done in the past four years, they will again do all that is humanly possible and that they are entitled to a reasonable return for their efforts. Put all on a basis of no more profit than farmers get and there will be fewer millionaires made in Canada in 1918.

Now, to be practical select seed early and clean it well; plan handy devices to help wherever possible, do as much as practicable with power, either engine or horse; use wide implements and machinery; arrange with neighbors to change work, and if any good hired help is available do as you have done, use it to the best advantage. If any compulsion is necessary toward greater production the farmers of Canada now on the land are not responsible for it. There efforts deserve more reasonable and generous consideration and will get it from those who know the situation. Let all organizations get together and evolve the best possible schemes

for helping on production in all lines. If some things are luxuries, let them be "cut out" for the time. Placing every man where his services will be of greatest use to his country, taking all things into consideration, will meet with the approval of all thinking Canadians. Fair play for all will bring best results.

To Increase Production.

BY ALLAN McDIARMID.

It is pretty generally admitted by those who are in a position to size up the situation, that this country, as well as the world in general is approaching a time of food shortage, if not of actual famine. But apparently we are not taking the matter very much to heart, for the money spent on the unnecessary things in life was never so great as at the present time. This carelessness in the spending of money would not be so serious if it was not accompanied by a lack of thought and preparation in another matter. Money is plentiful and while that is the case the majority of people apparently think that everything that money can buy at present must continue to be plentiful as well. That this is not the case anyone can see if they will take a minute to think about it. Money is only a medium of exchange, not a means of existence. It will not take the place of bread in case of a complete crop failure. And so far as war-time economy consists in hoarding up actual dollars and cents it is of very little real value as a preparation for the conditions that are going to face us in the near future. The fact that the spend-thrift squanders his fortune is of little concern to the country at large because of the fact that the money remains in circulation and the financial state of affairs has not been affected. There is as much gold and silver as ever. It has changed hands, that is all.

But in the case of anything in the line of food-products it is a very different matter. Any waste means a shortage in the supply and probable hardship and suffering in a world where production and consumption are on a fairly even balance in normal times. By economizing in the matter of food, by eating no more than we need, and by stopping waste in the cooking of our meals, a good deal can be done to relieve the situation. At any rate a good habit will have been formed. But the most business-like and common-sense way of undertaking to prevent famine in a country is to increase the food-supply. Not in every land can this be done. We know of nations that are cultivating almost every foot of land that hasn't a building on it, and they are making the best possible use of natural and commercial fertilizers as well. But here in Canada the case is different. In the West there are hundreds of thousands of acres waiting for the breaking plow. Can our Government be induced to take the necessary steps towards bringing this land under cultivation and, to the extent of their effort, prevent the disasters that will follow a great shortage of food?

Here is the case in Saskatchewan. Thousands of acres of "School Lands" are lying idle in various parts of the Province. Thousands more are held by speculators. Traction engines are owned by a large percentage of the farmers and these engines are used by their owners but a very small part of the time and in some cases not at all, the breaking on many sections having been all done years ago. Now the question is, why can't these practically idle engines be put to work on this idle land and thousands of acres broken up during the coming summer under Government supervision and control? There is no question but that capable engineers could be had if good wages were offered, and even if it came to conscripting them, no serious objection could be raised under the circumstances.

If the owners of unbroken land could be induced to cultivate their own holdings by a bonus of three or four dollars an acre paid by the Government it might be well to do it. The expense would probably be justified later on, and as for the present, money is no object if the point is gained. Millions have been spent for the manufacture of munitions to destroy our enemies. Let us spend a few more, if necessary, to save the lives of our soldiers and to prevent suffering among those who remain at home. This idea has the support of many Western farmers and it would seem to be practical. What is the use of controlling the price of food and regulating the quantities to be sold if, in the end, there isn't enough of said food to keep the people from starving? Fixing the price of wheat doesn't add one bushel to the visible supply. It simply prevents speculation and the boosting of prices. What we need, and what the Government has not yet undertaken to supply directly, is more wheat. Bacon and beef are necessary, of course, as well as many other things, but the breaking up of our idle land is at present the most practical way in which the Government can help out the situation and the most important in any case.

And now is the time to get ready to do it. Prairie sod that is broken next spring will not grow wheat profitably this year. It may grow oats or flax, but in any case it will be ready for wheat in the spring of 1919, and that may quite possibly be the very time it will be needed to save the situation. Anyway, what is needed is that our Minister of Agriculture take this matter in hand and get capable men to look after the details of the undertaking, and who will see also that the work is pushed along in a methodical and business-like way. Work of a similar nature is being carried on in Great Britain at the present time and as part of the Empire it is of just as vital importance that we increase pro-

duction here as there. We are equally concerned in the outcome of the war.

Should the results of this enterprise warrant it and conditions a few years hence make it advisable, the work could be carried on in other districts where very little land has yet been taken up and Government lands could be farmed by the Government on a scale that would provide for any conceivable emergency. But the first duty of those in authority would seem to be to cultivate the land within reasonable distance of the railroads, where the object in view could be accomplished in the shortest time and with the least risk of failure. And action should not be long delayed.

Nature's Diary.

A. B. KLUGH, M.A.

Canada From Ocean to Ocean. III.

If we turn from the shore and walk inland in the Maritime Provinces in a locality in which primaevial conditions exist we find ourselves in a Spruce-Birch forest. This forest consists almost entirely of White Spruce, Red Spruce and Paper Birch. There are, of course, some places in which a different type of forest exists, such as a hardwood forest, but the Spruce-Birch forest is typical of by far the greater area.

This forest which occurs along the Atlantic coast is different from the coniferous forests further inland in several respects. It is notable for one thing because of the luxuriant carpet of moss which covers its floor. This great development of moss is undoubtedly due to the fact that along the coast the atmosphere is a good deal moister in summer than it is further inland. One notices also the abundance of lichens, both on the trees and on the ground, and one is at once struck with the great numbers of different species of fleshy fungi. Here in this moist, rather dark, forest is an ideal habitat for these fleshy fungi, and they accordingly flourish in great profusion.

Ferns also grow in large numbers in this forest, some species, such as the Beech Fern, the Hay-scented Fern and the Shield Fern being particularly abundant. The Club-mosses are also extremely well represented.

In flowering plants the Spruce-Birch forest is not at all rich, the shade being too dense for the growth of any except shade-enduring species. The Wood Sorel, with its clover-like leaves and delicate pink flowers with the petals lined with deeper pink, is one of the commonest and most characteristic flowering plants. The Star-flower, with its white star-shaped flowers at the end of slender, upright pedicels is common. The Bunchberry is fairly common in the woods, and in little clearings it grows in huge patches which, when the plants are in full flower, resemble snow-banks. The One-flowered Wintergreen, with its single, white, waxy blossom, is quite common in many places and the Twin-flower often spreads its trailing stems over considerable areas.

The Spruce forest is the home of many birds. Of these one of the commonest, and certainly one of the most noticeable during spring and early summer, is the Hermit Thrush. This bird is one of the most beautiful songsters we have in Canada, and a calm evening, the low-sinking sun over the waters, the lapping of the rising tide on the shore and the silvery chant of the Hermit Thrush blend to form a glimpse of nature in the Spruce woods which fringe the mighty Atlantic. The Hermit Thrush breeds from May to July, the nest being placed on the ground and composed of leaves, grass, bark and rootlets. The eggs are three or four in number, and are of a uniform greenish blue.

Another bird characteristic of the Spruce woods is the Slate-colored Junco. In some localities this species remains throughout the winter, but in most it arrives very early in spring. It nests in May and June, the nest being well concealed in a hole in the ground or under an old root, and being composed of grass-stems and lined with hair. The Slate-colored Junco has a great variety of call-notes and a trilling song which quite closely resembles that of the Chipping Sparrow.

The Crow is also a very common bird in these woods, but we can hardly call it characteristic of them, since the Crow is characteristic of all kinds of country clear across the continent. But these Crows of the forests along the sea-coast have a way of mixing up the ferns of the sea-shore and the woods, as they pick up Sea-urchins and Clams and carry them into the woods, so that the nature-student frequently encounters these animals or their remains some distance inland.

The commonest mammals of the Spruce-Birch forest are the Varying Hare and the Red Squirrel.

The forest country of the Maritime Provinces is interspersed with numerous little lakes, and in these we find aquatic life well developed—fresh-water clams, snails, leeches and frogs of many species, including the Bullfrog, and along the muddy shores of many of these lakes there are many very interesting aquatic plants, such as the peculiar Quill-wort, a plant which is an ally of the ferns and looks like a little tuft of grass, the Water Lobelia with its hollow, two-barrelled leaves, and the Arrow-head.

Large tracts are also covered by peat-bogs, areas in which the substratum is mainly Sphagnum Moss among which grows a host of sedges, cotton-grasses, rushes and plants belonging to the Heath Family and the Orchid Family. In some of these bogs Blueberries and Cranberries are abundant. Most of the plants of these peat-bogs are the same as those which occur in similar habitats across the continent, but there is one, the Baked-apple Berry which is characteristic of bogs near the coast. This plant has roundish-kidney-shaped leaves and bears berries which are nearly an inch across and which, when ripe, resemble a baked apple in appearance and taste.

(To be continued.)

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THE HORSE.

Diseases of the Feet—VIII.

Quittor.

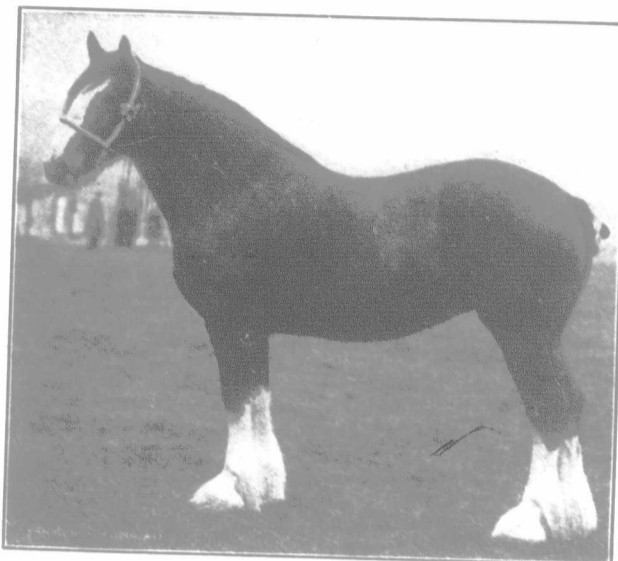
A condition known as "Quittor" consists of a fistulous wound on the coronet, usually upon the quarters or heels. A tube or pipe extends from this opening downwards to a greater or less distance, often extending to the sole, in other cases a variable distance down the wall to the seat of irritation. It is generally caused by treads, punctures, pricks in shoeing, suppurating corns, or other injuries that cause a suppurating within the foot, or in the structures of the coronet. Pus forms at the seat of irritation. If an opening be not made through the horny boundary to allow its escape, it will increase in quantity and burrow upwards between the sensitive and insensitive structures until it reaches the coronet, through which it will break. If existing for any considerable time, a false tissue of a fibrous nature surrounding the passage forms, practically forming a tube or pipe extending from the seat of irritation to the external opening. One or more of these sinuses may form. In most cases the sinus is practically straight, but in others it is more or less curved.

Symptoms.—The symptoms are readily recognized. There will be more or less lameness. In some cases the lameness is very marked, the horse being unwilling to put the foot to the ground, while in others it is slight. There is a swelling and hardening of a portion of the coronet, in which one or more small orifices are seen discharging a thin, limpid secretion, or a thick and sometimes somewhat curdled pus. From the external orifices sinuses are found leading generally downwards beneath the coronary substance, lateral cartilages and into the foot. A quittor differs from a wound or recent abscess in the coronet by the condition of the parts, which have taken on a peculiarly well-marked unhealthy action, by the character of the swelling, which is hard to the touch, and by the presence of one or more sinuses.

Treatment will depend upon the cause. If it be a suppurating corn puncture, prick, bruise or other cause that sets up an irritation, followed by the formation of pus between the sensitive and insensitive soles, a free opening must be made through the horny sole to allow escape of pus. The seat of tenderness in the sole can usually be readily located by tapping gently with a hammer or pressing with a pair of pincers. When the seat of trouble is tapped or pinched the animal will evince pain. After the pus has been liberated, treatment should be the same as recommended on a former article for punctures. In addition to this, local treatment of the coronet should be given. If the condition is of recent occurrence, all that is required is to keep the opening clean and dress two or three times daily with an antiseptic, as a five per cent. solution of one of the coal tar antiseptics or carbolic acid, but if the condition has been in existence for some considerable time, it is wise to inject the sinus once or twice daily for a few days, as 8 grains of corrosive sublimate in one-half pint of boiled or distilled water. The fluid will escape at the sole, having first passed the whole length of the sinus and tending to destroy any fibrous growth that may have formed.

In cases where no communication exists between the exit and the sole of the foot, it is necessary to locate the seat of irritation, and either make an opening through the wall to allow escape of pus, or extend the passage down to the sole and make an inferior exit there. This is an operation that in most cases presents difficulties. In the first place it is necessary to determine the direction and depth of the sinus. This is done by carefully introducing a probe. When the operator has satisfied himself on this point, he must decide whether he will make the lower exit through the wall or through the sole. When the seat of irritation is near the lower margin of the wall, the sole is usually selected for the exit. In many cases the long continuance of quittor is due to the imprisonment of a piece of decayed bone, dead cartilage, or other foreign body, and it is necessary to remove this before a cure can be effected. In cases of this kind the condition will usually be disclosed during the probing operation, the point of the probe coming in contact with the offending body reveals the condition to the operator. This also locates the seat of the trouble. In such cases it is necessary to pare through wall or sole and remove the foreign body. When it is decided to extend the sinus down to the sole, either a bistoury or a red hot iron is introduced at the top and forced down, cutting or burning a passage to the sole which is then pared through to make a free exit. Most practitioners object to the use of the hot iron, except in cases where other means will not suffice. After the sinus has been continued to an inferior opening, it is good practice to inject into it a strong solution of corrosive sublimate, say 15 grains to an ounce of water. One or at most two injections will be sufficient to cause the whole surface of the sinus to cast off a thin slough, and leave a normal granulating surface, requiring no further treatment beyond being kept clean by flushing out once or twice daily with an ordinary antiseptic solution. To sum up, the principles of treatment are: To make a dependent orifice by incision or cautery, remove all foreign bodies, destroy proud flesh or fibrous growths, keep clean and stimulate reparative processes. When fistulous openings are situated on or near the anterior surface of the coronet, great care must be observed in treatment, as the articulation of the bone of the foot with the pastern bone is superficially sealed, and thinly covered by soft structures, hence care must be taken to not cut or cause a sloughing into the joint. During treatment it is necessary to give complete rest, exercise or work causes great suffering and renders recovery very difficult.

WHIP.



A Good Type of Clydesdale Brood Mare.

LIVE STOCK.

Changing a Sheep House to a Piggery.

I have a building, 50 feet by 20 feet, that I wish to equip for a piggery. It stands on a stone wall about one foot high and has 9 by 10-inch sills. It has been used for a sheep pen and the walls are single boarded and battened. This building stands about 16 feet from the east end of the barn, to which I should like to have it joined so I could enter the piggery from the stable and barn floor. Kindly advise me how to make this building warm enough for pigs and how to ventilate it. Would cement sides and floor be suitable? What is the best size for pens? Please recommend anything that would make this building up-to-date. G. R. A. M.

Ans.—Sentiment in favor of elaborate and extensive piggeries is ebbing and now approaching the low-water mark. The colony house or hog-cabin is growing in popularity and giving good results under widely varying conditions. The piggery and cabin can be used in

are two ply of building paper, covered with plain boards put on vertically, with beveled battens over cracks. The inside of the posts and studs is covered with modern building paper, which is covered with seven-eighth-inch sheathing. The ceiling also is sheathed with seven-eighth-inch stuff. The roof is boarded on the rafters and covered with roofing paper and metal shingles.

This description offers some suggestions for this particular case. On the inside of the studs of the building, already standing, one could put a ply of building paper and board it over tightly, making a satisfactory wall. The dead air space between the two layers of boarding would keep out cold and moisture. The stone wall on which it already stands should be quite satisfactory.

While cement floors, in the opinion of some breeders, are not altogether satisfactory, they are the most popular type now in use and it is difficult at moderate expense to construct anything superior to them. Their cold and moist nature, for which they are criticized, can be reduced to some extent by placing several inches of gravel or cinders for a foundation. The rough part of the concrete floor may be painted with two coats of tar and then the top layer of cement, one inch thick or more, placed on top of this. The tar is a perfect insulator from soil moisture. An overlay in the corner of the pen will keep the pigs off the cement while they are lying down.

Plenty of windows should be installed in the south wall, giving at least one for each pen. The windows should be large enough and so situated in the wall as to flood the pens with light.

A straw loft in a piggery reduces the moisture very considerably, especially when the floor of the loft is loose enough to permit the air to circulate upwards. The straw should be changed every year.

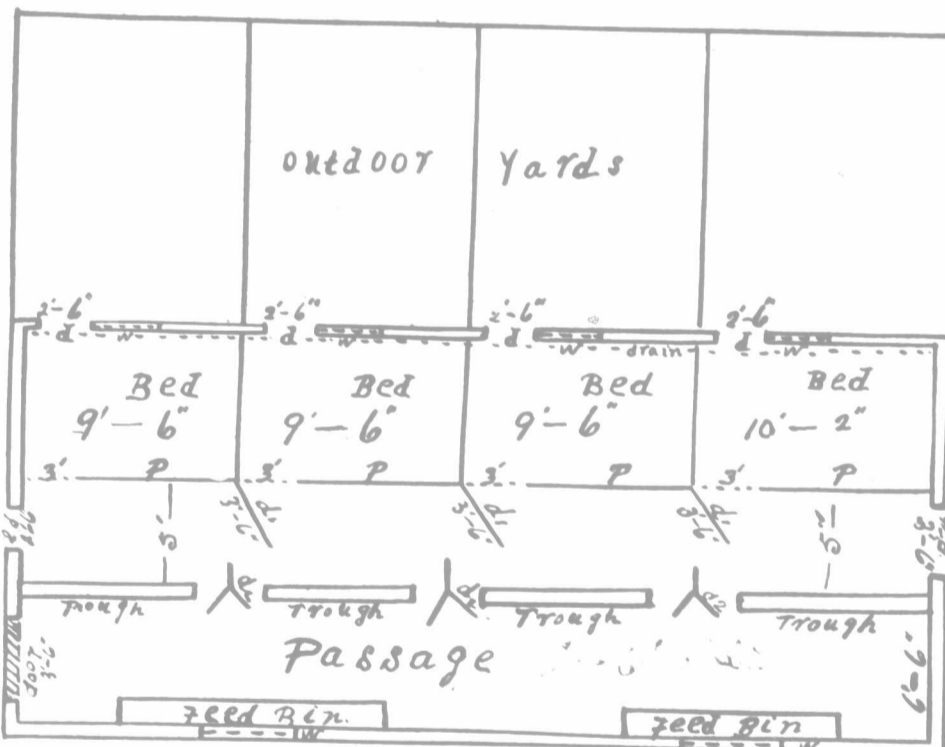
As to ventilation, there are several methods to follow. One in common use has a shaft opening through the ceiling below and the ridgeboard above, and is covered with a cupola effect to prevent a current of cold air downward. There should be at least two of these in a building of this size and it might be well to have a check at the bottom so one could regulate the air current according to temperature. In some piggeries the windows are so constructed as to act as an inlet for fresh air. The top section is hinged so as to open inward at the top; thus diffusing the fresh air well over the tops of the pens. The fresh air may also be brought in through a shaft placed between the wall and its stone foundation and coming up the wall for a short distance on the inside. These should not be more than 4 by 6 inches in size and should be equipped with coverings on the inside openings by which the amount of incoming cold air can be regulated.

The accompanying plan may offer some suggestions in regard to pens. Nine feet by 12 feet, 10 feet by 12 feet, and in some cases pens as small as 8 feet by 10 feet, are suitable. Under any circumstances one should provide trough space sufficient for the number of pigs the pen is supposed to accommodate. A building 20 feet wide will not have sufficient width to permit of two rows of pens and a convenient passage, so one could lay out the building in a manner similar to that represented by the accompanying illustration which has pens and yards on the south side. With the hinged gates between the troughs and the sleeping corner of the pens, one has a passageway throughout the length of the building which facilitates cleaning. The drain should be located along the line where these gates are hinged, instead of at the back wall as shown in the illustration, and the slope in the floor should be towards it, both from the beds and from the troughs.

This lay-out for a piggery would not suit everybody, but it at least offers some suggestions or acts as a basis upon which to draw more convenient plans.

The building could be joined to the barn, thus making one more pen and a feed room.

Produce and save and in doing so remember that dollar bills cannot be eaten or worn for clothing, neither do they make satisfactory fuel for heating. The real necessities of life are not found in money in its various forms, but in things which can be bought with money. Canada might have plenty of money but the people might starve or freeze. Available food, clothing and heating material are far more important in a pinch than is money, although it is necessary now to conserve the latter that the nation may be able to finance the war.



Plan of a Small Piggery.

The Self-Feeder For Swine.

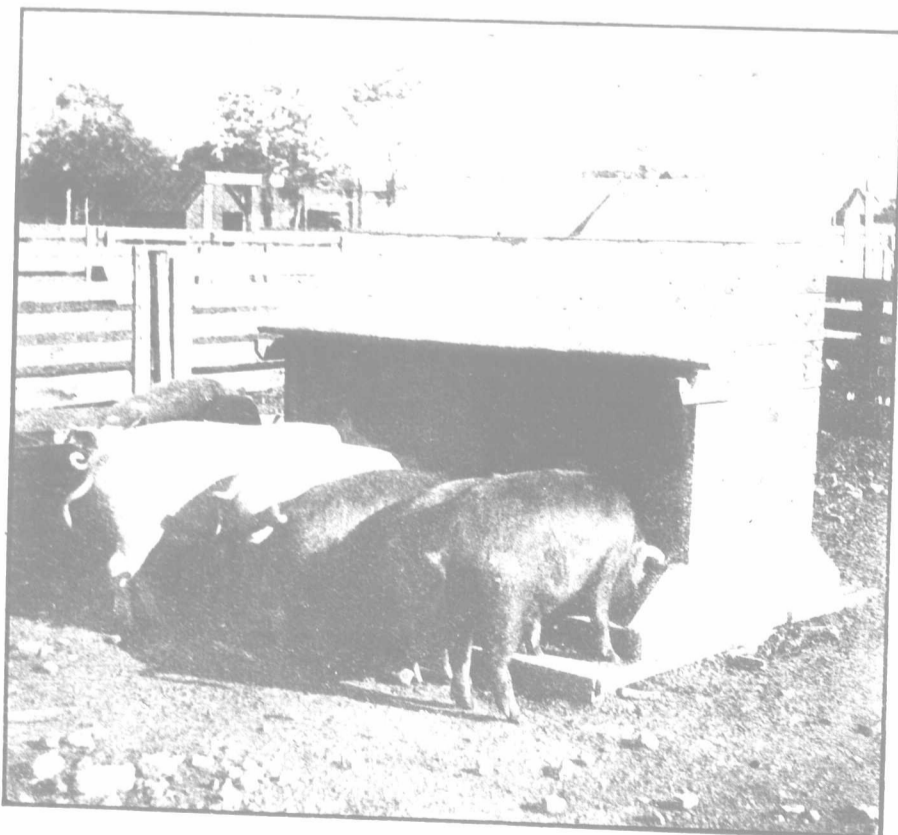
The self-feeder for swine has given good results at experiment stations in Canada and the United States, but the practice recommended by these institutions has not been adopted as extensively as the advantages of the system warrant. At present the self-feeder offers a partial solution of the labor problem as it affects swine production, while, at the same time, it is no deterrent to the economical and successful rearing of hogs. In fact, swine as a general thing will thrive better under the system of self-feeding than when handled according to the old-time popular way. There has been considerable controversy as to whether hogs should be fed two, three or four times per day. This has been largely idle pastime, for it has been proven that they will do excellently when allowed to eat when and what they wish. We have been taught to look upon the porcine tribe as something that will eat anything, and always too much if they could get it, when the facts of the case are that the hog is somewhat of a connoisseur in regard to food and if given a preference he will take exactly what he needs and what he requires to produce meat quickly. Furthermore, he has shown that he can balance his own rations and set his own standards quite as correctly as several notable swine authorities, whom we have followed in the past, could do it for him. On a recent visit to Iowa Farms, in the State of Iowa, the writer had the opportunity of observing the self-feeder in use where a hundred sows or more are farrowed every year, and in the neighborhood of five hundred hogs are turned off annually, the majority of which go for breeding stock. In the hog-cabins and in the piggeries the self-feeder was a part of each pen's equipment, and the writer never saw a more thrifty herd of swine. Tankage and middlings are fed through the boxes separately, while the corn is thrown to the hogs in the yard. At the time of our visit, corn was being fed on the cob. Throughout the States of Iowa, Illinois and Indiana the self-feeding method is popular, while at the Iowa State College, at Ames, where it has been tested for several years, it is held in very high esteem. Observations, however, made in the States mentioned would lead us to impose one limitation on its use, and that is in regard to the feeding of in-pig sows, particularly as they near farrowing time. Brood sows thus fed showed a tendency to be somewhat too fleshy.

The construction of the self-feeder in use throughout the Corn Belt was in no way elaborate. It resembled, in design, the hopper in common use by poultrymen for feeding dry mash to chickens, only it was larger and usually had two compartments; one for shorts and the other for tankage. It was nailed to the side of the pen, or on the inside of the hog cabin, thus allowing the hogs to feed only from one side.

The Self-Feeder in Canada.

For a number of years the Central Experimental Farms at Ottawa have recommended the self-feeder for use under Canadian conditions, and in the January 3 issue of "The Farmer's Advocate," (page 6) was published an article telling just how it has worked out on a Middlesex County farm. The self-feeder in use there was made according to the Experimental Farms design, which is described in the following paragraphs:

Provided the requirements enumerated are met with, changes in the details may be suggested by the ingenuity of the builder. The line drawing shown illustrates a feeder with one-half of the roof hinged and used as a filling door, the possibility of leakage being prevented by continuing the opposite side several inches past the peak, thus protecting the joint. The photograph shows a feeder with the filling door at one side, the aim being to do away with the joint in the roof. While both are satisfactory and similar in the more important details, possibly the first type is to be especially recommended.



The Self-feeder in Use.

The structure rests on 3 pieces of 2 x 4 on edge, as shown. (By using a pair of runner or skids, the outfit may be rendered portable).

The walls consist of three 2 x 3 studs on each side, covered inside with 1/2-inch T & G boarding. On top of the studs is a 2 x 3 plate. The boarding should start at 5 inches above the floor of the troughs, and a gate, or feed control board, 1/2 inch by 10 inches in width, the full length of the feeder, slides behind the boarding. This gate may be fastened at any desired height by thumbscrews, sliding in a vertical slot on the outside face of the boarding. Connection between control board and thumbscrews is made by two iron straps 1 inch by 1/4 inch, as shown.

The floor of the bin consists of 1/2 inch T & G boarding laid on 2 x 2 rafters at 45 degrees.

The floor of the feed troughs is 1/2-inch T & G boarding laid across the 2 x 4 base pieces.

The front of the feed troughs consists of 1 piece 4 inches by 4 inches (2 two by fours) beveled from the centre down to the flooring. From this front are placed 2-inch by 2-inch braces running up to a 1-inch by 3-inch piece laid along the sides, as shown.

The roof consists of 2-inch by 2-inch rafters resting on the 2-inch by 3-inch plate, and covered with 1-inch T & G boarding and ready roofing.

The door which is made of 1/2-inch T & G with 1-inch by 3-inch battens at back, should be equipped with hinges and handle for lifting, and in the case of the roof door, should have a prop to keep it open.

The structure is 5 feet 1 3/4 inches by 6 feet 5 3/4 inches, outside dimensions.

Modifications.

The two-sided self-feeder is especially adapted for outdoor use or where a considerable number of hogs are together in a large pen or run. Under ordinary circumstances one-half of the feeder represented by the line drawing would be ample and could be made in such a way that it might readily be attached to the wall. Partitions could also be made in it so the different kinds of grain would feed down separately.

The points to keep in mind are: First, the construction must be such that the grain will feed down regularly without any stops or clogging, such as often occurs in chutes from bins. The troughs must also be made so the minimum amount of waste will be permitted through the hogs nosing the meal over and out of the trough.

How and What to Feed.

Experiments at the Central Experimental Farms have prompted the Animal Husbandry Division to give the following advice in regard to the self-feeder and rations adapted for use in it:

Place the feeder on a platform or floor that will remain clean during wet weather, and prove accessible to the pigs at all times. Provide shade of some sort, either trees or a rough shed. While this system of feeding will prove relatively economical in dry lot feeding where green feed, skim-milk or water are supplied daily, the maximum efficiency will be reached where the feeders are placed in a good clover or alfalfa pasture. In any case, dry lot or pasture, with or without milk products, fresh water should be always supplied, preferably running, or from some self-watering device, regularly and frequently filled.

Young pigs from ten weeks of age onward may be safely and economically fed by this method. Until this age is reached it is generally wise to feed by hand, although experiments have proved that even sucking pigs have been benefited by the feeder. Shoats of all ages, and in fact all classes of pigs may be most profitably "self-fed." Young breeding stock, similarly, are benefited, provided the ration is one of a bone and muscle-forming nature. In general, avoid self-feeding with pregnant sows, particularly as farrowing time approaches.

From a mechanical standpoint practically any mixture of whole or ground grains, or other millfeeds may be successfully fed. Corn, for example, is frequently fed alone with clover or alfalfa pasture, for short-finishing periods. For young pigs or shoats any of the following rations will be found suitable, provided all hulls are fairly finely ground:

1. Shorts, fine-ground oats, fine-ground barley—equal parts.
2. Shorts 4 parts, either of above grains 4 parts, ground peas 2 parts.
3. Shorts or wheat, 2 parts; barley, 2 parts; peas, 1 part.

With any of the above rations fed to young pigs skim-milk may be profitably fed. Where such cannot be obtained the addition of tankage, meat or blood meal, is recommended, say at the rate of one pound of tankage to six pounds of any of the above mixtures. Where whole corn is used, one pound of tankage could be added to every five of corn.

Self-Feeder Suggestions.

In the United States the Free-Choice system is followed quite extensively. This consists in placing different kinds of grain in separate compartments of the self-feeder and allowing the hog to mix his ration as he desires. Shorts, tankage and corn are the three feeds commonly used throughout the Corn Belt, but in Canada, especially this year, the latter two are practically out of the question.

John M. Evvard, Assistant Chief in Animal Husbandry at the Iowa Experiment Station, and an acknowledged swine expert, makes the following suggestions in regard to the usefulness and limitations of the self-feeder:

1. An efficient method for full feeding of hogs is to self-feed.
2. If you wish to "grow your pigs slowly" do not self-feed.
3. The hog does not like hash any better than you do.
4. The self-feeder will not save all of the work, only part of it.
5. Better have a little too much self-feeder trough space than too little.
6. The self-feeder works excellently with swine; but that is not saying that the same is true of horses, cattle, sheep, poultry and goats.
7. To self-feed pregnant sows, mix bulky feeds with the grain, such as alfalfa. Regulate the gains by increasing or decreasing the hay meal.
8. The hog is a physiologist not an economist; he eats to suit himself, and corn at 3 cents and corn at \$3.00 looks all the same to him. In other words, "the hog looks out for himself, not you."
9. Human ingenuity must be exercised in learning what and which feed to place before swine in separate self-feeders to secure optimum results.
10. The hog cannot always economically balance his ration; much depends upon the opportunities that you afford him. Choose the right feeds.
11. The self-feeder in the summer had best be in the shade, and in the winter away from the cold winds, preferably under warm shelter—well floored.
12. Rats, chickens, birds and other animals enjoy the self-feeder as do the hogs; govern your operations accordingly.
13. The careless, unreliable human feeder can be displaced with the self-feeder to great advantage oft-times in the full feeding of swine.
14. Self-watering is a part of the Iowa Self-Feeding System, therefore keep plenty of drinking water before the hogs always. Self-icing is not self-watering.
15. Self-fed pigs are liable to eat most any hour of the day or night, hence it is well to have the self-feeders easily accessible all of the time.

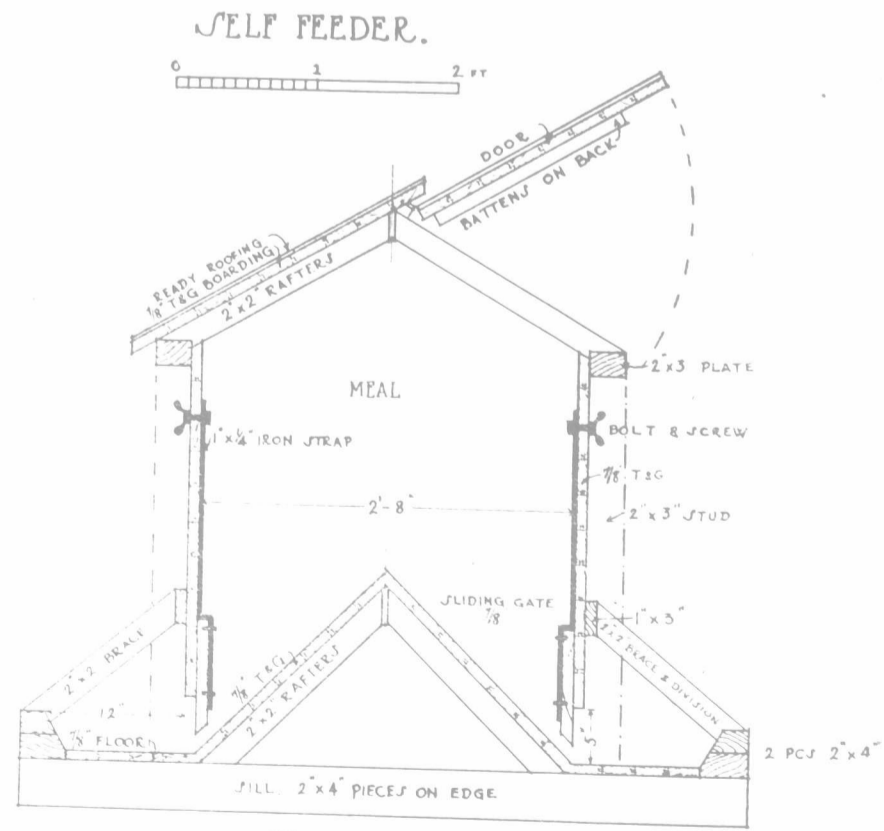


Diagram of a Self-feeder.

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THE FARM.

Cleaning up the Wood-lot.

EDITOR "THE FARMER'S ADVOCATE":

The fuel question has become about as persistent as the weather, which John M. Gunn, in his own admirable way, lifted out of the common place in the Christmas Farmer's Advocate. When everything else fails the town falls back on the farmer, either as a scape-goat or a deliverer. In the daily newspaper which I picked up the other morning to wrap about a couple of hot bricks, I noticed a clarion call to the farmer to relieve the situation by chopping more wood and hustling it to town, just as though John had worked himself out of a job with three or four home stoves to keep agoing, sixty hungry animals to look after, and milk to haul to the factory! But in all seriousness, as one looks over large areas of old Ontario with its well-wooded lots, these would provide timber enough and more, rightly husbanded, to make impossible a fuel famine for all time to come. Even without going to New Ontario, there are great stretches of bush in districts like Parry Sound and Muskoka that would seem sufficient to keep the home fires of the Province perpetually burning. Illimitable fuel to spare, and yet with a week of zero weather thousands are on the verge of perishing because the output or distribution of coal from American mines has failed! Why? Not altogether the war, for the conditions were drawing us towards this predicament long before 1914. We are brought back face to face with the old trouble of securing man power to reduce trees to fuel, and its economical distribution by the railways. Too many living in cities and towns, too few on the land. The towns have absorbed an excessive proportion of the rural population, and many of those left are indisposed or unequal to the physical tasks our forefathers so cheerfully surmounted. There is opportunity for statesmanship of a high and practical order in the solution of this very problem of fuel for the people. In a land of five months winter, fuel supplies are just as essential as the public mail service. Suggestions through "The Farmer's Advocate" might give a start toward its solution. It is a bigger and more far-reaching issue than the price of wood because \$15 or \$16 per cord now is not as much of an incentive as \$3 or \$4 was when I whistled my way by wagon or sleigh to the nearest market town. If the price were \$25 per cord it probably would not greatly reduce the difficulties of securing wood fuel, which, by the way, are not confined to cities and towns. Villages next door to large wood lots have been almost frozen out by spells already this season. In some cases natural gas alone saved the situation. Farmers themselves have felt the pinch, especially some who, tempted by the offers of mill and timber men, allowed their farms to be completely denuded of trees in recent years, a process which is still going on. Had the oft-repeated counsels of "The Farmer's Advocate" been taken and these wood lots or a portion of them been preserved and fenced in from live stock, the owners would not to-day be at the mercy of a hole in the ground hundreds of miles away. I have had it figured out to me that the interest on what was obtained for the timber and the profit on the crops that could be grown on the land would more than buy the coal for farm household use, but contingencies unforeseen have arisen and the figuring proved faulty. In addition to the financial stress involved, the homestead has been swept by increasingly severer blasts as the winters go by and the summer storms are more devastating and the rainfall, essential to good crops, less equitable.

Though the towns afforded some help last season towards farming operations I would not like to suggest that much assistance could be expected at this season for a man's job like wood cutting, nor would I think it wise to inaugurate, as undertaken last autumn in New England, a general cord-wood cutting campaign, although something of this sort might be done under the Foresters' Service on the Provincial Crown lands. Since the public owns the timber and has largely built the railways, owning some of them out and out, it does not seem unreasonable to ask the Government to pull itself together and get some of this fuel to the people at a reasonable cost. So far as the farm wood lots in the older portions of the Province are concerned, many of them might be cleaned up to advantage. Some of the old, half dead apple trees, thirty-five feet high and of useless varieties, may well go into the wood pile. And there are swamp areas that might, under judicious culling, yield up considerable quantities of serviceable fuel. Dead and fallen trees and broken-down limbs can be collected at times when there is not an excess of snowfall, greatly to the improvement of the bush as a whole. In some localities the old-fashioned wood bee could be revived. A few men and boys of the neighborhood with saws and axes will accomplish in a few hours what would be impossible for one or two working alone. Limbs and small trees can be cut into rail lengths and heaped up at some convenient point and, at another time by the use of the gasoline engine and buzz-saw with a minimum of physical labor and at no great outlay, be speedily converted into stove wood or furnace fuel. If not in sufficient quantities for disposal to the towns, it would keep the farms supplied with heating material and thus save the drain caused by the teaming of coal in such large quantities to the farms. Wood furnaces or box stoves that will take in large chunks of rough wood will maintain heat fairly well through the long nights, and though they may have some disadvantages I have found wood fires more wholesome than those of coal; and in the unparalleled experience through

16. It is well not to "rush" the hog when he is eating; the self-feeder allows him plenty of time to eat without creating that impulse to hurry for fear that the other hogs get all of the feed (as in the hand-feeding scheme).

17. Do not neglect those fall pigs; give them a few self-feeders in which are corn, meat meal, tankage product, middlings and salt. Try the scheme; enjoy the results, and tell your neighbors.

18. There are scarcely any runts to cause down-heartedness in the Free-Choice System fed bunches, because they get all they want to eat and of whatever feed; and it is the lack of suitable feed (and shelter) mostly that produces the "winter runts."

19. Lest we forget: The suckling pig that follows his "mammy" is self-fed all of the time; why not continue the practice after he is weaned.

20. Do not mix slop if you can do better. Save the time and the labor; use the self-feeder when full feeding.

21. Self-feeding according to the Free-Choice Scheme or System is the natural way of full feeding.

22. The self-feeder is not a panacea for all feeding troubles.

A New Explanation Re Cotted Wool.

Opinions regarding the cause of "cotted" or "matted" wool have varied somewhat and no authority has been too sure of his ground. W. T. Ritch, an Australian wool expert and Technical Instructor to the American Wool Improvement Association, has recently advanced an idea which he claims answers the question adequately. He has determined, to his own satisfaction, that the fibres of wool which cot easily have abnormally-shaped cells and on account of this peculiarity the wool fuses together in a mat. It is well known that the wool-fibre is made up of many cells and in the structure of these Mr. Ritch has discovered the cause of the undesirable condition known as cotted or matting. The preventive measures he recommends are to have the wool of breeding stock examined under the microscope and to breed only from those sheep that have wool-fibre of the proper type. He recommends this method particularly when selecting a stud ram for use on the flock.

This wool expert states that cotted fleeces are practically unknown in the Inter-Mountain States. In the North Island of New Zealand, parts of Patagonia, Tasmania, and Falkland Islands the loss from cotted fleeces is very serious and an occasional loss of this nature is experienced in some parts of England. Cotted is the technical term for wool which felts on the backs of sheep, in certain climates where the atmosphere is frequently humid and the winters somewhat changeable. With a continuance of damp, changeable weather the pasture sometimes causes a slight heating of the blood which results in an irritation of the cuticle or skin and sheep are then inclined to rub against any object or roll on their backs to ally the irritation. This intensifies the tendency of the fleece to become matted or cotted. Ticks are also a cause of irritation which induces rubbing. Sheep carrying cotted or felted fleeces generally get run-down in health shortly before the shearing season, and their wool when shorn is worth no more than inferior qualities of shoddy.

Low-Grade Flour or "Red Dog" as Feed

Is low-grade flour satisfactory feed for fattening cattle, if it is used in conjunction with turnips, oil cake, chopped oats, silage and straw? What proportion should be used? Which would be preferable, oil cake at \$62 per ton, or low-grade flour at \$58 per ton? R. J. R.

Ans.—Low-grade flour is that by-product which contains the wheat germs and is therefore quite rich in protein. It is not considered to be in the same class with corn as a fattening feed and is more frequently fed to hogs than to cattle. It has had a more extensive use in the Maritime Provinces than in Ontario where corn, as a general thing, is more easily obtainable. The writer has seen it used for fattening hogs with quite satisfactory results. The following table which reveals the constituents of corn, low-grade flour, oil-cake meal and oats, will help to answer this question.

Feeding Stuff	Digestible Nutrients in 100 lbs.			
	Crude Protein	Carbohydrates	Fat	Total
Corn.....	Lbs. 7.5	Lbs. 67.8	Lbs. 4.6	Lbs. 85.7
Low-grade flour.....	14.8	56.5	3.5	79.2
Oil-cake meal.....	30.2	32.6	6.7	77.9
Oats.....	9.7	52.1	3.8	70.4

It will be seen by the table that corn, which is acknowledged to be the best feed grown for fattening stock, is high in carbohydrates; low-grade flour comes next; oats next, and oil cake last in that respect. Oil cake meal, however, is rich in protein; it has a laxative effect on the digestive system, and acts somewhat as a tonic or conditioner besides. Good oats are quoted at around \$45 per ton in Western Ontario at time of writing. Low-grade flour fed alone is very unsatisfactory, on account of its sticky and doughy nature, but when mixed with chopped oats or fed on roots or silage it should give little trouble. We believe the low-grade flour at \$58 per ton would be a cheaper feed for fattening

cattle than oil-cake meal at \$62. However, the roughage mentioned contains very little protein and it might be well to use a small quantity of oil cake to bolster up the ration in that regard. A corn ration supplemented with 10 per cent. of oil meal has been found superior to corn alone and while low-grade flour is richer in protein than corn, we believe a small quantity of oil-cake meal added to the ration would be beneficial. We would suggest a mixture of low-grade flour, 5 lbs.; chopped oats, 4 lbs.; oil-cake meal, 2 lbs. This is the proportion only; the feeder must decide for himself how much he can feed per day with profit. If this grain mixture, fed with roots and silage, proves too laxative, reduce the oil cake, especially when the succulent roughage is plentiful, and grown on the farm where fed. A mixture of feeds is usually better than one kind alone. Consequently we would advise that both roots and silage, as well as straw be fed in conjunction with the grain mixture. Quantities and proportions must be regulated more or less by the quality of the different feeds and by the condition of the cattle. Prices, too, are an important factor and for this reason it seems advisable to feed more heavily on oats and low-grade flour than on oil cake, especially when the latter is not considered economical where fed in large quantities under Canadian conditions.

