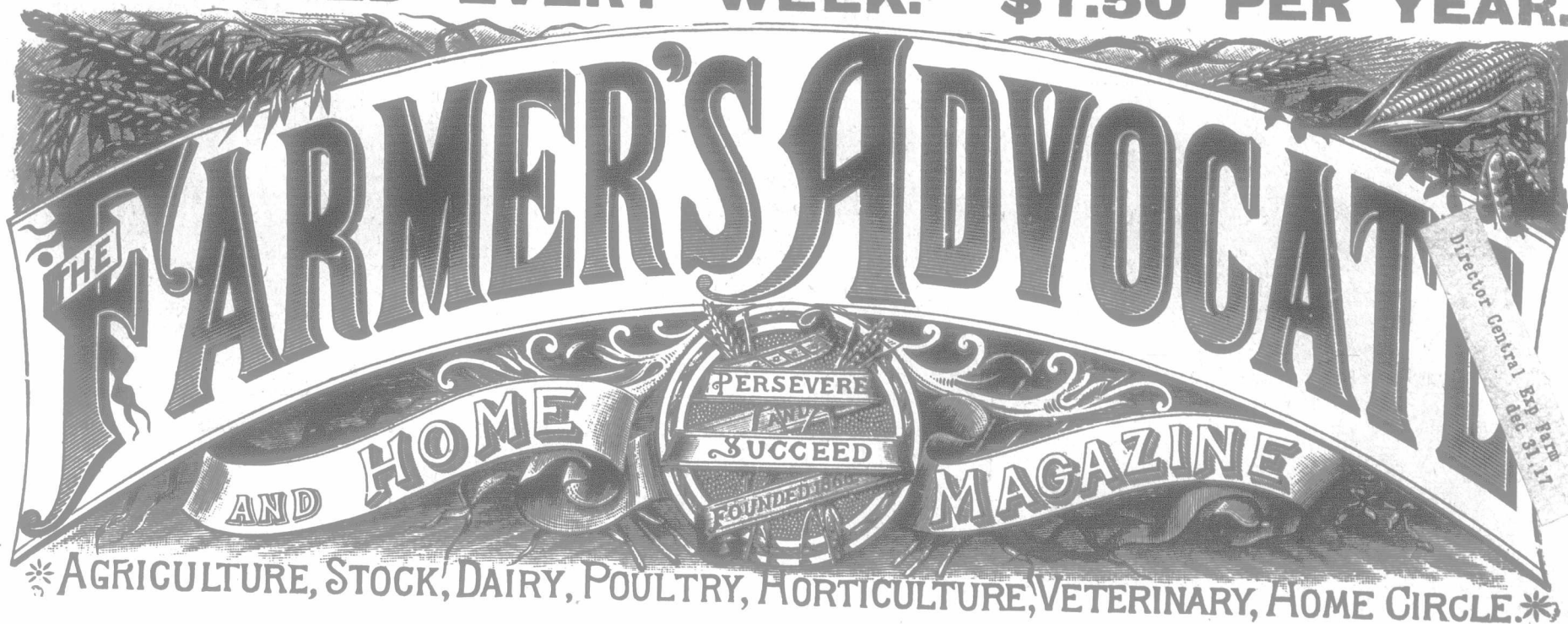


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VOL. LII.

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No. 1272

Needed on Every Farm

Renfrew Standard

Thousands of Users

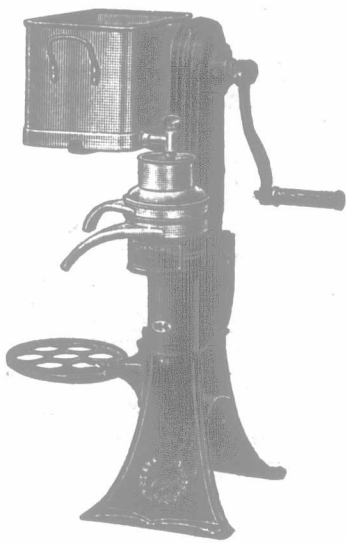
A woman, signing herself "Farmer's Wife," and writing to the "Ohio Farmer" magazine, said:

"It is the cream check that pays the grocer and dressmaker, builds houses and barns, buys the piano, sends the children to college."