Feeding Pigweed Seed.

On account of the fact that the seed of pigweed is being purchased at many country points at a price of \$10.00 to \$13.00 per ton and shipped out of the country, and that there has been considerable inquiry as to the possibility of using it for feed, an experiment was undertaken at Brandon Experimental Farm to determine the feeding value of the seeds as compared with other grains. The pigweed seed was boiled to kill the germs in the seed and also to make it more palatable. There was a small quantity of small and cracked grains of wheat in the pigweed seed and also the seeds of other weeds as well. The weights of grain fed were in every case dry weight.

The pigs used in this experiment were Berkshires, Yorkshires and Berkshire-Yorkshire cross-breeds, and were divided as nearly equally as possible into three lots.

Summary of Experiment.

	LOT 1 Barley and Feed Flour	LOT 2 Barley and Pigweed	LOT 3 Barley, Feed Flour and Pigweed
Number of pigs in experiment.....	10	10	10
Total weight at beginning of experiment, Nov. 15.....	1565 lbs.	1523 lbs.	1726 lbs.
Average weight per pig.....	156½ "	152½ "	172.6 "
Total weight at end of experiment, Dec. 6.....	1859 "	1702 "	1894 "
Total gain in 21 days.....	294 "	179 "	168 "
Average gain per pig in 21 days.....	29.4 "	17.9 "	16.8 "
Average daily gain per pig.....	1.4 "	.85 "	.8 "
Amounts of Feed used—			
Barley Chop, per bus. \$1.20.....	920 lbs.	920 lbs.	492 lbs.
Feed Flour, per ton, \$50.....	306 "		250 "
Pigweed Seed, per ton, \$10.....		306 "	492 "
Total cost of Feed.....	\$30.65	\$24.53	\$21.01
Average cost per gain of 100 lbs.....	\$10.40	\$14.02	\$12.50

From the above figures it will be seen that while the cost of feed is much greater for the pigs fed on barley and feed flour than where pigweed seed forms part of the ration, yet when the gains are taken into consideration, the pigs on the straight grain ration made much the cheapest gains. No charge was made for the pigweed except the actual cost of time and fuel required in boiling it. Another lot of five much younger pigs was fed on straight pigweed but did not do well at all; barely keeping up their original weight, and were going back very rapidly toward the end of the experiment.

The results of this experiment would indicate that pigweed seed alone has practically no feeding value, and if there is any market for it at all, it would be much more profitable to sell the pigweed and purchase other feeds than to feed it to pigs.

Everyone hopes that a cold December and early January will mean an early spring.

Cattle may be commandeered in Britain. Keep up the supply in Canada.

which we are passing every means should be employed that will lighten and more evenly distribute the burdens the people are bearing in the common cause.
Middlesex Co., Ontario.

ALPHA.

Advice and Prejudice.

EDITOR "THE FARMER'S ADVOCATE":

The farmer is a much-advised man. If one were to sit down and think over the subjects submitted to his intelligence as being worthy of his earnest attention for his own good, the session would be a lengthy one, and there would be need for a soft-cushioned chair. He couldn't do it, for instance, "while the horses are eating their oats." Incidentally, farmers themselves are not above giving advice upon occasion. Some of our best friends have staggered us occasionally by tossing off suggestions of things that could be done "while the horses are eating their oats." Either their approval of our speed of action was altogether too high, or the speed at which our horses would eat their oats was entirely underestimated. It will possibly be of interest to select a few items of advice from different sources and make remarks about them. Here's one for instance about swine. It is taken from Prof. C. E. Day's address at the Ottawa Winter Fair and printed in the Annual Report of the Live Stock Branch of the Ontario Dep't. of Agriculture, 1916, which, by the way, has just been received. "Prevailing market conditions in Canada, and the general scarcity of hogs of all kinds, have rendered it difficult for packers to discriminate in price in favor of the bacon hog, even though they might desire to do so. . . . Undoubtedly, if hogs in sufficient numbers to bring about an export trade of any considerable magnitude are produced on the farms of this country, export bacon hogs will command a premium." Now, here comes the advice. Anybody who has had occasion to ask Prof. Day for advice knows that he is sincere and has the best interests of Canadian farmers at heart, and we must bear this in mind as we read what he said: "The bringing about of this desirable state of affairs can be greatly facilitated by the farmers themselves if they will take hold of the matter in an unprejudiced and business-like manner, as recommended in the paragraph which follows.

"Co-operation.—Perhaps the greatest drawback to the live-stock industry of Canada at the present time is the tendency on the part of our farmers to wish to get something different from the stock owned by their neighbors. This tendency to want something different means that there is no uniformity in the hogs going to market from a certain district. Surely no man is so wrapped up in any breed that he loses sight of the fact that, after all, the main object in keeping hogs is to increase our profits from the farm. Think for a moment what it would mean if all the hogs going to market from a certain district were of the same type and color. If this were accomplished farmers could market their own hogs and secure the highest market price for them. At present we find from one district all colors and types of hogs in a car load, and there can be only one result, an unsatisfactory price.

"Co-operation on the part of farmers, in breeding and marketing their swine, would make the paying for hogs according to quality immensely more simple than it is at present, and I believe that packers will be found quite willing to meet the farmers in a spirit of fairness upon a proposition of this kind. When all is said and done, therefore, farmers have it in their power to practically compel discrimination in price in favor of the bacon hog if they will go about the matter in a combined and business-like manner."

This is how Prof. Day sums up the farmers' failure with regard to the marketing of their swine. He says in effect that if Canadian farmers were not prejudiced, unbusiness-like individuals they would do better for themselves and for the country, and he is right. It is plain talk, but that's what we need to-day. The reason that farmers won't co-operate is that they are prejudiced, and one of the indications that they are unbusiness-like is that they won't co-operate. This looks very much as though if we could get rid of prejudice we could make a business-like combination of our class which would be hard to beat. But let us look into this advice of Prof. Day's more closely. It is given with the sincere belief that it would benefit the farmer. But how would it benefit the farmer? Every farmer to-day tries his level best to produce good type, smooth, well-finished hogs because he knows they fetch the highest price, but in every litter the individuals are not always alike; even when mating has been carefully considered, and the farmer has taken his sows a long distance to breed them so as to get bacon-type hogs, there may be some stubbier than others, and possibly there will be a runt. The ones that are good doers will bring him more money as it is, because it is in them to do it whether they are black, white or red, and all the co-operation in the world wouldn't make the good ones any better nor the poor ones either for that matter. The only thing that could be made uniform would be the color. The idea that the co-operation of unprejudiced farmers in a business-like way would necessarily produce uniformity in size and type of every hog raised in the district and that there wouldn't be any but high-grade, top-notchers to ship out. What would the farmer do with the wrong-shaped and midget hogs which nature persists in supplying? They couldn't be shipped with the high-class, as that would spoil the shipment. They would have to be shipped separately, and we can imagine the beggarly price that would be offered for them. The farmer

would have to make two trips instead of one, and he would have to keep the hogs he knew were to be discriminated against in price till such time as the district was ready to ship a carload of poor quality hogs. Isn't it better for the farmer to clean up his shipment on one day if he needs to, either to save time or feed or what not at the best price he can get? It seems to us as though Prof. Day's suggestion would be more in favor of the packers than of the farmers, because they would be saved the trouble of grading at their end of the line. We must admit, however, that even apart from hogs or profits it would be an inestimable boon if we could get rid of prejudice, if we could co-operate, and if we could be business-like. It would be interesting to try out Prof. Day's theory and to try it out honestly. It might be the beginning of getting rid of some of our prejudice, and it would mean that we would find out the benefits of co-operation and being business-like.

Now we will look at another piece of advice. This time it is given by the Farmer's Advocate. Now, anybody who has taken the Farmer's Advocate, even if he has only done so "for the women folks," knows very well by reading every page of it himself, even to the advertisements before "the women folks" get a chance at it—that this magazine wouldn't under any circumstances knowingly give a farmer a wrong tip. Page 2042, column 1, paragraph 1. We read: "The side of bacon must be such that it will cure into something acceptable to the trade, and whether it comes from a black, white or red pig is a secondary matter. A good deal of this breed controversy is piffle, and if the average breeder would make his choice, and then be as much of a stickler for strain and type as he generally is for breed he is pretty sure to make a success. . . . Select your breed and allow your personal likings to be gratified to a considerable extent. . . . The most successful breeders cannot see anything attractive about animals which do not belong to the particular kind with which they work. They are wrapped up in their breed, so to speak, and are more successful on account of their admiration for it. Have a high standard or ideal and make your herd of whatever breed you choose attain to it."

Here we have an entirely different direction for the attainment of success. For farmers who cannot rise above prejudice it is excellent. We are not all constituted alike, and the Farmer's Advocate is for all. This advice, it is plainly stated, is for the average breeder. Some men are not content to be classed among the average breeders, they would like to be a little bit above the average.

If in a district there are a few farmers desirous of trying out Prof. Day's theory it would be necessary, if they are to have any success, to win over to their way of thinking some of those farmers who "cannot see anything attractive about animals which do not belong to the particular kind with which they work."

It is difficult to get the average farmer who has been used to certain methods and certain breeds all his life to change them, and the only way to do it is, in a case like this, to provide good sires of the type and color decided on and try to induce the prejudiced farmers to use them. In fact, it would pay for those interested in getting one type and color in a district to club together and offer prizes for the best litters sired by their chosen hogs. Many men will work for a definite prize which will benefit others as well as themselves. The idea that others, and especially certain individuals, were to derive and benefit from their actions would kill the project at once. The younger generation is happily growing up with fewer of these prejudices, they are measuring up to the standard of men such as the country needs, and are not so afraid that there is a "nigger in the fence" when new schemes are proposed. They are willing to examine and take a chance at testing out plans that come from good, reliable sources, and it is to the men of to-morrow that we look to really develop Canadian farming and bring it into line with manufacturing and transportation, and the other influences which at present govern the country.

There are some men among us who are whining because the farmers are ignored by the powers that be. There are others who loudly declaim that we, as a class, possess more knowledge and ability for clear thinking than could be found in the cities, and want to see farmers in control of the destiny of Canada at once. There are those who look on District Representatives and the work of the departments of agriculture as worse than useless. These are not constructive advisers. They are the men of yesterday, the Rip Van Winkles who have just waked up to find the world has changed and is still changing. They cannot catch up but they make a noise and shout to those in front to look out or they will run over them. In the meantime the young men see clearly that whining and grouching will do no good. They know that farmers must so act that they will inspire enough confidence in the minds of the people at large that they will be invited to assist in the control of the country's destiny, until at last farmers are strongly represented side by side with others, who also have rights, in our parliament at Ottawa. These younger men know the value of District Representatives, the need for scientific research, and the advantages to be gained from the results of such work carried out by the government agricultural departments and colleges. The report of the fourth convention of the United Farmers of Ontario is before us—a terrible exhibition of prejudice and spleen. No wonder they complain being out of favor with the press and the government. Let us hope that their bark is worse than their bite, and that they may reveal some of their good qualities at their next convention.

Huron Co., Ont.

DERMOT McEROV.

Why Keep the Boys on the Farm?

EDITOR "THE FARMER'S ADVOCATE":

The increasing cost of farm produce, and the scarcity of foodstuffs has brought us up against some problems. One is how is this old world going to be fed? Some one has suggested the Chinese plan—a population forced to subsist on a vegetable diet, and we may be coming to that.

The so-called "High cost of living", is one that was attracting considerable attention before the war, and the slogan, "Back to the land," was becoming quite fashionable; whole volumes have been written on the subject by our city friends. Yet have we seen any stampede of city-born people to the farms? Instead we see a steady movement of good citizens off the farms to the cities and the farms are left desolate, sold to lumbermen or speculators or deserted as the case may be. We also hear considerable about how to keep the boys on the farm and most of what we hear is arrant nonsense. The boys on the farm must be educated, and they must be allowed to fill their proper place in the nation, wherever that place may be. Our educational system will some day be framed and improved so that not only our boys but our girls will get a good education and practical help and encouragement that will assist them to decide what profession or what position in life they are likely to succeed in when the inclination as well as the ability of the boy will be taken into consideration. When that time comes we hope there will be fewer men who make a failure of life. We all agree that the farmer's son is more likely to succeed on the farm than his city cousin. But if nature meant the farmer's son for a statesman or a lawyer or an engineer surely that is his place.

Agriculture, the most essential vocation in the world is the one that brings the smallest remuneration, and that is the reason so many farms are vacant to-day—the reason our boys prefer city life. The government is wasting millions on what they call a campaign "To educate the farmer". They have accomplished nothing because they have begun at the wrong end.

The farmer asks for nothing but a fair deal. He is willing to do his share but he is struggling under burdens grievous to be borne. Education is a good thing but it must be a "balanced ration". And most of the stuff dealt out to the farmers is conflicting and contradictory impractical, and in many cases insulting.—When farming as an industry pays half as well as making cement, or paint or munitions or automobiles we will have farmers aplenty.

If the government would give farmers cheaper farm machinery, cheaper autos, better roads and better educational advantages for their children it would help more than all the "hot air" that is being poured out in the name of education. The farmer certainly needs an all-round education, also a knowledge of human nature, of domestic animals, of plants, seeds, birds, weeds, insects, etc., etc. He must have business ability and experience. He must be a hustler and have a large measure of good sound commonsense. He must have capital, and he must be willing to work from fifteen to seventeen hour per day. Is it reasonable for him to expect fair remuneration for his work? For the farmer must get a respectable livelihood for himself and his family, and his children must be educated. Even if "The country skies are always blue", and the birds sing ever so sweetly, "And food is to be found in stones" and "sermons in blades of grass."

The farmer is being urged to produce, "yes produce even at a loss" as his patriotic duty. No doubt the farmer will do his best but he is already working to the limit of his strength and can only increase production if he gets the right kind of help. If skilled labor is available wonders can be done, but the farmer has no time to waste with the novice. Again, the farmer is asked to raise hogs—more hogs. Can he make bricks without straw?

The farmer's wife is being told to save, to economize. Let me assure you she will save. She has had a life-long training in economy. She is master of the art. No foodstuffs go to waste on the farm. What the family does not eat goes to feed the chickens or those much needed hogs. But let me suggest someone else must be found to feed those hogs. The farmer's wife is a busy woman and must not neglect her children to feed hogs.

Compton Co., Quebec.

A FARMER'S WIFE.

Public Opinion.

EDITOR "THE FARMER'S ADVOCATE":

The elections are over. Some are pleased and some are displeased, but it is the duty of all, whether things have turned out to their liking or not, to make the very best of the situation as it exists. Governments are very much what the people make them—not only prior to an election but afterwards. Even the most corrupt and shameless politician is susceptible to public opinion, while those who would do good are rendered powerless if they have no support from the people. Therefore, while the elections are over, and the die is cast, it is government can do little harm to an alert, public-spirited electorate, determined to protect their own interests; whereas a good government can make little headway against the powers of darkness if it is not generously and persistently supported by those whose interests it would guard. Let everyone, therefore, who would make the present crisis a starting point for better things become individually responsible for "doing his bit" so that pre-election promises may become established facts instead of being straightway consigned to oblivion. Thousands of our bravest sons have gone forth to

fight, so from the sacrifice to fight our souls is no le imperat hangs in may tu fields ar to ever establish

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"Guess watched th gard their hands over dog, where bushes to feet and b from father like Joseph' "Gee, b of mixed an reply. The right and h was a good of him. T through th the barn th take good c you and yo Tom was in

fight, so that right, justice and liberty may not perish from the earth. Shall these be the only ones to make sacrifices? Surely not! Surely it is as necessary for us to fight for democracy and liberty in Canada as it is for our soldier boys on the plains of Flanders. Our duty is no less than theirs and the call to sacrifice equally imperative. The times are big with change; the future hangs in the balance. Who can tell what slight effort may turn the scale—at home as well as abroad! The fields are white unto the harvest and the call goes forth to everyone. Who will enlist in this great battle to establish in Canada that which alone exalteth a nation?

In this universal and perennial fight one consideration is of unique and paramount importance at the present time. Public opinion, which is the ultimate force controlling governments, is nowadays largely influenced by the press. It was not always so; but in all civilized countries that is the situation to-day; the press exercises a dominating influence upon public opinion. It is, therefore, a matter of supreme importance that the press be independent and unpurchasable, and be not given to pander to popular prejudice and personal greed. And in this very particular much is to be desired.

The Toronto "Printer and Publisher" says:

"Canada has numerous 'controlled' newspapers—by big interests—by department stores and by corporations. We all know this, wink at it, and sometimes defend it—but there is abroad everywhere a house-cleaning spirit and purpose. How can we have a Utopian Canada with controlled and shameless newspapers and a public that acquiesces in a controlled press?"

The Bishop of Montreal stated in a pastoral letter read slightly over a year ago "No German power more truly menaces our liberty than a subsidized press and a corrupted political life. Lately I have been making enquiries from men in a position to know and they tell me the danger is great and real."

The situation is, therefore, plain. The greatest obstacle that stands in the way of establishing liberty and democracy in Canada is a subsidized and controlled press. Generally speaking, Canadians are not yet awakened to the supreme danger of the situation. Perhaps they do not know how largely the press is controlled. Perhaps they do not realize how completely the former condition of individual proprietorship by the

editor has been replaced by one of corporation ownership where, frequently, large groups of papers are owned by the same syndicate, and the editors are but paid servants. It would not be so bad if the public knew the real owners of the press. But as a rule they are entirely in ignorance and, therefore, easily become unsuspecting of all the arts of editorial sophistry and news selection and coloration. Perhaps the best immediate safeguard is that suggested by the Advocate on many occasions, the enforced publication of the real owners of the press. Those newspaper owners who have no sinister purpose will not object to having the fact of their ownership made public, whereas the state is under the most definite obligation to protect the public from those who use their power over the press for purposes of predatory exploitation. There seems, therefore, no good reason why a pre-emptory and powerful demand should not be made immediately for complete publicity in regard to the real owners of our Canadian papers. This is the first requisite in protecting the fountain of our public life at its source, without which our fight for liberty, democracy and good government is likely to be practically futile.

Brant Co., Ont.

W. C. Good.

Canada's Young Farmers and Future Leaders.

Food for Thought.

Don't envy the other fellow his job; excel in the one you are at.

To-day is the to-morrow you worried about yesterday.

Life is largely what we make it. The world looks entirely different to the optimist from what it does to the pessimist.

"The man who once most wisely said
Be sure you're right, then go ahead,
Might well have added this, to wit,
Be sure you're wrong before you quit."

There is good and bad in everybody. We should look for the good and give a man credit for it, rather than be forever parading his unfavorable qualities. To be told continually of our shortcomings does not tend to rapid improvement. A word of praise is worth a whole paragraph of fault finding when endeavoring to get a man to improve.

Ben. Franklin once said: "Drive thy business, let not thy business drive thee." This advice is as applicable to-day as it was in Mr. Franklin's time. Many of to-day's failures are due to lack of ambition.

A Breeder in the Making.

It was an October morning and the rising sun shone like a glowing red ball through the hazy atmosphere. The wooded slopes displayed a profuse and fascinating variety of colors, forming a picture of rare harmony typical of the early autumn. As the sun rose above the eastern horizon the colors brightened and enhanced the beauty of the scene. A sturdy farm boy of fifteen years paused in his morning work and looked with new interest upon the familiar and strangely beautiful landscape. His father was starting to the back pasture to look after the herd of breeding cows and called to his son, "Better get a bucket of salt and come with me, Tom. We'll have a look at the cows in the back pasture." Tom hustled with the salt, and a little later together with his father strolled around the scattering trees that presented such beautiful colors and in the distance seemed to decorate the landscape.

"Somehow I always like the country and most of all at this time of year. It's fine to taste this fresh bracing atmosphere, to see the different colors and country beauty everywhere."

"Yes," his father replied. "It's fine, it touches the heart of life itself, it's these things of beauty of health, to which we respond that make country life worth the living."

Tom continued to speak, now that he had touched a responsive chord. "I always thought I wanted to live in town, but I am getting to think I like the farm better to live on." They passed over the knoll and found the herd feeding contentedly on the other slope, and as they approached one of the cows tossed her head anxiously.

"Guess Blossom's got a calf," said Tom, as they watched the cow's movements as she continued to regard their presence with concern. Tom placed his hands over his mouth and imitated the barking of a dog, whereupon Blossom hurried away among the bushes to her calf in hiding. The calf bounced to its feet and brought forth an expression simultaneously from father and son. "Well, by George!" for it was like Joseph's coat of many colors.

"Gee, but ain't he spotted?" said Tom, and a nod of mixed amusement and disgust was his father's only reply. They looked him over to see that he was all right and had taken his milk, and Tom, noting that he was a good one, proposed that they make a show steer of him. They looked over the herd and returned through the woods to the barnyard. As they neared the barn the elder turned to Tom and said, "If you'll take good care of that spotted rascal, I'll give him to you and you can show him at the local fair next year." Tom was inwardly delighted, but merely replied, "I'm

much obliged; maybe I can fix him up fit to show, although I never fed a calf for a show."

"Well, it will be a good time for you to learn," was his father's reply.

Tom returned to his unfinished chores, thinking much about the calf and how to handle him to the best advantage. It being Saturday he did not have to attend school, and spent most of the day in preparing a box stall for the cow and calf. Towards evening he went again to the pasture and drove them in and shut them in the stall. In the daytime, except in stormy weather, the cow was turned into the pasture, and the calf was given the run of the little lot with access to shelter.

As the weeks passed, Tom watched the development of the calf with rising hope. He read the stock papers with increasing interest, and one day he wrote to a herdsman, who, he had read, had been successful in fitting show steers, for a few pointers. In due time the answer came and supplied Tom with the information that proved helpful. He sent for a bulletin issued by the Agricultural College treating on this subject and read it carefully. His father, passing through the barn one day, observed several pages of this bulletin, the herdsman's letter and a few clippings pasted up in a convenient place for reference. He noted, too, as the months passed, that Tom gave more time to the stock and the farm and less to the neighborhood frivolities.

Winter passed, spring came and went and the summer was far advanced. Tom had been faithful to his charge and was counting the days till the opening of the local fair. He had named the calf "Sidelight" on account of the white spots and stripes on each side, and he seemed to Tom to fill the description of a "good killer." Finally the opening day of the fair came and found Sidelight in a comfortable stall with a deep bedding of straw. Tom observed with some apprehension that two well-known herds, of which he had often read, had stopped over on their way to the provincial fair, and each had a steer calf. So he worked with greater care to put Sidelight in presentable form. He had studied the other two entries, but thought that Sidelight was wider sprung in the rib, had more meat on the back and was fuller in the quarters, though was not as fat as either of the others. When the time came for judging the calves Tom became quite nervous; it was a new experience, but he did his best. The judge, a local man and somewhat elated over his selection for the place, indicated a preference for the long-haired, level red and the furry coated roan, each revealing the herdsman's art in hair dressing and posing, and gave them first and second, leaving Sidelight outside the money. Scarcely had the ribbons been tied when a man from an adjoining district stepped into the ring and hastily ran his hand over each calf and turned abruptly to the judge and said, "You must be afraid of spots."

"Well I don't like 'em much," was the reply.

"You don't seem to like form either," was the biting retort.

This started a general discussion, and while the weight of reputation inclined favor to the red and the roan, the more experienced pronounced Sidelight the best prospect of the three. At the tying of the ribbons Tom was greatly downcast, for his hopes had been nursed for many months; but this unexpected interest from others in his entry gave him new hope, and he led Sidelight back to his stall with mingled chagrin and buoyancy. He had finished tying him to the manger when he was addressed by the man who had started the discussion of the ring. "Sonny, you've got a coming steer there; you deserved to win, and I want you to fix him up for the provincial fair next year."

"I will, if my father will let me," said Tom.

"Who is your father?"

"John Foster. He couldn't be here to-day."

"Well, he'll let you, and I'll see that he does. Tell him Brown said so."

Scarcely had he departed when Mr. Landers, the owner of the red winner, approached Tom and said, "Well, my boy, your calf needs more fitting, but he's a right good one. Do you want to sell him?"

Tom said he hadn't thought about selling him.

"Well, if you do, I'll give you \$50 for him."

This looked like a good price to Tom and he was

tempted to accept the offer, but heeding Mr. Brown's suggestion, he said "No, I thought I'd fit him for the provincial fair next year."

"You know that takes a lot of time and considerable expense," was Mr. Landers' reply. "Better sell him when you have a chance."

But Tom quietly answered in the negative and Landers left with the request that he write if he wanted to sell.

The fair over, Tom and Sidelight were again at home, Tom much wiser if not more enthusiastic than before. He had a talk with his father about the show and told him what Mr. Brown had said.

"Yes, you've done so well with him, I want you to fit him for the provincial fair."

Tom set about learning how to care for the steer during the coming year, and in doing so he gained many points in the management of the herd and the farm as well. The seasons passed quickly by and Sidelight made splendid advance. His was the first entry received by the secretary of the provincial fair and Tom had Sidelight on the grounds several days in advance of the opening date, thinking a few days' rest would be to his advantage after shipment. The judging of the steer classes was delayed a day, as the judge had been unable to reach the fair on the day appointed for the purpose. Tom was busy about the stall when he was accosted by his old friend of the year before, who gave him a hearty handshake and eagerly examined Sidelight. He turned to Tom and said, "I knew I wasn't fooled either in the calf or in you." They talked of the other entries, many of which were commendable, and being advised of the delay in judging, Brown said, "You had better go in with the boys in the judging contest for practice to-day. I'll be around to watch after your steer." To this Tom assented and when the class was called he went about his work soberly and his papers when finished were handed in.

Early the next forenoon the yearling steers were called out and Tom led Sidelight into the arena among twenty other entries. The judge seemed quite at home in his work and went about picking the winner. One after another was sent to the fore, and though he gave Sidelight a minute inspection, he did not move him. Tom began to wonder if spots really did make a difference, and wondered, too, if a reputation was a factor in the making of awards. As the judge re-arranged those he had selected for the prizes, Tom's hope was waning, for Sidelight stood in tenth place. His hands twitched in spite of himself, but Brown, leaning over the railing, touched Tom on the shoulder and said, "Don't you worry." The judge had made a careful selection and seemed to be going over them for his final look, and Tom's heart sank. The crowd looked on with intense interest. Stepping back as though satisfied with the rating, the judge paused one brief second, and placing his hand on Sidelight's hip, motioned Tom to back him out, and as he came closer said in a low voice, "Go to the top." As Sidelight was led into the first place, the crowd cheered and the applause continued for several minutes. When the blue ribbon was handed to Tom his hand trembled so that he dropped it, and the man holding the second winner picked it up and stuffed it in Tom's pocket, and taking his hand said, "Shake, old man." A dozen hands were extended to Tom. Brown patted him on the back and said, "Well, sonny, it paid didn't it?" The red and the roan stood fifth and seventh. The onlookers spent much time in "going over" Sidelight and discussing his form. The man with the megaphone announced the result of the awards, and when he gave the name and age of the owner of the winner, another cheer broke forth from the throng. Tom was much abashed, for it was all new to him, and he slipped out with Sidelight, and alert Mr. Brown, anticipating offers to purchase, advised Tom to make a strong price on him. "Better make it \$300, for Landers needs him. You notice his calf and 2-year-old won, but his yearling is weak." Sure enough, late in the day Mr. Landers called Tom aside and said, "I'm ready to talk business if you want to sell your yearling and will make me a fair price." Tom said he would sell him and wanted \$300. Landers demurred, but observing that Tom was disposed to stand firm, he closed the deal, fearing to leave it open, as he had the

herd prize in view in the coming big show of the year, and a check for \$300, the largest he had ever seen, rested in Tom's hand.

Tom led Sidelight over to the Landers' stalls, patted him again and again, and when he finally turned away he was fumbling in his pocket for his handkerchief. Having decided to leave for home that night, he went to the superintendent, who directed him to the secretary's office for his prize money.

The train reached the home station early in the

morning, and after securing breakfast at the lunch counter, he rode to the farm with the rural mail carrier. Alighting at the front gate he carried the home mail under his arm. His father met him in the yard and asked him what he had done with his steer. For reply Tom handed him the two checks, for \$375, and told him of the winnings. They passed joyously into the house and surprised his mother, who radiantly greeted him and when told of his winnings and sale of Sidelight, gave him a motherly caress. His father was opening the mail, and with some show of animation handed an

open letter to Mrs. Foster to read. She read the letter and with tears in her eyes, kissed Tom repeatedly. The letter was from Brown. It ran: "Tom won the judging contest and gets a scholarship at the Agricultural College. Good work. Thirty boys competed. Tom left the grounds before the decision was made. Congratulations." John Foster got up from his chair, and placing his hand on his son's shoulder, said: "Tom, we've been proud of you for a long time, but to-day we're a little prouder than usual."—FRANK D. TOMSON.

Automobiles, Farm Machinery and Farm Motors.

Second Year Drivers.

It is timely that those who have put in their first year of motoring should be instructed in what might be called post-graduate work. When you purchased your machine last year the agent gave you a certain amount of information regarding its operation and upkeep, but if the delivery was made during the busy season you certainly did not receive as much attention as if you had taken possession of your car during the quiet period, and so you were compelled to take a number of lessons from experience and to gather information here and there about matters that sooner or later developed tremendous importance. You can drive now, however, and to some degree or other you are in a position to cater to the requirements of your auto. We wish you to advance another stage and become proficient, or as they say in the United States, "smooth". Perhaps your first two or three trips found you releasing the clutch too quickly and forcing rather than feeling the gear shift lever in the changing of gears. Start right out now to get the ratio between the clutch pedal and the gear shift lever. If necessary go out on the road alone and practice with your car until you can get into high gear without making the slightest sound. A careless driver rattles the gears and annoys his passengers as well as any spectators but he does something far worse than this,—he jars his car from one end to the other. A machine is not built absolutely rigid. There must of necessity be considerable play in it from the crank shaft to the differential. This play makes for easy operation but if called upon too sharply results in damage to the chassis and the body. If you want a long life for your machine you must establish absolute freedom from strain. Thousands and thousands of miles of travel do not harm an auto if it is started smoothly, run with care and stopped without vibration. We have talked to motorists about this and they always agree that we are right and there is no argument, but the next thing you know they are jumping and jerking their cars all over

the road. Don't agree with a mechanical idea and fail to carry it out, for the loser is not the person who gives you good advice but the one who refuses to accept it. Vibration is the worst enemy of any mechanism. It is not only in the handling of the clutch and gear shift that you develop jerking movements but you accomplish the same purpose when you run on a rim, or on under-inflated tires, or allow your motor to misfire. A motor that is not giving an even series of explosions cannot be able to operate with an even flow of power and so you should take steps against the first signs of misfiring. You may have an air leak around the joint of the intake manifold. You can easily determine the existence of this trouble by spraying gasoline around the joints when the engine is turning over slowly. If your motor speeds up there must be a leakage for the manifold is taking in additional fuel. Perhaps your valve stem guides have become worn and if so this condition should be remedied without delay. Then sometimes the threads of the spark plugs do not fit tightly into the cylinders and the effect is misfiring. Spark plugs that have become dirty and carbonized cause uneven operation and should be cleaned without delay. Kerosene is an excellent cleanser for the points of spark plugs. If your platinum points are improperly set the motor will act strangely. It is always well to have the points examined at regular intervals. These cold days the ordinary gas causes a lot of spitting and spluttering and we urge the owners to heat up their motors before putting cars into gear.

An additional advantage accruing from the heating of the motor is the distribution of the oil. A machine that has been standing for some time gets rather set and the lubricant congeals. You get the easiest operation when the oil is flowing freely in all parts of the power plant. We said something at the beginning of this article regarding the stopping of a car. Do not bring your machine to a halt as if you were afraid of striking a wall or an iron fence. There is nothing gained by jerking up an auto. Perhaps a second or two is saved but if the life of your car is to be considered this small

space of time is certainly a costly item. In the vast number of cases you know the point at which you are going to pull up, so why not throttle down in plenty of time and allow the momentum to die? There is no sense in murdering it at the expense of the brakes and the entire structure of your auto. When you hear a strange sound coming from any part of your motor do not say, "Oh, I guess that will be all right," but make an immediate investigation, because sooner or later you will require new parts and it is well to remember that these do not work as well in conjunction with old worn parts as they do with those that have not been subjected to terrific strain.

We have preached a great deal about cleanliness in automobiling and we shall not dwell upon it in this article, other than to remind you again that care should be taken of the engine. The cleaner the motor is the softer it purrs. Demand that the valves be ground consistently, that carbonization be kept at a minimum, that the oil be changed regularly and that foreign matter be taken away as often as possible from moving parts.

AUTO.

An Auto Course.

Having secured great benefit from your magazine and being especially interested in the auto department, I write to you to find out where I could get a short course in the mechanism of an auto with the idea of becoming an efficient driver and repairer. I own a car myself and of course would like to become thoroughly familiar with repairing on it. Do you know of any such place in Toronto or a city nearer to Leeds County? I could not be away over a month, more or less.

M. E. M.

Ans.—The Technical Schools of Ontario are conducting automobile courses with nominal fees. Write the Minister of Education, Toronto, Ontario, for full information.

AUTO.

POULTRY.

Why Some Hens do not Lay in Winter.

If hens would only give sixty or seventy per cent. production during the winter months when eggs are selling around a nickel apiece, and would continue to lay during spring and summer when comparatively little attention is required, poultry farming would be a profitable undertaking. However, only a small percentage of farm flocks lay during the frosty weather; it is unnatural for them to do so. If eggs were gathered as freely during December and January as they are in April and May, spring prices would prevail during the winter, as supply and demand are the price-setting factors. Some flocks do lay when eggs are at the top price and give their owners a liberal profit. If one flock will lay why won't another, is a problem which bothers many poultrymen. The fault cannot be entirely with the breed, as representatives of most breeds have satisfactory winter egg records. There is a good deal, however, in the strain. Considerable selection has been made with practically all breeds. By mating the heavy layers with sons of heavy layers, and selecting the best pullets and again mating them with blue blood so far as production goes, the egg yield has gradually been increased, but in some cases at the expense of show qualities. Others select for the show-ring, giving little consideration to egg yield. It is somewhat difficult to get high production and show qualities combined in the one bird. If eggs are the aim then it is important that the breeding stock be descended from a laying strain. The flock may be bred right but yet not lay the desired number of eggs. There are so many things which might affect production that it is difficult to single out any one thing which might cause a low egg yield.

In the first place, it is unnatural for fowl to lay during the winter or to produce a large number of eggs in a season. Old hens or late-hatched pullets cannot be expected to lay heavily until near spring, even under ideal conditions of feed and housing. If eggs would be secured next winter, steps should be taken to have a number of pullets hatched during April or early May. These should be fed a ration which will keep them growing during the summer. As a pullet must reach a certain stage of maturity before she commences to lay. Some late-hatched birds develop rapidly and commence laying early, but they are the exception rather than the rule.

The pea has a good deal to do with the thriftiness of the flock. Draft, dampness, and poor ventilation

are detrimental to the health of the birds and unhealthy birds are not the layers. Let sunshine and fresh air into the pen. Cotton permits the latter to seep through without causing a draft. Over-crowding must be avoided. The birds must have room to scratch freely and also room on the roosts. Over-feeding, under-feeding, lack of variety in the ration, no grit, green feed, meat, or water, will keep the flock from laying. Lack of any one of the above mentioned items may be the determining factor causing absence of eggs. With the present price of grains, there is greater danger of under-feeding than over-feeding. The materials which constitute the egg must be furnished the flock. If there is a deficiency in the raw material furnished, one cannot reasonably expect the birds to manufacture a large number of eggs, no matter if they have been selected and bred for heavy egg production. Some of the essential raw material, as meat food, is expensive and there are flocks which seldom have access to it. Grit and shell which are cheap are lacking in some pens, and yet eggs are looked for. One poultryman has a flock of pullets which looked healthy and were quite red about the head yet were not laying the middle of December. About that time he commenced feeding green cut-bone and meat scraps, which cost him five cents a pound. He fed at the rate of about one pound a week to ten birds. Within a week two of the pullets commenced laying, and towards the middle of January he was getting nearly forty per cent. production. This may not have been due entirely to the addition of meat to the ration, but we believe that it had something to do with starting the birds to work. If so, it paid to feed meat even at five cents a pound. Skim-milk is a substitute for meat which is available on many farms, and it is doubtful if there is any more profitable way of marketing this by-product of the dairy than feeding it to the flock. Lack of meat food in some form may be the limiting factor to production in many farm flocks.

Grain should be fed in a deep litter of straw so that the birds will have to work to get it. Exercise is essential to health and heavy production. It is surprising the number of poultry houses there are with bare floors. The birds pick up the grain quickly and then mope around until the next feed. They do not move around sufficiently to start the blood circulating properly. Wheat, corn, oats, buckwheat and barley make very satisfactory grain feeds. Hard grain is not enough; wet or dry mash or both are necessary. Some folk have the idea that a bird will over-feed if mash or grain is constantly before it. Such is not the case. The dry-mash hopper may contain rolled oats or a mixture of two parts bran, one part middlings, one part cornmeal, one part gluten meal, and one part beef scrap. The same material may be used in a moist mash, which should be fed occasionally. A little hot feed aids in

warming a bird up, but it should become warm by exercise in the morning.

Green feed of some nature is generally available on the farm, but it is not always fed to the fowl as regularly as it might be. Then, there is the matter of supplying the flock with a drink. An egg contains a large percentage of water, which is proof that water is a necessity and it should be clean. We know of flocks that are allowed to get their liquid refreshments by eating snow during the winter and going to the stock trough in summer. These flocks are not among the heaviest producers, however. Take the chill off the water on frosty days and if necessary fill the drinking fountains twice a day. If milk is available, have a fountain for it in the pen. Grit and shell are oftentimes overlooked but they are almost as essential to a laying flock as are the grain and mash. Regular feeding and careful attention to details are the price of success in poultry raising. If eggs are to be gathered during the winter the owner of the flock must be prepared to devote a little time to looking after the birds and furnish them with the proper housing and feed.

HORTICULTURE.

Setting and Caring for a Sweet Cherry Orchard.

At the last meeting of the Ontario Fruit Growers' Association, G. A. Robertson, of the Niagara District, gave a very comprehensive paper on the setting and care of a sweet cherry orchard. We reproduce here a part of it dealing more particularly with the purchase of stock, the setting of same and pruning the orchard.

Our future orchard should consist of trees procured from some honest, reliable nurseryman or grower. The first precaution is to be sure that they are true to name, and then it is necessary to see that they are grown on the Mazzard or sweet-root stock. Unfortunately, too many of our Canadian nurserymen use the Mahaleb stock; this is easier to grow in the nursery, but when planted in the orchard it makes a short-lived tree, as the butt of the sweet stock outgrows in diameter the Mahaleb root. The first noticeable effect is that some of the limbs on one side of the tree lack vigor, and finally die. This is followed by a rapid decline of the tree, and often a fungus breaks out at the surface of the ground where the root joins with the butt. I may also add that in cherries, as well as other fruits, the attention of careful bud selection is an item which has not been given due consideration. In California the failure of some of the lemon groves to produce remunerative crops has been investigated, and the shortage in the

crop is attributed to no other cause than the indiscriminate gathering of the buds used by the nurserymen. The prolific tree being, as a rule, not a tree where there is a superabundance of buds suitable for propagation, the nurseryman takes the buds from one of the same variety, but one which has a disposition to form a shade tree rather than one with heavy fruiting qualities.

In starting an orchard a serious mistake is often made by not giving the trees sufficient room. Sour cherries do well when planted twenty by twenty feet apart. Sweet cherries should have at least a distance of twenty-five by twenty-five, and the more spreading thirty by thirty feet. In my newer plantations I stake the orchard at twenty by twenty feet, and then start planting alternately each way a cherry and a peach. This makes the cherries about twenty-eight and a half feet apart diagonally. The peach coming into bearing more rapidly, and being shorter lived is used as a filler, and must be pulled out so as not to interfere with the cherries, which should not usually occur until after the trees have reached the age of ten or more years. The nursery stock, as procured from the nursery, should be one or two years old from the time of budding, the former is usually a straight, upright growth usually called a "whip," the two-year-old is branched.

From past experience fall planting of sweet cherries is most desirable for the Niagara District. One can get a better headed tree, as the buds are dormant, and the roots become firmly settled in the ground, and an early start in the spring is essential. If spring planting is followed they should be planted as early as the ground is suitable, as the buds usually swell very early, and many get rubbed off even with the most careful handling. After planting do not prune back too much. The terminal bud is the one where the growth starts most readily and then the several buds surrounding the terminal bud. I prefer to have the trees headed not lower than three feet from the ground, and three feet six inches is better for the more spreading varieties.

If you have a two-year-old tree, it will likely have a head formed, and if it is the proper height you may cut out the vertical growth of the terminal bud in the centre formed the preceding year, but don't shorten in the laterals if the tree has been fall planted, for top and root growth develop simultaneously, and if you cut off the one you retard the other. From actual test at the Vineland Experimental Farm the losses from the shortened-in trees were fifty per cent. greater than those left unshortened. My preference is to have a tree forked with three branches spaced evenly, and if you have such do not, under any consideration, cut it back. There is a common belief that a heavily pruned tree grows faster than an unpruned tree, and many prune heavily to "force wood growth." If you wish a tree to increase in size just let it grow. If you wish a strongly-forked tree leave the branches which form first the main shoot. The fast-growing branch is erroneously called a strong growth, whereas in reality the heavy-growing, upright branches are not the strongest growing, and the more rapid and upright growths stimulated by excessive pruning while forming the head of the tree is a source of weakness and trouble later on.

The future pruning of the tree is not a very serious problem. It consists of the pruning of some of the unnecessary branches that form in the centre of the tree, and trying to allow the tree to take on a natural rather than a forced wood growth. Do not allow one side of the tree to grow at the expense of the other. If it is necessary to remove rather much wood from the centre of the tree, a modified system of summer pruning may be adopted, this is best done about the middle of July. This has a tendency to check wood growth and cause the formation of fruit spurs. As the trees start to bear the fruiting will retard the excessive wood growth and the manure may be applied more liberally. When the trees are in full bearing, liberal applications of barnyard manure may be applied in the winter, with the addition of about four hundred pounds of bone meal in the spring and about two hundred pounds of nitrate of potash per acre.

THE DAIRY.

The herd sire requires exercise during the winter. If a yard or box stall is not available to turn him loose in, lead him around for exercise occasionally.

If the young calves appear a little unthrifty or are scoured slightly add a small quantity of lime-water to their drink and keep them in clean, well-ventilated pens.

Did you keep feed and milk records last year? Some who did for the first time were surprised when they balanced the books at the end of the year. A few of the cows which were considered to be in the second-rate class gave a larger net profit than some of the pets. It is not so much the quantity of feed a cow eats as how much profit she makes after deducting the price of feed and labor.

Twenty-two Ayrshire cows and heifers qualified in the Record of Performance test between December 15 and January 4. There were five in the mature class, with Lady Jane standing at the top with a total of 13,100 pounds of milk and 514 pounds of fat. Lady Floss of Springbank was the only cow to qualify in the four-year-old class. She gave 8,298 pounds of milk and 325 pounds of fat. Lenore 2nd was first in the three-year-old class, giving 11,302 pounds of milk, testing 4.38. The two-year old class was led by McGregor's Laurie May with 13,060 pounds of milk and 503 pounds of fat.

Eastern Ontario Dairymen Meet.

The 41st Annual Convention of the Dairymen's Association of Eastern Ontario was held in the town of Perth, January 10 and 11. This particular town and surrounding district won world-wide fame in 1893 when the local dairymen supplied milk for the manufacture of the mammoth cheese which did so much to advertise Canadian dairying. This particular cheese weighed 22,000 pounds, and 207,200 pounds of milk were required in its manufacture. The convention held this year eclipsed similar events held in the past, not only in attendance but in the nature of discussions and quality of exhibits of cheese and butter. Questions of vital importance to dairymen were dealt with by men who knew whereof they spoke, and dairymen presented their side of the problem in a clear, concise manner. While prices for dairy products have been high the past year, which resulted in patrons of Eastern Ontario cheese factories securing considerably more revenue than in past years, it has not been smooth sailing. Help has been scarce, which put more work on the dairyman and his family in order that the milk supply be kept up to normal. Feed has been higher priced than usual, so that taking everything into consideration the price of cheese did not net the dairymen undue profit in 1917. However, all present at the convention appeared willing to bend every effort to further production, but they did ask for a square deal.

The attendance at all sessions surpassed that of previous years, which showed the interest taken in the Convention by dairymen of Lanark and surrounding counties. Those who did not avail themselves of the opportunity afforded missed a chance of securing valuable information. The convention adopted a resolution requesting the Government to strenuously enforce regulations under which oleomargarine is sold so as to protect, as far as possible, the producer of butter. A resolution was also passed in favor of a deputation of dairymen waiting on the Minister of Agriculture in order that they might present their views on cost of production and prices of dairy products, with the view of having price of the manufactured article commensurate with the cost of production so that there will not be a falling off in the output of dairy products.

President's Address.

In his opening remarks J. N. Stone, President of the Eastern Ontario Dairymen's Association, commented upon the numerous changes which have taken place since the convention was held in Perth seven years ago. The war has affected all classes of occupations and industries, but the cheese and butter industries have not suffered so severely as some as the price of both has increased, but, even at the high price of cheese during 1917 the President believed that dairymen producing milk for other lines than for cheese were the most fortunate. If the cheese dairymen are expected to fill the requirements expected of them, it was felt that they must be paid a fair price with their neighbors. Mr. Stone stated that "if the cheese price is correct then the prices of other dairy products are too high." The labor problem confronts dairymen, and lack of suitable help prevents many from increasing their herds. Labor-saving devices, such as milking machines, may help solve the problem. The President mentioned having seen several machines in operation the past summer, and all were giving entire satisfaction.

Mr. Stone outlined what the executive of the Association had done in an effort to protect the dairy industry against the competition of oleomargarine. This substitute was allowed to be manufactured in and imported into Canada as a war measure only, and if allowed to continue after the war he felt that a wrong had been done the dairymen. The executive believed that the dairymen had a right to be heard when the question was under consideration, but the order was put through without the authorities knowing whether the dairymen were in favor or against the order. It was believed that some organization would be needed to prevent oleo injuring the dairy industry. The speaker reported that he was looking forward to a prosperous season for dairymen in 1918, as cattle were coming through the winter in fairly good condition.

The secretary's and treasurer's reports were favorably received. The Association has met its obligations and has a balance in the bank of \$1,435.39. The 1919 convention will be held in Belleville.

Instructor's Report.

Before delivering his report G. G. Publow, Chief Dairy Instructor for Eastern Ontario, gave a reminiscence of instruction work since its inauguration fifteen years ago. Improvement in the quality of the product turned out from the factories and creameries has been continual since the inception of instruction work. The uniformity of quality and finish of the large exhibit of cheese at the convention spoke volumes for the work of the instructors. Mr. Publow reported a new field for dairying opening up in Northern Ontario, where 19 cheese factories and 3 creameries were operated last season. Four hundred and thirty-nine patrons with 2,110 cows averaging 2,991 lbs. of milk supplied milk to the 19 factories, and the quality was such that 9.94 pounds of milk were required to make one pound of cheese, which was less than in the older districts. In the 3 creameries 221,024 lbs. of butter were manufactured. The average production per cow was less than in other parts of the Province.

The 40 creameries operating in Eastern Ontario produced 4,080,000 lbs. of butter in 1917. This sold at an average of 39.5 cents per pound, which was 6 cents higher than last year. The quality of butter was considered to be good. Two of the creameries

collected cream in tanks, 13 in large cans, and 24 in individual cans. Twenty-five creameries used scales for testing. Some modified form of cream grading was advised in order that improvement in quality of butter be more rapid.

In Eastern Ontario 820 cheese factories were in operation during the summer of 1917. This was 20 less than the previous year. The patrons numbered 30,659 and they kept 8,000 more cows than in 1916, bringing the number up to 285,050. However, for the six months the yield per cow was only 3,477, being a decrease of 173 lbs. This was accounted for by the unfavorable climatic conditions and, to some extent, to scarcity and high price of feed stuffs. The factories handled 991,384,190 lbs. of milk from May 1 to October 31. This made 89,960,754 lbs. of cheese which was a decrease of 1,000,000 lbs. from 1916, but, owing to the higher price for cheese, patrons in Eastern Ontario received over two millions of dollars more than in 1916. It required 11.02 lbs. of milk to make one pound of cheese.

The instructors made 1,222 full-day visits and 4,630 call visits to factories. During the season 31,714 samples were tested by Babcock and lactometer tests, and 75 of these were found to have been adulterated. Legal action was taken and 65 fines were imposed. The instructors made 8,293 sediment tests of individual milk. The value of these tests is being more and more recognized in demonstrating to patrons the wisdom of cleanliness in all operations surrounding the production and care of the raw material from which cheese is manufactured. Mr. Publow reported that so far as he could estimate at least 90 per cent. of the total season's make were passed in first grade, and that the lower grades were mostly made in the month of August. This goes to prove that the weather is an important factor in making high-quality cheese. The speaker stated: "I have been a firm advocate and believer in the grading of dairy products for market. It is the one system that should do more than anything else to improve quality. It is the fair and sensible way of encouraging better methods by all concerned when one receives a better price for better goods. A system of cheese grading has been practically forced upon us by war and its results have been satisfactory."

During the summer further study of the effect of fat in milk or quantity of cheese produced was made, and it was found that the yield of cheese was in direct proportion to the percentage of fat in the milk. Cheese made from 100 lbs. of 5.3 per cent. milk weighed nearly 5 pounds more than that made from the same quantity of 3.3 per cent. milk. That patrons and factory men realize the importance of quality in milk was evidenced by the number of factories voluntarily paying for milk by test, increasing the past season from 86 to 95. Fifty-three of these paid by straight fat test, 38 used fat plus 2 system, and one followed a fat plus one basis.

Pepsin has been largely used as a coagulant and has given fairly satisfactory results, although there has been a tendency toward greater loss of fat in the whey. Uniform acidity of the milk from day to day and slightly lower temperature for the coagulation period was recommended. The instructors found that 625 of the patrons were using milking machines, and where care was taken in cleaning they were proving satisfactory. During the year 803 new silos were erected by patrons in Eastern Ontario, which is an increase of 200 over 1916. While there are some difficulties to be overcome Mr. Publow was optimistic regarding the future of the dairy industry.

The Work of the Cheese Commission.

The address by J. A. Ruddick before the convention should clear up any misconceptions which might have prevailed regarding the why of the Cheese Commission. The Dairy Commissioner is a member of the Cheese Commission, and he fully explained the work which has already been done by this body. Instead of criticism the Commission deserve a good deal of credit. The following excerpts from Mr. Ruddick's address explain the situation: "It is evident that some of the dairymen have looked upon the appointment of the Commission as an act which had the effect of preventing the price of cheese from going as high as it would otherwise have done, and that they have, in consequence, been losers to some indefinite extent. It seems to me, however, that a mere statement of the facts, with regard to the cheese situation, will show that this is entirely an erroneous view and that instead of being the means of preventing higher prices, the appointment of the Commission and the handling of the cheese through that channel has placed many millions of dollars in the pockets of Canadian producers in excess of what they would have received if the trade had been allowed to take its own course. In fact, it is hard to say what would have happened, because the export could not have been continued on the old lines at any price."

"In March last the Imperial Board of Trade, seeing shipping and financial difficulties looming up to stand in the way of the regular export trade, expressed a desire to purchase the entire exportable surplus of Canadian cheese of the season of 1917. With that end in view a representative of the Board in the person of Jas. McGowan, was sent to Canada, and the Canadian Government was requested to nominate two commissioners to act with Mr. McGowan for the purpose of dealing with the whole question. The Board of Trade had purchased the entire output of New Zealand cheese for the season of 1916-17 at 19 cents f. o. b. steamer, and was not, at first, inclined to pay more for our surplus of 1917. However, after negotiation the Imperial authorities finally authorized the Commission to offer 21 3/4 c. f. o. b. steamer Montreal for the exportable surplus of Canadian cheese for the season of 1917.

"Everything was done that was possible under the circumstances to protect the interests of the Canadian cheese producers. Proof of this assertion is found in the fact that the Ministry of Food has just concluded a further bargain with the New Zealand cheese factories to take their surplus output for the current season of 1917-18 at a price which will net them only between 19 and 19½ cents per pound. The price named is 20 cents f. o. b. steamer, but the factories pay the first three months' storage and insurance, receive 90 per cent. payment in 28 days, and allow 2½ per cent. on marked weights for shrinkage, which latter item alone works out at ¼ cent a pound. Of course, there is room for difference of opinion as to whether 21¼c. f. o. b. steamer Montreal was a fair price for the cheese, but I think it must be admitted that the purchaser of any article has a right to determine how much he is willing to pay. The British Board of Trade in this case simply took the place of the British merchant who in normal times imports the cheese, and it will hardly be disputed that the merchant has the right to determine the limit that he will pay in ordinary transactions.

"Although reference is constantly being made in the press and elsewhere to what is termed the 'fixed' price of cheese during the past season, I want to point out that there has been no 'fixed' price for cheese in Canada. The British food authorities fixed a maximum price for the retail sale of cheese in the United Kingdom, but there has not been, nor is there at this moment any regulation or other legal obstacle to prevent a Canadian cheese exporter or producer from selling his cheese at a higher price than the Commission is paying if he can get it, or from shipping it to the United Kingdom himself if he can secure the space. Of course, I am aware that for all practical purposes these facilities do not exist and that the factories are in a sense obliged to take the price which the Commission is paying, but the distinction between an actual 'fixed' price and control and the manner in which business has been done through the Commission should not be overlooked.

"The Commission, having been appointed, proceeded to formulate regulations to govern the acceptance of cheese. These regulations were made with a view of utilizing as far as possible the organization and facilities which already existed for the handling of the cheese trade. It was suggested in some quarters that the buyers should be required to pay not less than a certain price in the country. The Commission, however, knowing the history of the cheese trade, relied upon the competition between buyers to secure fair prices to producers, and the experience of the past season proves that their faith in that matter was well founded. As a matter of fact the price paid on the cheese boards was, in many instances, so high that there was not sufficient margin to pay freight, storage, cartage, cooorage, etc., and leave any profit to the dealer. An average of 21 cents at country shipping points would have been a fair price for No. 1 grade. Producers can have no complaint on that score, and if the buyers did not make any money it was their own fault.

"The Commission has recognized three grades of cheese, and probably the principal innovation in the handling of the season's output was the one by which a definite spread in value was fixed between No. 1 and the lower grades. It is, I suppose, generally known that 21¼ cents was paid only for No. 1 grade, the prices for No. 2 and No. 3 being 21¼ cents and 20¼ cents, respectively.

"The buyers were required to grade the cheese themselves, and to offer them to the Commission in lots of 500 boxes of one grade and color. When this was done the Commission sent its own inspectors to examine them, and if any of the factory lots offered were not up to grade as represented they were struck off the list and others had to be substituted. The chief inspector was a member of my own staff, Mr. Jos. Burgess, and those who know Mr. Burgess will have no difficulty in believing that the work was carefully and conscientiously done.

"The rival claims of different districts for superiority in the matter of quality have been discussed for years without any information on the subject. As all the cheese handled by the Commission were classified into three grades before being offered, and were all accepted on that basis, it was only a matter of compilation to determine the actual number of boxes of the different grades mentioned. The following table shows the number of cheese handled by the Commission from June 1 to December 31, 1917, by provinces, with the percentage of different grades in each case:

Province of Origin	Boxes	Grades (Percentages)		
		No. 1	No. 2	No. 3
Ontario	1,087,359	93.38	6.42	.20
Quebec	755,390	70.88	27.13	1.99
P. E. I.	17,488	90.85	9.00	.15
The Dominion	1,861,237	84.22	14.85	.93

"The standards on which the classification was made are practically the same as those which have been observed in the trade for many years. Roughly speaking, grade No. 1 may be described as including all cheese of good commercial value, well boxed and having no objectionable flavors. Cheese were considered No. 2 grade if there were a percentage of samples off flavor, fruity, or unclean in flavor, acid, too much moisture, open, loose, gassy, cracked ends, soft rinds, bad finish, or too high for the boxes. One or more of these defects was sufficient to place the cheese in No. 2 grade. No. 3 grade consisted of cheese which were badly off flavor,

very fruity or rancid, or very acid; that is to say, any cheese which had the defects of No. 2 grade only in a more pronounced degree."

Mr. Ruddick reported that the Commission was impressed with the advisability of standardizing the size of cheese made in Canada. Lack of uniformity in size of cheese made it difficult to secure boxes to fit the cheese. Standardization of one would lead to standardization of the other. Mr. Ruddick gave considerable information regarding the use of fibre cheese-boxes. The speaker did not believe that the patriotism of farmers is wholly a matter of dollars and cents. With favorable conditions a further increase in milk production was looked for during the coming season.

Buy a dairy bull from a man who can show you the records of his dam and granddam.—Geo. H. Barr.

The most successful man is not he who knows the most, but it is he who can put the greatest amount of knowledge into practical use.—Geo. H. Barr.

We must look for Government control of prices, but they should be high enough to induce farmers to keep up quantity and quality of food production.—A. A. Ayer.

A man who won't do everything he can to produce until the war is won is a traitor to his country.—J. Alexander.

The present demand for condensed products is not likely to prevail after the war.—J. A. Ruddick.

The eight-hour system is in vogue on many farms—eight hours before dinner and eight hours after.—Prof. H. H. Dean.

I have no sympathy with people who say that farmers are profiteers. If dairymen did make a little extra last year, it didn't begin to make up for the lean years of the past.—Prof. H. H. Dean.

Milk contains food nutrients for building a perfect man or woman.—Prof. H. H. Dean.

A woman giving oleo to her children is doing them an irreparable harm. What she saves between the price of oleo and butter may later be paid out many times in doctor's bills.—Prof. H. H. Dean.

The condensed milk factory uses all the solids in the milk; the creamery about a third of the solids, and the cheese factory about one-half.—Prof. H. H. Dean.

Why should prices of dairy products remain stationary when feed prices are going up?—An Eastern Ontario Dairyman.

Why should the farmer be asked to continue producing a certain product when he is not meeting expenses by doing so? He should not be blamed if he changes his method of farming in order that he may be engaged in the most profitable line.—A Northfield Dairyman.

Twenty-one and three-quarter cents was a fair price for cheese last June, but it was not fair last fall. If the price does not increase this spring, dairymen will turn their attention to other lines.—H. Smith.

The Commission Saved the Situation.

James Alexander, Chairman of the Cheese Commission, related some of the difficulties the Commission had to contend with in commencing the movement of cheese at a time when factories and warehouses were filled to the doors. Rules and regulations had to be drafted, bottoms for shipment secured, money made available for financing the undertaking, etc. Money was advanced by the Finance Minister so that one difficulty was overcome, making it possible to pay factories for the product. The speaker believed that some arrangement such as that formulated for handling the cheese the past year was necessary in order that the cheese industry might be carried on. There has been a big saving in rate of exchange to the country by the methods adopted. It was explained that the Commission were servants of the British Board of Trade rather than "fixers" of cheese prices. The purchaser, not the Commission, set the price. The cheese had to be on the spot ready for shipment, as no one knew just when there would be space available. This required careful planning and much work. Mr. Alexander didn't blame dairymen for wanting higher prices, but he asked all to be reasonable and have a cheery face until the war is won at least. "We are in the support trenches and should bend every effort to support," he said.

Butter and Cheese Problems.

Considerable experimental work is carried on at the dairy of the Ontario Agricultural College every year,

and many knotty problems are there solved which materially aid butter and cheese manufacturers as well as producers on the farm. In a brief address Prof. Dean, of the College, gave those present at the convention much valuable information regarding causes of "difficult churning," "variation in weight of print dairy butter," and "variation in percentage in fat in cream." Reference was also made regarding the use of rennet and pepsin in cheese-making and the benefits of paraffining cheese. Experiments have proven that breed of cows and feed have little effect on the time required in churning, and that lactation did not make the difference which some people believed, provided conditions of temperature at time of churning were right. It was also found that cream from cows fed in the stable churned as readily or even more so than did cream from the same cows when on grass. Richness, ripeness and temperature were factors to be considered. Thin cream, cold cream under ripe cream and too much cream in the churn were the chief causes of difficulties in churning, and all can be readily overcome.

There is a considerable loss in weight of butter when held, and the more salt that is added the greater the shrinkage. Prof. Dean believed that those in authority should exercise judgment before seizing short-weight butter on the market unless it can be proved that fraud was intended. The weight of a pound of butter might easily decrease an ounce between the time it was printed and placed on the market owing to shrinkage.

It was found that different speeds of the cream separators caused a marked variation in the test of the cream. If care were taken to always turn the handle at the same speed and the same amount of water or skim-milk used to flush the bowl there should be little variation in the test from day to day.

In regard to coagulating material Prof. Dean advised cheese-makers to use a good brand of commercial rennet if it could be secured, if not a mixture of pepsin and rennet could be used, but care should be taken that pepsin solution has not lost its strength. The speaker believed it would pay makers to paraffine cheese that were to be held at the factory for some weeks, as it prevents shrinkage. The outfit for doing the work is not expensive and it does not take long to dip the cheese.

Butter-Making a Science.

L. A. Zufelt, Superintendent of Dairy School at Kingston, claimed that butter-makers are laboring under a serious handicap, and can never hope to make as high-quality butter from gathered cream as can be made in whole-milk creameries. While color and texture are under the control of the manufacturer, flavor is more or less determined by the quality of cream. The speaker stated that "color and texture are influenced largely by the richness of cream, temperatures of cream and wash water and length of time in working." Thin cream and too cold wash water tend to produce speckled butter. Too rich cream has a tendency to give trouble in churning if churn is more than half filled, while too thin cream does not churn readily and when the butter does gather it is likely to be more or less speckled and have a greasy texture. A cream testing from 32 to 35 per cent. fat was recommended, and then only have the churn about half filled. Mr. Zufelt believed that failure to have cream, wash water, etc., at proper temperature was responsible for considerable of the defective color and grain. Using plenty of water for washing and having it at four or five degrees lower than proper churning temperature was advised.

To improve the flavor of butter the quality of cream delivered by patrons must be improved. This may be brought about by offering a premium for quality in cream. It will never come by paying the same price for all cream irrespective of quality. Pasteurization aids in overcoming some of the defects of cream. Mr. Zufelt suggested that improvement will come by securing a sweeter cream and more frequent delivery and the production of 35 per cent. cream. Makers were advised to forget about a 16 per cent. moisture content and endeavor to make a smooth, firm, butter of uniform color; to use proper temperatures for churning and to see that sufficient pure water of low enough temperature be used. Installing pasteurizers and other modern machines aids in improving the quality. "Get all the information you can from whatever sources available and don't use guess work," said the speaker. "Butter-making is an exact science and does not admit of a hazardous practice."

Plan, Prepare, Plant.

Prof. J. H. Grisdale, Director of the Experimental Farm, Ottawa, explained various methods of increasing production even under the many handicaps of the present time. He did not blame agriculturists for being somewhat provoked at so much volunteer advice coming from city folk who did not understand the producer's position. However, he believed the situation to be serious, and claimed that united efforts were required in order that more food be produced in 1918. While more money was passing through the farmers' hands than ever before, the speaker did not consider that it was any criterion that unusual profits were being made owing to the increase in the price of everything required on the farm. Greater quantities of food can be produced by increasing the acreage under cultivation and by better methods of farming. The speaker discussed "better methods" under the following headings: Better planning, better preparation, utilization of man and horse labor to the best advantage and prompt action. Between now and spring the manure might advisedly be put on the land. Hauling direct from the stable and spreading it on land intended for hoed crops was recommended; if the snow gets deep it might be put in small piles. This will save considerable valuable time in the spring. Prof. Grisdale emphasized the fact that seeds

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of all varieties are scarce, especially root seed, and advised the securing of all seeds required this spring at an early date. They are high priced now, but indications are that they will be higher. The winter is also the time to overhaul harness, implements, etc., and make necessary repairs. The speaker believed that horses could be wintered more cheaply than is the custom and then put in condition for spring work a few weeks previous to commencement of seeding operations. Treating seed to prevent smut was also given as a method of increasing yields at small expense. By having large implements, big fields, using three or four horses on the implements, riding instead of walking when tilling the soil, etc., all tend to economy of production with the least effort.

Considerable work has been done at the Experimental Farms in the way of comparing costs of using small and large implements in farm work. The following table gives some of the results:

Implement	Size	Number of horses	Cost per acre
Plow	1-furrow	2	\$2.00
	2-furrow	3	1.25
Disc	12-blade	2	.90
	17-blade	3	.80
	double disc	3 or 4	.45
Harrow	4-section	2	.17
	6-section	3	.13
Seeder	11 marker	2	.22½
	20-marker	3	.18

In regard to the double disc Prof. Grisdale claimed that good work at a saving in time could be done by attaching a throw-in disc behind a throw-out or vice versa, provided a rigid frame double disc was not available. The speaker advised getting on the land as soon as it was fit in the spring. Early seeding generally gives best returns.

Convenience in the stable, running the young stock loose in sheds or stalls, using labor-saving devices as litter carriers, feed trucks, milking machines, self-feeder for feeding hogs, etc., were mentioned by the speaker as a means of keeping production at the maximum under labor shortage.

Herd Record Work.

Geo. H. Barr, chief of the Dairy Division contended that "in no line of agricultural work in Canada is there a greater opportunity to increase production than there is in the improvement of the dairy herds." The average yield of milk per cow is around 4,300 pounds per annum, but there are herds averaging over 10,000 pounds. A high-producing herd can be purchased, but improvement can also come through selection and breeding the best cows to a sire that has a long line of heavy-producing ancestors. While the first plan is quickest it is expensive. The speaker favored the latter plan as it tends to develop and train the owner to handle his herd successfully as it develops year by year. Mr. Barr claimed that the first step towards herd improvement "is to be dissatisfied with the cows on hand" and the second is "to either own or secure the use of a properly bred sire as the improved milking qualities of the heifers must come through the sire." It is not a difficult matter to accurately pick out the best cows if records are kept. Having the record of each cow a dairyman has something definite to work on in building up a profitable herd. Records are also a guide in feeding and tend to avoid the waste of expensive feeding of cows which have not the necessary dairy capacity for increased production. To prove that this work was justifiable the speaker stated "that the average yield of milk per cow for all Canada has increased 30 per cent. since cow testing work was first commenced by the Dairy Division in 1904. This means that the total value of Canadian dairy products was greater by at least \$50,000,000 in 1917 than it would have been if there had been no improvement in the herds since that time. The proper use of the information contained in the records was strongly urged. Records themselves will not make a cow give more milk, but they will enable the owner to know his cows and select and feed intelligently. Saving heifers from the best cows, weeding out low producers and using a sire of the right calibre has enabled some dairymen to double their herd yields in five or six years. Those who have had the right viewpoint in keeping herd records have profited and their success should induce others to commence keeping records this year.

Butter Grading.

The address by J. H. Scott of Toronto who has been in charge of butter grading the past season dispelled any doubt which might have existed regarding the practicability of grading butter by sample. Mr. Scott outlined the circumstances leading up to the commencement of grading and his experience so far leads him to believe that it is practical for creameries to put up and mark a sample box for scoring purposes. The boxes and stamping outfits were furnished by the Department at cost so as to have uniformity in the system of marking. Twenty-six creameries made application to have butter graded. As the samples were received at the grading station, they were placed in storage so that all would be under the same condition so far as temperature was concerned. The score card used was 45 points for flavor, 25 for body and texture, 15 for color, 10 for

salt and 5 for finish. First grade butter scored 92 points and over; from 87 and under 92 was placed in second grade; 82 points and under 87 constituted third grade and below 82 were considered as culls. Of the 3,299 samples graded 82.16 per cent. were placed in first grade; 28.15 per cent. were seconds, and 17.82 per cent. was under second grade. The greatest percentage of poor butter was received in August when conditions were most unfavorable for the production of high-quality butter.

The most common defects in flavor which Mr. Scott found were: "heated", "sour" and "yeasty flavors" with "rancid" flavors developing in some samples. These are not insurmountable difficulties. Loose, open texture and weak body were other defects noticed. The speaker stated that, "excessive free moisture is a serious defect in butter from a commercial standpoint. It not only makes a 'sloppy' or 'mushy' textured butter, but is the cause of a great loss in shrinkage to the trade in storage and in cutting out to the retail trade in prints as most of our butter is handled to-day. Proper incorporation of the moisture would prevent a great many of the complaints we hear of short weight in butter when it reaches the dealer". The color and salting are important from the consumers' standpoint. A considerable percentage of the butter was reported as showing a little freckle or waviness which is objectionable.

In order to get a general idea of the butter produced throughout the province fifty creameries other than those for which grading was done regularly sent in samples in August and September and 68 per cent. scored over 92 points which placed them in first grade. Mr. Scott contended that there is much room for improvement in the quality of butter produced in Ontario. Many creameries accept cream regardless of quality and this retards progress. The mechanical end of butter manufacturing is also weak in some creameries. The "off" flavors developing in storage can largely be overcome by pasteurizing the cream and this was advised if butter was to be held. Mr. Scott found that butter from cream so treated scored practically the same four months after being placed in storage as it did when fresh. He could not say as much of butter from unpasteurized cream. In the discussion which followed more evidence regarding the benefits of pasteurizing and grading was given by Mr. Barr. The movement though late in getting underway is a step in the right direction and everyone interested in dairying should support it. The price now is high for all grades of butter but there are reasons for believing that it will not always be so. High-quality butter will undoubtedly be able to hold its place but low grades already have a relentless competitor in oleo. Uniformity of flavor, color, texture, salt, etc., in the entire output of Ontario butter is what is needed. Grading will help bring this about.

Cheese and Butter Exhibit.

The exhibit at Perth was the best in the history of the Eastern Dairymen's Association. During the past few years great improvement in appearance and finish of the product has been made due undoubtedly to the good work of the dairy instructors. Geo. H. Barr in commenting on the exhibit stated that on the whole "it was the best lot of cheese he ever went through at an exhibition. One-third of the entries were as fine a lot as a man could be expected to put up". This, coming from one of the experience and calibre of Mr. Barr should encourage Eastern makers to continue working towards perfection. The change from rennet to pepsin as a coagulant has evidently had no detrimental effect. F. Morton of Belleville assisted Mr. Barr in judging the cheese and both expressed the opinion that the entries would compete favorably with entries from Western Ontario.

The exhibit of butter was small but the few entries were of high quality. I. W. Steinhoff of Toronto made the awards. The following are the awards in both butter and cheese:

Butter.—CREAMERY: 56-lb. box, 1, E. J. Smith, Brockville; 2, E. E. Chaffee, Cornwall; Jas. Small, Prescott, (equal); 3, M. Robertson, Belleville. One pound prints, 1, Jas. Small; 2, E. J. Smith; 3, E. E. Chaffee. DAIRY: 20-lb. crock, 1, Mrs. J. Carson, Perth; 2, Mrs. F. Ferrier, Perth; 3, R. Patton, Richmond Hill; 4, Mrs. J. D. Ewart, Perth. DAIRY BUTTER: One-lb. prints, 1, Mrs. J. Carson; 2, Miss A. S. Boyce, Warkworth; 3, Mrs. H. Sexsmith, Napanee; 4, R. Patton; 5, Mrs. J. D. Ewart; 6, Miss I. Drummond, Almonte.

Cheese.—FLATS: 1, C. T. Rogers, Kingston Mills; 2, Geo. Alguire, Wales; 3, A. Hawkins, Carleton Place, C. A. Wilkins, Mille Roches, (equal); 4, B. G. Monroe, Apple Hill, J. Small, (equal); 5, A. McDonald, Martintown; 6, G. Rancier, Wales. STILTONS: 1, A. J. Cameron, Cornwall; 2, J. Snetsinger, Dickinson's Landing; W. J. Potter, MoulINETTE, (equal); 3, N. H. Purdy, Belleville; 4, W. F. Gerow, Napanee. SEPTEMBER COLORED: 1, G. L. Alguire, 2, G. Rancier, W. P. Kilfoyle, Franktown, (equal) 3, L.F.M. Murray, Kemptville; 4, W. J. Potter, W. Lines, Crasonby, (equal); 5, E. E. Chaffee; 6, A. McConnell, Merrickville, J.W. Fretwell, Oxford Mills (equal). OCTOBER COLORED: 1, G. Rancier; 2, A. McConnell, T. L. M. Murray, (equal); 3, E. S. Rogers, Kingston Mills; 4, B. G. Monroe, Apple Hill, H. St. Dennis, Martintown, (equal); 5, B. M. Haley, Lanark; 6, E. E. Chaffee. SEPTEMBER WHITE: 1, M. Haley; 2, L. Tallman, Ottawa; 3, G. Rancier; 4, J. King, Almonte, D. Lyons, Ardock, (equal); 5, R. H. Henderson, Richmond Hill; 6, E. E. Chaffee. OCTOBER WHITE: 1, C. Wilkins, 2, G. Rancier; 3, Geo. H. Rose, Stirling; 4, A. J. Cameron, Cornwall; 5, J. Cameron,

South Mountain, T. H. Wood, Perth (equal); 6, A. McDonald, Martintown; D. Lyons, (equal).

Chas. Wilkins had the highest scoring cheese in his entry of October white, the score being 98.1. More than half the entries scored over 95 points. Large cheese sold by auction brought 21¼ cents per pound, flats, 21½ cents. Butter brought from 45 to 47½ cents per pound.

Evening Session

The large hall was filled to its capacity at both evening sessions of the convention, among the speakers were: Dr. J. W. Robertson. C. F. Bailey, Assistant Deputy Minister, W. J. Bell, of Kemptville Agricultural School, Prof. Dean of O. A. C., Dr. A. E. Hanna, M. P., F. W. Hall, M. L. A., A. A. Ayer and J. J. Hands, mayor of the town. These gentlemen gave valuable information relative to practical methods of assisting the Empire in its hour of trial. The need for food is great and Canada is a food exporting colony lying closest to the seat of war. Our duty was clearly shown.

The following directors were elected: H. Glendinning, Manilla; G. A. Gillespie, Peterboro; W. H. Olmstead, Bearbrooke; J. McGrath, Mt. Chesney; J. A. Sanderson, Oxford Station; Neil Fraser, Vankleek Hill; A. Hume, Campbellford; Wm. Brown, Dickinson's Landing; E. H. Graham, Carp; A. J. Robertson, Martintown; Geo. Smith, Iroquois; M. N. Empey Napanee; W. D. Benson, Picton; T. A. Thompson, Madoc; J. Steele, Almonte; J. Kerr, Belleville; D. Muirhead, Renfrew, and R. G. Leggett, Newboro. R. G. Leggett was elected President for the ensuing year. J. McGrath, 1st Vice-President; Neil Fraser 2nd Vice-President; J. R. Anderson, Mountain View was appointed Treasurer and T. A. Thompson of Almonte was re-elected Secretary.

FARM BULLETIN.

Stockmen Get Together and Protest Against Freight-Rate Increase.

An important meeting of representatives of the various live-stock breeders' associations in Canada was held in Toronto, on Tuesday of last week, to protest against the proposed increase of 15 per cent. in freight rates in this country. Associations represented were: The Dominion Shorthorn Breeders, Canadian Hereford Breeders, Aberdeen-Angus Breeders, Galloway Breeders, Ayrshire Breeders, Jersey Breeders, Clydesdale Breeders, Hackney Breeders, and the various Dominion and Provincial Associations of sheep and swine breeders.

Among the principal speakers were: H. S. Arkell, Dominion Live-Stock Commissioner; Peter White, K.C., Toronto; George Pepper, of the Dominion Live Stock Branch, Ottawa; Robert Miller, Stouffville; C. F. Bailey, Assistant Deputy Minister of Agriculture for Ontario, and R. W. Wade, Secretary of the Eastern Canada Live-Stock Union.

All the speakers emphasized the importance of getting together in order that the live-stock interests might get the same sympathetic hearing of their case that is granted other industrial organizations. Mr. Pepper showed clearly that the freight-increase question is not all one-sided, and that the railway earnings in figures do not show justification for any advance in rates at the present time when it is so necessary that production be increased. "What the railways want," said Mr. Pepper, "is increased tonnage and better distribution of hauling. This increased production and tonnage will come from the West and the C. N. R., and the Government roads will be the greatest benefactors. Canada must have increased production to increase exports to meet her war and other obligations. Increasing rates will not help, but retard the bringing of this about and it will add \$40,000,000 to our producers' and consumers' burdens, \$30,000,000 of which will go into a full feed box. Don't allow it—it is not good business."

Two resolutions were passed. H. D. Smith, of the Hereford Breeders' Association, moved and William Graham, of the Clydesdale Breeders' Association, seconded the following: "That we, the live-stock representatives of Eastern Canada here assembled, do hereby protest against the 15 per cent. increase in freight rates on agricultural products, believing that the present tariff provides an adequate return to railroads for service rendered, and believing also that such increase would impose an unwise burden on agriculture at a time when increased production is so urgently needed."

J. E. Brethour moved and James Douglas, of Caledonia, seconded: "That a committee consisting of Wm. Smith, of Columbus, Ont.; John Gardhouse, Weston, Ont.; Robt. Miller, Stouffville, Ont.; William Dryden, Brooklin, Ont.; and W. F. Stephen, Huntingdon, Que., be appointed to secure the co-operation of all other representative agricultural organizations to present the case to the special committee appointed by the Federal Government to deal with the matter."

The meeting was one of the best of its kind yet held, and showed evidence of a growing spirit and determination among stockmen to get their industry so organized that it will command its proper place and due consideration by the Government.

Away in Front.

EDITOR "THE FARMER'S ADVOCATE":

My wife and I both enjoy your paper, and it is away in front of any other farmer's paper I have seen, and I have derived much benefit from it. Your Christmas Number is excellent, and "a book" in itself.

FREDERICK UPWARD.

The Experimental Union Had 4,299 Experimenters in 1917.

The thirty-ninth annual meeting of the Ontario Agricultural and Experimental Union, held at the Ontario Agricultural College, Guelph, on Tuesday and Wednesday of last week, provided a program of great interest to the upwards of three hundred short-course and regular students of the College, and the small number of ex-students who availed themselves of this opportunity to refresh their knowledge of the work the "Union" is going. We must say again that it is unfortunate that more of the ex-students of the College and the experimenters who are carrying on the co-operative experiments on their own farms do not attend these annual meetings. Since the co-operative work started, thirty-two years ago, over 88,600 distinct tests have been made, and there is a fund of valuable information in each annual meeting for those who are privileged to attend.

Close Unnecessary Industry.

President H. Sirett, of Brighton, Ontario, pointed out the seriousness of the situation caused by the war and the necessity of Canada doing all possible in the production of foodstuffs. "Our efforts," said Mr. Sirett, "to do our utmost in the production of foods are handicapped by the ever-increasing difficulty in obtaining help on the farm. There has been an increasing demand in almost every line of production. The manufacture of munitions, the increased trade in all those commodities required for the equipping and maintaining of a vast army has taken men from the field whose services could ill be spared. But we recognize the need of these industries and have endeavored to spare the men to carry them on. Unfortunately, these necessary industries are not alone in feeling and impetus and many industries engaged in the production of what in no sense can be considered as necessities are competing with other manufacturers and with the farmer for labor. Unfortunately, too, many of these industries have been able to offer prices for their labor which has made it almost impossible for the farmer to compete against them. Laborers, who previously have been employed on farms, cannot be censured for leaving the rural districts to work in towns and cities when the reward received there is greater than is to be obtained at their previous occupations. . . . If it be true that there exists a crisis in Europe in connection with the food supply and there is not a sufficient number of men who will voluntarily accept the reward which the production of food offers, it is as necessary to conscript men to work in the fields as it was that men should be conscripted to fight in the trenches.

"It may not be necessary to resort to a law which will go into the factories and take the men out to the fields. It would be equally effective if the manufacturers of those things which are non-essential were placed under a restriction which would have the result of preventing them from competing with essential industries for what labor is available. If farmers are to be urged to produce 'Even at a loss', then manufacturers must be prepared to restrict their production 'Even at a loss'. Now might be a most opportune time for the manufacturer to invade new fields and establish himself in new territory; territory which the European manufacturer has hitherto controlled and from which he has been forced to withdraw in order that his employees might be liberated to bear arms or to engage in other industries of greater importance.

"It cannot be tolerated that labor needed in the production of those things which are most essential at the present moment and of paramount importance to the successful carrying on of the war, be diverted, in order that some might take advantage of an opportunity to place their industries in a better position to be maintained after the war is over. By so doing we are jeopardizing our chances of bringing the war to an early and most successful conclusion. It may be advisable to place all industrial activity under the control of a commission whose duty it would be to say in what industry labor may be employed. That would mean that every would-be employer of labor would have to obtain a license which would give authority to engage the number of employees, which the commission considered was justified by the absolute needs of the country at the present time."

Among the industries which Mr. Sirett mentioned as non-essential were the manufacture of automobiles and automobile accessories to be used for unnecessary recreation; the manufacture of confectionery, ornaments for personal adornment or other uses, clothing which is demanded only as a result of the dictates of fashion, and an innumerable list of such things as cannot be classed as necessities. Such industries must halt to make easier the production of necessities which should eventually tend to lower prices of those necessities. Mr. Sirett concluded by saying that the assistance offered by business men and other urban residents last summer, while a help, offered no dependable solution to the problem. The amount of labor cannot be increased; we must therefore see that what is available is employed only in those industries most essential.

An Economic Problem.

H. B. Webster, of St. Mary's Ont., Vice President of the Union, opened the discussion following Mr. Sirett's address. In his opinion the main question at the present time was an economic one. There is a marked economic uneasiness in the country, and farmers do not appear to have sufficient confidence in themselves. Labor is leaving the land to command higher wages in the city, and the farmer is not in a position to compete with the industries which are taking his

help. He did not believe that farmers were responding to the call for increased production as they would if the economic conditions were on a different basis and the farmer could compete with other industries. For his present condition, Mr. Webster believed that the farmer was himself to blame, although farmers as a class do not feel that they can launch out as they would like to do because of the uncertainty regarding markets, etc. "The great need in agriculture is co-operative organization and development of independent thought," said Mr. Webster. He believed that the Experimental Union should give the farmers' co-operative movement every sympathy and support, and that the organized farmers should demand the legislation which would eventually overcome the economic disadvantages under which the farmer labors at the present time.

The Secretary's Report.

The Secretary's report was very encouraging, showing a gradual growth of the "Union" work since its inception thirty-nine years ago, and particularly since the co-operative experimental work was started in 1886.

The increase in the number of experimenters in agriculture can be seen from the following figures which show the average yearly number actually engaged in the work in each of four eight-year periods:

Periods.	Years.	Average number of Experimenters per annum.
1886-1893	8	315
1894-1901	8	2,608
1902-1909	8	3,882
1910-1917	8	4,282

The total number of distinct tests made throughout the Province in agriculture alone during the past thirty-two years has been 88,604. The number of experimenters in the past year was 4,299. Even though the past three years have been abnormal as to weather and labor conditions the experimental work has not waned but rather increased.

The Co-Operative Experiments in 1917.

Dr. C. A. Zavitz, in giving the results of co-operative experiments in agriculture during the past year, pointed out that there had never been a year in which the people took a deeper interest and the number of experiments was a thousand more than in 1916, or 4,299 in all, and over 4,200 men conducted experiments on their own farms. There were thirty-seven distinct experiments sent out.

In speaking of oats, Dr. Zavitz stated that the market value of the oat crop in Ontario is about equal to the combined values of the winter wheat, spring wheat barley, rye and buckwheat, about one-quarter of the value of all the field crops grown in the Province, about one-half of the value of the horses, cattle, sheep, lambs, swine, and poultry sold or slaughtered annually, and practically double the value of the cheese and butter manufactured in the factories and in the creameries of Ontario each year. Referring to the O. A. C. 72 oats, the speaker pointed out that it started from a single seed in 1903, that it was first sent out in 1911 by the Union, and in 1913 there was sufficient of this variety to enter the Field Crop Competition and a first prize was obtained. In 1916 this variety took first place in the competitions carried on by seventy-six agricultural societies in Ontario, and it is gradually replacing the Banner variety. The O. A. C. 72 has yielded on an average over Ontario in tests for the last five years, 50.1 bushels per acre, while the O. A. C. No. 3 has yielded 45.7.

O. A. C. No. 21 barley and common emmer have been tested for five years, in which the barley has always surpassed the emmer; the average for 1917 being a lead of 89 pounds of grain per acre. This barley was started at the O. A. C. in 1903 and has been sent out by the Union for ten years in succession, and is now the most extensively grown barley in the Province.

In spring wheat the Marquis and the Wild Goose are the varieties distributed. In four of the last five years the Wild Goose surpassed the Marquis in yields of grain per acre, the average for five years being 20.2 bushels for the Wild Goose and 19 for the Marquis. It is interesting to note that the number of acres of spring wheat in Ontario amounted to 144,305 in 1916, and 182,957 in 1917.

Five varieties of winter wheat were sent out in the fall of 1916; the results have already been published in this paper, and five varieties were again sent out in the fall of 1917, including the O. A. C. 104; Improved Imperial Amber, Improved Dawson's Golden Chaff, Kharkov and Yaroslaf. In twenty-five experiments at the O. A. C., No. 104 came at the top of the list. It is a cross produced at the College between Dawson's Golden Chaff and the Bulgarian.

Two varieties of buckwheat were sent out. In the average of seven years Rye buckwheat gave 25.3 and Silver Hull 20.5 bushels per acre.

In spring rye two varieties were sent out. The average yield in bushels of grain per acre for 1917 and the average of the seven-year period are, respectively: O. A. C. No. 61, 22.5, 24.7; and common, 20.4, 21.6.

The Petkus winter rye and the Imperial Amber winter wheat were tested. The rye surpassing the wheat by an average of 380 pounds per acre in 1915 and by 344 pounds in 1916 and 265 pounds in 1917.