Verily, the cow and the cream separator seem to be given the place of honor on Ohio farms. And well they should, for what else returns so much profit per dollar invested?

An investment in more cows and better cows will pay almost every farmer—especially if he has a Standard Cream Separator to get the utmost possible cream profits for him.

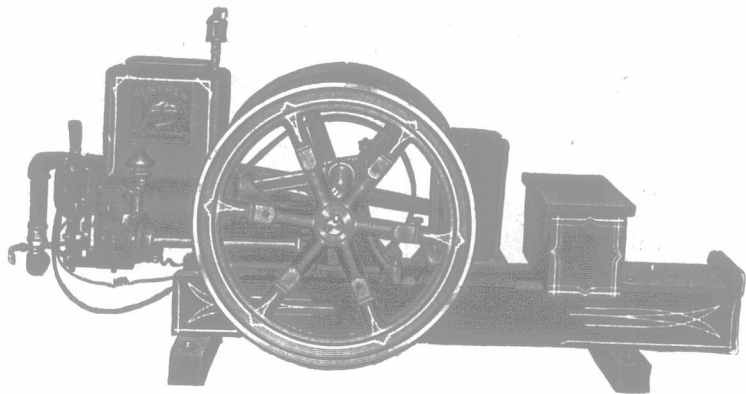
Canadian Government Dairy School Reports show that the Standard Cream Separator skims down to .01 per cent. In other words, the Standard loses but one-tenth of a pound of butter-fat in every one thousand pounds of milk skimmed. Do



you know of any other cream separator that can furnish unbiased proofs of equally close skimming? Remember, it is one thing to claim close skimming and another thing to prove it to the hilt.

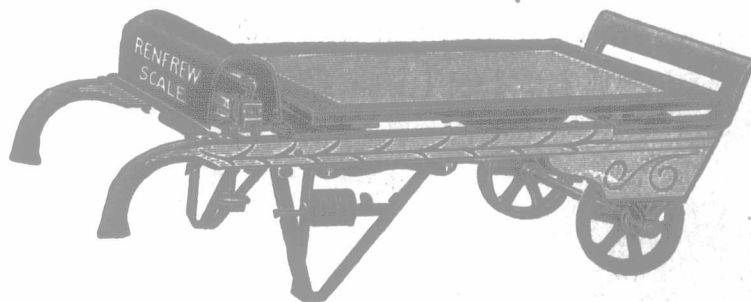
The Standard is not only a wonderful skimmer, it is also a sanitary skimmer. It is easy to keep its smooth, wide-open bowl and polished steel discs sweet and clean. There are no hard-to-get-at places where dirt and impurities can collect and taint the milk. Cream skimmed by the Standard tastes sweet and delicious. It brings the highest price.

There are other features, such as automatic oiling, interchangeable capacity, patented guide pin, curved wing centre, helical tooth main gear, which we haven't the space to describe here in detail. But we will send our Separator Catalogue containing complete information. Write for a copy



You Need One Greatly To-day

With farm labor so scarce and so high, every farmer needs a gasoline engine—in some cases two of them. And a Renfrew Standard will soon pay for itself. Just make a note on a piece of paper of all the ways it can save work for you. The length of the list will surprise you. Then send the list to us, and we will check it up and tell you other ways it can lift your burden. We will also send you our Engine Catalogue, which tells about the dual ignition, steam engine governor, starts without cranking, and other features of this famous engine