In each of the past two years three varieties of field peas have been sent out including the Canadian Beauty,

the Early Britain and the Potter. For the two years the Potter led with 21.9 bushels, the New Canadian Beauty coming second with 21.8, and the Early Britain third with 21.3.

Two varieties of field beans met a large demand in the co-operative experimental work, and also a variety of soy beans was sent out. Pearce's Improved Tree bean gave the highest yield per acre, namely 18.75 bushels, followed by Elliott's Pea Bean with 17.83 bushels, and the O. A. C. No. 81 soy bean with 14.81 bushels. Dr. Zavitz advised growers to plant the common white pea bean, because over Ontario it ripened a little earlier than Pearce's.

Only three good results were obtained in the experiments with corn for grain production, where the Golden Glow led in York County, the Wisconsin No. 7 in Norfolk County, and the Longfellow in Huron County.

In grain mixtures, the bushel of oats and bushel of barley was again found the best.

In 1917 co-operative experiments were conducted throughout Ontario with mangels, sugar mangels, swede turnips, fall turnips, field carrots, fodder corn, millet, grass peas, vetches, rape, kale, field cabbage, mixed grains, grasses, clovers and alfalfa. The season was abnormal and experimenters found it exceedingly difficult to carry on tests with corn, sorghum and millet. In mangels, the Yellow Leviathan with a yield of 24.86 tons per acre led Sutton's Mammoth Long Red with 24.78 and the Ideal with 24.16. In sugar mangels, Bruce's Giant White Feeding outyielded Carter's Improved White Sugar by almost four tons per acre, and in turnips Garton's Model was closely followed by Steel-Briggs' Good Luck and the American Purple Top; the range in tonnage being from 19.06 to 20.09.

In corn for fodder purposes the average results for the past two years are shown in the following table:

Variety	Tons Freshly-husked Ears Per Acre.	Tons Whole Crop Per Acre.
Wisconsin No. 7	3.4	13.0
Compton's Early	3.4	12.5
Golden Glow	3.3	12.2
Longfellow	3.2	11.8
White Cap Yellow Dent	3.1	11.7
Bailey	2.8	11.1
Salzer's North Dakota	3.2	10.7

As the two seasons were very abnormal, these results do not show high yields.

In sweet corn for table use the Golden Bantam still leads.

Two varieties of potatoes were tested on 263 farms in 1917. The Extra Early Eureka leading the Davies' Warrior by 20 bushels per acre; the yields being 167.8 and 147.8 respectively. Dr. Zavitz pointed out that there were too many varieties of potatoes in Ontario and an effort was being made to standardize the crop with the Irish Cobbler as the early variety, the Early Ohio as the extra early and the Green Mountain as the standard late variety.

Co-operative experiments with fertilizers were carried out with potatoes, mangels, rape and winter wheat. The results were only given with mangels. One hundred and sixty pounds of nitrate of soda applied when the plants were three inches tall increased the yield 4.3 tons per acre, and the same quantity applied when the seed was sown increased the yield 4.5 tons per acre. The highest average yield for five years was produced from 200 pounds applied when the plants were three inches tall, an increase of 6.2 tons per acre over the yield from unfertilized land.

Ontario's Agriculture in the Crisis.

Dr. G. C. Creelman, in discussing Ontario's agriculture in the present crisis, drew attention to the great necessity for a large production of grain, because no crop is so easily grown; because the price is good; and because we are asked to supply wheat and wheat substitutes in the form of oats and barley to meet the food needs of the Allies. Present indications are that the winter is going to be hard on fall wheat and there was not as much sown as we hoped would be put in. Dr. Creelman urged the sowing of more Marquis and Wild Goose spring wheat because wheat would be needed and he felt would be profitable. He also urged the production of our own root-seed.

He referred to the shortage of labor and discussed the possibility of helping out with threshing gangs in the fall. Large gangs for large machines might be supplied, or the small threshing outfit might be used on some farms and the grain threshed as drawn in or left to be threshed after winter set in and the changing work would not necessitate stopping of teams. The drawback to sending out the large threshing gangs would probably be the expense. Dr. Creelman estimated that it would cost from five to nine cents per bushel to do the threshing or from \$50 to \$90 per thousand bushels, whereas threshers supplying two men and a machine are getting about \$20 at the present time. He asked if the farmers would stand the extra expense in order that their teams might be kept going an extra two weeks in the fall in place of a man being away threshing during that time. The drawback to the small outfit was also one of cost, the price ranging from \$1,100 to \$1,340. His suggestion was the employment of gangs where required, that nothing be done where the system was

already working out satisfactorily and the use of small threshers where they could be used to advantage.

He went briefly into the tractor work. The Ontario Government had 130 of these machines last year, and a tractor course is to be held shortly at the O. A. C. with probably 100 students. Dr. Creelman also referred to the campaign for vegetable production and stated that no poultry campaign would be put on this year. The labor problem was the one big problem in his opinion and he stated that he did not know how it was to be met unless 100,000 Chinese could be brought in in bond to do the work on the land and shipped out again after the war. This suggestion appeared to be more or less of a "feeler" and met a quick reply from one of his hearers: "Not on your life."

Experiments in Weed Eradication.

A summary of the co-operative experiments in weed eradication from 1912 to 1918 was given by Prof. J. E. Howitt. In 1912 six experiments were included as follows: The use of rape in the destruction of perennial sow thistle; a system of intensive cropping for the eradication of the same weed; the use of rape in the destruction of twitch grass; and a method of cultivation and cropping for the extermination of the same weed; a method of cultivation and cropping for the eradication of bladder campion; and spraying with iron sulphate to destroy mustard in cereal crops. In 1917 ten experiments in all were conducted including those already mentioned and a method of cultivation for the destruction of ox-eye daisy; a method of cultivation and cropping for the suppression of field bind-weed; a method of cultivation and cropping for the eradication of wild oats, and a method of cultivation for the destruction of chess.

In the past six years over sixty farmers have co-operated in this work. A complete outline of the experiments and results will be published in a future issue.

Canada Can Grow Her Own Root Seed.

One of the most important subjects discussed at the meeting was that of root seed production. Dr. M. O. Malte, of the Central Experimental Farm, Ottawa, expressed the opinion, based on experimental work, that there was no real reason why Canadian farmers should not produce considerable of their own root seed and that Canadian-grown seed was just as good as the European seed, if not better. In normal years Canada imported about 350,000 pounds of turnip seed, 900,000 pounds of mangel seed, and 30,000 pounds of carrot seed. Canadian farmers had labored under the false impression that European seed produced bigger and higher-quality crops. Before the war, there was no danger of root seed shortage. The seed companies always had two or three years' supply either in hand or on order, but now that the European countries have been forced to prohibit the exportation of seed Canada is facing a crisis. The supply for 1918 will likely be sufficient to go round but an effort must be put forward to grow our own supplies for 1919. The Dominion Experimental Farms expect to have 350 acres devoted to the growing of root seed this year. There is no reason why this country should rely upon Europe for root seed. Experiments in the United States and in Canada have proven that root seed can be grown successfully on this continent. Results of seven different tests of the Canadian seed of Yellow Leviathan mangel have shown an average yield of 3 tons and 750 pounds per acre more than produced from European seed, and with the Mammoth Long Red over 3 tons to the advantage of the Canadian-grown seed. Mangel seed can be grown in Eastern Ontario, Southern Ontario, British Columbia, and to a lesser degree in the Maritime Provinces and Northern Ontario. Turnip seed may be successfully produced in Eastern Canada, particularly in Nova Scotia, and carrot seed in Eastern Canada, and especially in British Columbia. If seed is not raised here this year for 1919 there is a probability that there will not be any seed to sow.

H. Stokes, of the Dominion Sugar Company, led in discussion. He believed with Dr. Malte, that Canada can grow better seed than can be imported, but the problem is to get the labor. From actual experience he had produced on a large scale from stecklings, mangel seed at a cost of from 9 to 32 cents a pound. He had also had fairly good results from small stecklings not bigger than a lead pencil, but of course a larger size is preferable. He advised that if pitting stecklings that the pit should not be more than five feet wide.

Northern-grown Seed Potatoes.

It was brought out in Dr. Zavitz' report that Northern-grown seed gave best results with potatoes. Justus Miller, Assistant Commissioner of Agriculture for the Province, led a discussion on Northern Ontario as a source of seed potatoes. That district is particularly free from what are known as the physiological diseases such as leaf-roll, mosaic and fusarium wilt. These diseases are carried in the seed and are more or less prevalent in Old Ontario. The short season in the North leaves immature seed; climatic conditions also have an effect and at the present time as a source of seed potatoes, Northern Ontario should be developed. The Department have secured 1,609 bags of potatoes from New Ontario and New Brunswick for experimental purposes, and they are endeavoring to increase the quality of the two varieties, Irish Cobbler and Green Mountain, in the North as a source of seed for older Ontario in the future.

Prof. Howitt, continuing the discussion, stated that New Ontario was practically free from these diseases, while in Old Ontario some fields were found with as high as sixty per cent. of leaf-roll, a disease which causes small potatoes, and where the little potatoes are again planted gains a foothold very rapidly.

Dr. Zavitz pointed out that the more immature the potatoes as a general thing the greater the yield from the seed.

Are You Working For \$392 Per Year?

One of the most interesting and valuable addresses of the entire meeting was that given by Prof. A. Leitch, who has had charge of the agricultural survey recently made in Caledon Township, Halton County. This survey was started on the first of October, statements were procured from 113 farms. After allowing 5 per cent. interest on the investment it was found that on one-third of the farms already tabulated the labor income of the farmer was \$392 for the year. This was on the small farms and the survey was made in a year when the farmers of Caledon Township made money if they ever did. In Prof. Leitch's opinion the farmers of these small farms in ordinary years have been working for nothing if they counted interest on their money. The following table will be of interest to readers. Only forty-nine of the farms have yet been tabulated.

Relation of Size of Farm to Labor Income.

Acres	Under 85	86-100	101-124	125-150	151-180	181-240
No. farms.....	16	12	5	7	5	4
Average size.....	72 acres	93	119	137	162	206
Average Capital.....	\$7,132	\$9,269	\$12,653	\$14,672	\$14,652	\$15,719
Productive Capital.....	\$4,317	\$6,185	\$8,422	\$9,254	\$10,129	\$10,991
Crop Acres per horse.....	16	22	22	24	25	25
Crop Acres per man.....	44	56	56	58	65	68
Labor Income.....	\$392	\$814	\$1,061	\$1,073	\$1,699	\$1,925

A study of this table reveals the fact that the larger the farm the greater the labor income. Readers will note that the unproductive capital is far higher in comparison to the size of the farm on the small farm than on the large one; that is to say, the man on the small farm finds it necessary to tie up, in comparison, much more money in unproductive capital than does the man on the large farm. Moreover, the expense of operation in both horse and man power is far higher on the small farm than on the larger one. It must be remembered, too, that these labor incomes were for perhaps the best year the farmers of the district ever had.

Another table shows the effect of good live stock and good crops on the same farms.

	Poor Crops and Poor Live Stock	Poor Crops, Good Stock.
No. of farms.....	13	12
Average size.....	102	111
Labor Income.....	\$366	\$1,150

	Good Crops, Poor Stock	Good Crops, Good Stock
No. of farms.....	12	12
Average size.....	126	116
Labor Income.....	\$866	\$1,304

It will be noted that the farms with poor crops and poor stock brought the lowest income; that those with poor crops and good stock, brought an income of practically \$800 more, which should be credited of course to the stock. Then those with good crops and poor stock brought a labor income of \$500 more than those which had the poor crops and poor stock, which means that good crops meant a difference of about \$500. And then, those which had good crops and good live stock as well brought nearly \$500 more than those with good crops and poor live stock; or, almost \$1,000 more than those with poor crops and poor live stock. Of course, there was a little difference in size of farms, which would make some difference in the returns. However, from the figures, Mr. Leitch concluded that the greatest need of this particular district was more good stock, particularly cattle, and an immediate increase in the quality of the live stock was necessary. There was a crying need for more capital on the farms.

Co-operative Wool Marketing.

Co-operation in wool marketing was dealt with by R. W. Wade, head of the Live Stock Branch, of the Department of Agriculture. Last spring application forms were sent out to 9,000 men to sell their wool co-operatively. In Mr. Wade's opinion there are from 8,000 to 12,000 sheep breeders in Ontario so that most of them would be reached by the forms. Up to April 23 about 100,000 pounds of wool was received. Advertisements were then placed in the farm papers and more than 100,000 pounds more wool obtained. All told, some 270,000 pounds were handled and this was the best wool in Ontario. Mr. Wade exhorted his hearers not to look altogether at the price but to co-operate as a principle. We must market in a big way and sheep breeders must believe in the principle, have confidence in those in charge of the work, and have courage enough to stand by co-operation in marketing. The Department of Agriculture did materially reduce the cost of selling, but the business must be put on a business basis, and while five cents a fleece was charged for handling it was not enough and in Mr. Wade's opinion one cent per pound would be about right with about one cent per pound added for freight. A few precautions are necessary for the producer of wool. Sheep must be so handled that the wool is kept clean, fleeces must be rolled tightly, sheep should be clipped when the wool is dry, and the wool should be stored in a dry place. Then, it is up to those in charge of the co-opera-

tive marketing to see to it that the buyers are satisfied; this means good and careful work in grading.

Sources of Seed Supply.

A topic of particular interest was that of sources of farm seed supplies for the Province of Ontario. This subject was taken up by a number of speakers, the first being Walter Steele of the Steele-Briggs Company. He pointed out that most of the seed grain was produced locally, that there was always a large demand for good seed oats and at the present time for Red Fife spring wheat as well. There seemed to be a sufficient supply of Marquis spring wheat, good barley and buckwheat available. Red clover is short, and it will be necessary to import from the Western States. There are ample stocks of alsike but the alfalfa seed supply is short. While timothy has been a good crop in Ontario and Alberta, Canada does not yet produce enough seed. This year it will be more than ever necessary to get supplies of seed corn from the United States. In Mr. Steele's opinion more farmers should specialize in pro-

ducing pure seed and should remove all weeds from growing crops of clover. He believed that growing vegetable and field root seeds was a specialized industry, and favored the importation, when practicable, of these seeds from Europe. The season of 1919 will be most critical.

Prof. W. J. Squirrell outlined the work the Union has done and the value it has been as a source of seed; 88,604 distinct tests have been made and the seed for these sent out after five years' trial at the O. A. C. The varieties distributed are of the very best, such as O. A. C. 21 barley, Mandseuri barley, O. A. C. No. 72, and O. A. C. No. 3 oats, Dawson's Golden Chaff and O. A. C. No. 104 winter wheat, etc. The Experimental Union has been the basis of the seed produced for the Canadian Seed Growers' Association, School Fairs, etc., and the prizes at the big fairs go to varieties sent out by the Union. These small quantities soon grow into large supplies. It is possible for one seed of oats to increase to 100 bushels in three years. The varieties are true to name, hand-picked. The Union is able to reach every farmer, and, better yet, the system is competitive. Those taking advantage of the opportunity to make experiments get the best seed of the best varieties.

R. S. Duncan, Superintendent of District Representative work, outlined the efforts of the Representatives in distributing seeds. In York County last year 150 individual farmers were, through the Representative, put in touch with other farmers having good seed. In Glengarry County over 2,000 bushels of seed were distributed in this manner. Besides, the School Fairs in charge of the District Representatives had been responsible for the children growing 3,072 plots of barley, 4,392 of oats, 1,380 of wheat and 14,532 of potatoes. The seed for which in one-pound lots of grain and five-pound lots of potatoes was supplied through the District Representatives.

The value of Field Crop Competitions in the distribution of good seed was discussed by J. Lockie Wilson, Superintendent. These competitions started in 1907 with a grant of \$1,000. Ten agricultural societies with 325 agriculturists competed; the acreage was 3,000. In 1917, 180 societies entered; 102 selected two crops and 85 one crop; 7,000 farmers in all took part and 70,000 acres were judged. One hundred and fifty field crop judges were trained by a week's Short Course at Guelph and the grant last year was \$25,000, \$13,000 in subvention from the Federal Department. Each society gets \$50 for each crop, the society putting up \$25 themselves for each crop. The seed is shown at the large fairs and meets a ready sale. Vegetable growers and market gardeners are now organized. The Government puts up two-thirds of the prize money and the Ontario Vegetable Growers the remainder. Mr. Wilson stated that the foundation of good farming lies in the thorough cultivation of the soil and took advantage of the occasion to refer to the value plowing matches and good plowing are in seed production, drawing attention to the Provincial Plowing Match in which there were 50 walking plows and 25 tractors which drew an attendance of 15,000 people in 1917.

Dr. Zavitz read a letter from L. H. Newman on the work of the Canadian Seed Growers' Association, and another from A. McKenney of the Western Ontario Seed Growers' Association.

P. L. Fancher, the Corn Expert and Secretary of the Corn Growers' Association, discussed the outlook for seed corn. Last year was a very bad season for corn and Ontario has not enough good seed of her own varieties to re-seed the seed-producing sections of the Province as was hoped. For silage, growers will have to be content with corn imported from the United States and will have to get seed from farther south than usual. Every effort is being made to get enough seed from which to grow corn for husking purposes. Mr. Fancher urged that all corn to be planted this year should be thoroughly tested by the farmer himself in order to safeguard the crop.

J. W. Lennox discussed briefly the work of the Dominion Seed Branch, and Dr. Zavitz read a paragraph from a letter from G. H. Clark, Dominion Seed Commissioner, in which the gravity of the situation with regard to field root and vegetable seed was pointed out.

The Value of Underdrainage.

A discussion on underdrainage and tile making was led by John R. Spry, now in charge of Government Institution Farms, and formerly head of the drainage work at the O. A. C. Mr. Spry pointed out that of the money expended under the Tile Drainage Act in loans to farmers 90 per cent. went to Essex and Kent and most of the rest to Lambton. Power ditching machines largely overcome the labor difficulty in connection with putting in tile. However, Mr. Spry believed that a system of County inspection of the work of the machines should be inaugurated. In making cement tile Mr. Spry advised against the use of the farm hand-machine which had proven a failure, and the power machine owned by farmers had not been a success financially. He believed that farmers should leave the making of tile to the manufacturers. Cement tile, cured in a steam kiln, were good, but we should always be suspicious of them if cured by the sprinkling method. Much of the difficulty in getting tile could be overcome if those requiring would organize and order in advance. Heavy soil if well surface-drained will not pay for much underdrainage.

Alfred Wehlann, a tile manufacturer of Cairo, Ont., took up the discussion from the viewpoint of the tile manufacturers, and Hon. Nelson Monteith followed with some practical experience. It is twenty-eight years since Mr. Monteith left the College and in the first two years back on the farm he laid with his own hands 25,000 tile. In those days four-inch tile were worth \$12 per thousand, 5-inch tile \$16 per thousand and 3-inch could be bought for \$8. Mr. Monteith believed that three feet was too deep to put tile in some heavy soils.

Practical Suggestions on Production.

Practical suggestions for the production of food materials for the coming year were given by some of the heads of the various departments of the College work, and by P. W. Hodgetts of the Fruit Branch.

Beef and Bacon.

Prof. G. E. Day, in discussing beef and bacon, pointed out that in ordinary times the higher price is obtained for well-finished cattle, and this has usually been profitable, but under present conditions when concentrates are required for human food he believed that roughage could be used with very little grain to produce sufficient finish to command a satisfactory price and give the consumer good meat and the butcher a profitable carcass. He cited experiments which were carried on at the College some years ago in which a gain of 2,180 pounds in weight was obtained from the use of 2,187 pounds of ground barley and 729 pounds of bran, or very little more than one pound of concentrates for each pound gain in weight, the balance of the ration being made up of hay, corn silage and roots, in the proportion of one, two and three, respectively. The steers were only cheap, common cattle and made gains of approximately 1½ pounds per steer per day for a period of 165 days, and while not well finished when marketed dressed a little less than 57 per cent. of carcass and the beef was much superior to a great deal of that consumers must make use of at the present time. He urged the use of as much roughage as possible and as little grain and believed that the extra high finish under these abnormal conditions was not absolutely necessary.

As far as bacon production was concerned, Prof. Day gave six reasons why we should put forth every effort to produce bacon hogs. Hogs multiply rapidly and mature quickly; they produce more meat from a given amount of food than any other animal; they produce greater weight of dressed carcass as compared with live weight than any other animal; and more edible meat in proportion to bone; and bacon contains a larger proportion of edible fat needed in the rations of soldiers; besides, it can be shipped in the most compact form. Prof. Day advised growing a small patch of mangels or sugar beets for the hogs and the mixing of pulped roots, moistened with hot water, and dry meal in feeding. He advised also the use of fine-quality alfalfa or red clover hay in small quantities for the larger pigs. For summer feeding he believed pasture crops were most convenient in reducing the meal ration and recommended alfalfa and young red clover, or a thickly-seeded mixture of grain such as oats and barley or oats and wheat with 8 pounds of red clover per acre. Rape and corn might also be used for fall feeding. Pigs do better on pasture when over 100 pounds in weight.

Wheat and Beans.

Dr. C. A. Zavitz gave a few suggestions regarding wheat and beans. It is important that these crops be increased in 1918. Wheat, for instance, can be easily grown, economically transported, and readily stored. According to the United States Year Book for 1916 for the three years previous to the war, 1910-11-12, estimates were made regarding six important food crops, including wheat, corn, oats, barley, potatoes and rye, for a number of the principal countries of the world and the estimated production per capita of these selected foods in terms of bushels of wheat was as follows: Canada, 70.1; Argentina, 69.7; United States, 45.3; Australia, 21.7; the German Empire, 21.3; Austria-Hungary, 21; France, 17.9; Russia, 14.3; Italy, 9.6; India, 7.8; Great Britain and Ireland, 5.6. Canada produces per capita more food in terms of grain crops than any other of the principal countries of the world. Dr. Zavitz

gave figures showing the need of the production of every bushel of wheat possible in this country in 1918. The amount of wheat available for export in the Province this year will depend upon the economy of the people in the use of winter wheat and the coming season's production of spring wheat. Dr. Zavitz believed that it would be wise to increase the acreage of spring wheat, to sow the best variety, to use seed of the highest quality, and sow at the right time. He quoted figures to show that the average yields per acre of spring wheat in this Province were increasing each year. Marquis was in his opinion the best variety, and the Wild Goose also gave good yields. Large, plump seed would give a yield of over 3 bushels per acre more than small, plump seed, and 5 bushels per acre more than shrunken seed. The earliest possible sowing after the ground was ready gave the highest yield.

Beans gave a higher market value per acre than any other grain crop grown in Ontario in 1916, namely \$58.95; corn for husking second, with \$36.57. Field beans approach animal foods in nutritive value. They are high in protein. The Province of Ontario and the States of Michigan and New York produce about half the beans grown on the North American continent. Beans are a very valuable crop, can be readily transported, and, when well matured, easily stored. Ontario, favorably situated, should produce as large an acreage of beans in 1918 as the limited amount of labor will permit.

Butter and Cheese.

Prof. H. H. Dean discussed the production of butter and cheese. He referred briefly to the food shortage, particularly with regard to dairy products. Butter is in short supply and in Britain has been selling as high as one dollar per pound. Fats of all kinds are scarce, milk fat more than all others because of the slaughter of cows and the lack of labor to milk and care for dairy cattle. There is no substitute for milk butter, declared Prof. Dean, and the nation that relies on vegetable and animal fats, other than milk fat, especially for children, has taken the first serious step in physical and mental degeneracy. The practical suggestion Prof. Dean gave was to keep better cows—discard all boarders in the herd. He advised the use of more cheap and abundant grass, silage, and root crops with a reasonable quantity of grain and by-products, such as bran, oil cake and cotton-seed meal. About one-half the cost of producing milk is for feed. Prof. Dean referred to suggestions that had already been made to overcome the labor problem by using more dairy machinery and utilizing women help. He referred also to the serious shortage of skilled labor in the creameries and cheeseries. If we are to increase or even maintain our present cheese output the price of cheese must advance over the 2134 cents per pound rate for grade one cheese in 1917. If condensaries are allowed to pay the high prices which prevailed during 1917 then cheese manufacturers must receive at least 25 cents a pound wholesale for No. 1 quality cheese. The cheese patrons and cheese manufacturers are heavily handicapped when competing with condensaries under the present arrangements, and it is not too much to say that No. 1 cheese should sell for as high a price per pound as does No. 1 beef or bacon. The new slogan regarding prices to be paid for farm produce is "Cost of Production, plus a fair profit." Prof. Dean also outlined the method of making cheese from skim-milk and buttermilk. From 12 to 15 pounds of edible food, highly protein in character may be made from 100 pounds of these by-products, and while it requires 25 to 30 pounds of skim-milk or buttermilk to produce a pound of gain in pigs, we see that considerable human food is lost by feeding these to pigs instead of converting them directly into food. Prof. Dean summed up his remarks as follows: "In order to increase the production of butter and cheese for 1918 more cows and better cows are needed; more and cheaper feed; more labor on dairy farms or in factories, or its equivalent in machinery; higher prices for the cheese produced in 1918 than was paid in 1917; and the manufacture of larger quantities of dairy by-products into palatable, digestible, merchantable food products for direct human consumption."

Poultry and Eggs.

Prof. W. R. Graham dealt with poultry and egg production for 1918. These he believed to be of material assistance in winning the war if used as a substitute for meat such as pork and beef. We can help a little by eating more eggs and more poultry at home. We must conserve meat for export, and as an egg never increases in food value from the time it is laid, we cannot do better than eat eggs at home. Money spent on a dozen of eggs will go about as far and prove to most people more appetizing than the same amount spent on meat. Poultry and eggs are good foods, somewhat perishable, then why not consume them in large numbers at home? Then, too, the percentage increase in the price of eggs, poultry, pork, mutton, beef, cheese and butter since the beginning of the war shows the poultry products are relatively as cheap or cheaper to-day than at the beginning of the war. Producers of poultry should maintain production and in some cases increase. We must feed no wheat. Hens will lay very well on a mixture of corn, barley and oats. Try to forget wheat. Terminal elevator screenings are available and are a fairly good substitute. If the birds receive this material when young and become educated to eating it they will consume it readily next spring. We must cull our flocks. Never was a good laying hen more profitable and never was a poor layer more unprofitable. The good layer is usually a hustler, goes to bed late and gets up early, rarely develops internal fat; loses the yellow color from her shanks and the plumage does not appear in perfect condition. A laying hen's pin bones

are very seldom close together. Prof. Graham advised poultrykeepers to grow all they need for their own supply. Hatch chickens during April and early May. Market the surplus males and old hens when they are ready. Watch the leaks in the business. Study increased production and decrease the boarders. There is no place to-day for the non-producer.

Do as Little as Possible in the Orchard.

P. W. Hodgetts, head of the Fruit Branch of the Province, dealt with the production of fruit and honey. He divided fruit growing into two divisions. Fruit specialists must continue in their lines of effort, get all the labor possible, especially female labor and put the bulk of the work on small fruits. He advised that no more than that labor absolutely necessary for a good crop be placed on orchards. Use the spray gun to help out in spraying and crop young orchards with crops likely to be in good demand; for instance, the tomato. He believed it would be good practice to fertilize the orchards well, because this can be done in the winter. In the second division of fruit growers he placed those growing fruit as a side line and advised that orchards, unless affected with scale, be given only absolutely necessary attention and all the time of the owner be placed on crops of vital necessity at the present time. Cut out all summer work in the orchard, such as summer pruning, and do the rough pruning now.

With regard to honey, Mr. Hodgetts mentioned that this was necessary to replace sugar and that the big owners would be looked to to increase the supply. This would be more satisfactory than to divide a number of colonies among beginners who did not understand the production of honey. Indications are for a good crop of both fruit and honey in 1918.

F. W. Sladen, of the Dominion Department, continued the discussion regarding the production of honey.

Watch Tuberculosis.

Prof. D. H. Jones, Bacteriologist at the O. A. C., discussed tuberculin testing of cattle. He stated that the tuberculin test was reliable in about ninety-eight per cent. of cases and outlined the method of putting through the test. It has been demonstrated that bovine tuberculosis may be contracted by the human race and that infants are particularly susceptible to this infection. He advised that cattle being brought into herds should be purchased subject to tuberculin test and also the slaughter of animals showing clinical symptoms of the disease, the separation of reactors from the herds, the removal of calves from infected cows and the feeding of these calves on milk from other and healthy cows, or on milk which has been pasteurized at 145 degrees F. for twenty or thirty minutes. The herd should be tested annually. Tuberculin may be had from the Veterinary Director General's Department, Ottawa, by giving the name of the veterinarian who is to make the test. Prof. Jones advised the use of the test because the disease is slowly developing and may be insidiously working in the herd without the knowledge of the owner.

On the last evening of the meeting, S. C. Johnston, of the Bureau of Motion Pictures, of the Department of Agriculture, gave an illustrated talk showing motion pictures of the bacon industry, mangel seed production, a history of O. A. C. 72 oats, poultry raising, and the canning of vegetables.

On Tuesday evening the usual Experimental Union annual supper was held in the College dining hall and the speaker of the evening was Sir. Wm. Hearst, Premier and Minister of Agriculture in Ontario, who delighted the large number present with the able manner in which he handled the questions of the day, with particular reference to the importance of agriculture at the present time.

The Treasurer's report showed the affairs of the Union to be in good condition. The balance from 1916 was \$1,906.11; this year it is about \$100 more, \$2,009.34. The agricultural experiments for the year cost \$2,408.89. There were 210 members.

Officers: President, H. B. Webster, St. Mary's; Vice-President, P. S. McLaren, McGarry. Directors, Dr. G. C. Creelman, O. A. C., Guelph; Hon. Nelson Monteith, Stratford; C. A. Kyle, Chatham; H. K. Revell, Goderich, and D. J. Matheson, O. A. C., Guelph. Auditors, S. H. Gandier and R. R. Graham, O. A. C.

Have you secured a sire to place at the head of your herd? When looking for one note the individuality of the animal; see his dam and sire if possible and enquire about the records made by his ancestors. An attractive looking animal with a long line of heavy producing ancestors will cost more than one in which appearance is the strongest qualification, and he is worth more. The record of a sire's ancestors is considered too lightly by some dairymen. Remember that the right quality sire may increase the average production of your herd considerably when his daughters come into milk.

Those calves and young cattle infected with ringworm should be isolated from the healthy stock and the premises disinfected. Moisten the scales of the ringworm and apply tincture of iodine twice daily until cured.

The best looking cow is not always the best milker. Appearances are sometimes deceiving.

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Toronto, Montreal, Buffalo, and Other Leading Markets

Week Ending January 10.

Receipts and Market Tops.

Dominion Department of Agriculture, Live Stock Branch, Markets Intelligence Division

CATTLE						CALVES						
Receipts			Top Price Good Steers (1,000-1,200)			Receipts			Top Price Good Calves			
Week Ending	Same Week	Week Ending	Week Ending	Same Week	Week Ending	Week Ending	Same Week	Week Ending	Same Week	Week Ending		
Jan. 10	1917	Jan. 3	Jan. 10	1917	Jan. 3	Jan. 10	1917	Jan. 3	1917	Jan. 3		
Toronto (Union Stock Yards)	4,993	5,943	4,024	\$12.00	\$10.35	\$12.00	598	630	350	\$16.00	\$13.00	\$16.00
Montreal (Pt. St. Charles)	856	908	305	11.25	10.15	10.25	243	242	115	16.50	11.00	15.00
Montreal (East End)	978	986	400	11.25	10.15	10.25	230	323	58	16.50	11.00	15.00
Winnipeg	1,957	1,498	401	11.00	8.50	11.00	62	56	23	10.00	9.00	9.00
Calgary	1,237	1,586	861	10.10	7.50	9.75						

HOGS						SHEEP						
Receipts			Top Price Selects			Receipts			Top Price Good Lambs			
Week Ending	Same Week	Week Ending	Week Ending	Same Week	Week Ending	Week Ending	Same Week	Week Ending	Same Week	Week Ending		
Jan. 10	1917	Jan. 3	Jan. 10	1917	Jan. 3	Jan. 10	1917	Jan. 3	1917	Jan. 3		
Toronto (Union Stock Yards)	9,863	10,659	7,229	\$18.75	\$12.75	\$18.75	2,813	1,554	693	\$19.25	\$14.25	\$19.00
Montreal (Pt. St. Charles)	1,972	1,167	441	19.30	13.75	19.25	841	1,309	965	16.50	13.50	16.00
Montreal (East End)	1,181	1,062	605	19.50	13.75	19.25	1,600	1,627	360	16.50	13.50	16.00
Winnipeg	9,853	9,223	2,394	17.75	12.50	18.00	92	82	169	17.75	12.50	15.50
Calgary	5,405	6,427	2,367	17.60	11.25	17.80	72	125	213	15.75	11.50	15.00

Market Comments.

Toronto (Union Stock Yards).

Five thousand cattle were on sale during the week, and of this number twenty-five hundred were on the Monday market. On the whole trading was steady at prices about on a level with those prevailing last week. Considerable activity was displayed on the Monday market with possibly a slight advance in some cases over last week's quotations. With normal supplies the outlook is for a steady market with slight advances from time to time. Among the loads offered for sale this week were quite a number made up of good to choice cattle carrying considerable finish, although quite a number of other steers in the loads could have been retained to advantage in the feeding pens for another two months. Only a few heavy steers were on sale this week; of those offered, several head sold on Monday at \$12.50, while twelve butcher steers of thirteen hundred pounds sold at a similar price on Tuesday. Other sales were made on Wednesday at \$12, and several small lots sold from \$11.25 to \$12 per hundred. For butcher steers of one thousand to twelve hundred pounds the best sales were twelve head of ten hundred and eighty pounds at \$12 per hundred, sixteen head at \$11.75, eleven at \$11.70, ten at \$11.65, thirty-three at \$11.60, seventeen at \$11.55, while two or three loads totalling sixty-five head sold at \$11.50. Of handy-weight butcher steers and heifers of eight hundred to one thousand pounds, a few head sold at \$11.50 per hundred, twenty-two at \$11.25, fifteen at \$11.10, thirty-six at \$11, seventeen at \$10.80, twenty-five at \$10.45, forty-one at \$10.70, thirty at \$10.50, and twenty-five at \$10.40. Cows were in active demand in sympathy with other grades of cattle, two choice cows selling at \$10.50, five at \$10.35, three at \$10.25, four at \$10.15 and six at \$10. Among the choice bulls on sale was one of two thousand pounds that sold at \$11.50 per hundred, two of fourteen hundred at \$10.75, one of eighteen hundred pounds at \$10.50, two of sixteen hundred pounds at \$10, several at \$9.75, and one of sixteen hundred pounds at \$9.50; these comprised the best prices of the week. Medium to good bulls sold from \$8.50 to \$9.35 with bologna bulls at \$7 to \$7.75. Canner and cutters were steady at \$5.75 to \$6.50 per hundred. The demand, as well as the supply of stockers and feeders, is rather limited at present and only a few loads went to country points during the past week. The best feeders are selling at \$9 to \$10 per hundred and the best stockers at \$8 to \$9, while common light stockers sold at \$7 to \$8. The calf market is steady and active. A number of immature calves are being marketed that are unfit for slaughter, and should be held for several weeks further feeding. Best veal sold from \$15 to \$16 per hundred with common veal at \$9 to \$12. Lambs were steady and active, prices showing a slight advance. A few choice lambs sold at \$19.25, while the majority of the best lambs realized \$18.25 to \$19, and common from \$16 to \$17. Light ewes were moving at \$13 to \$15, and heavy at \$10 to \$12. There was little change in the hog quotations. Selects sold on Monday at \$18.50 per hundred, fed and watered, while on Tuesday some sales were made

TORONTO (Union Stock Yards)					MONTREAL (Pt. St. Charles)				
CLASSIFICATION	No.	Avg. Price	Price Range Bulk Sales	Top Price	No.	Avg. Price	Price Range Bulk Sales	Top Price	
STEERS heavy finished	21	\$12.36	\$11.75-\$12.50	\$12.50					
STEERS good	128	11.61	11.00-11.75	12.00	1				
STEERS 1,000-1,200 common	11	10.25	9.75-10.50	10.75	10				
STEERS good	805	11.02	10.75-11.50	11.65	9	10.75	10.50-11.25	11.25	
STEERS 700-1,000 common	249	9.22	8.25-9.75	9.75	125	9.75	8.50-10.00	10.25	
HEIFERS good	406	11.13	10.75-11.75	11.75	4	10.85	10.00-11.00	11.00	
HEIFERS fair	682	9.51	9.00-9.75	9.75	37	9.25	8.50-9.50	9.50	
HEIFERS common	48	8.29	7.75-9.00	9.00	61	7.90	7.75-8.25	8.25	
COWS good	204	9.32	8.75-10.25	10.50	21	10.25	9.50-10.50	11.00	
COWS common	1,114	7.32	6.75-8.00	8.75	246	7.85	7.50-9.00	9.00	
BULLS good	139	9.76	9.00-10.25	10.75	11	10.50	10.00-10.75	10.75	
BULLS common	119	7.52	7.00-8.00	8.00	57	7.75	7.50-9.00	9.50	
CANNERS & CUTTERS	551	6.00	5.75-6.25	6.25	232	6.50	6.00-7.00	7.00	
OXEN					8	9.00	8.50-10.50	10.50	
CALVES veal	592	14.32	13.00-16.00	16.00	212	13.50	12.00-15.00	16.50	
CALVES grass	6	7.00	6.00-9.00	9*00	31	7.10	7.00-7.50	7.50	
STOCKERS good	57	8.43	7.75-9.00	9.00					
STOCKERS 450-800 fair	143	7.54	7.00-8.00	8.00					
FEEDERS good	232	9.59	9.00-10.00	10.00					
FEEDERS 800-1,000 fair	84	8.75	8.50-9.00	9.00					
HOGS selects	9,312	18.47	18.25-18.75	18.75	1,756	19.25	19.25-	19.50	
HOGS (fed and watered) heaves	20	18.50	18.25-18.75	18.75					
HOGS lights	292	16.99	16.25-17.75	17.75	180	18.35	18.25-18.50	18.50	
HOGS sows	232	16.93	16.25-17.75	17.75	34	16.80	16.75-17.00	17.00	
HOGS stags	7	14.57	14.25-14.75	14.75	2				
LAMBS good	2,192	18.51	18.00-19.25	19.25	169	16.50	16.50-	16.50	
LAMBS common	385	16.71	15.00-18.00	18.00	283	15.50	15.00-16.00	16.00	
SHEEP heavy	34	11.00	9.00-12.00	12.00					
SHEEP light	125	13.43	12.00-15.00	15.00	104	12.75	12.50-13.00	13.00	
SHEEP common	77	7.50	6.00-9.00	9.00	285	11.50	11.00-12.00	12.00	

at \$18.25. The market recovered to \$18.50 on Wednesday under an active demand, while an odd lot brought 10 cents to 15 cents above that quotation. The market closed steady on Thursday at this level.

Of the disposition from the Yards for the week ending January 3rd, Canadian packing houses bought 146 calves, 18 bulls, 1,382 butcher cattle, 7,639 hogs, and 538 lambs. Local butchers purchased 132 calves, 281 butcher cattle, 288 hogs, and 109 lambs. Canadian shipments consisted of 6 calves, 21 canners and cutters, 87 stockers and 27 feeders, 104 hogs, and 40 lambs. No shipments were made to United States' points during the week.

Montreal.

There was a marked increase in receipts of cattle during the week compared with those of the previous two weeks, over eighteen hundred cattle being offered for sale. Of this number a larger percentage than usual were butcher steers, of medium weight and quality for which the demand is keen and prices high in the absence of finished cattle. There was renewed activity in the market following the fall due to the Christmas and New Year holidays, and under a keen demand the market advanced on all classes of stock from 25 to 50 cents per hundred. Twenty-five steers of

medium quality and averaging one thousand pounds sold at \$10 and a few head carrying slightly more finish sold at \$11. The majority of the steers were weighed up at prices ranging from \$8.50 to \$10. Heifers sold exceptionally well although at a wide range, on account of the variety in quality; good heifers brought from \$10 to \$11, medium from \$8.50 to \$9.50, and common, \$7.75 to \$8.25. Butcher cows sold up \$10.50, most of the sales being made from \$9.50 to \$10.50 for the best, and from \$7.50 to \$9 for those of common and medium quality of which grade there were two hundred on sale. Canners and cutters sold from \$6 to \$7. Butcher bulls were in good demand at the advanced prices, a number of good animals selling at \$11 per hundred, while the majority of the best bulls sold from \$9 to \$10, and common from \$7 to \$8.50. The supply of veal calves showed a noticeable increase over those of the past four weeks, while the numbers of grass calves are now light. Prices advanced from 50 cents to \$1 under an active demand, the best veal calves sold at \$16.50 per hundred and common from \$12 to \$14. Grass calves from \$7 to \$7.50. Lambs sold 50 cents above last week's prices, bringing \$16 for those of good quality, and from \$15 to \$16 for those of common to medium quality. Sheep were averaged at last week's prices. Both class were in good demand.

*The hog market opened strong and active at an advance of 25 cents per hundred and closed unchanged at the advance, selects selling from \$19 to \$19.50 per hundred, fed and watered; lights from \$18.25 to \$18.50, and sows from \$16.75 to \$17; very few sows are being received. Receipts were more than those of the previous week by twenty-one hundred, but all offerings were readily purchased.

PT. ST. CHARLES.—Of the disposition from the Yards for the week ending January 3rd, Canadian packers and local butchers purchased the total receipts of the week, which consisted of 115 calves, 179 butcher cattle, 62 canners and cutters, 55 bulls, 441 hogs, and 965 lambs.

EAST END.—Of the disposition from the Yards for the week ending January 3rd, Canadian packing houses and local butchers purchased the total receipts for the week, comprising 47 calves, 311 butcher cattle, 605 hogs and 360 lambs.

Winnipeg.

Cattle, prices were advanced 50 cents to \$1 per hundred over those of three weeks ago, the period just prior to the holiday season. The quality of the run was only fair but despite this some fancy prices were realized, one steer selling at \$11.50 per hundred, and twenty head averaging twelve hundred and eighty pounds at \$11.35; the majority of the butcher steers around these weights sold

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from \$9.50 to \$11.30. Lighter weight butcher steers also sold well, those weighing around eleven hundred pounds selling as high as \$11, while the majority sold from \$9.50 to \$10.50. Steers and feeders weighing up to one thousand pounds sold from \$8.75 to \$9.75 for those of good quality, twenty-six head averaging eight hundred and eighty pounds selling at \$10.25, and one at \$10.75 those of medium quality sold from \$7.50 to \$8.75. Butcher heifers are still being sold on the same basis as butcher steers, the packing houses apparently being anxious to purchase stock of heavy weights, regardless of sex. Two well-finished heifers sold at \$10.50 per hundred, while the majority of the best sold from \$9.25 to \$10.25, and medium from \$8 to \$9. Butcher cows showing good killing quality sold well, two head bringing \$9.50 per hundred; twelve averaging twelve hundred and twenty brought \$9, while the bulk of the best brought from \$8 to \$9, those of medium quality sold from \$6.50 to \$7.50.

Buffalo.

Cattle.—A general improvement was noted in the cattle trade at Buffalo last week. With the holidays passed, evenly cold weather, together with the coolers pretty well cleaned up, there was a general inclination on all sides to take hold more freely, as a result of which killers of the better kinds of butchering cattle paid from 15 to 25 cents higher prices than the preceding week, while a good steady market was had on shipping steers. Best steers offered ranged from \$12.65 to \$13.50, the extreme top being for two loads of high quality, thoroughly well finished steers averaging 1,366 lbs. On handy butchering steers a long string sold from \$11.40 to \$11.85, and these were ready sale. In fact anything in the decent butchering line found ready sale at stronger prices. Bulls never sold higher, \$10.75 being paid for heavy grades. Stockers and feeders were in light supply and only the better grades were wanted. Best milk cows and forward springers sold at good, strong prices, with the medium and common grades going for slaughter. Offerings for the week totaled 3,800 head, as against 3,875 for the preceding week and 3,950 head for the corresponding week a year ago. Quotations:

Shipping Steers—Natives—Choice to prime, \$12.65 to \$13.50; fair to good, \$11.75 to \$12.40; plain, \$10 to \$10.75; very coarse and common, \$9 to \$9.75.

Shipping Steers—Canadians—Best grass, \$12 to \$12.50; fair to good, \$11.50 to \$11.75; common and plain, \$9.50 to \$10.25.

Butchering Steers—Choice heavy, \$11 to \$11.50; fair to good, \$10.50 to \$10.75; best handy, \$11 to \$11.85; fair to good, \$10 to \$10.50; light and common, \$8 to \$9; yearlings, choice to prime, \$12 to \$12.50; fair to good, \$10.50 to \$11.25.

Cows and Heifers.—Best heavy heifers, \$10 to \$10.50; good butchering heifers, \$8.60 to \$9.50; fair butchering heifers, \$8.25 to \$8.50; common to fair, \$6.50 to \$7.75; very fancy fat cows, \$10 to \$10.25; Best heavy fat cows, \$8.75 to \$9.25; good butchering cows, \$7.50 to \$8; medium to fair, \$6.75 to \$7.25; cutters, \$5.75 to \$6.25; carners, \$4.50 to \$5.75.

Bulls.—Best heavy, \$9 to \$9.50; good butchering, \$6.50 to \$7.50.

Stockers and feeders.—Best feeders, \$9 to \$9.25; common to fair, \$7.25 to \$8.50; best stockers, \$7.50 to \$8; fair to good, \$6 to \$7; common, \$5 to \$5.75.

Milchers and Springers.—Good to best, in small lots, \$100.00 to \$140.00; in carloads, \$85.00 to \$100.00.

Hogs.—Prices at Buffalo showed a wide margin over all marketing points last week. Monday the extreme top was \$17.35 but the bulk of the crop moved at \$17.10 and \$17.15, with pigs selling at \$16.50 and \$16.75. Tuesday's top was \$17.45, with majority going at \$17.25 and \$17.35, Wednesday the range was from \$17.60 to \$17.70, with one load \$17.75 and Thursday bulk moved at \$17.60, with two decks \$17.65 and \$17.70. Friday values went off 35c. to 45c., top dropping to \$17.35, with bulk going from \$17.15 to \$17.25. After Monday pigs sold mostly at \$16.50, roughs ranged from \$16 to \$16.25, and stags \$15 down. Receipts the past week were 28,500 head, as compared with 25,186 head for the week before and 35,000 head for the same week a year ago.

Sheep and lambs.—Lamb prices were on the jump last week. Monday the general market for tops was \$18.50, Tuesday none brought above \$18.35, Wednesday best again sold up to \$18.50, Thursday some made \$18.65 and Friday the most desirable kinds reached \$18.75. Cull lambs sold good, best in this line bringing up to \$17.50. While no yearlings sold the past week above \$15.75, choice handy ones were worth up to \$16. Wether sheep are quotable at \$13 and \$13.25 and ewes from \$12.50 down. Receipts last week totaled 11,900 head, being against 8,048 head for the week previous and 13,200 head for the same week a year ago.

Calves.—Buffalo hung up a new record for veals last week. On the opening day it was a \$17.50 market for the best lots, Tuesday and Wednesday the bulk moved at \$17, Thursday choice lots were back to \$17.50 and Friday, under a keen demand, tops reached up to \$18. Culls were slow all week, selling from \$14.50 down and fed calves ranged from \$6 to \$8. Receipts for the week totaled 2,100 head, being against 2,074 for the week previous and 2,300 head for the same week a year ago.

Toronto Produce.

Live stock receipts at Union Stock Yards, West Toronto, Monday, Jan. 14 consisted of 36 cars, 713 cattle, 16 calves, 33 hogs, 145 sheep and lambs. Butcher cattle, strong, 50 cents higher; cows and bulls strong at last week's prices. Sheep, lambs, calves, strong no change in price. Hogs, \$19 per cwt., fed and watered.

Breadstuffs.

Wheat.—Ontario, No. 2, winter, per car lot, \$2.22; (basis in store Montreal). Manitoba wheat, in store, Ft. William—including 2½c. tax—No. 1 northern, \$2.23½; No. 2 northern, \$2.20½; No. 3 northern, \$2.17½; No. 4 wheat, \$2.10½.

Oats.—(According to freights outside) Ontario, No. 2 white, 81c. to 82c., nominal; No. 3 white, 80c. to 81c., nominal. Manitoba oats, No. 2 C. W., 87½c.; No. 3, C. W., 81c.; (in store, Fort William). Extra No. 1 feed, 81c.; No. 1 feed, 77½c. Barley.—Malting, \$1.36 to \$1.38.

Peas.—According to freights outside; No. 2, \$3.70 to \$3.80.

Corn.—American (track, Toronto), No. 3, nominal.

Rye.—No. 2, \$1.78.

Flour.—Manitoba first patents, in jute bags, \$11.50; second patents, in jute bags, \$11; strong bakers', in jute bags, \$10.60. Ontario flour (in bags, prompt shipment), winter, according to sample, \$10.10; Montreal, \$9.95; Toronto, \$9.80, bulk seaboard.

Hay and Millfeed.

Hay.—Track, Toronto, No. 1, \$15.50 to \$16.50 per ton; mixed, per ton, \$13 to \$15.

Straw.—Car lots, per ton, \$8.50 to \$9, track, Toronto.

Bran.—Per ton, \$35.

Shorts.—Per ton, \$40; middlings, per ton, \$45 to \$46.

Good feed flour, per bag, \$3.25.

Hides and Wool.

Prices delivered, Toronto:

City Hides.—City butcher hides, green, flat, 20c.; calf skins, green, flat, 23c.; veal kip, 20c.; horse hides, city take-off, 85 to 86; city lamb skins, shearings and pelts, \$1.50 to \$2.25; sheep skins, \$2.50 to \$4.

Country Markers.—Beef hides, flat, cured, 18c. to 19c.; deacons or bob call, \$1.50 to \$1.75 each; horse hides, country take-off No. 1, \$5.50 to \$6; No. 2, \$5 to \$6; No. 1 sheep skins, \$2.50 to \$3.50; horse hair, farmers' stock, \$25.

Tallow.—City rendered, solids, in barrels, 13c. to 14c.; country solids, in barrels, No. 1, 12c. to 16c.; cakes, No. 1, 14c. to 16c.

Wool.—Unwashed fleece wool, as to quality, fine 60c.; coarse, 58c.; washed wool, 70c.; coarse, 65c.

Wool.—Unwashed fleece wool, as to quality, fine, 60c.; coarse, 58c.; washed wool, 70c.; coarse, 65c.

Butter.—Creamery butter showed a slightly firming tendency on the wholesale, during the past, week—the dairy variety declining somewhat as its sale is being affected by oleomargarine. Creamery, fresh-made pound squares, at 49 to 50c. per lb.; creamery, solids, at 45c. to 46c.; dairy, 35c. to 40c. per lb.

Oleomargarine.—32c. per lb.

Eggs.—Both cold-storage and new-laid eggs firmed a trifle, wholesale, selling as follows: New-laid, 70c. per doz.; cold-storage, No. 1's, 47c. per doz.; selects, 51c. per dozen.

Beans.—The bean market kept about stationary in price. Hand-picked Canadians selling at \$8 per bushel, wholesale; the Indias going at \$6.50 per bushel; Lima beans selling at 16½c. to 17c. per lb.

Cheese.—Cheese remained unchanged in price: Old cheese selling at 30c. per lb.; new at 24c. per lb., and new twins at 24½c. per lb.

Honey.—There is very little honey on the market, and it is very firm in price. Extracted, 5 lb. and 10-lb. pails, 22c. per lb.; 60-lb. pails, 22c. per lb. The comb selling at \$3.25 to \$3.75 per dozen.

Poultry.—Poultry of all descriptions was only shipped in lightly last week, and prices again advanced in chickens and fowl, especially—Geese being the one exception, as they declined in price—and turkeys kept stationary. The following prices being quoted for live weight: chickens, milk fed, per lb., 25c.; chickens, ordinary fed, per lb., 22c.; fowl, 3½ lbs. and under, per lb., 20c.; fowl, 3½ lbs. to 5 lbs., per lb., 24c.; fowl, 5 lbs. and over, per lb., 27c.; ducklings, per lb., 24c.; geese, per lb., 10c.; turkeys, young, per lb., 25c.; turkeys, old, per lb., 22c.

Wholesale Fruits and Vegetables.

Apples.—Apples have been quite plentiful on the wholesales, but there has only been a very limited demand for them, as of course, perverse human nature, cries for the scarce article—Oranges. The western boxed varieties ranged from \$2 to \$2.75 per box with an odd one of extra choice quality bringing \$3—Ontarios at \$4.50 to \$7 per bbl; Nova Scotias at \$4.50 to \$6 per bbl.

Oranges.—Oranges have been exceptionally scarce and mostly of large sizes with the prices steadily advancing—Floridas now selling at \$5.25 to \$6.25 per case—California Navels at \$5 to \$6.50 per case.

Potatoes.—Potatoes have also been quite scarce, as the severely cold weather has prevented shipping—Ontarios now sell at \$2.25 to \$2.30 per bag and New Brunswick Delawares at \$2.50 per bag.

Montreal Produce.

Horses.—There is very little of interest in the market for horses at present. Prices continued steady, as follows: Heavy draft, weighing 1,500 to 1,700 lbs., \$225 to \$275 each; light draft, weighing 1,400 to 1,500 lbs., \$175 to \$225; small horses, \$150 to \$200 each; culls, \$75 to \$125 each; good saddle and carriage horses, \$200 to \$250 each.

Poultry.—The price of poultry has eased somewhat since the Christmas trade was on, but is now about steady at 34c. to 35c. per lb. for turkeys; 25c. to 27c. for chickens and ducks, while fowl are 19c. to 22c., and geese 22 cents to 23 cents per lb.

Dressed Hogs.—Although the price of abattoir-dressed showed practically no change, ranging from 26½c. to 27c. per lb. for best stock, country-dressed hogs brought an advance of about ½c. per lb. selling at 25c. to 25½c. per lb. Sales are said to have been made at 26c.

Potatoes.—The quality of potatoes on the market has not been very good of late, this applying to some of the better varieties. Green Mountains were quoted at \$2.25 per bag of 90 lbs., in a wholesale way, and \$2.50 to \$2.65 retail. Ontario white stock was \$2.15, and reds \$2.05 per bag of 80 lbs., ex-store.

Honey and Maple Syrup.—Honey was unchanged, being 19c. to 22c. per lb. for white clover comb; and 17c. to 19c. for white extracted, and brown clover comb, according to quality. Maple syrup was very scarce, and quoted at \$1.40

to \$1.80 per gallon of 13 lbs., sugar being 15c. to 17c. per lb.

Eggs.—The recent cold weather has had a firming effect on the market for eggs, and it is very difficult to get fresh-stock. Prices quoted were 65c. to 70c. for new laid; 55c. for fresh eggs; 50c. to 52c. for Fall fresh; 47c. for cold storage, selected; 43c. for No. 1, and 39c. for No. 2 cold storage.

Butter.—Supplies of margarine have increased, and so has the demand. The price was 30c. to 32c. wholesale, and 34c. to 37c. retail, against 45½c. to 46c. for the finest Sept. and October creamery, and 1c. less for fine, or as against 43½c. for current makes of creamery and 36c. to 37c. for dairy butter.

Cheese.—Prices being paid by the Commission were unaltered, being 21½c. for No. 1 cheese; 21¼c. for No. 2; and 20¾c. for No. 3. The butter and cheese and dairy trade is agitating to prevent the export of milk and cream to the United States, it being claimed that there is insufficient here for our own requirements.

Grain.—The tone of the market for oats continued quite strong, and No. 1 feed oats were quoted up to 93c., with No. 2 at 90c.; Ontario No. 2 white, 91c. to 92c.; Ontario No. 3, 90c. to 91c.; No. 4, 89c. to 90c. per bushel, ex-store. Ontario malting barley was firm at \$1.48 per bushel, ex-track here for choice grades.

Flour.—The market was unchanged, and demand was moderately good. It is thought that ere long, the food controller will compel a mixture of wheat with other grains for flour purposes. Manitoba first patents were \$11.60; seconds, \$11.10, and strong bakers', \$10.90 per barrel, in bags. Ontario 90 per cent. patents, \$10.70 to \$11 per barrel, in wood, and \$5.20 to \$5.35 per bag.

Millfeed.—The market continued very strong, with bran selling at \$35 per ton in bags; shorts, \$40; middlings, \$48 to \$50; pure grain mouille, \$61 to \$63; mixed mouille, \$50 to \$58 per ton in bags.

Baled Hay.—Hay was in good demand and if the cars could be obtained to ship it to the United States, trade would be very active. No. 2 baled hay was \$14.50 to \$15.50 per ton; No. 3 \$13.50 to \$14.50; clover mixed \$10 to \$12.

Hides.—The only change of consequence in the hide market was a decline in the price of beef hides, of about 3 cents per lb. This brings the price down to 18c., 19c. and 20c. per lb., for No's. 3, 2 and 1, respectively, Montreal inspection. Calf skins continued steady at 25c. per lb. for grassers, and 28c. to 30c. for veals; lamb skins were unchanged at \$4.50 each, and horse hides at \$5 to \$6 each. Tallow was steady at 3½c. per lb. or scrap fat, and 8c. for abattoir scrap. Rendered tallow was 16c. per lb.

Sale Dates.

Jan. 29, 1918.—Victoria County purebred Stock Association, Lindsay, Ont.—Shorthorns and Herefords.

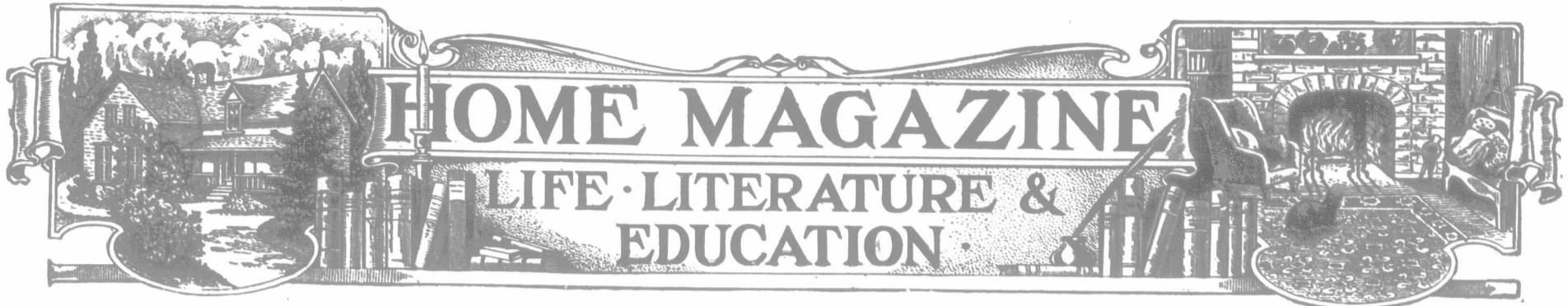
Jan. 30, 1918.—Alex. Hastings, Crosshill, Ont.—Shorthorns, Leicester Sheep and Hampshire Hogs.

Feb. 20, 1918.—A. Stevenson, Atwood, Ont., Shorthorns and Yorkshires.

Feb. 23, 1918.—W. A. Dryden, Brooklin, Ont.—Shorthorns.

March 20, 1918.—Oxford District Holstein Breeders' Club Consignment Sale, Woodstock, Ont.—Holsteins.

President Wilson in addressing Congress on Jan. 8th, substantially backed up Premier Lloyd-George's statement, (in reply to Count Czernin's terms for the Central Powers at Brest-Litovsk) of why the Allies are at war. Both agree that after the war armaments must be reduced; that colonies have a right to their own form of government; that Alsace-Lorraine must go back to France; that Belgium be evacuated; that Poland be independent; that the sanctity of treaties be re-established; that the Dardanelles be nationalized. President Wilson adds that the frontier lines of Italy be readjusted; that Russian territory be evacuated and that Russia be given opportunity to work out her political development. . . . There is no word claiming right to destroy or disrupt Germany, Austria-Hungary or Turkey, but guarantees for the world's peace must be secured.



Life.

I asked him, "What is life?" and he replied:
Not mere existence; 'tis the attitude
The soul of man takes up to what he meets.

Whether we see it when a daughter stands
Upon the sunny threshold of glad Youth,
Declining the entreaty that Love makes,
And then goes back into a quiet home
To nurse her aged parents and to kiss
The cross that she must bear through
lonely years.

Whether we see it in the man who wakes
From his intoxication and resolves
Upon the neck of Appetite to plant
His spirit's foot; who falls, not to remain
Among his broken resolutions, but forth-
with
Asserts himself, winning as wins the sea,
When the returning tide goes up the beach.

Whether we see it in some knight, high-
souled,
Who left a well-selected road to fight
The enemy of Freedom, but alas!
Died ere he struck a blow, cut down, per-
chance,
By illness ere he saw the battle-lines;
Or, maybe, to a shell-hole, wounded,
Crawled
To die—while an unfinished conflict
swayed
This way and that—the issue still in
doubt.

These heard the finest voices of the world
And turned thereto with faces glory-lit;
And when such die, with gain of gold or
place
Denied them, and their bodies mix again
With dust, unmarked, pity them not, for
they
Life's secret knew. Their spiritual nature
found
A kinship with high God, and so they
lived.

Such lives upon duration ne'er depend.
The deed done—or untouched—'tis all the
same.
One year, or twenty, all the same, for
lives
Like those have a completeness all their
own,
For they are liegemen in the realm of the
Soul.

—Alexander Louis Fraser.

Through the Eyes of a Canadian Woman in England.

ENGLISH winter with its short, dull days and piercing winds has descended once more upon us, and one rises reluctantly in the dark mornings to dress as hastily as stiffened fingers will permit. So far the cold has been of the dry Canadian variety, and we feel we should be thankful for small mercies, although there is no beautiful snow to soften the effect. The past month of mild weather has been a boon to all, in that a great saving of "coal" has been accomplished. I am beginning to realize now that the changeableness of the climate has its charm, for we are certain to wake up some morning, to find the air soft and balmy, if moist. Everywhere Canadians are hugging a bit of fire, while English people sit back and enjoy it from a distance, for they scorn to coddle themselves. I asked an English woman who never joins the circle around the hearth if she were not cold. "O yes," she said, "I am never warm this time of year," and touched my hand with her icy one, and there the subject ended. She scores though, for her complexion is never warped, nor her spirits affected by the atmosphere.

A real tank is playing a very important part in the capital this week. Trafalgar Square, where its huge bulk is reared, is

scarcely large enough to hold the investors. It was a brilliant idea, and few who come out of curiosity to see the great machine go away without banking money, in sums great or small, for the war loan. Queues appear to be a war fashion. We have long had the sugar, tea and margarine queues—now Lordoners are forming a tank queue, and the million pounds asked for have been subscribed, while three million are in sight! To-morrow morning another tank will "do" the city, collecting further investments, and next week four others will make a tour of the provinces, taking Liverpool, Manchester, Sheffield and Cardiff as their starting points. After that they will probably be sent to do their deadly work in France.

We have just had an interesting show of the patients' needlework at our hospital. The largest ward on the ground floor, "Kitchener," was the scene of the display. Down the centre a long table was arranged, which was covered with a great variety of articles, some of them being very beautiful. There were tea-cosies, pinchusions, blotters, and belts in cross-stitch, in Dragon, Coat-of-Arms, Allied flags and other designs. Then there were the little pictures in embroidery on linen glass-covered and framed, which are so much in vogue just now, as well as pillow and cushion covers in bold, conventional patterns. The peacock with its gorgeous coloring seemed to be the most popular design of all. Never have I seen an exhibit of woman's work which surpassed this in beauty of coloring or fineness of execution. The men who were able to move about, as well as many others from nearby hospitals, enjoyed it to the full, and it was amusing although pathetic to hear them comparing their methods of work. For days before some of our men were awake early and hard at it before they had their breakfast in order to have it finished in time, and they looked forward to the show with the enthusiasm of children. It helped, too, to make them forget for a time their misfortunes. One man made sixty golly-wogs (his pals in the ward now call him the "golly-wog wonder"), and most artistic they were, especially those in black and yellow with tiny waist-coats and even buttons. They are supposed to bring good luck to the wearer. May they bring it to the maker as well! I was not able to get in at the beginning, and found when I arrived, to my great disappointment, that everything had been sold. The money will be used to buy further work materials for the patients. Those who accomplished two pieces retained one for themselves to send to their homes, where I am sure they will be appreciated. To the boys who were still in bed in "Kitchener" the passing to and fro of people from the outside world proved as great a diversion as the delightful music furnished by six charming girls during the afternoon.

The Canadian Colony in England is full of sympathy for Halifax in its great disaster. Every corner of this poor old war-wrecked world seems to be having troubles of its own these days. May the rift in the clouds appear and peace once more reign in this New Year of 1918!

These are sad days for man's best friend, the dog. There are few scraps in the kitchen, and the cheap bits at the butcher's which were formerly bought for him, now sell at a high price for human consumption. So poor doggie, too, must needs become a vegetarian. And there are hosts of dogs! I never knew there were so many in the world before. The dog tax in this country must be a considerable source of revenue. Most English women—and men, too—love dogs, and the few who do not, possess them, because a well-bred dog lends an air of smartness. But as I said before, these are lean days for them, and the poor man's dog fares like his master. As for the rich man's pet the following incident speaks for itself. "Somewhere in Warwickshire" a well-known and popular sportsman who

breeds St. Bernards was asked how he manages to feed them in these days of food shortage and restrictions. This was his reply: "In ordinary times they were fed on liver and paunch, but now they only get the same as ourselves." Every day an aristocratic grey-hound comfortably blanketed, an Irish terrier, and a fluffy white Pom stand at the open window of the hospital kitchen at the noon hour and enliven the scene with a series of prolonged and hungry howls, relieved by short, impatient barks. The odors of meat and gravy make the poor animals think of the good old days before the war. There is now an agitation to have pet dogs destroyed because they are sharing in the nation's food, and if we come to these straits many homes will be saddened, for this is a nation of dog-lovers. I used to watch from my window last winter a carter who always lifted his little dog up beside him and wrapped him carefully in the folds of his shabby coat when he started for home at the conclusion of his day's work.

Pussy, too, is treated with the greatest affection and consideration. When entering the railway station a few days ago I saw coming towards me a thin, black cat, mournfully mewling because of the cold. Just then a train was due and numbers of men and boys were filing into the building. I could not help noticing that almost every one as he passed hastily stopped and stroked pussy kindly. It is a wonder the English make such great soldiers (especially in combat with Germans), they are such a gentle people. One realizes here that the bravest are indeed the tenderest. In the boys' schools, I am told, a prize is given at the end of each term to the lad who best "plays the game" in regard to being fair, honorable and kindly to the unfortunate. There is a vote taken from the boys as to who shall be entitled to the reward. This accounts, largely I am sure, for the spirit of good sportsmanship and fair dealing which prevails.

I have been very busy to-day making "spills" such as our grandmothers excelled in, for the necessary match now takes its place among other war economies; we are asked to confine ourselves each to six a day. Before the war England's consumption was approximately three thousand million boxes per week. The deliveries for last week were thirty-two million boxes. Consequently clubs, hotels and restaurants which have fires in the public rooms have been asked to provide spills for their patrons. Some time ago housekeepers began to keep a stock of them. I put mine in a quaint china vase on the mantel, which my landlady tells me was the "spill-jar" which was handed down to her from her great grandmother. There is quite an art in making neat ones, but the spirit of rivalry will soon bring them to perfection. I have a "hunch" that it will be an interesting way for hospital patients to put in some of their lagging hours, and shall make the suggestion at once.

With heartiest New Year's greetings and good wishes to dear Canada.

SIBYL.

Among the Books.

No Man's Land."

[*No Man's Land*, by "Sapper"; Hodder & Stoughton Pub. Co., 17 Wilton Ave., Toronto; price \$1.25.]

DURING the past year books by "Sapper"—"*Men, Women and Guns*," "*Sergeant Michael Cassidy*," R. E., and others—have won ever-increasing recognition. Now "*No Man's Land*" has arrived to sustain that soldier-author's reputation.

"*No Man's Land*" is, as the author states, "not a story;" there is no plot; "it is just what happens every day some-

where or other in the land of glutinous, stinking mud, where the soles are pulled off a man's boots when he walks and horses go in up to their bellies, where one steers a precarious and slippery course on the narrow necks of earth that separate shell holes, and huddled things stare up at the sky with unseeing eyes." It is, in short, just a disconnected collection of incidents and reflections—just such things as your soldier can tell you, when he returns from the war, if he will talk—for "Sapper" is a soldier, and has been a soldier, in France and Flanders. He knows the game through and through.

There are horrible things in "*No Man's Land*,"—but that is war. . . . There are tragic things in it;—that, too, is war. . . . And there are humorous things in it,—war, once more, for "the boys" laugh often, even in the trenches, and once in a while the laughter bubbles out into the world, as in Bairnsfather's drawings, and "Billy's" letters, and portions of this volume with its grim title "*No Man's Land*;" and then the world laughs, too, even though its laughter choke in the half sob and the dimming of the eyes with tears.

The chapter that tells about Jimmy O'Shea, trainer in bayonet practice, is not nice reading, but "such things must be" before as well as after "a famous victory." . . . The story of Staunton's bit of detective work is thrilling as that of any make-believe Sherlock Holmes. . . . The bit sandwiched in about "Bendigo Jones" is simply adorable fun to anyone who knows anything of "futurist" convulsions of art. . . . But all the way, too, there are descriptions that make the scenes live before us, familiar, almost as those about our own homes; and, thrown upon that vivid background are the little human touches that could only come of experience itself.

With the Sapper you reach, through a field splashed with red poppies, blue cornflowers and white daisies, the shattered "Ritz" House, now the shelter of the end of a communication trench. Down you go, and then wind in and out along that zig-zag way, with the poppies and weeds meeting over your head,—on to the spot where, instead of flowers above, gray and drab walls of sandbags rise high on each side of the narrow tunnel, and dugouts begin; and men in khaki, placidly puffing pipes, and cracking jokes, and passing on bits of trench news. . . . On again, to the land all pitted with shell holes, where wire entanglements stretch their ugly tentacles, where the stenches arise, and men's voices sink to whispers.

Here is one bit of description that concerns trench mortars. It is taken from a chapter entitled *A Day of Peace*.

"His meditations were interrupted by a procession of gunners each carrying on his shoulder an unpleasant-looking object which resembled a gigantic dumb-bell with only one blob on the end—a huge, spherical cannon-ball on a steel stalk. They were coming from Leicester Square ('the boys' have every place named.—Ed.) and he met them just as they turned up the Hay-market. Waiting until they had all gone by, he followed on in the rear of the party, which suddenly turned sharp to the left and disappeared into the bowels of the earth.

"'No. 7,' murmured the Sapper to himself. 'I wonder if the officer is new?' He turned to a bombardier standing at the entrance to the passage. 'Is your officer here?'

"'He's down below, sir.' The man man drew to one side, and the Sapper passed up a narrow, deep trench and went down below to the trench-mortar emplacement, a cave hewn out of the ground much on the principle of an ordinary dug-out. But there were certain great differences; for half the roof had been removed, and through the hole thus formed streamed in the early morning sun. A screen of rabbit wire covered with bits of grass, lying horizontally over

the open hole when the gun was not firing, helped to conceal it from the prying eyes of Hun aeroplanes. Let into the ground and mounted and clamped to a stand was the mortar itself—while beside it sat a very young gunner officer, much in the attitude of a mother beside her firstborn. He was obviously new to the game, and the Sapper surveyed him with indulgent eye.

"Good morning." The gunner looked up quickly.

"I'm the Sapper officer on this bit of line. You've just come in, haven't you?"

"Yes, early this morning. Everything seems very quiet here."

"From four until eight or nine it's always peaceful. But I don't know that you'll find this spot very quiet once you start pooping off. This particular emplacement was spotted some two months ago by the wily Hun, and he got some direct hits on it with small stuff. Since then it hasn't been used. There are lots of others, you know."

"I was ordered to come to this one," answered the boy doubtfully.

"Right-o! my dear fellow—it's your funeral. I thought I'd just let you know. Are you letting drive this morning?"

"Yes—as soon as I get the order to fire."

The boy was keen as mustard, and, as I have said, very young—just another infant. He had not long to wait, for hardly were the words out of his mouth when a sergeant came in.

"Captain's compliments, sir, and will you fire two rounds at G. 10 C. 54?"

Rapidly and without confusion the men did their appointed jobs; the great stalk slithered down the gun, the bomb—big as a football—filled with high explosive was fixed with a detonator, the lanyard to fire the charge was adjusted. Then every one cleared out of the emplacement while the Sapper took his stand in the trench outside.

"Let her rip." The lanyard was pulled, and with a muffled crack the huge cannon-ball rose into the air, its steel stalk swaying behind it. Plainly visible, it reached its highest point, and still wobbling drunkenly went swishing down on to G. 10 C. 54—or thereabouts. A roar and a great column of black smoke rose from behind the German lines.

"Almost before the report had died away, the gun was sponged out, and another incriminated monster departed on its mission. But the Sapper was already some way up the Haymarket. It was not his first view of a trench-mortar firing."

It was "a day of peace," and yet, before night, had come the Great Adventure for at least one of those mentioned. Up the line a bit, as the C. O. sat at dinner, an orderly came into the room with an envelope.

"The C. O. spread out the flimsy paper and frowned slightly as he read the message. 'T. M. Emp. No. 7, completely wrecked by a direct hit 9.30 a.m. A.A.A. Please inspect and report, A.A.A., C.R.E., 140th Division.'

"Delayed as usual," grunted the Scotchman. "I was there just after it happened, and reported it to the O. C. Trench Mortars. Did you not hear, sir, for it's useless repairing it? That position is too well known."

"Were there any casualties?" The Sapper Captain's voice was quiet.

"Aye. The poor lad that was crooning over his gun when I saw him this morning, like a cat over her undrowned kitten, just disappeared."

"What d'you mean, Mac?"

"It was one of the big ones, and it came right through the wire on top of him." The gruff voice was soft. "Poor bairn!"

It is a temptation to quote much from this book, but it is scarcely fair to an author to send too many of his choice bits ahead to herald his story. Sufficient to say that "Sapper" is no mean artist, and that he knows his ground. If, occasionally, he tells horrible things—that is war. But even out of all its horrors he looks ahead with vision. He sees that a new order will come, even to the men who are now suffering. "In their civilian life," he says, "self talked; there, each individual pawn scrambled and snarled as he pushed the next pawn to him in order—or went into a blind alley as the case might be—in his frenzied endeavor to better himself, to get a little bit and more. The community was composed of a mass of struggling, fighting men, each one all out for himself and only himself."

"But from the tuition which the manhood of Britain is now undergoing, there must surely be a very different result. Self no longer rules; self is sunk for the good of the cause—for the good of the community. And the community, realizing that fact, endeavors, by every means in its power, to develop that self to the very maximum of which it is capable. . . ."

"Surely what has been accomplished in the Army can be carried into other matters in the fullness of time. I am no prophet; I am no social reformer to speak of ways and means. All I can say with certainty is that I have seen them come in by hundreds, by thousands—these men of our country now fighting in every corner of the globe—resentful, suspicious, intolerant of authority. I have seen them in training; I have seen the finished article. And the result is good; the change for the better wonderful."

"It cannot be that one must presuppose such a hideous thing as this war to be necessary, in order to attain such results. I cannot believe it. There must be some other method of teaching the lessons of playing for the side and unselfishness. The spurred culprits of Mr. Wells' imagination have given a lead over the fence; surely all the rest of the field is not going to jib."

"And when the harvest does come in, when the sickle is finally put to the crop, there will be such an opportunity for statesmanship as the world has never before seen."

"Winnowed by the fan of suffering and death, the wheat of the harvest will shed its tares of discord and suspicion. The duke and the laborer will have stood side by side, and will have found one another—men. No longer self the only thing; no longer a ceaseless grouch against everybody and everything; no longer an instinctive suspicion of the man one rung higher up the ladder. But more self-reliant and cheery; stronger in character and bigger in outlook; with a newly acquired sense of self-control and understanding; in short, grown a little nearer to its maximum development, the manhood of the nation will be ripe for the moulder's hand. It has tasted of discipline; it has realized that only by discipline for the individual can there be true freedom for the community; and that without that discipline, chaos is inevitable. Pray heavens there be a moulder—a moulder worthy of the task."

Books Received.

The Tempting of Tavernake, by E. Phillips Oppenheim. An exciting, modern novel of London and New York. McClelland, Goodchild & Stewart, Toronto. Price, \$1.35.

The Definite Object, by Jeffery Farnol, a story of New York, an adventurous young man of wealth, and a charming girl. Musson Book Co., Toronto. \$1.40.

Helps for the Rural Schools.

BY "THE OWL."
Paper VI.

REALLY, in some things we are most inconsistent.—A farmer would scorn to be told that he should reap his fields with a sickle when a binder is available; a carpenter would laugh at a man who told him he should smooth a board with a pocket knife when a plane can be got; and a capable house-keeper would think it ridiculous to be expected to carry on her work without the necessary utensils;—and yet, in the majority of places in the rural districts "the teacher" is expected to get along and do good work with practically no helps at all other than chalk, a few maps and a broom!

In short, we profess that our children are the most precious things we own, yet pay the least possible attention to their education, which is the most important thing that concerns them.

It is quite enough to visit a dozen rural schools, then drop into the first city school one comes to, to know that, in the matter of helping material the city schools are, as a rule, much better equipped than the rural school, —and yet the country boys and girls are just as important as those in the city, and it is just as necessary that they be supplied with every possible material that can develop them during these formative years of their lives.

To think, however, that there is some excuse for this country in this matter. Often the schools are poorly supplied simply because the action does not know the things

that can be got. Here is a plan that will overcome that: Send a committee, made up of the teacher, one trustee and two other representatives of the section, once every year or so, to visit some of the city schools and see with their own eyes the materials and the way in which they are used. I asked a city teacher last night if she thought the city teacher would object to this, and she said she knew most of them would be glad to entertain such visitors at any time, but that it might be necessary to make "beforehand" arrangements with the Inspector who would then take up the matter with the teachers whose rooms were to be visited. In this way the visitors would be enabled to see the most helpful lessons, and would not run the risk of walking in upon a dictation lesson, for instance, when one in number-work with "material," or geography with a sand-board, would be more to the point.

IT is in the lower forms, of course, that the most material is needed. Every city kindergarten to-day is supplied with the Froebel "Gifts," blocks, cylinders, etc., which the little ones use in many ways. Also, there are "pegs" for number work, paper and blunt-topped scissors for cutting, splints, cardboard with wool for sewing, clay and plasticine for modelling, and colored crayons for various kinds of exercises.

As the grades ascend much of this material is still used. Plasticine, for instance, gives absorbing material for making relief maps; the colored crayons are used for more intricate designs, and the number-work goes on to wider areas. The sewing passes on from cardboard to cotton materials, and, in the higher grades easy lessons in cookery and manual training are as much a matter of course as those in "readin', ritin' and 'rithmetic." A globe (the earth) is a feature in most of the rooms, also charts for teaching physiology and care of the body,—and there are yards and yards of blackboard, running at least across the front and down one side of the room. In many of the rooms, too, may be seen cases of small bottles containing weed-seeds, collected by the children and labelled; collections of bits of wood, and of leaves and wild-flowers, all mounted and labelled.

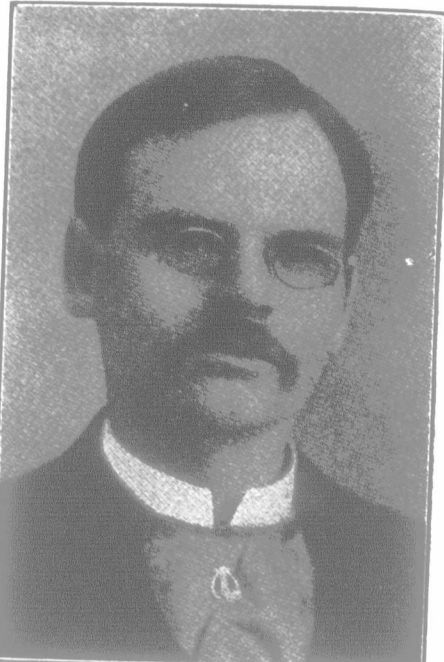
In this last the rural teacher who is really "up to" her work, will see vast possibilities. In her school will be seen, soon, collections of pressed weeds which will give material for splendid lessons on the eradication of the weeds; similar collections of insects; boxes for seed testing, and experiments with selection of seed. The country, indeed, offers vastly better opportunities for teaching in many branches than the city can ever do,—a fact of which many wide-awake rural teachers are already aware and making of good use.

OF one thing in regard to the use of material it may be necessary to give warning. Dear Very Practical Person, if you go into a school-room and see a class of little children sewing wool words on cardboard, don't think they are "wasting their time." Know that, according to the psychology of education, these little ones are learning at once: familiarity with the words; the faculties of concentration, observation and precision; industry and ease of using the hands. . . .

When you see a class busily drawing maple leaves and coloring them, do not look upon it as "fiddling nonsense." Know that the same faculties of observation, precision and industry are all in training, and that, besides, the lesson has probably been made a useful opportunity for making measurements. . . .

When you see boys making trays and stools and book-cases, don't think that they are "just learning carpentering," valuable as that may be. Know that this work develops certain brain powers, that might be dormant were not the hands employed in such work as this.—When you see your boy working in your fields don't look upon his work as only so much saving of money for you. Know that he is learning life-lessons besides, and that it is up to you to let the money side of the question be the secondary instead of the first consideration in regard to his efforts.

In closing—Give the teacher all the "helps" and all the encouragement you can. Your very sympathy will inspire her—if she be the right kind of girl—to recognize the importance of doing the best she can with her school. If she cares nothing at all for that, then she should not be for you. Your boys and girls are far too precious and important to entrust to anyone who "does not care."



William Wilfred Campbell.

Dr. William Wilfred Campbell, Canadian poet, novelist and historian, who died recently at his home in Ottawa, was among the most distinguished of our native writers.

He was born in Berlin (Kitchener), Ont., June 1st, 1861, and received his education at some of the High Schools of Ontario, at University College, Toronto, and at Cambridge, Mass. In 1885 he was ordained as an Anglican clergyman, and for some time was rector at St. Stephen, N. B. In 1891, however, he resigned, and took a position in the Dominion Archives department at Ottawa, a field which gave him more time to write and a greater opportunity for indulging in his favorite study, historical research. Of late years, like many other men, his affections turned to the land, and so he bought a small farm in the suburbs of Ottawa, "City View," on which he established his home.

In 1884 he married Mary Louisa, only child of the late David M. Dibble, M.D., of Woodstock, Ont. His mother, who survives him, still lives at Warton, Ont., a spot in which the poet spent some of his early years.

The poem which has, perhaps, brought Dr. Campbell his greatest fame, is *The Mother*. His published works are: *Lake Lyrics; The Collected Poems of Wilfred Campbell; Poetical Tragedies; Sagas of Yaster Britain*; and the novels: *Tan of the Orcaides*, and *A Beautiful Rebel*, with several volumes of historical importance.

Hope's Quiet Hour.

Practical Living.

AND He said unto them, Take heed, and beware of covetousness: for a man's life consisteth not in the abundance of the things which he possesseth.—S. Luke 12:15.

Yesterday a man, who is an enthusiast about farming, said to me: "You never write about anything practical, do you?" He meant, of course, that I did not help people to pile up money by my "Quiet Hour." For my part, I consider that the cultivation of our souls is the most practical business of life—unless it be the helping of the spiritual life of others.

Let us study the setting of our text. Our Lord was telling His disciples to be utterly fearless in all situations, because they were safe in God's embrace. Even when they should be brought before magistrates in law courts the Holy Spirit would be their Advocate. Then a man in the immense crowd of listeners became excited, and demanded that this Teacher who had no fear of magistrates should take up a case and plead for him. He had become involved in a family quarrel and wanted our Lord to claim for him what he considered was his rightful share of the family property.

Perhaps there was indignation as well as sorrow in the stern refusal to interfere: "Man, who made me a judge or a divider over you?" The man thought the acquisition of wealth was a practical thing as compared with the eternal realities of the spirit. And so He turned pleadingly to the people and warned them

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to beware of covetousness; reminding them of a fact we are very apt to forget that man's true life does not consist in the possession of wealth. In order to show the evident truth of this statement He told them the story which is usually called "The Rich Fool". Read it over carefully and you will see how exactly it is fitted for its purpose. Each detail is sketched in with a masterly hand.

Here is the picture of a rich farmer gathering in a splendid harvest. God worked the mysterious miracle of reproduction, and he took God's gifts as his right and gathered them in selfishly and unthankfully. He called them "my" fruits and "my" goods; and, because he had more than he could stow away, his one thought was how he could build bigger barns in which to store the crops which overflowed his old storehouses. Satisfied that he was prosperous and making a huge success of life, he looked into the future, tranquilly confident that even if poor harvests should come to other people he was all right. He had enough property to last many years and did not need to work but could spend his time in luxury and pleasure.

"But God said unto him, Thou fool, this night thy soul shall be required of thee: then whose shall those things be, which thou hast provided?"

Instead of calling him a "rich" fool we might describe him as a "poor" fool. He thought he was a man of the world, a practical man, a successful person and one to be envied; and yet the barns he had stocked for his selfish enjoyment would be handed over to others and he must go before God to give account of his stewardship. Suddenly he would discover that he had no right to say so complacently "my" fruits and "my" goods—the earth and the increase thereof belong to God. We are only stewards; from the king on his throne down to the poorest day-laborer we must all answer to God for the time, powers of mind and body, and opportunities of service He has placed in our hands. Suddenly we may be called into our Master's presence. If —like that farmer in the parable who thought himself rich—we have made it the chief business of life to secure comforts and luxuries for ourselves, we shall find that our work has been anything but practical.

It is not easy to ignore the presence of Death in our midst in these days. We know that to-day or to-morrow the message may come to us: "The Master is come, and calleth for thee." Then hoarded millions will not be riches but deepest poverty—they will witness against us, speaking loudly of our selfishness.

"Practical!" With death waiting at the door to call us into the wide world on the other side, the most practical thing any of us can do is to heed our Lord's warning as he pointed to the shivering, naked soul ushered into eternity and said: "So is he that layeth up treasure for himself, and is not rich towards God."

Even on this side of death the hoarded gains of selfishness may be swept away. In the terrible shaking of our boasted civilization, which has taken place during the war, many who felt secure in their possessions have discovered that they could not hold on to them. If all our riches are piled up on earth we are always on the edge of poverty. But, if God's love be our pearl of price, we have wealth which neither earthly enemies nor death itself can take from us.

Christ upon the Cross, stripped of all earthly possessions, calmly placed His soul in the Father's hands. He was safe there—and knew it.