Don't Guess. Weigh Everything

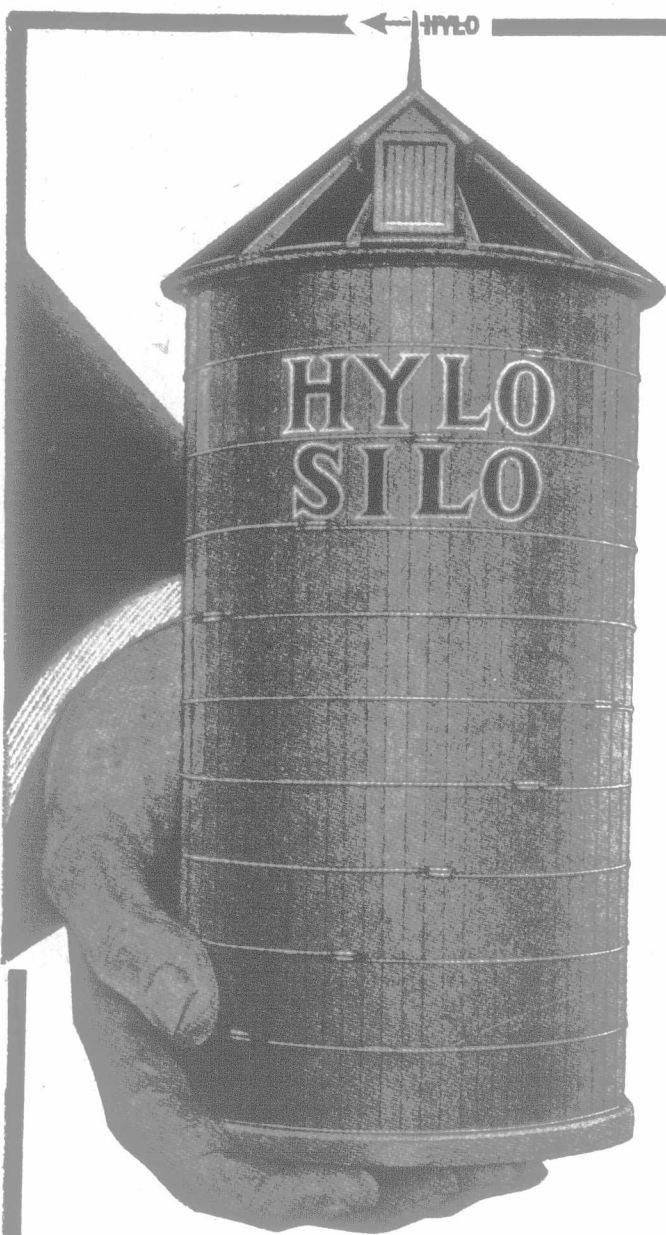
The only way to make sure you are getting paid for every pound you sell is to weigh everything—and this applies to what you buy, too. Scales are a necessity on every farm—and the Renfrew Truck Scale is the handiest for the purpose. Wheels around like a truck.

Weighs anything, small or large, from a pound to a ton. Government inspected and fully guaranteed. You cannot make any mistake buying one. Thousands in use weighing cream, produce, cattle, etc. Write for Scale Booklet.

The Renfrew Machinery Company, Limited

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Take This Silo Now! We'll Pay For It!

DON'T wait till you have saved enough money to pay cash for a silo. It may take you longer than you think, and all the time you are doing without the silo you are losing silo profits. In the end, you won't have any better silo for all your waiting and saving.

You don't have to wait and save for a Hylo Silo. We'll do the waiting and the Hylo Silo will do the saving. With the savings you can pay for it and you'll never miss the money. In a short time you'll own a fine silo that practically did not cost you a cent, instead of skimping and saving for years and having no silo at all. More important still, in the

HYLO SILO

you'll have a silo that completely satisfies in every way. Maybe you want durability.

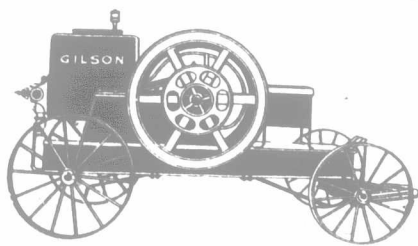
Properly cared for, the Hylo Silo will last a lifetime. Maybe you want good looks. The Hylo Silo is built along correct architectural lines, and will make a pleasing addition to your farm buildings, as well as give an air of prosperity to your home surroundings. Maybe you would like a silo that will never need attention. Our Silo Book will convince you by actual photographs that the Hylo Silo is of the design and construction best able to give you continuous service and satisfaction. Send for it. It is free.

But maybe, after all, you are one of that large army of sensible men who realize that the best silo is the one that keeps silage best. This is where the Hylo Silo is never surpassed and seldom equalled. It is designed and built, first and foremost, to produce the choicest silage, and is doing it to-day on 50,000 farms.