St. Paul, looking forward to the prospect of persecution, peril or death, exultantly declared that none of these things could separate him from his treasure—"the love of Christ." He invited others to share in the true riches which the world had no power to give or to take away. Whether the disciples of Christ—real disciples—faced earthly defeat or victory, they were "more than conquerors" though the love of their ever-present Lord. Death could only bring them nearer to Him, they feared neither evil angels nor wicked earthly powers, for nothing could separate them from their priceless treasure, "the love of God which is in Christ Jesus our Lord." Rom. 8:35-39.

What is a successful life? Is it to gain the whole world and lose one's own soul? Or is it to spend one's life in willing service, inspired by love to God and one's fellows?

Christ has summed up the commandments in one great word, "LOVE".

If love be the greatest thing in the world, the fulfilling of the law, then the absence of love must be the opposite extreme—the deepest and blackest sin. What is the absence of love? Surely it is selfishness; the wasting of life on one's own poor, miserable self.

On the surface it might seem as if our soldiers were madly throwing their bright young lives away. People speak of them as "cannon fodder"—what a name for those who are giving up comforts and ease, and facing torture and death for the sake of others!

No matter how "practical" we imagine ourselves to be, no matter how many goods we have laid up for many years, we can't keep death out of our homes—we can't escape death ourselves. When that hour comes, when God calls a soul to leave the tabernacle of the body and appear before Him, that hour may be one of triumph—not defeat but victory.

"Take comfort, ye who mourn a loved one lost

Upon the battlefield—thank God for one Who, counting not the cost,

Faced death and would not yield;

Thank God, although your eyes are dim with tears

And sad your life, and grey, That howsoever the battle went, for him

'Twas victory that day!

With armour buckled on, and flag unfurled,

The heights of death he trod, Translated from the warfare of the world

Into the Peace of God."

DORA FARNCOMB.

Gifts for the Needy.

I have been making up my accounts for 1917, and find that during last year "gifts for the needy" amounting to \$286.25 passed through my hands, in addition to other things—such as papers for the "shut-in" and parcels of clothing. Out of the Quiet Hour purse 173 donations have gone to the needy—in varying amounts, from 40 cents up to five dollars—and the purse is still very full. The stream of incomings since Christmas has been so continuous that I have not been able to keep pace with it in the way of outgoing—especially as I was away from home in the holiday season—but I don't intend to let your gifts remain idle very long.

Since last week I have received \$5 each from H. S. B. and M. T., and \$2.50 from the Misses H.

I returned home to find in my room seven large packages of S. S. papers. Some of these have found their way to the hospital and the rest will follow in good time.

My heartiest thanks go out to the many kind readers of the "Advocate" who have used me as a canal through which their "gifts for the needy" pass. DORA FARNCOMB. 52 Victor Ave., Toronto.

On Christmas Eve I emptied the Quiet Hour purse (it is not often empty) passing on your gifts to people in need. Then I went away from home, and my Christmas mail did not reach me until New Year's Eve. As I opened letter after letter on that day, and discovered how many contained "gifts for the needy" from readers of the "Advocate", I was almost overwhelmed. So many wrote as if I were doing some "great work" among the poor—but the truth is I am only "neighboring", helping here and there with your money as you might do among your neighbors in the country. I am a very commonplace individual, with no talent for doing "great" things, but at least I try to be a faithful steward of your bounty, and thank you most heartily for your confidence.

My Christmas mail contained gifts of \$10 each from E. B. and H. E. H.; \$5 each from W. C. D., Mrs. T. H., R. B., A. T., Mrs. T. C. M., Mrs. Y. and "a quiet country woman"; \$2 each from R. G. and K. P.; and \$1 each from D. A. and "a friend"—ixty-one dollars in all. Do you wonder that I feel overwhelmed? Still it will be a pleasure to buy coal for some people who are struggling along with scarcely any fuel, this cold winter, and—with prices of food soaring high—even sixty dollars will melt away in time. Next week I hope to give you my annual statement. Heartiest good wishes to all my friends for a Happy New Year. HOPE.

The Fashions.

How to Order Patterns.

Order by number, giving age or measurement as required, and allowing at least ten days to receive pattern. Also state in which issue pattern appeared. Address Fashion Department, "The Farmer's Advocate and Home Magazine," London, Ont. Be sure to sign your name when ordering patterns. Many forget to do this.

See under illustrations for price of patterns shown in this week's issue.

When ordering, please use this form:— Send the following pattern to:

Name.....
 Post Office.....
 County.....
 Province.....
 Number of Pattern.....
 Age (if child or misses' pattern).....
 Measurement—Waist..... Bust.....
 Date of issue in which pattern appeared.....



9537 Coat with or without Cape. 34 to 42 bust. Price 15 cts.

The Ingle Nook.

[Rules for correspondence in this and other Departments: (1) Kindly write on one side of paper only. (2) Always send name and address with communications. If pen name is also given, the real name will not be published. (3) When enclosing a letter to be forwarded to anyone, place it in stamped envelope ready to be sent on. (4) Allow one month in this Department for answers to questions to appear.]

The Good Work of the Dollar Chain.

THE Dollar Chain—your Dollar Chain—now totals \$5,100, a chain in which every link has gone to help someone in desperate need. Some of it has gone to buy yarn to make socks for cold feet in the trenches. You know, every ounce of yarn that you get free at the Red Cross that you may knit it up, has to be paid for by someone. If there were no donations from the people of this country there would be no yarn to knit. Some more of the Dollar Chain money has gone to buy food for the Belgians, thousands of whom are still absolutely dependent upon outside help for every bite they eat. Even in those parts of Belgium where the people are free to buy food, prices are so prohibitive that it is difficult to secure even the barest necessities, and it were not for Commissions from America who have taken up the work of distribution things would be worse than they are. These Commissions need continuous help. Money from the Chain has also been sent to help the Serbians and Armenians,—just this week \$25 for the latter. Even that means something, you know, for there are literally thousands of people, chiefly women and children—Armenians and Syrians—who are today starving, and 17 cents will feed one person there for a day. Every atom of food, as yet, must come from outside sources, for nearly all of the breadwinners have been killed—some with axes, "to save the price of cartridges," and all of the rest have been driven from their homes. In all, since the war began, over 1,000,000 have perished, some killed by the Turks, some dying along the way of starvation, having been forced to leave on short notice and with no means of subsistence. "Refugees," says a dispatch, "are located in broken down houses, damp sheds, stalls and stables, where sickness is unavoidable. If this condition continues, half the refugees will die. Many are dying of hunger on the highways and in the woods, where they go seeking grass and weeds, but find the ground barren, the locusts having consumed all vegetation." There are still 2,000,000 survivors, of whom 400,000 are orphaned children.

The Dollar Chain has helped a little in the vast work of filling all these needs. People have sent contributions through it who are constantly spending in Red Cross work at home; others, who know not just how to contribute conveniently otherwise have found it a very ready way for doing so. But there are thousands upon thousands among the subscribers and readers of The Farmer's Advocate and Home Magazine who have not yet contributed through it at all. Surely this is because these good people have not yet really given thought to the matter. At home, as a rule, they can contribute only to the Red Cross. The Dollar Chain reaches even farther than



No. 9530 Apron Work. Beg. one size.

9552 Plain and Fancy Capes, 34 or 36, 38 or 40, 42 or 44 bust. Price 10 cts.



No. 9528 Child's Coat with Yoke, 2 to 6 years.



No. 9516 Watatcosta. Small 34 or 36, medium 38 or 40, large 42 or 44 bust.



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that. Large contributions are, of course, welcome—they do proportionately greater good—but only small ones are really asked for. Nearly everyone can afford to send 50 cents in a whole year to the Dollar Chain. If every subscriber were to send 50 cents this week that would amount to \$15,000.00 before next week. Think of that! If every reader were to send 50 cents, possibly \$75,000 would arrive. And this would all be divided, at once, among the Red Cross, Belgians, Serbians and Armenians.

It does not seem a great deal to ask every subscriber of this paper—and as many other readers as feel their hearts moved—to contribute this small amount or even 25 cents, right now in the cold weather, when so very much is needed. You will not miss it very much; yet 50 cents will keep an Armenian woman or child alive for three days. It is not necessary to send your name—if you do not wish to—but every contribution should be accompanied by some pen-name by which it can be entered on our books and acknowledged in our pages.

Some contributors have done splendidly, having sent over \$100.00 since the Chain was begun. But the "Widow's Mite" is also splendid, just as splendid when the sender can spare no more.

At least, will you kindly think this matter over.

JUNIA.

Needle Points of Thought.

There is nothing more melancholy and contemptible than to see a successful man, who has brought out a brood of fine things, sitting meekly on added eggs, or, still worse, squatting complacently among eggshells.—A. C. Benson.

The consumption of alcoholic drinks lowers efficiency. Army officers know it, railroad officials know it, manufacturers know it—everybody knows it but those who will not look the facts in the face.—The Independent.

Making Vinegar from Honey.

"E. H.", Lambton Co., Ont., asks how vinegar can be made with honey. I have searched in vain for explicit information in regard to this. If anyone has made vinegar in this way perhaps she will be good enough to send the method for "E. H."

War Time Cookery.

Entire Wheat Bread.—Sifted entire wheat flour, 5 cups; scalded milk, 2 cups; molasses, 1/2 cup; yeast, 1/4 cake dissolved in 1/4 cup lukewarm water; salt, 1 1/2 teaspoons. Mix milk, molasses and salt. Heat to lukewarm and add the yeast cake dissolved in the water, then the flour. Beat well, let rise until nearly double its bulk. Beat, turn into greased bread pans, let rise again until nearly double its bulk, and bake about 1 hour in a moderate oven. (This and the two following recipes are from the Food Controller's Office).

Johnny Cake.—One cup cornmeal, 1 cup white flour, 1/2 cup sugar, 1 1/2 cups sour milk, 1/2 teaspoon soda, 1/2 teaspoon baking powder, 1 teaspoon salt, 1 tablespoon molasses. Mix and sift dry ingredients twice, and gradually add the sour milk. Beat well and bake in a shallow greased pan in a moderate oven.

Bran Gems.—One cup white flour, 1 cup bran, 1 cup milk, 1 egg, 4 tablespoons sugar, 1 tablespoon melted butter, 1 teaspoon salt, 4 (level) teaspoons baking powder. Mix and sift dry ingredients. Add the milk mixed with the beaten egg, then the melted dripping. Bake in a hot oven in buttered gem pans.

Corn Scallop.—One pint canned or stewed dried corn, 2 or 3 cups milk, 2 cups breadcrumbs. Mix, season with salt and pepper, put buttered crumbs over the top and bake. Nice as a hot dish for supper.

Pan-Roasted Potatoes. Prepare potatoes as for boiling, boil 10 minutes then drain and cook in the roasting pan with meat about 10 minutes. Baste often with the fat in the pan.

Creamed White Turnips. Cook 2 cups of half-inch cubes of turnips in boiling salted water half an hour, or until tender, drain and mix with 1 cup White Sauce. To make the white sauce take 2 tablespoons butter or dripping, 2 tablespoons flour, 1 cup milk, salt and pepper to

season. Melt the shortening, add flour and stir until cooked; add the milk and and seasonings, and heat, beating with a wire whisk until smooth.

Vegetable Hash.—Take 2 cups cooked cabbage, 1 cup cooked potatoes, 1 cup cooked turnips, 1 cup cooked beets, 1 tablespoon grated onion, pepper and salt to season, 2 tablespoons beef drippings 1/2 cup stock or water. Mix the vegetable and seasonings. Melt the fat in a frying pan, add vegetables and stock and cook slowly half an hour. Serve very hot on a hot dish.

Lyonnaise Potatoes.—Four boiled potatoes, 2 tablespoons sausage fat, 2 slices onion chopped fine, pepper and salt to season. Cut the potatoes in half-inch cubes and season with salt and pepper. Put the fat in a frying pan, add the onion and cook slowly for 10 minutes. Add the potatoes, stir well, and cook for 10 minutes without browning.

Raisin Bread.—Take 1 quart bread dough, 1/2 cup shortening, 1/4 cup sugar, 1 cup raisins, seeded and chopped. Knead shortening, sugar and raisins into the dough; shape in 2 round loaves, let rise, brush with milk and bake in a hot oven about 40 minutes.

Cinnamon Toast.—Spread toasted bread with butter, then with honey, and dust with cinnamon. Serve very hot.

Chicken Gallosch.—Take 2 raw potatoes, 1 tablespoon butter or dripping, 1 cup brown stock or gravy, salt and pepper to taste, 1/4 clove garlic or a bit of onion, 1 cup cold chicken. Pare the potatoes and cut into small dice. Put in the spider, with the butter or dripping to fry. Toss about until they begin to brown, then add the seasoning, stock and chicken. Simmer very slowly until the potatoes are soft.

Fish Bisque.—Two cups cold fish, 1 tablespoon butter or dripping, 1 teaspoon chopped parsley, 1 tablespoon Worcestershire sauce or catsup, 1 quart stock, 1 tablespoon flour, 2 cups hot milk, 2 tablespoons cracker crumbs, salt and cayenne pepper to season. Mince the fish fine, add to it the butter, chopped parsley, Worcestershire sauce, and stock. Thicken with the butter and flour mixed together. Add the milk, cracker crumbs and seasoning, and serve very hot, with biscuits or bits of buttered toast, for supper.

Cheese Toast.—Cut slices of stale bread, toast until brown and soften by dipping quickly in and out of hot salted water. Lay on a hot platter and over them pour a cup of cream sauce, tomato sauce, brown sauce, or gravy left from dinner. Sprinkle each slice generously with grated cheese, season with pepper and salt, dot with bits of butter and set in the top of a hot oven until the cheese is a delicate brown. Serve very hot. A nice and very nourishing dish for supper on a cold evening, and a good way to use up cheese that has become too dry.

An Unusual Cupboard.

"Yes, baking and cooking used to be a nightmare to me," said Kathleen, "but it isn't any more. I just came to the conclusion that if Fred could get things to make his work easier in the fields I could get things to make my work easier in the house, and so I got a few dollars together one day and started for the best hardware store I knew. It's perfectly wonderful how many really useful things you can get for ten or twenty dollars. Look here!"

She opened the doors of a large wall cupboard, throwing in as an aside, "Fred made me the cupboard."

The "cupboard", which stood between the stove and the bake-table, and was really not a "cup-board" at all, was enough to make one want to start house-keeping at once, just to have the chance of working out something so convenient.

The bottom part was given over to pots, kettles and saucepans, resting on shelves covered with zinc, and each occupying its own spot so that it could be removed without upsetting a heap of piled up things. At the end of one shelf was a steamer, also a double-baler and a large colander. . . . Immediately above these shelves were two very shallow ones fitted with slats in front so that they formed a splendid rack for an array of pot lids and pie and cake pans. The pie pans were all of granite, to do away with the danger of a "tinny" taste such as sometimes develops when acid fruit is used for pies cooked in tin. The



Strength

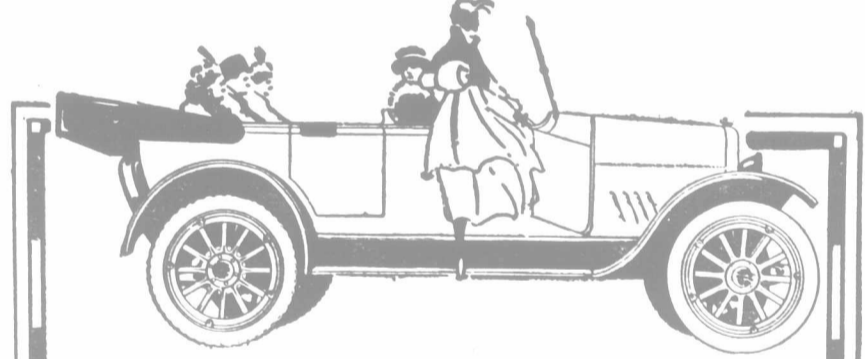
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cake pans were of tin, and were fitted with double bottoms, the inner one loose, thus killing two birds with one stone—preventing the cake from burning easily on the bottom and making it easy to turn it out of the pan. Two were oblong and exactly the same size and shape, with perpendicular edges. "These I use for layer cakes," said Kathleen.—Another was for loaf cake, and a third had a tube in the middle. "This one", said Kathleen, "I always use for a deep cake, such as fruit cake. The tube in the middle keeps it from being soggy."

Above the pans was a space fitted with hooks and pegs, to which were hanging all sorts of useful small things. "I call this my 'Woolworth Department,'" laughed Kathleen. In the row of spoons were two fairly large granite ones, "for vegetables and gravies," a huge granite one for bread, a heavy slotted one for cake-beating, and a wire one which, Kathleen told us, she used chiefly for beating salad dressing, white sauce, and eggs for omelet. For whipping cream and egg-whites for meringue she preferred the Dover egg-beater which hung near, using it always with a round-bottomed bowl.

Upon the hooks also could be seen a graduated measuring cup, a large and small grater, a wire potato masher, a ricer, a wire basket for boiling eggs and cooking doughnuts and croquettes, and two cake cutters, one square and of a fair size, the other small and diamond-shaped.

"I always use square cake cutters," explained Kathleen, "They prevent having to roll out scraps afterwards. The little diamond-shaped one is for Scotch shortbread—why do they call it bread? All of these little things, you see,"—pointing to the spoons, etc.—"are in rather constant use, so they are hung just at the right height so that I can take them out without either reaching or stooping. Here on this first shelf also"—indicating the lowest of a second series of shelves that extended to the top—"I keep some other things that I use pretty constantly."

These "things" were: a porcelain casserole with cover, for meat pies and scalloped potatoes; a set of deep "patty-pans" for "patties" and muffins; and an "adorable" baking-dish of "pyrex."

"The 'patty-pans,' you see, are not grooved; they are perfectly plain, as they are so much more easily cleaned," explained Kathleen. "And don't you just love 'pyrex'?"—taking down the pretty baking-dish, that looked exactly like glass, although it had baked many a dainty dish in the oven. "It looks so pretty on the table," continued Kathleen, "and you can keep things just as hot in it as in the casserole. I'd like to have many utensils of aluminum and pyrex, but—well one sometimes has to go slowly, but its nice to keep accumulating things you like."

Among the "select few" on the upper shelves were noted aluminum jelly moulds, individual earthenware souffle dishes, and a few other things that might have been dispensed with, but were nice to have.

"I really think your kitchen is the most interesting room in your house to you," we said, later, as Kathleen showed us, with pride, her bread-mixer, bake-table and very convenient collection of knives.

"Of course it is!" she assented. I love it. It's my workshop, and I'm very proud of it. But it's pretty well furnished now. Next year, if the war is over, I'm going to get some new things for the living-room."

The Scrap Bag.

Mashing Potatoes.

When mashing potatoes add a little hot milk. They will be much more light and fluffy.

To Renovate a Plush Coat.

When the nap on a plush coat has become flattened hang it in the bathroom, fill the tub with very hot water and let the coat steam thoroughly. If you have not a bathroom small enough to fill with steam suspend the coat over a tub of boiling water and put something about to keep the steam in. Afterwards brush well, and the nap will be greatly improved.

Instead of Eggs.

When eggs are scarce, when making meat loaf use 2 or 3 grated carrots in-

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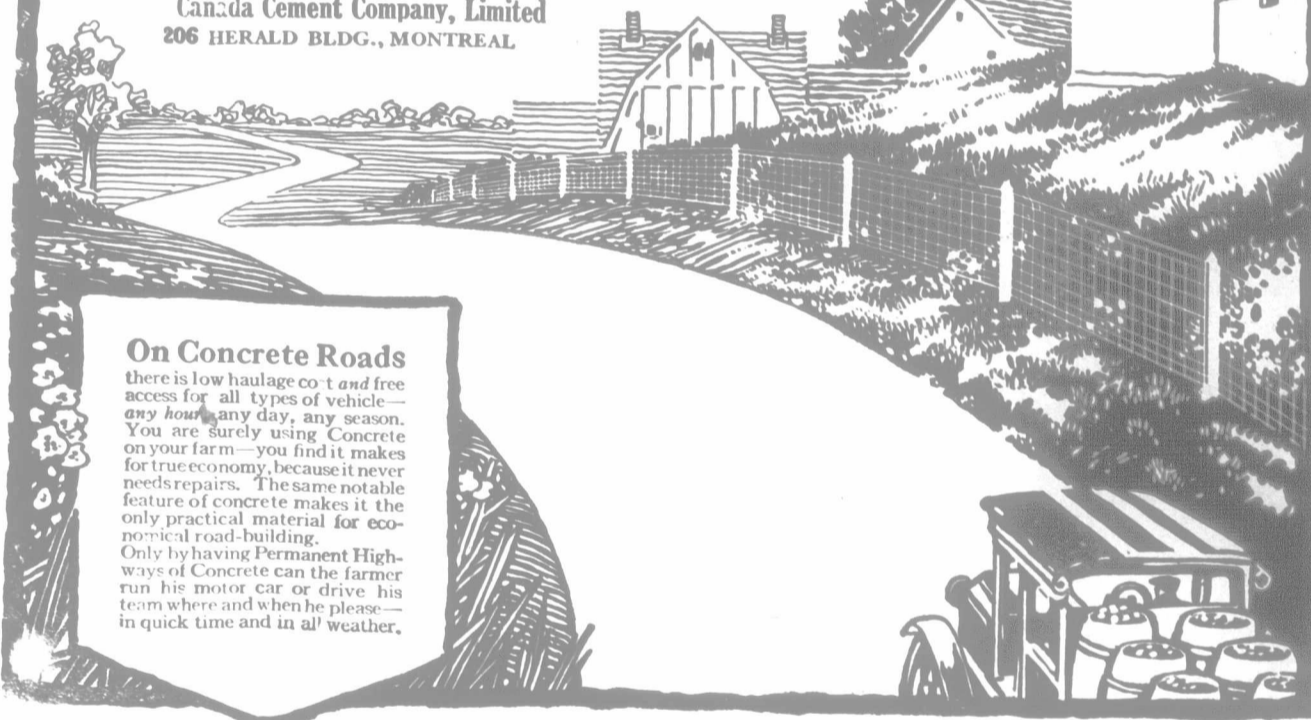
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stead of the eggs. They may also be used instead of eggs in pancakes.

Hint for Old Yarn.

To straighten out the kinks in old yarn that has been used, wind it in a skein and tie bits of yarn in three or four places. Next dip it in lukewarm water and hang up to dry. The yarn will look like new.

Cooking Cornmeal.

Use plenty of cornmeal, in porridge, muffins, pancakes and Johnny cake. It is an excellent food. To ensure well-cooked and perfectly smooth cornmeal porridge, says a writer in McCall's, place it first in the oven to dry, then pour it into a sieve and sift slowly into the boiling, salted water.

To Keep Little Children Covered.

To keep little children covered at night get some very large safety pins and pin the top quilt down to the mattress, leaving it loose enough not to be uncomfortably tight.

Preventive of Fire.

If a stove has to stand so close to woodwork that there is danger of its being set afire, cover the wood with a coating of liquid asbestos paint, or with a sheet of real asbestos. The following method has been recommended for mixing the asbestos paint at home: Take 3 parts gum lac, 4 parts sodium borate, 7 parts powdered asbestos, 20 parts water. Heat the water, add the gum lac and borate, and when all have been dissolved, stir in the asbestos. Apply half a dozen coatings, dried after each coating.

Serial Story.

An Alabaster Box.

BY MARY E. WILKINS FREEMAN AND FLORENCE MORSE KINGSLEY.

By arrangement with McClelland, Goodchild & Stewart, Publishers, Toronto, Ont.

Chapter X.

Mrs. Daggett was sitting by the window gazing dreamily out, when Lydia returned after witnessing the triumphant departure of the promoter of Famous People.


"It kind of brings it all back to me," said Mrs. Daggett, furtively wiping her eyes. "It's going to look pretty near's it used to. Only I remember Miss Bolton used to have a flower garden all along that stone wall over there; she was awful fond of flowers. I remember I gave her some roots of pines and iris out of our yard, and she gave me a new kind of lilac bush—pink, it is, and sweet! My! you can smell it a mile off when it's in bloom."

"Then you knew—the Bolton family?" The girl's blue eyes widened wistfully as she asked the question.

"Yes, indeed, my dear. And I want to tell you—just betwixt ourselves—that Andrew Bolton was a real nice man; and don't you let folks set you thinking he wa'n't. Now that you're going to live right here in this house, my dear, seems to me it would be a lot pleasanter to know that those who were here before you were just good, kind folks that had made a mistake. I was saying to Henry this morning: 'I'm going to tell her some of the nice things folks has seemed to forget about the Boltons. It won't do any harm,' I said. 'And it'll be cheerfuller for her.' Now this room we're sitting in—I remember lots of pleasant things about this room. 'Twas here—right at that desk—he gave us a check to fix up the church. He was always doing things like that. But folks don't seem to remember."

"Thank you so much, dear Mrs. Daggett, for telling me," murmured Lydia. "Indeed it will be—cheerfuller for me to know that Andrew Bolton wasn't always—a thief. I've sometimes imagined

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him walking about these rooms. One can't help it, you know, in an old house like this."

Mrs. Daggett nodded eagerly. Here was one to whom she might impart some of the secret thoughts and imaginings which even Maria Dodge would have called "outlandish":

"I know," she said. "Sometimes I've wondered if—if maybe folks don't leave something or other after them—something you can't see nor touch; but you can sense it, just as plain, in your mind. But land! I don't know as I'd ought to mention it; of course you know I don't mean ghosts and like that."

"You mean their—their thoughts, perhaps," hesitated Lydia. "I can't put it into words; but I know what you mean."

Mrs. Daggett patted the girl's hand kindly.

"I've come to talk to you about the wall papers, dearie; Henry thought maybe you'd like to see me, seeing I don't forget so easy's some. This room was done in a real pretty striped paper in two shades of buff. There's a little of it left behind that door. Mrs. Bolton was a great hand to want things cheerful. She said it looked kind of sunshiny, even on a dark day. Poor dear, it fell harder on her than on anybody else when the crash came. She died the same week they took him to prison; and for one, I was glad of it."

Mrs. Daggett wiped her kind eyes.

"Mebbe you'll think it's a terrible thing for me to say," she added hastily. "But she was such a delicate, soft-hearted sort of a woman: I couldn't help feelin' th' Lord spared her a deal of bitter sorrow by taking her away. My! It does bring it all back to me—the house and the yard, and all. We'd all got used to seeing it a ruin; and now—Whatever put it in your head, dearie, to want things put back just as they were? Papa was telling me this morning you was all for restoring the place. He thinks 'twould be more stylish and up-to-date if you was to put new-style paper on the walls, and let him furnish it up for you with nice golden oak. Henry's got real good taste. You'd ought to see our sideboard he gave me Chris'mas, with a mirror and all."

Having thus discharged her wifely duty, as it appeared to her, Mrs. Daggett promptly turned her back upon it.

"But you don't want any golden oak sideboards and like that in this house. Henry was telling me all about it, and how you were set on getting back the old Bolton furniture."

"Do you think I could?" asked the girl eagerly. "It was all sold about here, wasn't it? And don't you think if I was willing to pay a great deal for it people would—"

"Course they would!" cried Mrs. Daggett, with cheerful assurance. "They'd be tickled half to death to get money for it. But, you see, dearie, it's a long time ago, and some folks have moved away, and there's been two or three fires, and I suppose some are not as careful as others, still—"

The smile faded on the girl's lips. "But I can get some of it back; don't you think I can? I—I've quite set my heart on—restoring the house. I want it just as it used to be. The old furniture would suit the house so much better; don't you think it would?"

Mrs. Daggett clapped her plump hands excitedly.

"I've just thought of a way!" she exclaimed. "And I'll bet it'll work, too. You know Henry he keeps th' post office; an' most everybody for miles around comes after their mail to th' store. I'll tell him to put up a sign, right where everybody will see; something like this: 'Miss Lydia Orr wants to buy the old furniture of the Bolton house.' And you might mention casual you'd pay good prices for it. 'Twas real good, solid furniture, I remember. . . . Come to think of it, Mrs. Bolton collected quite a lot of it right 'round here. She was a city girl when she married Andrew Bolton, an' she took a great interest

in queer old things. She bought a big tall clock out of somebody's attic, and four-posted beds, the kind folks used to sleep in, an' outlandish old cracked china plates with scenes on 'em. I recollect I gave her a blue and white teapot, with an eagle on the side that belonged to my grandmother. She thought it was perfectly elegant, and kept it full of rose-leaves and spice on the parlor mantel-piece. Land! I hadn't thought of that teapot for years and years. I don't know whatever became of it."

The sound of planes and hammers filled the silence that followed. Lydia was standing by the tall carved chair, her eyes downcast.

"I'm glad you thought of—that notice," she said at last. "If Mr. Daggett will see to it for me—I'll stop at the office to-morrow. And now, if you have time, I'd so like you to go over the house with me. You can tell me about the wall papers and—"

Mrs. Daggett rose with cheerful alacrity. "I'd like nothing better," she declared. "I ain't been in the house for so long. Last time was the day of the auction; 'twas after they took the little girl away, I remember. . . . Oh, didn't nobody tell you? There was one child—a real, nice little girl. I forget her name; Mrs. Bolton used to call her Baby and Darling and like that. She was an awful pretty little girl, about as old as my Nellie. I've often wondered what became of her. Some of her relatives took her away, after her mother was buried. Poor little thing—her ma dead an' her pa shut up in prison— . . . Oh! yes; this was the parlor. . . . My! to think how the years have gone by, and me as slim as a match then. Now that's what I call a handsome mantel; and ain't the marble kept real pretty? There was all-colored rugs and a waxed floor in here, and a real old-fashioned sofa in that corner and a mahogany table with carved legs over here, and long lace curtains at the windows. I see they've fixed the ceilings as good as new and scraped all the old paper off the walls. There used to be some sort of patterned paper in here. I can't seem to think what color it was."

"I found quite a fresh piece behind the door," said Lydia. "See; I've put all the good pieces from the different rooms together, and marked them. I was wondering if Mr. Daggett could go to Boston for me? I'm sure he could match the papers there. You could go, too, if you cared to."

"To Boston!" exclaimed Mrs. Daggett; "me and Henry? Why, Miss Orr, what an idea! But Henry couldn't no more leave the post office—he ain't never left it a day since he was appointed post-master. My, no! 'twouldn't do for Henry to take a trip clear to Boston. And me—I'm so busy I'd be like a fly trying 't get off sticky paper. . . . I do hate to see 'em struggle, myself."

She followed the girl up the broad stair, once more safe and firm, talking steadily all the way.

There were four large chambers, their windows framing lovely vistas of stream and wood and meadow, with the distant blue of the far horizon melting into the summer sky. Mrs. Daggett stopped in the middle of the wide hall and looked about her wonderingly.

"Why, yes," she said slowly. "You certainly did show good sense in buying this old house. They don't build them this way now-a-days. That's what I said to Mrs. Deacon Whittle—You know some folks thought you were kind of foolish not to buy Mrs. Solomon Black's house down in the village. But if you're going to live here all alone, dearie, ain't it going to be kind of lonesome—all these big rooms for a little body like you?"

"Tell me about it, please," begged Lydia. "I—I've been wondering which room was his."

"You mean Andrew Bolton's, I s'pose," said Mrs. Daggett reluctantly. "But I hope you won't worry any over what folks tells you about the day he was taken away. My! seems as if 'twas yesterday."

She moved softly into one of the spacious, sunny rooms and stood looking her, as if her eyes beheld once more the tragedy long since folded into the past.

"I ain't going to tell you anything sad," she said under her breath. "It's best forgot. This was their room: ain't it nice an' cheerful? I like a southwest room myself. And 'tain't a bit warm here, what with the breeze sweeping in at the four big windows and smelling sweet

of clover an' locust blooms. And ain't it lucky them trees didn't get blown over last winter?"

She turned abruptly toward the girl. "Was you thinking of sleeping in this room, dearie? It used to have blue and white paper on it, and white paint as fresh as milk. It'd be nice and pleasant for a young lady, I should think."

Lydia shook her head. "Not," she said slowly, "if it was his room. I think I'd rather—which was the little girl's room? You said there was a child?"

"Now, I'm real sorry you feel that way," sympathized Mrs. Daggett, "but I don't know as I blame you, the way folks talk. You'd think they'd have forgot all about it by now, wouldn't you? But land! it does seem as if bad thoughts and mean thoughts, and like that, was possessed to fasten right on to folks; and you can't seem to shake 'em off, no more than them spiteful little stick-tights that get all over your clo'es."

This room right next belonged to their baby. Let me see; she must have been about three and a half or four years old when they took her away. See, there's a door in between, so Mrs. Bolton could get to her quick in the night. I used to be that way, too, with my children. . . . You know we lost our two little girls that same winter, three and five, they were. But I know I wanted 'em right where I could hear 'em if they asked for a drink of water, or like that, in the night. Folks has a great notion now-a-days of putting their babies off by themselves and letting them cry it out, as they say. But I couldn't ever do that; and Mrs. Andrew Bolton she wa'n't that kind of a parent, either—I don't know as they ought to be called mothers. No, she was more like me—liked to tuck the blankets around her baby in the middle of th' night an' pat her down all warm and nice. I've often wondered what became of that poor little orphan child. We never heard. Like enough she died. I shouldn't wonder."

And Mrs. Daggett wiped the ready tears from her eyes.

"But I guess you'll think I'm a real old Aunty Doleful, going on this way," she made haste to add.

"There's plenty of folks in Brookville as 'll tell you how stuck-up an' stylish Mrs. Andrew Bolton was, always dressed in silk of an afternoon and driving out with a two-horse team, an' keeping two hired girls constant, besides a man to work in her flower garden and another for the barn. But of course she supposed they were really rich and could afford it. He never let on to her, after things begun to go to pieces; and folks blamed her for it, afterwards. Her heart was weak, and he knew it, all along. And then I suppose he thought mebbe things would take a turn. . . . Yes; the paper in this room was white with little wreaths of pink roses tied up with blue ribbons all over it. 'Twas furnished up real pretty with white furniture, and there was ruffled muslin curtains with dots on 'em at the windows and over the bed; Mrs. Andrew Bolton certainly did fix things up pretty, and to think you're going to have it just the same way. Well, I will say you couldn't do any better. . . . But, land! if there isn't the sun going down behind the hill, and me away out here, with Henry's supper to get, and Dolly champing his bit impatient. There's one lucky thing, though; he'll travel good, going towards home; he won't stop to get his tail over the lines, neither."

An hour later, when the long summer twilight was deepening into gloom, Jim Dodge crossed the empty library and paused at the open door of the room beyond. The somber light from the two tall windows fell upon the figure of the girl. She was sitting before Andrew Bolton's desk, her head upon her folded arms. Something in the spiritless droop of her shoulders and the soft dishevelment of her fair hair suggested weariness—sleep, perhaps. But as the young man hesitated on the threshold the sound of a muffled sob escaped the quiet figure. He turned noiselessly and went away, sorry and ashamed, because unwittingly he had stumbled upon the clew he had long been seeking.

(To be continued.)

A speaker in the French Chamber of Deputies recently expressed the opinion that the concluding struggle of the war will be a vast celestial battle fought in the air above the fields of France.

Two Extra Cans of Milk

Royal Purple Stock Specific will increase the daily flow of milk per cow, two to five pounds per day while in the stable. You simply mix this pure conditioner with the other meals you are feeding. Its action aids digestion, purifies the blood and improves the condition of stock.



Royal Purple Stock Specific

will put flesh on the poorest, most run-down animal on your farm. We stand back of this guarantee to the extent that we will refund your money if it does not give the desired results when directions are followed.

PUT ROYAL PURPLE STOCK SPECIFIC TO THESE

TESTS: See if it will increase your milk flow. See if it will improve the condition of run down animals. See if it enables you to market pigs a month earlier. We know it does all these things. We ask you to try it—and benefit by its use. Sold by dealers everywhere in large and small packages.

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London, Canada



POULTRY AND EGGS

Condensed advertisements will be inserted under this heading at three cents per word each insertion. Each initial counts for one word and figures for two words. Names and addresses are counted. Cash must always accompany the order for any advertisement under this heading. Parties having good pure-bred poultry and eggs for sale will find plenty of customers by using our advertising columns. No advertisement inserter for less than 50 cents.

AM SOLD OUT OF GESE AND TURKEYS
Now offering Indian Runner Ducks and Barred Rock Cockerels. Bred right. priced right. John Annesser, Tilbury, Ont.

BARRED ROCK COCKERELS—LAYING strain; good, healthy stock. Wm. R. Goff, Route 1, Glencoe.

BARRON'S 282 STRAIN, S. C. W. LEGHORN cockerels; also S. C. R. I. Red cockerels from good layers, both good quality. \$3.00 each Earle Willson, Aurora, Ont.

HIGH-CLASS BARRED ROCKS AND PEKIN Ducks; also White Wyandotte cockerels from bred-to-lay strain. Prices right. Leslie Kerns Freeman, Ont.

FINE, HEAVY, PURE-BRED MAMMOTH Bronze turkeys; bred from prize stock. Also Scotch Collie Pups. R. G. Rose, Glanworth, Ont.
WHITE WYANDOTTE COCKERELS AND pullets, Regal strain, \$2 and \$3 each. Rosecomb Black Bantams, \$1 pair. R. J. Gracey, 120 Thompson Ave., London.

WANTED FEATHERS OF ALL KINDS

We pay highest prices. Write for price list.
The Canadian Carpet & Comforter Mfg. Co., Ltd
340 Dufferin St., Toronto, Ont.

28 CENTS FOR CHICKENS

THE ABOVE PRICE PAID BY
Walters, 702 Spadina Ave., Toronto
WRITE FOR PRICE LIST

"Make the Money You Worked for Work for You"

A very easy matter to arrange, and well worth the trouble of investigating, for those who have \$100 or upwards lying idle or at only 3 per cent.

We can supply Government bonds and other safe investments to yield as high as 7 per cent. (\$70 per annum per \$1,000, instead of \$30, with larger or smaller amounts in proportion).

A postal will bring you particulars by return mail.

Ferguson, Sanson & Graham
Investment Bankers
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Advertisements will be inserted under this heading, such as Farm Properties, Help and Situations Wanted and Pet Stock.

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EXPERIENCED FARMER (MARRIED) requires position as working manager or foreman. Apply Box H, Farmer's Advocate, London, Ont.

FOR SALE—FARM 290 ACRES, FIRST-CLASS buildings and stabling. Brick house, slate roof, modern conveniences. Land all under-tiled; lots of water, good orchard and hardwood bush; also house for hired man. Apply Box 142, Springfield, Ont.

EXPERIENCED HERDSMAN OF PURE bred Holsteins open for engagement March 1st, or would accept management of dairy farm; references. Box "W", Farmer's Advocate, London, Ontario.

VALUABLE RESIDENTIAL FARM PROPERTY—180 acres on Bay shore, adjoining Owen Sound. One hundred and fifty acres choice clay loam, free from stone, cultivated; six hundred maple trees in bush; large, modern barn, fully equipped; running spring water, three-ton weigh-scales. Beautiful ornamental grounds around large stone house; good orchards; all kinds of small fruits. Price—eighteen thousand dollars, half cash. W. M. Morrison, "Royston Park", Owen Sound.

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RIDOUT & MAYBEE Crown Life Bldg. TORONTO, ONT.

Protein Prolificacy—Proficiency—Prosperity

More and more do we realize the tremendous significance of protein and nitrogen in our business as farmers. They mean flesh-forming elements in the stable, plant food in the soil. We pay out good money for both, and regard it as good business to do so. Our own business is to demonstrate to you that there are two ways of getting these precious elements. One is the railway, the other is the clover way. Every now and then some enthusiastic experimenter tells you something about the enormous food-producing and soil-fertilizing power of sweet clover. Who doubts its value as a food now? Who discredits its soil-rebuilding power? Its reputation is established, the need for its services are insistent. Grow bigger crops of feed, feed more live stock and feed them better, at the same time rebuilding, not depleting your fields. Probably ten thousand farmers will grow it this year for the first time. As others' experiences have been, theirs will be. Sow Sweet Clover. Sow the best. For forage, for pasture, we recommend our own select strain of sweet clover, known as Canadian Alborea. It is finer of stalk, more tender and less rank, more prolific of seed. Write for our descriptive pamphlet, "The Hollow Stem," that tells you all about it.

CANADIAN ALBOTREA CLOVER CO., LTD.
Warehouse and Shipping Office:
Listowel, Ontario

Advocate Ads. Pay

Fifty Years' Financial Progress

Important Address by General Manager of Canadian Bank of Commerce.

Sir John Aird, in his address to the Shareholders at the Annual Meeting of the Bank, said:

We are crossing the meridian into the second half-century of the Bank's existence and, pausing to look back, we may well feel satisfaction in what has been accomplished in a comparatively short period of time. While we hold second place only among the Canadian banks in the matter of "Total Assets," we may point to our premier position as regards "Current Loans and Discounts in Canada" as an indication of the importance of the share taken by this Bank in the task of providing for the financial requirements of the mercantile community, and of carrying on the daily business of the country. In this connection it is interesting to note that by the year 1912 the current loans and discounts in Canada of this Bank were three times as great as those of all the Canadian banks in the year in which it was founded. We had hoped on this anniversary to announce the increase of the Rest to an amount equal to the paid-up capital of the Bank, and this doubtless would have been accomplished had it not been for the war.

A Conservative Policy.

We have deemed it wise to follow a specially cautious and conservative policy and to provide during the war even more thoroughly than usual for any element of doubt in the loans and securities of the Bank. The increasingly keen competition in business has resulted in the banks being called upon to perform far greater services for smaller remuneration, so that the increase in the volume of their business is out of proportion to the increase in their profits. Naturally an increased volume of business means a corresponding increase in the provision to be made for doubtful items, while the profits do not provide in a corresponding measure for the relative appropriations. Whenever there is offered a new issue of government securities yielding a higher rate of interest, the market for existing securities is depressed to a corresponding extent and this entails a writing down of all securities on hand. Doubtless when the war is over this downward movement will cease and securities will tend to appreciate in value, so that much of this may be recovered.

Advance in Profits.

The profits for the year amounted to \$2,637,555, an increase of \$198,000 over the figures of the previous year but, as we have already pointed out, an increase not at all commensurate with the additional business transacted or the additional responsibility involved. Large advances have been made from time to time to both the Dominion and the Imperial Governments, and these naturally bear low rates of interest. This may be considered as part of our contribution to the cost of the war. We carry forward

the large sum of \$1,332,000 at the credit of Profit and Loss account.

Increased Note Circulation.

There is again a large increase, amounting to \$4,735,000, in the item of notes of the bank in circulation, nearly double the increase reported last year. As pointed out at the last annual meeting, the principal reasons for the high level of the note circulation are two-fold: first, the high level of all prices, and second, the great business activity caused by the large orders for merchandise and munitions placed in Canada by the Allied Governments. A few years ago it would have been considered most extraordinary that the total note circulation of all the banks should be throughout the year in excess of the total of their paid-up capital. The course of events has thus fully vindicated the foresight of those who devised the provisions of the Bank Act under which the Central Gold Reserves were established, as otherwise there would be to-day no regular statutory provision for the additional bank-note currency needed to carry on the business of the country.

Twenty Billion Turnover.

The deposits now amount to the very large sum of 276,000,000, an increase during the year of \$46,529,000. When it is recalled that not until 1901, thirty-four years after the Bank's establishment, did the total deposits equal the amount of this increase, and then only after the taking over of the Bank of British Columbia, the extent of the increase and of the difference in scale in Canadian affairs will be better grasped. We estimate the total turnover of the Bank for the year at 20 thousand million dollars. Needless to say, with the decrease in our trained staff caused by the military enlistment, the problem of caring for this vast amount of business does not grow less difficult. The increases in other items of the liabilities do not call for special remark, as they are merely the result of the growth of our business.

Strong Cash Reserves.

Turning to the assets side of the Balance Sheet, we find an increase in our holdings of cash of \$8,361,000, of which \$1,722,000 is in gold and silver coin, \$2,639,000 in Dominion notes and \$4,000,000 in our deposit in the Central Gold Reserves. The last item has already been dealt with. Our cash holdings represent 18.19 per cent. of our deposits and circulation and 17.4 per cent. of our liabilities to the public, from which you will see that we have not deviated from our policy of carrying strong cash reserves in these times of difficulty and uncertainty. The large increases in our holdings of Dominion

and Provincial Government Securities and of British, Foreign and Colonial Public Securities consist principally of Treasury bills of the Dominion and the Imperial Governments. We have continued, as opportunity offered, to realize on our holdings of other securities and these show a reduction of \$1,618,000. Immediately available assets have increased by \$37,995,000 and now stand at 53.2 per cent. of liabilities to the public. Call Loans are slightly lower than last year, but Current Loans in Canada have increased by \$16,083,000, the net increase in the total of our current loans being \$12,097,000. Total Assets have increased by \$55,947,000 or 19.39 per cent.

The Roll of Honor.

Of our officers, 1,422 have now taken up arms, or 75 per cent. of our present male staff, exclusive of messengers. We know that we have supplied our full quota, but we are making efforts to release every man physically fit who is called up under the Military Service Act and who can possibly be replaced, and are asking exemption for only a few officers, the length and the character of whose training are such that they cannot be replaced. With grief mingled with pride, we record a total loss of 153 men killed in action, 69 of whom have made the great sacrifice during the past year. No fewer than 255 have been wounded, many seriously, 7 are missing, and 16 are undergoing the hardships of the enemy's prison camps.

Railways a Vital Factor.

Probably few people realize how essential to modern business is prompt and reliable railway service, or how the lack of such service invariably means high prices to the consumer. No modern business could continue in operation were the transportation facilities of the country suddenly to be suspended. A full consideration of the relation between delays in transportation and increased cost to the consumer is out of place here, but it may confidently be asserted that promptness and regularity of service are of more importance to business men and to the general public than low freight rates. Unfortunately of late years Government efforts have been directed almost entirely to the reduction of the latter, while ignoring altogether the greater importance of the former. The general increase in freight rates recently granted is a step in the right direction. The pass to which the railways of the United States have been brought in this connection is well described by our New York Agent in the Review of Business Conditions, although since his report was written, the United States Government has placed all the railroad lines in the country under the control of a Director-General, to be operated as a single system. Fortunately for the public interest, one of the great Canadian railway systems has not been dependent entirely upon its income from transportation, or the problem here would have become more acute. The cost of operation, that is, of labor, materials and supplies, has risen enormously in recent years, without a corresponding increase in the revenue from transportation. It is

not always borne in mind that the development of Canada, and its subsequent increase in wealth and population, would not have been possible without the construction of the railroads, and that the large number of people who have invested in railroad securities have, therefore, performed a public service of the highest importance. Whatever may have been the motives which prompted the investment, this service still calls for some measure of recognition.

Need for Greater Thrift.

And now a few words as to the future. Up to the present the high cost of living, of which we hear so much, has borne heavily on comparatively few. The great majority of Canadians who are not serving in the armed forces of the Empire are employed at high wages in war industries. They have more to spend than they ever had before, and many are spending it. They scorn carefulness and the small economies that must be practiced by the inhabitants of less favored countries. But there will come a time when high taxation and uncertainty as to the future will make men hesitate to embark on new enterprises, when there will be double the number of applicants for half the number of jobs and when food will be still more scarce than it is at present. Only then shall we realize the full effects of the high cost of living. How shall we prepare for that day? The great need of the world will then be abundance of food, at reasonable prices, and if we in Canada by stimulating production, transportation and distribution, are able to supply the nations in abundance, we shall not only have laid broad and deep the foundations of prosperity for ourselves, but shall have earned the gratitude of the nations. We shall have found a way to utilize the services of the unemployed and to lower as far as possible the high cost of living.

After the War.

The machinery for accomplishing this cannot be created on the spur of the moment, and we must equip ourselves beforehand to cope with the changed conditions which will prevail after the war. We must so co-ordinate the productive forces of the nation that there will be, as it were, the nucleus of an organization already prepared to utilize the labor of the unemployed in the production of food, and in its distribution and transportation to the great markets abroad. The period of strain immediately following the war will pass away in time and normal conditions will again prevail. In order that this trade should be permanently successful under these normal conditions, it must be organized from the beginning with a view to efficiency and placed on a sound, economic basis. When we consider what difficulties have been overcome in order to transport fresh meat from Australia, New Zealand and the Argentine through the tropical zone to the markets of Europe, we cannot but believe that the less serious difficulties confronting Canada can be successfully solved. We have millions of acres of productive land, we expect to have an abundance of labor, but we require organization and leadership.—Advt.

IRON AGE

GARDEN TOOLS

Answer the farmer's big questions: How can I have a good garden with least expense? How can the wife have plenty of fresh vegetables for the home table with least labor?

IRON AGE Combined Hill and Drill Seeder


solves the garden labor problem. Takes the place of many tools—stored in small space. Sows, covers, cultivates, weeds, ridges, etc., better than old-time tools. A woman, boy or girl can push it and do a day's hand-work in 60 minutes. 40 combined in 1 set \$13.50. 2 sets \$25.00. Write for details.



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41 Symington Avenue, Toronto, Canada.

SWEET CLOVER SEED

We have for sale a quantity of White Blossom Sweet Clover seed of our own growing. Best strain obtainable. Bright, clean sample. None better at any price. While the supply lasts at 24c. per lb. Bags free. **W. J. GALBRAITH,** Silverwood Farm, Phelpsston, Ontario



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Nearly every woman can have a beautiful face and skin by following the Hiscott Institute plan. Bead is the treatment of cases at the Institute; we extend the advantages of our treatment to those who cannot come to us. We are known throughout the world for our successful results. Write for a free book on "Practical Skin Care." Also, "A New System of Hair Dressing and Skin Care" makes a good combination. Write for a copy of our new advice FREE.

Princess Skin Food, 1/2 lb. \$1.50
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We send FREE sample of Princess Skin Food by 8 cents in stamps to cover mailing. Booklet "Be" sent on request.

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The Dollar Chain

For the soldiers and all who are suffering because of the war.

Contributions from Jan. 4 to Jan. 11:
I. H. G., \$2; J. D., Bailieboro, Ont., \$1; Josiah R. Thomas, New Lowell, Ont., \$1; David Patterson, Caledonia, Ont., \$10; Maggie Patterson, Caledonia, \$5; T. L. Lowe, Bear Brook, Ont., \$1; "Toronto", \$2.

Previously acknowledged, \$5,089.05

Total to Jan. 11, \$5,111.05

Kindly address contributions to The Farmer's Advocate and Home Magazine, London, Ont.

The House of Lords in England on Jan. 10th rejected Lord Loreburn's amendment seeking to exclude women from the suffrage. On the same day the U. S. House of Congress adopted a resolution providing for submission to the States of the "Susan B. Anthony" amendment for the national enfranchisement of women.

The Hughes Cabinet in Australia has been sworn in with practically no changes.

Make Money This Year From Your "Sugar Bush"

Hundreds of farmers to-day make more profit from their "SUGAR BUSH" with less time and labor than they do from any other crop on the farm.

The demand for Maple Syrup and Sugar is greater than the supply, therefore, prices are good and there is always a ready market.

If you have Maple Trees on your farm which you are not tapping, you are losing good money. Maple Trees always produce a fair crop. They need no care of any kind, set each year produce more, and are tapped at a season when you cannot do any other kind of work.

WRITE TO-DAY and let us tell you how to make the most out of your Maple Trees with the least time and effort.

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All Crops with
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LIFT YOUR CORNS
OFF WITH FINGERS

Tells How to Loosen a Tender Corn
 or Callus so it Lifts Out
 Without Pain.

A noted Cincinnati chemist discovered a new ether compound and called it Freezone, and it now can be had in tiny bottles as hereshown for a few cents from any drug store.



You simply apply a few drops of Freezone upon a tender corn or painful callus and instantly the soreness disappears, then shortly you will find the corn or callus so loose that you can just lift it off with the fingers. No pain, not a bit of soreness, either when applying Freezone or afterward, and it doesn't even irritate the skin. Hard corns, soft corns, or corns between the toes, also toughened calluses, just shrivel up and lift off so easy. It is wonderful! Seems magical! It works like a charm! Your druggist has Freezone. Ask him!



Government Says Keep
More Cattle This Winter

The Ontario Government advises all farmers to keep one or two extra head of cattle this winter. You can do this most economically by cutting your own feed, as cut feed always goes farther.

Peter Hamilton Feed Cutters

will exactly meet your requirements, as they do the work quickly, easily and satisfactorily. Hand and power outfits in a wide range of sizes and prices.

Write To-day for Free Booklet.
PETER HAMILTON CO., LIMITED
 Peterborough, Ont. 27

BE YOUR OWN
BLACK-
SMITH
 FARMERS!
 SAVE REPAIR BILLS
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Questions and Answers.
 Miscellaneous.

Road Blocked by Snow.

I live two miles and a half southeast of public school. On the public road until this time of the year the road is well travelled. One mile and a quarter north of school the lumber men open a swamp road, which every one travels, and, the main road blocks with snow.

1. Can the township be compelled to keep the road open for the children to go to school?
 2. If so, what steps could I take to compel them?

Ans.—1. We think so.

2. It would be in order to write the Council demanding that the road be kept open, and warn them that unless they attend to the matter promptly and properly an action will be brought against the township corporation for a mandatory order compelling such attention to it. If necessary follow up your notice by commencing the action on behalf of yourself and the other ratepayers.

Veterinary.

Paralysis.

Ewe acted stupid for a week, then lost the use of her hind legs and then of her fore and now is helpless. She eats a little. I have been giving her salts and sweet nitre.

Ans.—This is paralysis, doubtless due to digestive derangement. Give her sufficient Epsom salts to purge her and follow up with 8 grains nux vomica, three times daily. Keep as comfortable as possible and feed a little clover hay, whole oats and raw roots. A recovery is doubtful.

Unthrifty Horse.

My horse is not in good condition. He is hide bound and his hair stands on end. He is kept in a warm stable and blanketed. He has little life.

Ans.—Have his teeth examined, and if necessary dressed by a veterinarian. Purge him with 8 drams aloes and 2 drams ginger. Follow up with a tablespoonful three times daily of equal parts of powdered sulphate of iron, gentian, ginger and nux vomica. Feed on good hay, rolled oats and a little linseed meal, with a couple of carrots or a mangel or turnip once daily. Also give a feed of bran twice weekly. Give regular exercise or light work and groom him well twice daily.

Indigestion in Pigs.

I bought a lot of pigs the 15th of November. They had been fed on sugar beet tops and were very thin. I put them all together in a small place and fed them all the soft Compton corn and barley chop that they would eat. A couple of weeks ago one acted oddly by turning around, lying down with his nose to the floor, then getting up. He did not eat for a day or two. One morning one made a roaring noise while eating, and he died in a couple of hours.

Ans.—The trouble is due to the sudden change in food and want of exercise. The fact that the first sick one refused to eat for a couple of days, allowed him to make, at least, a temporary recovery. It is remarkable that there has not been more trouble, as the change in food and general surroundings was very sudden. Purge with 2 to 3 ounces Epsom salts, according to size. Feed on milk, shorts or middlings and a little chopped oats with the hulls sifted out, and raw roots, and see that they get plenty of regular exercise. After a few days you may gradually increase the amount of food and gradually change the kind to stronger food, as they become used to it.

Holstein Association Herd-Book

Volume 36 of the Holstein-Friesian Association of America Herd Book is off the press, and through the courtesy of Fred L. Houghton, Secretary of the Association, a copy has been received at this office. It is a large, neatly-bound book of nearly 1,200 pages, giving the registrations up to March 1, 1917. It contains names of bulls numbering from 187554 to 202565, and of cows from 333562 to 365525. The volume is carefully indexed as to breeders and owners, as well as to animals.

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"Why gamble with valuable eggs and more valuable time experimenting with an incubator—learning to run it? It's business with you from the start with a Buckeye Incubator, because all the experimenting has been done for you."

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The universal satisfaction of over half a million Buckeye users, big and little, proves that there is absolute certainty of success in hatching. Endorsement of the Buckeye by all the Agricultural Colleges and Experiment Stations removes all possible doubt.

It is built up to a standard, not down to a price. Up to such a high standard of correct principles and exact performance that we place behind it an unequalled guaranty

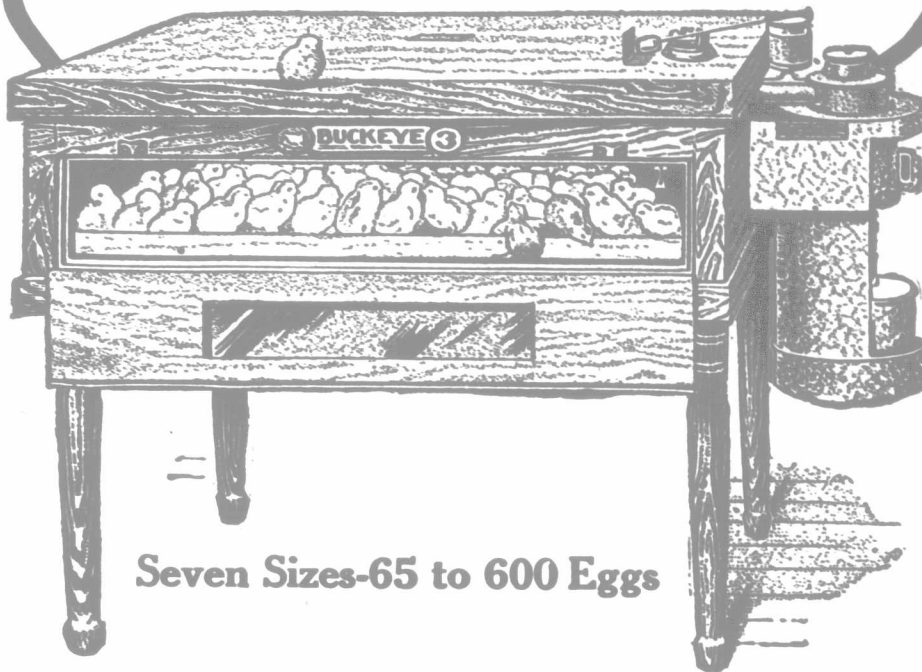
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The Buckeye is guaranteed to hatch more chicks and stronger chicks than any other incubator; to operate satisfactorily in any temperature down to freezing; to require no artificial moisture and no attention to the regulator from the time the hatch is started until it is finished. Any Buckeye that fails to meet this guaranty will be taken back any time within 40 days.

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Imported and Canadian Bred Clydesdales

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Several choice imported and Canadian-bred mares, safe in foal. Also several prize-winning fillies and stallions, and a few show geldings, 2 and 3 years of age.

W. A. McNIVEN, R. R. No. 4, HAMILTON, ONTARIO

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I have on hand a number of real choice young mares and fillies. Eight excellent young bulls, from 9 to 12 months, of Right Sort and Royal Blood breeding; also a number of females. Inspection invited.

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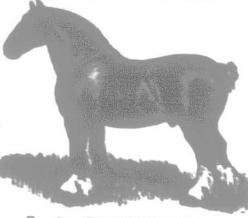
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ABSORBINE, JR., the antiseptic liniment for mankind. Reduces **Strained, Torn Ligaments, Enlarged Glands, Veins or Muscles, Heals Cuts, Sores, Ulcers.** Allays pain. Price 25¢ a bottle at dealers or delivered. Book "Foot Care" free.

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Cures the lameness from Bone-Spavins, Side-Bones, Ringbones, Curbs, Splints, etc., and absorbs the



bunches, does not kill the hair, absorbs Capped Hocks, Bog-spavins, thick pastern joints; cures lameness in tendons, most powerful absorbent known; guaranteed, or money refunded. Mailed to any address. Price \$1.00.

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At Guelph Winter Fair and Toronto Fat Stock Show, 1915 and 1916, the grand champions were Aberdeen Angus. At Chicago International, out of 15 grand championships and 15 reserves, the Aberdeen-Angus have won 10 grand championships and 9 reserves. Out of 15 grand championships for carloads, Aberdeen-Angus have won 12 times. Out of 15 grand championships for Carcass Contest, Aberdeen-Angus won 14 times.

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if your teams are equipped with
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These pads prevent Sore Shoulders and cure Gall Sores. Your dealer will supply you, or write:
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SUNNY ACRES ABERDEEN-ANGUS

Bulls of serviceable age and females not akin.

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P. O. and 'Phone - - - Oakwood, Ont.
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Rams and ewes. Heifers in calf to Queen's Edward, 1st prize, Indiana State Fair.

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The greatest breeds for producing highest quality of beef and mutton. They are both hardy and prolific. We have bulls, females, rams and ewes for sale.

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Get high-class Angus bull and breed the champion steers. I have show-ring quality bulls from 10 to 24 months of age; also choice 1 and 3-year-old heifers. **T. B. BROADFOOT, FERGUS, ONT.**

Dr. Bell's Veterinary Medical Wonder. 10,000 \$1.00 bottles FREE to horsemen who give the Wonder a trial. Guaranteed for Colic, Inflammation of Lungs, Bowels, Kidneys; Fevers and Distempers, etc. Send 25¢ for mailing, packing, etc. Agents wanted. Write address plainly.
Dr. Bell, V. S., Kingston, Ont.

Aberdeen-Angus

Alonzo Matthews, Manager, Forest, Ontario

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Beaver Hill ABERDEEN-ANGUS

Cows with calves at foot. Bulls of serviceable age and females all ages.

ALFX MCKINNEY, R. R. No. 1, Erin, Ontario.

Kennelworth Farm Aberdeen-Angus

A splendid lot of calves for other ages in the bunch, suitable for 7 months. Victor

1st prize, at head of herd.
PETER A. THOMSON, HILLSBURG, ONT.

Questions and Answers.
Miscellaneous.

Removing Warts.

How can warts be removed from a cow's teats?
G. W. I.

Ans.—Some people burn the warts off with caustic. If they have slender attachments they may be clipped off with scissors and then the spots touched with caustic to prevent them growing again. Tying a silk thread at the base of the wart frequently proves a satisfactory treatment. In two or three days the wart will drop off, provided the thread is tied tight enough.

A British Subject.

A man came here from Bavaria thirty-four years ago; he never got naturalization papers but made a declaration that he wished to become naturalized. His son, twenty-five years old, born in this country, has been appointed school trustee in our section. Some object to his holding the position on the ground that he is not a British subject. If he is not he certainly can't hold the position, as the Act is explicit on that point. The young man has never taken the oath of allegiance. Is he a British subject or not?
T. A. T.

Ans.—He is a British subject.

Removing Cankers—Alfalfa Seed Per Acre.

1. What is a good cure for cankers in a dog's ear?
2. How much alfalfa seed is required for one acre of good clay land?
A. J. H.

Ans.—1. The nature of the canker is not given. A little different treatment might be required for one that is filled with pus than for one that has a hard surface. Applying butter of antimony once daily with a feather may remove them. This substance is rather severe and care should be taken in handling it. Applying carbolic acid will sometimes burn off the canker, disinfect the wound and start healing.

2. From 18 to 20 pounds of seed is considered about the right amount to sow.

Unthrifty Pigs.

I have a bunch of pigs fourteen weeks old which have been led on oat chop. For some time they have been restless and very noisy. They are not thriving as well as they should. Sometimes they chew at the boards in the pen. Advise treatment.
W. C. B.

Ans.—Hogs do better on a variety of feeds than on a single grain. While oats are an exceptionally good feed for all kinds of stock, we believe you would find it an advantage to mix a little shorts with finely-ground oats for young pigs. At fourteen weeks they will stand a little heavier feed, such as barley, or a little corn if it is available. The restlessness and chewing of boards indicates the lack of something in the ration, which in all probability is mineral matter. Try a mixture of feeds and give the pigs access to charcoal, wood ashes, a little sulphur, salt, etc.; if you have dirt from the root-house throw it in the pen for the pigs to root in. Pulped mangels or turnips fed along with the grain make a splendid addition to the ration.

Vendor and Purchaser.

A buys a 50-acre farm from C. At least they agree each with the other to that effect, and a date is fixed for the money to be paid over and possession given. In the meantime A searches the title and finds it all OK in the County Registrar's Office, but in the Municipal Clerk's Office he finds a ditch tax (Township ditch), also an award by township engineer against it. Can A compel C to clear off the drains and award before paying over the purchase money, as his agreement calls for good, clear title free from encumbrances?
Ontario. J. S. G.

Ans.—Assuming that the agreement is quite regular and valid, we think that A is in a position to legally call upon C to either pay the amounts so charged against the farm or allow some out of the purchase money at time of the closing by A of his purchase.

A Solid Foundation

“WHEN a man acknowledges that his wife is dependent upon him, solely, for a livelihood, that man has confessed his need for life insurance in a convincing manner.”—Life Insurance Independent.

What will be her source of maintenance when the wage earner no longer provides?

Stocks, securities and real estate may or may not be available when the time comes for them to take the place of your earning power. No man can rely, with certainty, upon such provision being available years hence.

A Mutual policy will provide a fixed income if desired; it will continue at least for twenty years and is payable monthly or yearly, and the amount is not subject to fluctuation like stocks, securities or real estate.

Why not put the future protection of your loved ones upon this solid foundation by means of a policy in the Mutual?

Write for booklet entitled, "Ideal Policies."

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OFFER EXCEPTIONAL VALUES IN
ABERDEEN-ANGUS CATTLE **SHROPSHIRE SHEEP**
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Visitors welcome. Correspondence solicited. (Please Mention Farmer's Advocate)

BROOKDALE FARM HEREFORDS
Herd headed by Bonnie Ingleside 7th, the Canadian-bred champion bull at Toronto, 1914-1915. We are offering several young bulls that were Toronto and Ottawa winners this year, all sired by the herd bull, as well as a few females in calf to him. Come and see our herd or write us for anything in Herefords.
W. READHEAD, BROOKDALE FARM, MILTON, ONT.

OAKLAND SHORTHORNS
This herd, numbering nearly 60 head, is of our own raising, and of the dual-purpose, prolific kind that satisfies the buyers. Present offering is 7 bulls, from 8 to 18 months, and females of any age, price worth the money. All registered. Crown Jewel 42nd at head of herd. **John Elder & Sons, Hensall Ont.**

IRVINEDALE SHORTHORNS
Herd headed by Marquis Supreme 116022. For sale at present, 9 granddaughters of (Imp.) Right Sort, and a good lot they are; also 2 bulls (roans), 15 months old, by Gainford Select.
JOHN WATT & SON, R.R. No. 3, Elora, Ont. G.T.R. & C.P.R.

SPRING VALLEY SHORTHORNS
Herd of seventy head, straight Scotch, good individuals. Headed by the great show and breeding bull, Sea Gem's Pride 96365 and Nonpareil Ramsden 83422. We have for sale four as good young bulls as we ever had and a few females. **KYLE BROS., DRUMBO, ONT. (Phone & Telegraph Via Ayr.)**

ESCANA FARM SHORTHORNS
For Sale—2 herd-headers of serviceable age; one a Cruickshank Orange Blossom by Right Sort Imp., and one a Jilt, by Raphael (Imp.); also one good farmer's bull. Can also spare a half-dozen females.
J. F. MITCHELL, BURLINGTON, ONT. Farm, 1/4 mile from Burlington Junction.

Robert Miller, Stouffville, Ont.
I still has a few Shorthorn bulls, fit for service, and some females that are as good as can be found for the man that wants to start right in Scotch Shorthorns. They will be sold for a low price, considering the quality, and the freight will be paid.
Write for anything in Shorthorns. One hour from Toronto

FIFTY IMPORTED SHORTHORNS
I have fifty head of newly imported Shorthorns (42 females, 8 bulls) which are acknowledged to be one of the strongest lots that have left Britain this season. You should see these if you are wanting something choice. **George Isaac, (All Railroads; Bell Phone) Cobourg, Ontario.**

When writing please mention Farmer's Advocate

Questions and Answers.

Miscellaneous.

Curing Pork.

What is a good method of curing pork? We have a hog weighing about 190 pounds and wish to know the best means of curing it so the meat will keep for summer use. C. C.

Ans.—There are a number of recipes which give fairly good satisfaction. In cutting up the carcass the leaf fat, trimmings from hams, shoulders and sides, and all surplus fat should be cut off and rendered for lard. The backbone and ribs are removed and the meat trimmed from them may be made into sausage. The hams, shoulders and sides can then be cured and smoked. After they are cool, each piece should be rubbed with salt and allowed to drain over night. The hams and shoulders may then be packed in a barrel, using the strips of bacon to fill in between pieces or put them on top. Make a brine by dissolving 8 pounds of salt, 2 pounds of brown sugar and 2 ounces of saltpetre in four gallons of water. These are the proportions for each 100 pounds of meat. The meat must be covered with the brine and left in it for from six to eight weeks, after which it can be placed in the smoke-house. Before being smoked, however, the meat should be washed in tepid water and the pieces hung up to dry for a day or two. A building six by eight is a large enough smoke-house for ordinary use. Ventilation should be provided to carry off the warm air and prevent overheating the meat. Some have the fire directly under the meat, but the best plan is to have the fire pot outside of the house and the smoke carried to the inside through a flue. If the fire must be placed under the meat, the latter should be protected by a sheet of metal. A slow fire is required at first to warm the meat up gradually, and during the winter months the fire may be kept going continually until smoking is completed, which would require possibly thirty-six hours. During the spring months a light fire may be started every second or third day for a couple of weeks. When the meat is smoked it may be kept in a dry, cool cellar or an attic with free ventilation. If the meat is to be kept for some time it should be wrapped first in paper and then in canvas.

Ventilating Stable.

I have a barn 30 by 90 feet, with a manure basement in the centre and ventilation is by means of a cupola in the roof connecting with the stable by means of air shafts made of boards. This system of ventilation appears to work very well but the walls of the stable become covered with frost. How can this be prevented? W. M.

Ans.—You do not state the kind of material used in constructing the stable wall. Unless the system of ventilation is exceptionally good, frost is likely to appear on cement or stone wall, and may even be found on a board wall unless there are two thicknesses of lumber and an air space. You mention about outlets in the ventilation system but say nothing about intakes, which are also necessary. The frost appearing on the wall is an indication that there is a good deal of moisture in the stable, which might be due to lack of sufficient ventilation. A single board wall or stone wall will frost up in cold weather unless the moisture on the inside is carried away by ventilation. It is possible that you have not enough outlets. One system of intakes is to allow the air to come in through a tube and enter the stable a foot or foot and one-half above the floor. This is quite simple if the barn is on a level; if on an embankment then a box could be inserted along the wall on the outside to carry the fresh air to the intakes through the wall. Board or tin should be fastened in front of the intake to force the air upwards so that it would be diffused through the stable rather than come in direct contact with the stock. Having the windows hinged at the bottom so as to open in from the top will also give ventilation without causing a draft. As we understand the question, the manure pit is in the basement. This may be the cause of surplus moisture, as manure heating gives off a good deal of steam. You might remedy the trouble by having the manure pit adjoining but separate from the basement proper.



The Ford Saves the Hay and Oats the Horses Eat

IT HAS been estimated that five acres of land are required to maintain one horse for a year, and that the same five acres would produce nearly enough food for two people. If 50,000 Canadian farmers each replaced one horse with a Ford, 250,000 acres would be added to the Nation's source of food supply and enough extra food made available to feed 100,000 people.

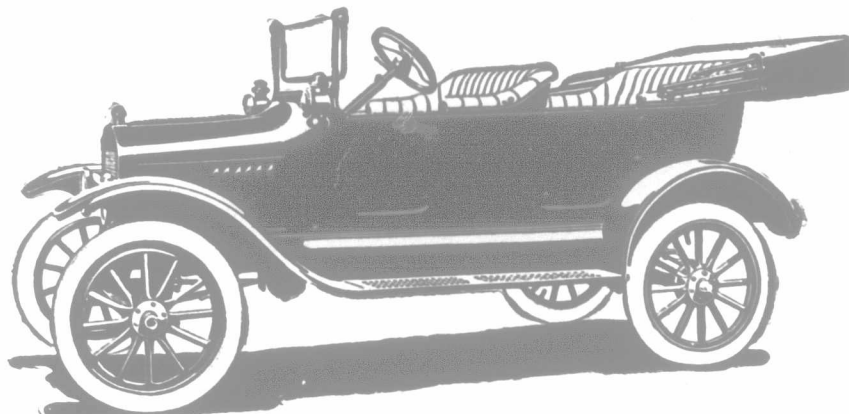
Just think what a great service this means to the country at the present time and the benefit to the farmers from the sale of food produced on this acreage.

A Ford car also saves the farmer a week or more of valuable time each year, which can be used for further productive work. The Ford travels three times as fast as a horse and rig—costs less to run and keep, and is far easier to take care of. With labor so scarce and high priced, time means money, so do not delay in getting your Ford.

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- Touring - \$495
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GLENGOW SHORTHORNS

We have a choice offering in young bulls, fit for service. They are all of pure Scotch breeding, and are thick, mellow fellows, bred in the purple.

WM. SMITH, COLUMBUS, ONTARIO. Myrtle, C.P.R., Brooklin, G.T.R., Oshawa, C.N.R.

SHORTHORN BULLS

of my own breeding, around a year old, best families and good colors, are for sale. Also a few young imported bulls.

Myrtle, C.P.R., Brooklin, G.T.R., Brooklin, C.N.R. Will A. Dryden, Brooklin, Ontario Co

PURE SCOTCH SHORTHORN BULLS

Our present offering of young bulls, sired by our herd sire Broadhooks Star, a son of the great Newton Ringleader, Imp., are the best lot of bulls we ever had on the farm. Come and see them, or write for particulars. We also have females of the richest breeding and highest individuality.

GORDON SMITH Woodslee Sta., M. C. R., Essex County. SOUTH WOODSLEE, ONT.

Imported SCOTCH SHORTHORNS

Our present offering includes 100 imported females and 12 young imported bulls, representing the most desirable lines of breeding. If interested come and see them. Burlington Jct., G. T. R. is only half mile from farm. J. A. & H. M. PEITIT, FREEMAN, ONTARIO.

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can spare a couple of cows, imported or Canadian-bred, with calves at foot and in calf again to Imp. Dalesman. I can also give one the choice of fifteen bulls, from five months to two years old. About half are Imp. They are priced to sell. Write, or come and see me. A. G. Farrow, Oakville, Ont.

O.A.C. No. 72 Oats

yielded 7 1/4 bus. per acre more than highest competitor at Guelph; or at present market quotations, 7 1/4 bus. at 84c.—\$6.09 per acre.

YOU CAN'T AFFORD TO SOW ANY OTHER VARIETY

Have good seed, testing 38 lbs., from registered stock. Price \$1.25 per bus. Sacks free. Samples sent.

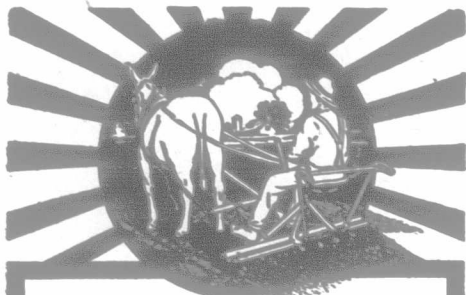
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For reliable Apple, Pear, Plum, Cherry, Peach and Ornamental Trees, Shrubs, Roses, Grape Vines, Berry plants, Evergreens Hedges, etc.—good ones, too. We ship direct to customers. Our trees are extra fine. Write us for prices on your lists for early Spring planting. 38 years at it. No agents. A. G. Hull & Son, St. Catharines, Ont.





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Cuts 4 ft. 4 in. wide

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The best supplementary feed for live stock and the "Veterinarian," the best book on the treatment of Diseases in Cattle. This book sent free with a trial ton order of Oil Cake. Write to-day for lowest prices.
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of all descriptions. Specialty made of draft horses, beef and dairy breeds of cattle, show and field sheep. Illustrated catalogues and testimonials on application. All enquiries answered with pleasure. Now is the time to import. Prospects were never better, and insurance against all war risks can be covered by payment of an extra 1% only.

Mardella Shorthorns

Dual-purpose bulls, 20 young cows and heifers—bred, some calves by side. Size type, quality; some full of Scotch. The great massive Duke—dam gave 13,599 lbs. milk, 474 lbs. butter-fat—at the head

Thomas Graham, Port Perry, R.3, Ont.



Commission Men Pay More

Dealers pay more for cattle that have been dehorned. The hides are worth more and the flesh has less bruises. Write for booklet telling about the Keystone Dehorner.

R. H. McKenna, 219 Robert Street, Toronto

MAPLE LEAF FARM

Shorthorns, some good young bulls and females. Shropshires, 50 lambs. Our flock leading winners on Eastern show circuit.
John Baker, Hampton, R. No. 1, Ont.

Brownlee Shorthorns. Offers a choice lot of young bulls, ranging in ages up to nine months and sired by the Nonpareil bull, Royal Saxon. See these before buying elsewhere. Could also spare a few females. Douglas Brown, Bright, Ont., R. R. 3, Ayr Station, C. P. R.

Shorthorns—Pail-fillers for sale. Young bull and heifers out of high record cows. A few young cows and bulls with extra good breeding and quality.
PETER CHRISTIE & SON
Manchester P. O. Port Perry, Ont. Co.

Hillcrest Shorthorns—Present Offering—a number of young bulls from 7 to 20 months old, by our former herd sire, "Merry Master" No. 122493—by "Right Sort" Imp.; others equally as good. Also a few females of different ages. Inspection invited. Visitors met by appointment. W. G. Howlett, G.T.R. & C.P.R. R. R. No. 1, Elora, Ont.

**R. O. P. SHORTHORNS
THE EVERGREEN HILL HERD**
Present Offering—Four young bulls from R. O. P. dams, and each tracing to three R. O. P. sires. Could also spare a couple of R. O. P. cows.
S. W. Jackson R. R. 4, Woodstock, Ont.

Glentoyle Dual-Purpose Shorthorns
Herd bull, Chieftain Duke 4th, 90499, fine, thick, young cows and heifers for sale, 8 young bulls, some herd heifers. Also a yearling C.P.R. stallion.
STEWART M. GRAHAM, LINDSAY, ONT.

The Cowmen of B. C.

"Have you wandered in the wilderness, the sage-bush desolation. The bunch grass levels where the cattle graze? Have you whistled bits of ragtime at the end of all creation? And learned to know the desert's little ways? Have you camped upon the foothills, have you galloped o'er the ranges? Have you roamed the arid sun-lands through and through? Have you chummed up with the mesa, do you know its moods and changes? Then listen to the wild—it's calling you.
ROBERT SERVICE.

Stories of the cowmen of Western Canada, like the oration at a politician's funeral, are usually pregnant with romantic appreciation. When one-time cow towns like Macleod, Calgary, or Kamloops adopt the formalities of a polite and more pampered civilization—when the once open range becomes intersected with barbed wire fences and irrigation ditches, and the law of the range becomes a fireside recitation of stirring days in a misty bygone—along comes the scribe to dwell with various emotions, and sometimes a generous inaccuracy, on the days that the cowmen knew when the swath cut was "high, wide and handsome."

The bona-fide cowman is not out after publicity. To him publicity is the forerunner of pre-emptors, and big-hearted as most cowmen are, they refuse to take pre-emptors to their bosoms. Theirs is the private life, the free, untrammelled, and generally prosperous life in the ranchhouse nestling in some secluded coulee far back from railways. Seclusion is their greatest asset, and hence the biographer necessarily has to assume the role of historian, picking up the skeins of his romance from reminiscent cowmen who no longer wear chaps or direct their big round-ups from the hurricane deck of a nimble footed cayuse. It is an odd fact, too, that the average Westerner likes to talk of the cattle ranching industry as a thing of other days. It is the guileless tribute of the softer generation of to-day to the rugged romance woven round the four-square, buoyant frontiersmen of yesterday—the stifled echo of that latent romance, which seethes in the soul of every red-blooded Westerner and which cannot to-day find its environs by wedding itself with the stock saddles and round-ups and cold, clear nights spent out on the big untrammelled range.

Truly, the days of the open range have almost passed, but the pageant is not run. The West can still boast of her big cattle ranches. The grain grower has invaded the open range with an unostentatious persistency that is irresistible, but there is open range to-day that he has not yet invaded, where the cattle industry is carried on in the good old style.

The average Westerner—and by that term I allude particularly to prairie dwellers—will perchance have to swallow a few convictions if he is told that this cattle country alluded to is in British Columbia. It might be, also, that many Westerners would vehemently challenge the statement that the largest cattle ranch in Canada is in British Columbia, but the fact remains that to-day we have to cross the Rockies to see the cattle-raising industry in its original setting.

British Columbia agriculture is more or less of an anomaly to the prairie farmer. At first blush he finds it difficult to believe that the small timber bound clearings in view of the railway are farms. A trip to the Coast through mountains and forests leaves him wondering where the arable land is in the coast province. He has an impression that all the farm land lying along the railway between Alberta and the Coast would not make one good prairie farm. And, generally speaking, British Columbia is all forests and mountains, north, south, east and west. But British Columbia, it is well to remember is an immense province, extending from the International boundary to the Arctic Circle, and its agriculture is as varied as its topography. On the low-lying, soggy land at the coast dairying is developed to a high state of perfection. In the Okanagan and south of the C. P. R., generally, fruit-growing is a big, highly-specialized industry. In the Northern Interior, where the climate is more severe, mixed farming is mooted as the agriculturist's

NINTH ANNUAL AUCTION SALE

Under the Auspices of the Victoria County Pure-Bred Stock Association, and the Ontario Department of Agriculture.

In Arnold's Garage, Kent Street, Lindsay, Ontario

Tuesday, January 29th, 1918 at 12.30 p.m.

35 Males—Shorthorns—15 Females, 6 Hereford Bulls

This is the largest sale of the kind in Eastern Ontario. Every animal inspected by the Association's Committee. Among them are a number of extra choice young bulls which would be a credit to any herd. Also a fine lot of heifers, a number of them of breeding age. Herefords offered by the well-known Hereford breeders, Mossom Boyd Co., Bobcaygeon, Ontario.

TERMS:—To residents of Ontario, cash or ten months' credit will be allowed on approved joint notes, all notes to bear interest at 6 per cent. per annum, from date of sale. To all buyers not residing in Ontario, terms cash.

CATALOGUE MAILED ON REQUEST TO THE SECRETARY

President and Auctioneer: Jas. Casey, Valentia.
Secretary: A. A. Knight, Lindsay.

CLEARING AUCTION SALE OF HIGH-CLASS SHORTHORNS

LEICESTER SHEEP AND HAMPSHIRE HOGS
SALE AT FARM

Wednesday, January 30, 1918

The imported bull, Braco (70132) (98155) heads the herd. All females of breeding age, bred, or have calves to the above sire. Conveyances will meet forenoon trains, Linwood, C.P.R., Newton, G.T.R. Write for catalogue. James McDonald, Auctioneer. Sale at 12 o'clock.

ALEX. HASTINGS, CROSSHILL, ONTARIO

Dual Purpose Shorthorns

Herd Headed By DOMINATOR No. 106224

whose grandam on his mother's side has an R.O.P. record of 13,535 lbs. milk, testing 3.99; and whose dam has an R.O.P. record of 10,689 lbs. milk, testing 3.88.

The cows in our herd are large and strictly dual-purpose in type and performance, many of them have high milk records.

A few cows, heifers and young bulls for sale, three of the latter are out of cows in the herd which have given between 10,000 and 11,000 lbs. of milk each in one lactation period.

Weldwood Farm Farmer's Advocate, London, Ontario

SHORTHORNS--T.L. Mercer, Markdale, Ont.

ROSEWOOD CHAMPION, by Nonpareil Archer, Imp., at the head of the herd. I have almost 100 Shorthorns in my stables at present. Marr Missies, Campbell-bred Clarets, Nonpareils, Minas, Rosemarys, etc.—the best of breeding and the best of cattle; bulls or females; also have a few Herefords

SALEM SHORTHORNS

Herd headed by Gainford Marquis, (Imp.) undefeated in England and Canada. Sire of the winning group at Canadian National, 1914, 1915, 1916. Can supply cattle, both sexes, at all times.
J. A. WATT, ELORA, ONT.

Blairgowrie Shorthorns and Shropshires

20 imported cattle, cows and heifers; all have calves at foot or are in calf to British service. Bulls for breeders wanting herd headers. Also home-bred bulls and females. Prices right. Rams and ewes in any numbers. JOHN MILLER, Myrtle Station, C. P. R., G. T. R. ASHBURN, ONTARIO.

WILLOW BANK STOCK FARM

Shorthorn Cattle and Leicester Sheep. Herd established 1855—Flock 1848. The great show and breeding bull, Browndale = 80112 = by Avondale, heads the herd. Extra choice bulls and heifers to offer. Also a particularly good lot of Leicester rams mostly from imp. ewes.
JAMES DOUGLAS, CALEDONIA, ONT.

IMPORTED SHORTHORN BULLS

We have several newly imported bulls of serviceable age. Cruikshank, Marr and Duthie breeding, as well as a number of choice, home-bred young steers, got by our noted herd sire, Proud Monarch, by Royal Blood. Get our prices before buying elsewhere. RICHARDSON BROS., Columbus, Ont.

Wm. D. Dyer, R. 3, Oshawa, Ont. Brooklin, G.T.R., C.N.R., Myrtle, C.P.R. SHORTHORNS. Pure Scotch or Scotch topped, beef type, yet good milkers. 3 young bulls and a few young cows and heifers for sale.

SHROPSHIRES. Type and quality. A few ram lambs still left.

CLYDESDALES. Stallion, 1 year old, rich in Baron Pride blood, promises size and quality combined

CREEKSIDE SCOTCH SHORTHORNS

Herd headed by Gay Monarch 79611, dam, Sally 8th Imp., and sire, the great Gold Sultan 75411. My present offering of young bulls includes several 7 to 14 months' youngsters, all thick, mellow, well-grown fellows—reds and roans—and priced right. Can also supply females in most any numbers.
Geo. Ferguson—Elora Station, C.P.R., G.T.R.—Salem, Ont

SEVENTY-THREE HEAD OF SHORTHORNS

Ten young bulls of serviceable age, Nonpareil Ramsden = 101081 =, and Royal Red Blood = 77521 =, at the head of the herd. The ten young bulls range in age from 8 to 15 months, and are for immediate sale. They are out of good dams which will bear inspection. Our cows and heifers will please, and you'll like the bulls.
JAMES McPHERSON & SONS, DUNDALK, ONTARIO.

PLEASANT VALLEY FARMS

Herd headed by (Imp) Newton Grand Champion and Belmont Beau. We have for sale a goodly number of real good young bulls that will suit the most exacting; also females. Inspection invited.
Geo. Amos & Sons C. P. R., 11 miles east of Guelph M. Ont., Ontario.

PURE SCOTCH SHORTHORNS

of exceptional merit. The young things we are offering this year are something extra, especially the bulls. Come and see them if you want something choice. GEO GIER & SON, WALDEMAR, ONT.

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In a time needing food economy many people are not getting all the nourishment they might from their food.

It is not how much you eat, but how much you assimilate, that does you good.