So it matters not whether you take advantage of our cash discount or buy on our easy terms, you get what you want—perfect silage from a perfect silo.

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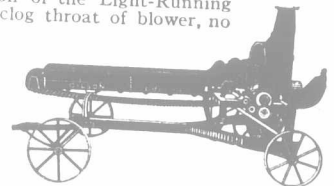
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The simple, scientific, carefully-worked-out construction of the Light-Running "Gilson Silo Filler" makes it absolutely impossible to clog throat of blower, no matter how fast the corn is thrown in. The Gilson is rightly called

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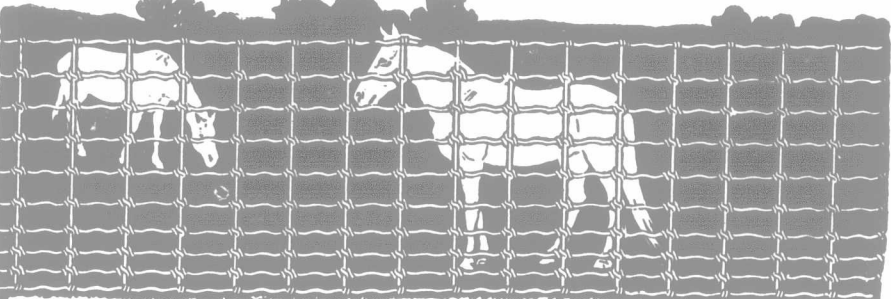
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The farmer who thoroughly examines the relative merits of the various brands of wire fences offered to him will not have any difficulty about deciding upon the one he ought to have. Let him decide by that most unerring of all tests—weight. Why judge by weight? Because weight means strength, and strength means durability and long life. Of the different makes of wire fences, there must naturally be one that will weigh heavier than the rest.

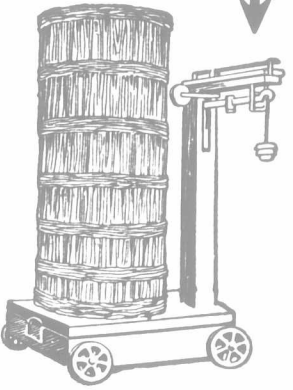
The heavy-weight among fences is the "Ideal"

The reason is that all the wires are full gauge No. 9 hard steel wire; every wire is full of life and strength, and heavily galvanized to properly protect and preserve that strength. You therefore get longer service from "Ideal"—most for your money in strength, durability and all-round satisfaction.

Ideal Fence

It is to your interest before buying fencing to get a copy of our catalogue; a postal will bring it.

The McGregor-Banwell Fence Co., Limited
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Our Big Free Book

Points the easiest, cheapest and quickest way to pull and remove your stumps.

Land clearing is not the time consuming, money consuming, back breaking, heart breaking, never ending job it once was, if you clear your land by the Kirsfin Method. This method pulls your stumps, clears the pulled stumps from your land and guarantees a saving of 10% to 50% over any other method. Before you clear another foot of land, find out what the Kirsfin Method can do for you.

Kirsfin Pullers are the very last word in up to the minute, twentieth century land clearing machines. Thousands of users testify to their superiority. There is a puller for every need. No matter what your clearing problem may be, there's a Kirsfin to solve it.

Kirsfin Stump Puller One Man — Horse Power

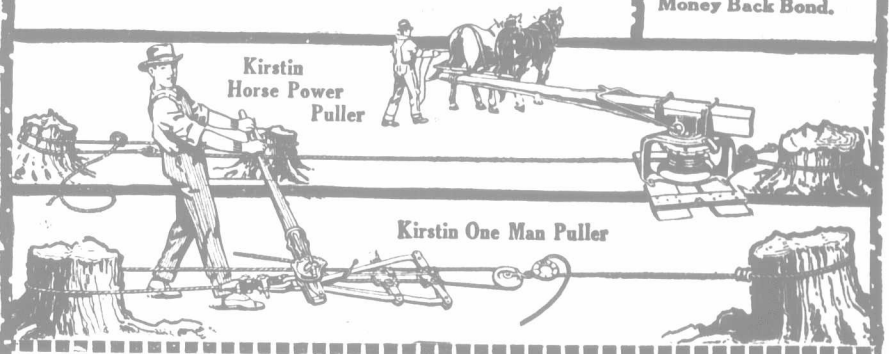
No stump is too big for the Kirsfin Horse Power Puller. Its mighty strength is irresistible because of its triple power and other exclusive Kirsfin features. It will clear more than two acres at one setting without strain to man, horse or machine. It has been a leader for 21 years.