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Stone and Stump Pullers

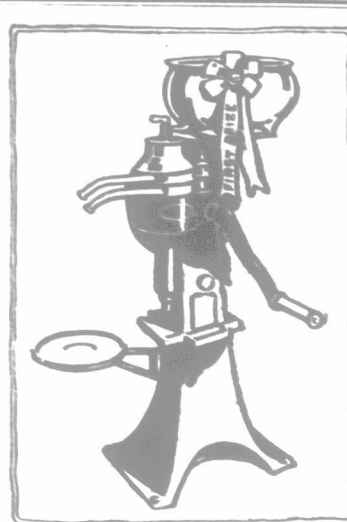
A. Lemire, Prop. Wotton, Que.

salvation. In the dry belt, of which Ashcroft is the centre, and where rain is as scarce as the proverbial Hebrews of Aberdeen, the potato industry flourishes by virtue of irrigation, and securely hidden in the great hinterland of this same big, arid interior, away back from the railways altogether, lies the great cattle country of British Columbia. The scope of British Columbia's cattle industry will be appreciated when it is stated that there are in the neighborhood of 175,000 beef cattle in the province. British Columbia has a somewhat lurid history, politically and otherwise. Away back in the fifties, the gold diggings attracted the early settlers, and later the province seemed to be the dumping ground for a great many young Englishmen who, it is uncharitably said, lumbered the dignified estate "at home". These superlative scions of English family trees settled in B. C., particularly at the local Post Offices, and spent their fulsome days waiting for the English mail to arrive and "ranching" in their spare moments. Meanwhile, the doughty prospector forged inland, cutting his endless trail of quest deep into a great raw interior, which nobody knew. The Cariboo mines opened up the huge territory lying north of Ashcroft, and in 1854 a wagon road was built to Barkerville, 280 miles north of the C. P. R. An army of gold seekers combed the huge territory, which now lies between the C. P. R., and the Grand Truck Railways. This great timber-bound country of huge lakes, rivers and canyons, mountains and plateaus, from the Alberta Divide to Bella Coola, and from the Thompson River to the Babine Mountains and on to Telegraph Creek and the Yukon were gone over almost foot by foot by the prospector. I have ridden over the great part of this wild country, and even in the wildest fastnesses of these forests and mountains, often three hundred miles from the C. P. R., and a long day's ride from the nearest habitation, my horse has stumbled into half-grown-over prospect holes dug by doughty prospectors in days so long ago that only men who came from Ontario to British Columbia by way of Cape Horn can recall them. I drag the prospector into this story of British Columbia cowmen purposely. The early history of British Columbia revolves round mining camps and cow-camps, and the miner was there first. It was the prospector who first discovered the large cattle ranching territories of this country. He carried the news to the outside, and freighters, packers and others of agricultural bent, capital and his information by corraling the country he discovered. Thus it was that the foundations of the cattle industry of British Columbia were laid.

Twenty-five or thirty years ago the whole interior of British Columbia was devoted to cattle-raising, but the influx of capital, particularly English capital, which followed the scandalous British Columbia real estate boom of a few years ago, converted a great many pretty good cattle ranching propositions into subdivision failures, and to-day the cattle country near the railway is cut up into small holdings, where Chinamen and Anglo-Saxons are growing alfalfa and potatoes and beans, a little grain and a few head of stock, tinkering with irrigation ditches and an acute labor problem that at least gives zest and a gambling element to their farming operations. Near the railway cattle ranching is still carried on in a fashion, but with a few exceptions the ranches are small and a considerable number of them are operated by imported managers who like a drop of tea in the middle of the afternoon.

The real cow country in British Columbia, lies in the Nicola Valley, which lies behind the gaunt sand hills south of Kamloops, and in the Chilcotin, which lies north of the C. P. R. and which is reached by the Cariboo Trail that cuts north from Ashcroft.

To reach the Chilcotin one travels north from Ashcroft by this wagon road to 150 Mile House, 138 miles from the railway. Turning west from this point the Fraser River is reached and crossed at Chimney Creek, and the first big ranches are reached about fourteen miles west of the river. To reach the Chilcotin, therefore, entails a trip by wagon road of 175 miles, and the country extends westward to Bella Coola. All the country lying west of the Fraser River is generally alluded to as the Chilcotin, but the ranching territory comprises long sloping areas on both sides of the River in the vicinity



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AT the great national and international expositions, the juries have invariably acknowledged the superiority of the De Laval. They awarded the Grand Prize, the highest possible award, to the De Laval at the Panama-Pacific Exposition at San Francisco in 1915, as also at Buffalo, Chicago, St. Louis, Paris, Brussels, and all the great world expositions for more than 35 years.

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Since 1892 the National Buttermakers' Association has held butter-scoring contests each year in connection with its Annual Convention, and at every such Convention butter made from cream separated by a De Laval Separator has scored highest. This is a 100% record for the De Laval. No room for chance there. Only unusual merit made such a record possible.

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If you are without a cream separator, or in need of a better one, let the De Laval start winning a bigger cream profit for you NOW.

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EVERY NEW DE LAVAL SEPARATOR HAS A BELL SPEED-INDICATOR



A PRIZE WINNING PRODUCT

Roycroft Farm Holstein-Friesians

Our 30-lb. bulls have all been sold, but we still have several sons of Pontiac Korndyke of Het Loo, that are just nearing serviceable age. Get one of these for your next herd sire, have a brother of Het Loo Pieterje, the world's greatest junior two-year-old at the head of your herd. We also have a 9 months, 27.78-lb. son of King Segis Alcartra; and one other, same age, by Dutchland Colantha Sir Mona. See them at once or write early.

W. L. Shaw, Roycroft Farm (Take Yonge Street Radial Cars from N. Toronto) Newmarket, Ont.

MAPLE SOIL STOCK FARM OF HOLSTEINS
I am offering a few choice heifers sired by King Segis Pieterje that have just been bred to Finderne King May Fayne; also some heifers and cows due to freshen all the way from February until April. All bred to Finderne King May Fayne, a few heifer calves sired by Finderne King; get some good ones.
H. C. HOLTBY. R.R. No. 1, GLANWORTH, ONTARIO

EVERGREEN STOCK FARM HOLSTEIN-FRIESIANS
Our unparalleled success at the Toronto and London Exhibitions during the past five years places Evergreen Holsteins in a class by themselves. The strong combination of size and type found in our individuals makes record producers. Your next herd bull should be carefully selected. See our offering before buying elsewhere.
A. E. HULET, (Oxford County) NORWICH, ONT.

Record Breeding and Great Individuality are combined in the now offering from daughters of Lewis Prilly Rouble Hartog, and sired by Baron Colantha Fayne. They will improve most herds. Several are of serviceable age. See these.

T. W. McQUEEN, OXFORD COUNTY, TILLSONBURG, ONTARIO.

Pioneer Farm Holstein Herd With big yearly records and high average butter-fat test, and headed by Canary Hartog, grandson of Royalton Violet, at 10 years, 30.39 lbs. butter, 735 lbs. milk in 7 days; 29,963 lbs. milk, 1,300 lbs. butter in 1 year. Sire's dam, Royalton De Kol Fern, 34.69 lbs. butter in 7 days, 116 lbs. milk in 1 day. Bull calves for sale born after Jan. 25th, 1917; dams over 11,000 lbs. milk up to nearly 16,000 lbs. milk in 1 year, at 2 years old. Walburn Rivers, R.R. No. 5, Ingersoll, Ontario. Phone 343L. Ingersoll Independent Line.

Riverside Holsteins Offer Inducements
A choice young bull from a 32-lb. dam, and a sire with a 38-lb. sister. Born last March. A beauty. Fifteen other young bulls with strong R.O.M. backing.

J. W. RICHARDSON, CALEDONIA, ONTARIO
LOW BANKS HIGH-RECORD HOLSTEINS. Only one bull left of last season's entire crop of calves. He is a beauty—straight as a string. Dark colored. His dam, "Hester Pietie Netherland", record, 30.14 lbs. butter in 7 days, and her first two daughters have each made over 19 lbs. butter in 7 days as junior 2-year-olds. Remember—his sire is a son of Pontiac Korndyke, and his ten first daughters tested average 19.64 lbs. butter and 436 lbs. milk at an average age of 2 years and 17 days. He won't be here long. Write for pedigree and price. K. M. Dingleish, Kenmore, Ont.

KING SEGIS WALKER'S DAUGHTERS

STILL MAKING LARGE RECORDS
If you want a young bull let me send you some photos and pedigrees. A few females left.
A. A. FAREWELL, OSHAWA, ONT.

BOO SPAVIN

Cure the lameness and remove the blemish without scarring the horse—have the part looking just as it did before the blemish came.

FLEMING'S SPAVIN CURE (Liquid) is a special remedy for soft and semi-solid blemishes—Dog Spavin, Thoroughpin, Splint, Curb, Capped Hock, etc. It is neither a liniment for a simple blister, but a remedy unlike any other—doesn't irritate and can't be imitated. Easy to use, only a little required, and your money back if it ever fails.

Fleming's Vest-Pocket Veterinary Adviser describes and illustrates all kinds of blemishes, and gives you the information you ought to have before ordering or buying any kind of a remedy. Mailed free if you write.

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Ship your cream to us. We pay all express charges. We supply cans. We remit daily. We guarantee highest market price.

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ASK ANY SHIPPER about our service and prompt returns.
Ask for Prices

The figures of yesterday may be **TOO LOW** for to-morrow. We furnish cans.

The Toronto Creamery Co., Limited
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Elmcrest Holstein Friesians

Must sell within next two weeks regardless of price. No. 1—Bull, large, strong, sure, born July 28, 1915. Dam's record, 31.54 lbs. 7 days; sire's dam, 29.01 at four years. No. 2—King Teske—19392—, dam, 30.78-lb. cow. Her dam 27.56 lbs. at 11 years. Sire's dam, Evergreen March, 110 lbs. milk 1 day, 29.45 lbs. butter 7 days. Mostly white, 4 years old, active, guaranteed sure, cheap. No. 3—Calf born March 1st, 1917, to our 24-26-lb. cow, sire No. 2. These animals are sound and right. No reasonable offer refused.

W. H. Cherry, Bell Connection Hagersville; Ont.

Sunnyhill Offering:

Holstein bulls and heifers, Shropshire ram lambs, Yorkshire pigs, both sexes, all ages.

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For Milk, Butter, Cheese, Veal Holstein Cows Stand Supreme

If you try just one animal you will very soon want more.

WRITE THE
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W. A. Clemons, Sec'y. - St. George, Ont.

Holstein Bulls

of serviceable age and younger; from dams with records of 30 lbs. down.

Write for prices.
R. M. HOLTBY, R. R. 4, Port Perry, Ont.

HOLSTEINS

For immediate sale—several cows and two year-old heifers, three due in February two in April, also seven yearlings and calves. Several are granddaughters of King Pontiac Avis Canada, from high-producing dams. Must be sold. If you can handle this lot get busy. Don't take time to write, come and see them. No reasonable offer refused.

WM. A. RIFE HESPELER, ONT.


of Big Bar, Canoe Creek, and Alkali Lake. In this territory the timber clears, and the land is a gradation from high plateau, covered with stones of volcanic origin and sage brush, such as exists at Riske Creek, to luscious valley bottoms such as may be seen along the Chilcotin River. Bunch grass, the greatest range feed of all, grows here, and a blue-looking range, in places as bare and dry as a board, turns off cattle rolling fat, to the wonderment of those not used to the bunch grass country. Some big ranches are maintained in this territory, the largest being the Gang Ranch, which runs some 7,000 head. Trethewey Moon, Cotton and Johnstone also maintain large herds. Riske Creek, stuck in the middle of the range, which consists of a hotel, store and ranchhouse all combined, is the commercial centre of this cow country, and this stamping ground for ranchers and cowpunchers is probably the most typical "cow town" in Canada to-day, where many a long-geared rangerider foregather to lean languidly over the store counter perchance or to make a valiant endeavor to assuage a perennial thirst. I still speak of pre-prohibition times. In this big secluded country the cattle rancher jealously guards his domain. I stayed at a ranchhouse in there last year that had all the conveniences of a well-appointed city house and several that the city house has not. For instance, in the evening we repaired to a beautifully furnished billiard room for a game of billiards. Almost every rancher drives a big expensive car, and their lives, while "exempt from public haunts" for at least a part of the year, are lives of ease and opulent freedom. And this can be easily understood. These men control the greatest grazing area in British Columbia. An enormous acreage has been declared commonage by the government, and the ranchers run their cattle on this at a trifling charge per head.

The cattle are usually a Shorthorn-Hereford cross, and are marketed as three and four year olds, necessitating a drive of over a hundred miles to the railway at Ashcroft. The P.G.E. Railway, the lurid history of which is familiar to most British Columbians, now operates spasmodically to Clinton, a point 33 miles north of the C.P.R. at Ashcroft, and the cattle are now shipped from Kelly Lake, which cuts out the last 33 mile lap to Ashcroft on which feed is very scarce. P. Burns & Co. buy the great bulk of the cattle. Winter range is scarce in the Chilcotin, and as a rule a ton of hay per head is allowed during winter. British Columbia has a strong stock-growers Association, and the new Brand Act, at which a great deal of desultory criticism was at first levelled, will do much to put a stop to cattle rustling, which is all too common at present, Indians being the chief offenders.

All along the C. P. R., between Ashcroft and Kamloops, the land is absolutely arid, the annual precipitation, including snow, dangling around seven or eight inches. In this sage-covered desert-like country, where fruit and vegetable growing under irrigation is not carried on, cattle are run, but no big ranches except the British Columbian Fruitlands, an abortive fruit-growing project that reverted to its original purpose, the Cherry Creek Ranch, and a few others, are encountered until the Nicola Valley is reached. About 40 miles south of Kamloops is located the most extensive ranching territory in Canada. Here is located the Douglas Lake Ranch, which is an English capitalized project running some 12,000 head of cattle, the Triangle Ranch running some 3,500 and others of smaller scope. The Douglas Lake Ranch, it is said, has over 4000 miles of fencing, but I merely submit that figure for what it is worth. The Nicola Valley is a rancher's paradise.

Here the bunch grass grows luxuriantly, in a rolling country dotted with sheltering bluffs and little lakes that provide good drinking water the year around. A feature, too, which contributes greatly towards the success of ranching here is the climate. It is almost ideal. The winters are mild, and cattle feed on luscious southern slopes almost all winter long. Every rancher is this favored district is wealthy, with big, well appointed homes.

Canada can show no finer sight than the cattle ranges on the big plateaux and valleys in this locality. As far as the eye can reach nothing but rich pasture, lakes and bluffs, bathed in sunshine, with thousands of sleek steers and cows and a



MANOR FARM HOLSTEINS

Announcing the First Offering in Females

My stables are getting too crowded and I must make room. No matter whether they are the mature cows I have been trying to retain, or even daughters of my own herd sires freshening with their first calves, some will have to go to make room for the youngsters now coming. The price asked on a limited number of cows should clear, and clear them quick. If you are in the market, don't delay.

I also have sons of both my junior and senior sires, King Korndyke Sadie Vale and King Segis Pontiac Posch.

GORDON S. GOODERHAM, CLARKSON, ONT.

HIGHLAND LAKE FARMS

Herd sire, AVONDALE PONTIAC ECHO, (under lease), a son of MAY ECHO SYLVIA, the world's record cow. Only one other 41-lb. bull in Canada. We have young bulls for sale whose two nearest dams (both Canadian champions) average as high as 35.62 lbs. butter in seven days; another whose two nearest dams are both 100-lb cows; and one ready for service, from a 41-lb. sire and an 18,000-lb. two-year-old dam. SEND FOR OUR BOOK OF BULLS. A few females for sale. Satisfaction guaranteed.

R. W. E. BURNABY (Farm at Stop, 55, Yonge St. Radial) JEFFERSON, ONT.

LLENROC STOCK FARM

On the Boulevard of the Beautiful Niagara River

A few well-bred young Holstein bulls for sale. Also a Belgian stallion, weight about a ton.

Address:—W. C. HOUCK - R. R. No. 1, Chippawa, Ont.

Hospital for Insane, Hamilton, Ont.

Present offerings are 4 grandsons of Dutchland Colantha Sir Mona, and high-testing, large-producing R. of P. dams of Korndyke and Aaggie DeKol breeding. Born during April and May, 1917. Apply to Superintendent.

SUMMER HILL HOLSTEINS

The only herd in America that has two stock bulls that the dam of each has milked over 116 lbs. a day, and their average butter records are over 35 lbs. a week. We have 50 heifers and young bulls to offer by these sires, and out of dams just as well bred. We invite personal inspection.

D. C. FLATT & SON, R. R. 2, HAMILTON, ONT. PHONE 7162

CLOVER BAR HOLSTEINS

We are now offering a number of young bulls, sired by our senior herd-header, Francy 3rd's Hartog 2nd, the noted son of the famous old Francy 3rd and Canary Mercedes Hartog; also a few females, all choice individuals.

P. SMITH, Proprietor, R. R. 3, STRATFORD, ONT.

DUMFRIES FARM HOLSTEINS

Present Offering—A few bull calves.

S. G. & ERLE KITCHEN ST. GEORGE, ONT.

HOMESTEAD HOLSTEIN STOCK FARM

I must sell 12 or 15 young cows, due to freshen in March or April in order to make room for young stock, also a few young bulls. For further particulars, write

B. R. BARR Harrietsville Station, C.P.R. Phone Connection. MOSSLEY, R. 1

WHO WANTS THIS BULL?

Lyons Colantha (No. 23221), Born Sept. 11, 1914. His sire is King Lyons Colantha, whose six nearest dams average 30.10 lbs. butter in 7 days; his sire is by a son of Colantha 4th's Johanna, 35.22 in 7 days, and 1,247 lbs. butter in 1 year. His dam is a 4,875 lb. 2-year-old in R. O. P.; her dam a 8,258-lb. 4-year-old. Must be sold at once; right in every way. For fuller particulars write:—

J. Mogk & Son, R. R. 1, Tavistock, Ont

HOLSTEINS

Present Offering—Only a few young bull calves. None of serviceable age.

M. H. HALEY SPRINGFORD, ONTARIO

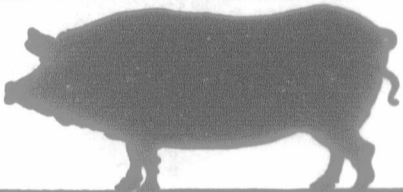
Herd headed by King Walker Pride (C. H. B., 17362.) (A. H. B., 207261) who is a son of the famous King Walker and the great show cow, Pride Hengerveld Lennox 30.12, who is a granddaughter of Blanche Lyons De Kol 33.31 and King Segis, who is a grandsire of world-champion cow, also of the two highest-priced bulls of the breed. Young stock for sale.

C. V. ROBBINS, Bell Phone, WELLANDPORT, ONTARIO

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BROWN BROTHERS CO.
 NURSERYMEN LIMITED
BROWNS NURSERIES, ONT.
SHROPSHIRE
 30 Yearling Rams—12 Yearling Ewes.
W. H. PUGH, MYRTLE STATION, R. R. 1
 Farm 2 miles from Claremont

Cloverdale Shropshires and Berkshires—40 shearing rams, 70 shearing ewes, an exceptionally choice lot; true to type and well grown; nearly all sired by the show ram, Nock 16 Imp. In Berkshires, the usual strong offering, including sows just bred, C. J. LANG, Burketon, Ont.

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 Live-stock Labels for cattle, sheep and hogs, manufactured by the Ketchum Manufacturing Co.
 Box 501, Ottawa, Ont. Write for samples and price



Let Him Lift the Mortgage
 Sleek, fat hogs are big profit makers.
Pratts ANIMAL REGULATOR
 prevents hog cholera. Reduces feeding cost. Insures big prices. Booklet FREE.
 PRATT FOOD CO. OF CANADA, LIMITED,
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PEDIGREED TAMWORTHS

Several sows, 2 years old, in pig. Also younger stock. Write:
Herolds Farms, Beamsville, Ont.

Morrison Tamworths and Shorthorns—Bred from the prizewinning herds of England. Tamworths, both sexes; boars from 2 to 12 months. Shorthorn bulls from 5 to 10 months old, reds and roans—dandies.
CHAS. CURRIE, Morrison, Ont.

Meadow Brook Yorkshires
 Fifty young pigs from five litters, weaned and ready to wean. Pairs not akin. Also a large choice of young sows near breeding age—priced to sell.
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CHOICE YORKSHIRES

All ages and both sexes, at right prices. A few bred sows and several young litters an extra special. All varieties, Turkeys, Geese and Ducks, S.-C. White Leghorns. **T. A. KING, Milton, Ont.**

TAMWORTHS

Young sows bred for spring farrow and a nice lot of young boars for sale. Write:
John W. Todd, R. R. No. 1, Corinth, Ont.

YORKSHIRES AND COLLIES
 We offer several fine sows that have been bred, and young stock, three months old; also choice, pedigree collie puppies. We guarantee satisfaction.
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Polands, Durocs and Berkshires
 Young stock at all times, both sexes and all ages. Can also supply anything in Dorsets or Southdowns. Everything priced to sell.
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SPRINGBANK CHESTER WHITES
 Pigs, both sexes, five months old and younger; a number of them sired by curly King—9997—, who has been a winner at Toronto and London the last several years. Satisfaction guaranteed. Inspection invited.
Wm. Stevenson & Son, Science Hill, Ont.

DUROC JERSEYS
 Our herd won all champion prizes at Toronto and London, 1916 and 1917. Pairs not akin. Young stock all ages for sale. Visitors welcome. For further particulars write:
Culbert Malott, No. 3, Wheatley, Ont.

Prospect Hill Berkshires
 Young stock, either sex, for sale, from our imported sows and boars; also some from our show herd, headed by our stock boar, Ringleader. Terms and prices right.
John Weir & Son, Paris, Ont., R. R. 1.

Featherston's Yorkshires—The Pine Grove Herd
 I have the choicest lot of young sows of breeding age that were ever on the farm. A few are already bred. Also have 10 young litters. Prices reasonable.
J. K. FEATHERSTON, STREETVILLE, ONT.

Lakeview Yorkshires
 If you want a brood sow or a stock boar of the greatest strain of the breed, (Cinderella), bred from prize-winners for generations back, write me.
JOHN DUCK, PORT CREDIT, ONTARIO.

Choice Registered Chester Whites
 Young pigs of either sex—shortly; sows carefully bred.
John Pollard, Elmdale Farm, Norwich, R. 4, Ontario

on her cattle ranchers for her addition, she could have sent them all to the car-board in one railway car. Probably the condition of pre-emption in British Columbia is quite natural, and not worthy of so much comment. It would seem evident, of course, that where our landed class controls so much, the other would be landowners must accept less favorable conditions. As to whether it is right, however, is another matter. Human nature clings to romance, but civilization is always facing ugly mathematical facts before ultimate progress is made. British Columbia has had its goodly share of romance and exploitation, and it may be that the romantic British Columbia is on the wane and that the truly progressive British Columbia is just opening its eyes.

J. H. McCullough

Questions and Answers. Miscellaneous.

Seeding to Permanent Pasture.

I purpose seeding a low-lying field to permanent pasture but would like to take a crop or two of hay off first. Does Kentucky Blue Grass make good pasture for cattle, and would it be advisable to sow it with a mixture of red clover and timothy? The field is now in wheat. Would a person be fairly sure of a good catch if grass seed were sown broadcast in the spring? How many pounds per acre of Blue Grass, clover and timothy would you advise sowing? Is Kentucky Blue Grass hard to exterminate if a person wished to break the field up again? Is there a better pasture grass than the above mentioned? There is some couch grass now in the field, does it give good pasture?

Ans.—Kentucky Blue Grass gives very good pasture and will remain in the soil for some time; in fact, it is rather persistent, which makes it somewhat difficult to eradicate. However, it withstands the drouth and wet as well as any of the grasses, which are desirable qualities for a permanent pasture grass. Many make a practice of sowing their grass seed on the wheat early in the spring. As a rule there is a light fall of snow late in March or early in April, after the winter snow has gone. The grass seed may be sown on this with satisfactory results. Others delay the sowing of grass seed until a team can be put on the soil. They then sow the seed and follow with a stroke of the harrows. The early sowing generally gives the best results. If seeding down for hay, we would recommend around 10 pounds of clover with other seeds. Owing to the high price of this legume, many have been tempted to scrimp a little, with the result that there has been a poor catch and comparatively little clover in the hay for winter feeding. Legume hay makes the best roughage for cattle in the winter, is good pasture, and is also a soil renovator. As the field is to be seeded for pasture about 5 pounds of Kentucky Blue Grass and 3 or 4 pounds of timothy might be sown. There are a number of other grasses which are frequently used when seeding for permanent pasture, and they would not interfere with the clover. Clover will kill out at the end of the second year, and by this time the other grasses will have become established. Meadow Fox-tail is a fine grass and 2 or 3 pounds of it might be added to the mixture. Orchard grass gives both early and late pasture. If cut early it makes fairly good hay, but if left until it starts to ripen it is unpalatable. White clover makes sweet feed and will remain in the ground for some time—2 pounds of it along with the other grasses makes a very good feed. If the latter grasses mentioned are included in the mixture, the amount of red clover might be reduced somewhat. The following grasses and clovers are used for permanent pasture and would possibly be superior to Kentucky Blue Grass, clover and timothy alone: Orchard Grass, 1 lb.; Meadow Fox-tail, 2 lbs.; white clover, 2 lbs.; red clover, 2 lbs.; Kentucky Blue Grass, 1 lb.; meadow fescue, 1 lb.; timothy, 2 lbs.; red clover, 1 lb. By using a variety of seeds which are at their best at different seasons of the year, there is fresh feed coming on all the time during the pasturing season. Couch grass makes good feed. It will often be noticed that the cattle will keep a patch of couch grass cropped short, while timothy and other grasses are allowed to grow to a considerable length.



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 of Horkstow, Lincolnshire, England

has for sale Pedigreed Lincoln Long Wool Rams and Ewes from his world famous flock of DUDGING BRED SHEEP. By winning the CHAMPION and "ALL" the prizes in the two-hour and yearling ram classes at the Royal Show of England, 1915, all previous records were broken. Coteses Shorthorns and Lincoln Red Shorthorns also for sale.
STATION—BARNET

"The Maples" Stock Farm—R. S. Robson & Son, Props., Denfield,
 Present offering—100 home-bred Lincoln ewes; ages 1 to 4 years (registered); 20 imp. yearling all bred to the best of 20 rams we imported this season—an extra-good lot of the heavy-shearing Shorthorns we have for sale cows and heifers of such strains as Clarets, Clippers, Village Mexico and Miss Ramona.

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 Present supply entirely sold out. Will have several litters early spring.
WELWOOD FARM, Farmer's Advocate, LONDON, ONT.

OAK LODGE YORKSHIRE HOGS
 We have a large selection of extra-good boars and sows of different ages. We are selling at prices make it attractive for the purchaser. Write for what you want.
J. E. BRETHOUR & NEPHEWS, Burford, Ont.

ELMHURST LARGE ENGLISH BERKSHIRE
 From the most important of sows, together with the stock boar, Suddon Terrier, we have a fine lot of breeding stock, all ages. Satisfaction and safe-delivery guaranteed.
H. W. VANDERLIP, Breeder and Importer, R. R. 1, BRANTFORD, ONT.
 Langford Station on Brantford and Hamilton Radial

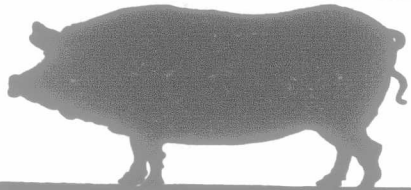
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 We have for sale at present some young pigs of a breed new to Canada, but standard and very popular in England, from our pure-bred, imported LARGE BLACKS. Stock excellent for breeding with other breeds. Their English reputation is that they grow large and fast. Also for sale bred English Berkshire.
Lynnore Stock Farm, F. Wallace Cockshutt, Brantford

BERKSHIRES
 My Berkshires for many years have won the leading prizes at Toronto, London, Guelph, High-beres and Sallys, the best strain of the breed, both sexes, and Adam Thomson, R. R. No. 1, Stratford, Ont. Shakespeare Station, Ont.

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BROWN BROTHERS CO.
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SHROPSHIRE
 30 Yearling Rams—12 Yearling Ewes.
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 Farm 2 miles from Claremont

Cloverdale Shropshires and Berkshires—40 shearing rams, 70 shearing ewes, an exceptionally choice lot; true to type and well grown; nearly all sired by the show ram, Nock 16 Imp. In Berkshires, the usual strong offering, including sows just bred. C. J. LANG, Burketon, Ont.

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 prevents hog cholera. Reduces feeding cost. Insures big prices. Booklet FREE.
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 Several sows, 2 years old, in pig. Also younger stock.
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 J. K. FEATHERSTON, STRIFEVILLE, ONT.

Lakeview Yorkshires
 If you want a breed sow or a stock boar of the greatest strain of the breed, a pedigree bred from prize-winners for generations back, write me.
 JOHN DUCK, PORT CREDIT, ONTARIO.

Choice Registered Chester Whites
 Young pigs of either sex—shortly; sows carefully bred.
 John Pollard, Elmdale Farm, Norwich, R. 4, Ontario

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J. H. McCulloch.

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 O. L.

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 Made of heavy Open Hearth steel galvanized wire with all the impurities taken out and all the strength and toughness left in. Every wire is crimped making the fence into one continuous spring. Top and bottom wires are extra heavy. Will not sag. Requires less posts than ordinary fence. Absolutely guaranteed.
 Don't buy a rod of fencing until you get our illustrated Catalog. Describes our big line of farm, poultry and ornamental fencing. Also Peerless farm gates.
 Agencies almost everywhere. Agents wanted in all unassigned territory.
The Banwell-Hoxie Wire Fence Company, Ltd.
 Winnipeg, Man. Hamilton, Ont.

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 Canadian Farmers will save money for themselves by installing a Page Farm Engine.
 For the Page will do many odd jobs around the farm that the hired man is paid to do. And hired help comes high these days. Their time is worth a lot to you.
 The Page Farm Engine will run the mechanical milker and the churn, grinds grain, chops feed, saws wood, etc. In fact, its uses are almost unlimited around farm and farm house.
 Send for a catalog, giving you list of prices and complete information about the Page line. You buy direct from our factory and get better value for your money. Your investment is all in the engine.

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 will give you valuable farming hints, and shows the full line of Cockshutt and Frost & Wood Implements. Write for a copy to-day.
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Gasoline & Kerosene Engines
 Saw Frames, Saw Blades, Grain Grinders, Straw Cutters, Belting, Scales, Farm and Lawn Fence. Write for price-list.
 A. R. Lundy, 251 West King St., Toronto

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 of Horkstow, Lincolnshire, England
 has for sale Pedigreed Lincoln Long Wool Rams and Ewes from his world famous flock of ALL DUDGING-BRED SHEEP. By winning the CHAMPION and "ALL" the prizes in the two-shear and yearling ram classes at the Royal Show of England, 1915, all previous records were broken. Coates Shorthorns and Lincoln Red Shorthorns also for sale.
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 Present offering—100 home-bred Lincoln ewes; ages 1 to 4 years (registered); 20 imp. yearling ewes all bred to the best of 20 rams we imported this season—an extra-good lot of the heavy-shearing kind. In Shorthorns we have for sale cows and heifers of such strains as Clarets, Clippers, Village Girls, Missies and Miss Ramsdens.

YORKSHIRES
 Present supply entirely sold out. Will have several litters early spring.
WELDWOOD FARM, Farmer's Advocate, LONDON, ONT.

OAK LODGE YORKSHIRE HOGS
 We have a large selection of extra-good boars and sows of different ages. We are selling at prices that make it attractive for the purchaser. Write for what you want.
 J. E. BRETHOUR & NEPHEWS, Burford, Ontario

ELMHURST LARGE ENGLISH BERKSHIRES
 From our recent importation of sows, together with the stock boar, Saddon Torredor, we can supply select breeding stock, all ages. Satisfaction and safe delivery guaranteed.
 H. M. VANDERLIP, Breeder and Importer, R. R. 1, BRANTFORD, ONTARIO
 Langford Station on Brantford and Hamilton Radial

ENGLISH LARGE BLACK PIGS
 We have for sale at present some young pigs of a breed new to Canada, but standardized and very popular in England, from our pure-bred, imported LARGE BLACKS. Stock excellent for crossing with other breeds. Their English reputation is that they grow large and fast. Also for sale, pure-bred English Berkshires.
 Lynnore Stock Farm, F. Wallace Cockshutt, Brantford, Ont.

BERKSHIRES
 My Berkshires for many years have won the leading prizes at Toronto, London and Guelph. Highcleres and Sallys, the best strain of the breed, both sexes, any age.
 Adam Thomson, R. R. No. 1, Stratford, Ont. Shakespeare Station, G.T.R.

Your VICTORY BOND

- ☐ If you own a *Victory Bond* or any Dominion of Canada Bond you will want to read our circular.
- ☐ It tells you clearly and plainly all about them—How to collect your interest—When it is due—How to buy and sell them, and other useful information.
- ☐ We have a few extra copies for free distribution.
- ☐ Write for circular 33 It will be sent you without obligation on your part.

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McCormick's
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Always crisp and delicious

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Alsike Red Clover, White Blossom Sweet Clover
 If you have any of the above seeds to offer, kindly send us samples, and we will quote you best price F. O. B. your station.

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 Seed Merchants Stouffville, Ont.

"1900" Gravity Washer

Sent free for one month's trial. Write for particulars.

"1900" WASHER COMPANY
 357 YONGE ST., TORONTO, ONT.
 (Factory, 75-81 Portland St., Toronto)

Wanted—Cord Wood

Soft or hard, loaded on cars.
 Write or 'phone us.

Beachville White Lime Co.
 Beachville, Ontario

15 VOLPEEK
 MENDS POTS & PANS

Mends Granite ware, Tin, Iron, Aluminum, etc. in two minutes. Without tools. 20 mends for 15c. From your dealer or us, postpaid. Vol-Peek Co., P.O. Box 2024, Montreal.

Gossip.

Readers should not fail to observe the advertisement of Alex. Hastings, Crosshill, Ontario, in this issue. Having sold the farm, he will offer by public auction the entire herd of Shorthorn cattle, his flock of Leicester sheep, and herd of Hampshire swine. The Shorthorn herd has been headed by the imported Rosebud-bred bull, Braco, which is of good scale, sure, active and a good sire. The females are of good ages and of good breeding. The Leicester sheep comprise breeding ewes, ewe lambs, and a few ram lambs. The record of the Hastings flock in the show-ring is ample guarantee of their quality. The herd of Hampshire hogs were first in Canada, and they have been eminently successful in all Ontario shows. See the advertisement and write for further particulars.

Isaac's Latest Shorthorn Importation.

One of the most noteworthy importations of Shorthorns Canada has seen in years was inspected recently by an Advocate representative at the farm of Geo. Isaac of Cobourg, Ont. This importation, which is Mr. Isaac's third in the past 12 months, comprises 42 head of breeding females and 8 young bulls, and while they were less than ten days out of quarantine at the time of our visit they were showing an excellent bloom and were a pleasing lot throughout. There is among them much of the blood that is represented in most all of the better herds in Britain, and many of them are calving this month to the service of some of the best herd sires in the Old Land. Two heifers, in fact, have already calved since landing, increasing the number by one bull and one female. The bulls with one exception are all in the neighborhood of from 10 to 15 months and, while every one is fully up to the average, two are perhaps as strong herd-heading material, in both individuality and breeding, as anything that has left the Isles for Canada this year. Both calves referred to are 12-month youngsters; one a Clipper and the other an Augusta. The former is a roan and the latter a red, and on the sire's side both are grandsons of Wm. Duthie's great herd sire, Knight of Collynie, whose calves at the 1917 Duthie sale made the wonderful average of £497 per head. There is also one Brawith Bud, one Jilt and two Broadhooks bulls. The females, too, represent most all of the more fashionable females of the day, Kinellar Clarets, Lady Dorothy's (including the Butterflies, Minas, Blythesomes, etc.), Broadhooks, Lancasters, Miss Ramsdens, Rosemarys, and others. There are young breeding cows of these families got by such noted bulls as Mr. Anderson's Warrior, Lady Cathcart's Neil of Cluny, Duthie's Collynie Prince Victor, Gordon's grand champion, Marr's Duke of Gordon, etc. All are young—a five-year Lady Dorothy cow being the oldest, and, with one or two exceptions only, all the females two years old or over, are showing safe in calf to the service of some of the best sires in Britain. See the advertisement elsewhere in this issue and write Mr. Isaac at once for further particulars.

Keep a Pig.

Away with the pets
 That provide us no fats;
 Canaries and parrots
 And puppies and cats.

Each tenement home,
 No matter how high,
 For patriot tenants
 Should offer a sty.

The dear little pig—
 How cunning his tail!
 Will grow to a porker
 Ere autumn grows pale.

The children will find
 Him best of all chums,
 And weep like the mischief
 When killing-time comes.

Then even New York
 Will ban the hot dogs,
 And revel in sausage
 Despite the trust hogs.
 J. A. in Brooklyn Eagle.



YOU CAN ENJOY EVERY MINUTE OF THOSE LONG WINTER EVENINGS

THESE are the nights when music calls to you—the cold, long winter nights when you spend most of your evenings at home, anxious for some amusement, to enjoy the hours before bedtime.

Home takes on a new meaning when there is a piano or a player piano to give pleasure to all the family or entertain your young or old folk visitors. There is a new enjoyable comfort for your home when music is there.

Williams Piano
New Scale
ENDORSED BY GREAT MUSICIANS OR PLAYER PIANO

is an instrument which you—and those that follow—will grow to cherish and love. The Williams is an instrument bearing the mark of the generations—old ideals of craftsmanship (68 years) pure of tone, responsive action and beauty of design. It is the choice of the world's great artists who tour Canada.

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THE WILLIAMS PIANO CO., DEPT. B, OSHAWA, ONTARIO
 Please send me "Art and the Critic" FREE, and full particulars as to convenient terms of payment on a Williams Piano

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We Have for Immediate Sale the Following:

Six imported Percheron stallions, ages four to eight years, both blacks and greys; all holding No. 1 certificates and guaranteed sure foal getters.
 Two Canadian-bred Percheron stallions, three years old, a pair of real good ones.
 Two imported Percheron mares, greys, a lovely pair of high-class mares, both supposed to be in foal.
 Four imported Clyde stallions, all proven horses, and the oldest one eight years old.
 Three imported mares, every one a winner at the big fairs, and all supposed to be in foal.

HODGKINSON & TISDALE
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Absolute, lasting, positive satisfaction is assured with every

Sherlock-Manning
 20th Century Piano—known as "Canada's Biggest Piano Value"
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THE SHERLOCK-MANNING PIANO CO.
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Write for our large photo-illustrated Catalogue No. 7—it's free to you.

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Kerosene engine pumping water to tank. Engine is usually at well head. Many uses for this attractive form of farm power.

Farmers Work Less Who Make Machinery Work More Here is Proof that Wider Machinery and More Power Pay

The following data is the summarized experience of 1852 farmers who kept accurate records. Hours in field averaged, daily, 9.65.

Ploughing: Two-horse teams drawing 10, 12 and 14-inch ploughs, turned over 1.60, 1.70 and 1.80 acres respectively. Three-horse teams drawing 12 and 14-inch bottoms ploughed 2.10 and 2.30 acres, respectively, in the same length of time. Four-horse gangs turning 24 and 28-inch widths accounted for 4.00 and 4.25 acres, respectively. Man-power is the scarcest and dearest form of farm power at present. More horses, or tractors, and wider furrows will do much to tide us over this abnormal year.

Harrowing: The relative costs of this important operation were as follows: small disc harrow, 90 cents an acre; three-horse disc, 70 cents; wide, double, cut-away disc harrow, 45 cents. Two sets of narrow drag harrows, hitched together behind four horses, save a man's labor.

Seeding: It was found that an average of 3 feet of drill should be allotted to each horse, and that 4 acres a day could be accounted for. Four horses on a 12-foot drill, therefore, would make a profitable combination by lowering the hours of man-power required in seeding.

Harvesting: The same principle holds good here, too. With the exception of the side draft and addition to the length of cutting rod and table does not add materially to the load. Each horse on the machine will cut about four acres. Ample horse-power in harvest pays well.

New Machinery is not required to apply this principle of more power to a profitable extent. The practical farmer shown in our illustration is replacing man-power by the most efficient use of the machinery he already owns.

More horse power permits the use of two implements at one time. Assaving in man power.

Mechanical Power can still further assist in economizing Man Power.

Motors can be made to do much of the work formerly done by man or horse. Where electricity is not obtainable the gasoline engine can be used to run a dynamo to provide electricity for lighting purposes. Where there is a good-sized stream on the farm it is often possible to dam it and obtain fall enough to generate all the power needed for stationary purposes, including running dynamo to provide electric lights and power.

There are two chief advantages in introducing motor power to supplant man-power. The work can be done much more quickly and much more cheaply. These same considerations also

apply to the supplementing of the horse by the motor, in many operations, particularly for stationary purposes and marketing. This is also becoming true of field work since the advent of the light tractor.

Grinding at Home Saves Time

With gasoline at 40 cents per gallon, grain can be ground at 4 cents per 100 pounds. At 20 cents per gallon the cost would be 2 cents per 100 pounds, which represents the cost if the engine burns coal oil at 20 cents per gallon. A farmer buying a gasoline engine should investigate the ones that will burn coal oil if desired.

The farmer should make a special study of the gasoline engine so as to be able to get the most out of it. An improperly adjusted carburetor may easily burn twice the fuel really necessary to do a given amount of work. And when the mixture is too rich, carbon deposits in the cylinders more quickly than with a correct mixture, thus still further reducing the efficiency of the engine. If a farmer uses 1 horse-power 1 hour a day on the average, this can be provided by the gasoline engine at 5 cents per day or \$18.25 per year when gasoline is worth 40 cents per gallon, or at \$9.12 per year by coal oil at 20 cents per gallon.

With electricity at 4 cents per kilowatt-hour the cost of grinding 100 pounds of grain would be 1.88 cents, and 1 horse-power 1 hour a day would cost 3 cents per day or \$10.95 a year.

With electricity at 4 cents per kilowatt-hour the power for all this work will cost only about \$65. Any overhead charge for transmission line must be added. With gasoline at 40 cents per gallon the gasoline engine will do the same work at about \$110, and the oil engine burning coal oil at about \$55.00, assuming the latter to cost half as much as gasoline.

For full information regarding the efficiency, management, installation or troubles of any practical farm machinery, write the Office of the Commissioner, Ontario Department of Agriculture, Parliament Buildings, Toronto.

What 3 Horse-Power used one hour a day will do on the average farm:

Grinding Grain.—20 days of 10 hours each using 3 h.-p., or 10 days using 6 h.-p.

Pumping Water.—½ hour every day, using 1 h.-p.

Cutting Straw.—3 days of 10 hours each, using 3 h.-p.

Pulping Roots.—½ h.-p. 1 hour per day for 6 months.

Sawing Wood.—1 day of 10 hours, using 3 h.-p.

Milking Machine.—2 hours every day, using 1½ h.-p.

Separating.—1/6 h.-p. 1½ hours every day.

Churning.—1/6 h.-p. 1½ hours per week.

Ontario Department of Agriculture

PARLIAMENT BUILDINGS, TORONTO

SIR WM. H. HEARST
Minister of Agriculture

DR. G. C. CREELMAN
Commissioner of Agriculture



The Farm tractor is doing splendid work in the rapid cultivation of the soil.