One man without horses can pull the biggest stumps, too, with the Kirsfin One Man Stump Puller. A little push on the handle gives tons of pull on the stump. This enormous power is developed by use of double leverage. It gives an ordinary 17-year-old farm boy a giant's power.

Our Free Book gives valuable information on all kinds of land clearing. It tells all about the Kirsfin line of pullers—most complete in the world—and explains Kirsfin Service, forever free to all owners of Kirsfin Machines. It has many photographs of stumps that the Kirsfin has pulled, and letters from the men who pulled them. Don't buy a puller until you read this book.

Big Money to Early Buyers To first buyers in every locality we offer a special opportunity to join in our profit sharing plan. No canvassing; just a willingness to show your Kirsfin to your neighbors. Don't wait—send the coupon today.

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Largest Stump Puller Manufacturers in the World



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Send me a Free Copy of "The Gold in Your Stump Land" and full particulars of The Kirsfin Method. The Money Back Bond. The 15 Year Guarantee. The Profit Sharing Plan.
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Sending this coupon obligates you in no way.

The Kirsfin Method gets rid of your stumps after they are pulled.

Money Back Bond 10 Day Trial 15 Year Guarantee Profit Sharing Plan

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Remember, the Kirsfin Method saves you from 10% to 50% over any other way of clearing land for the plow. This claim is supported by a Money Back Bond.

Put in as Big a Garden as you Possibly can this Spring

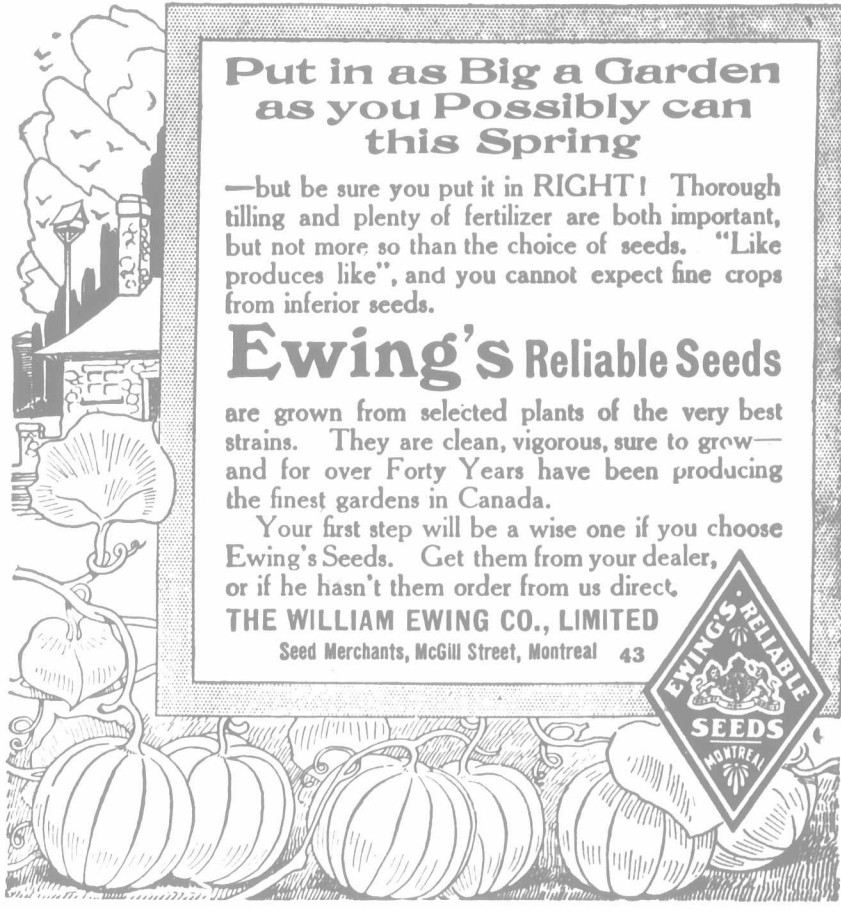
—but be sure you put it in RIGHT! Thorough tilling and plenty of fertilizer are both important, but not more so than the choice of seeds. "Like produces like", and you cannot expect fine crops from inferior seeds.

Ewing's Reliable Seeds

are grown from selected plants of the very best strains. They are clean, vigorous, sure to grow—and for over Forty Years have been producing the finest gardens in Canada.

Your first step will be a wise one if you choose Ewing's Seeds. Get them from your dealer, or if he hasn't them order from us direct.

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THE NEW DE LAVAL

A Bigger and Better Cream Separator



THE FARMER who buys a De Laval this year will get a bigger and better Cream Separator than ever before.

Not only will he get a better machine, a simpler machine, a machine that will skim even closer than any previous De Laval, but he will get a machine of larger capacity.

The NEW De Laval is the culmination of nearly forty years of experience and development by the largest and oldest cream separator concern in the world. It represents

The greatest improvement in separator construction in the last thirty years

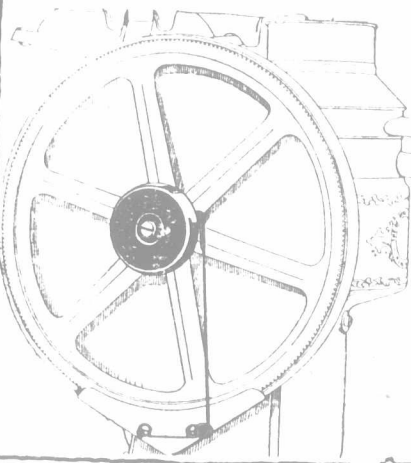
If you are trying to get along without a cream separator, or with a half-worn-out or unreliable machine, why not get a NEW De Laval NOW and stop your cream waste? You don't need to count the cost, because the De Laval will soon pay for itself.

There is a De Laval agent near you who will be glad to explain all the improvements and advantages of the NEW De Laval, and who will set and start a machine for you on your farm and let you try it for yourself.

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

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

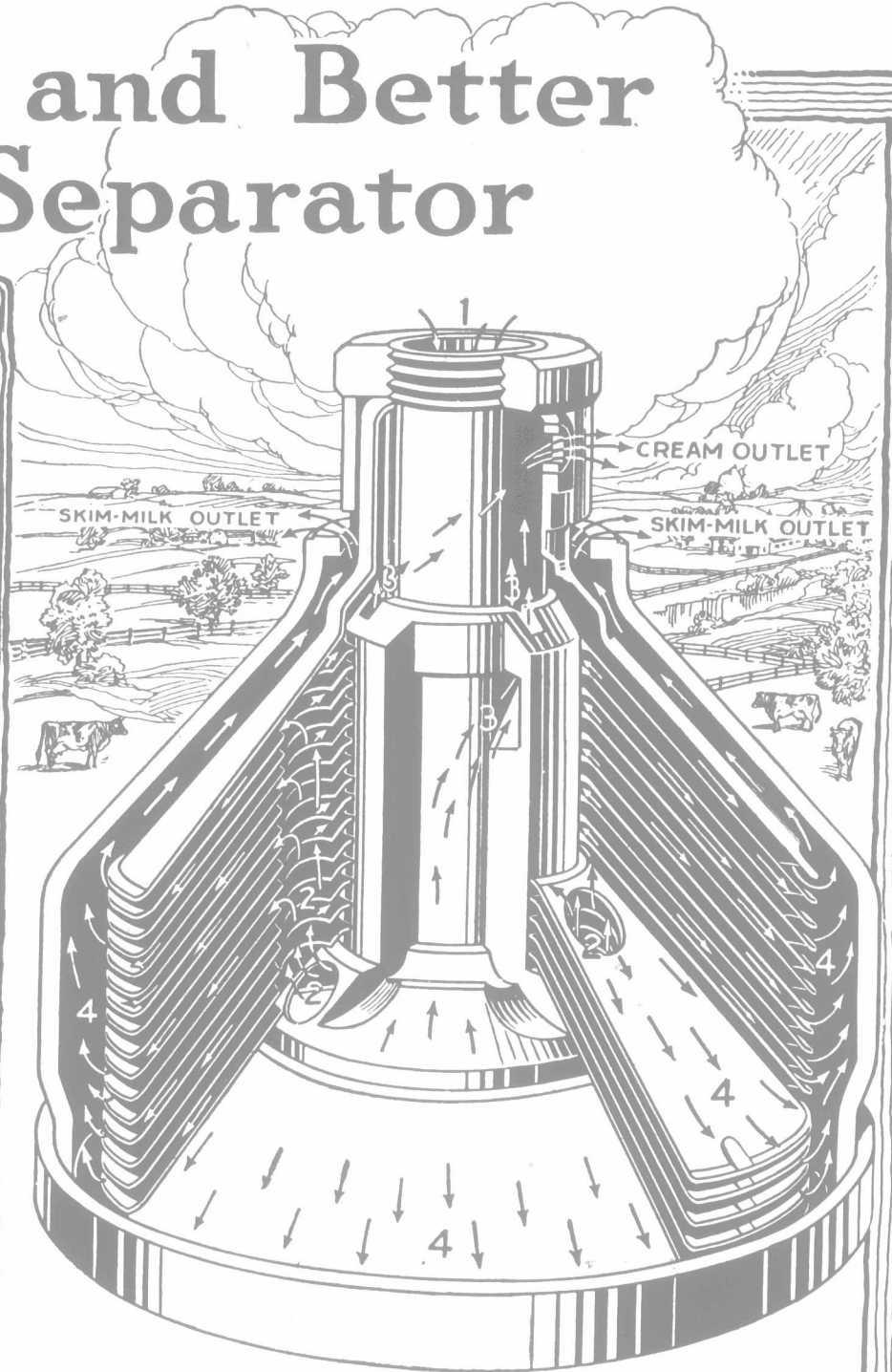
Every NEW DE LAVAL is now equipped with a Bell Speed-Indicator



The "Warning Signal" which insures proper speed and uniform cream

Because nine people out of ten turn the separator handle too slowly and because this always means loss of cream and cream of uneven thickness, every cream separator should be equipped with a reliable speed indicator.

Every NEW De Laval is now so equipped. The De Laval Bell Speed-Indicator is simple. It is accurate. It is reliable. There is nothing to wear out or get out of order. No matter who runs your De Laval, the "warning signal" will tell you when the speed is not right. You hear it and do not need to see it.



THE NEW SELF-CENTERING DE LAVAL BOWL

Some of the points of superiority of the NEW DE LAVAL

The New De Laval bowl design and the new method of delivering the milk into the discs give increased capacity without increasing the weight or size of the bowl or increasing its speed. The incoming whole milk is delivered beyond the cream wall, and this, in conjunction with the improved design of the bowl, makes possible closer skimming than ever before, especially under the more difficult conditions of separation, such as skimming a very heavy cream or separating milk below usual temperature.

The much lower speed of the De Laval than other cream separators (in most cases from one-half to one-third less) insures minimum wear of gears and much longer life of the machine.

The New De Laval concave-bottom, self-centering bowl is so designed and so supported by the detached spindle that it will run true and do perfect work even after long wear, the great importance of which every separator user will appreciate.

There are fewer discs in the New De Laval bowl, and all discs are unnumbered and are interchangeable.

By reason of its simpler construction and the fewer number of discs, the New De Laval bowl is more easily washed and cleansed.

All New De Laval are automatically oiled, every moving part of the machine being bathed in a constant film of oil. There are no oil holes anywhere on the machine, and the sight feed oil cup on the top of the frame provides for a constant supply of fresh oil.

The gears, pinions and other moving parts of the De Laval are exceedingly simple in arrangement, substantial in dimensions and always interchangeable.

The De Laval tinware is sturdy and heavily tinned, well suited for long and hard wear, and easy to clean.

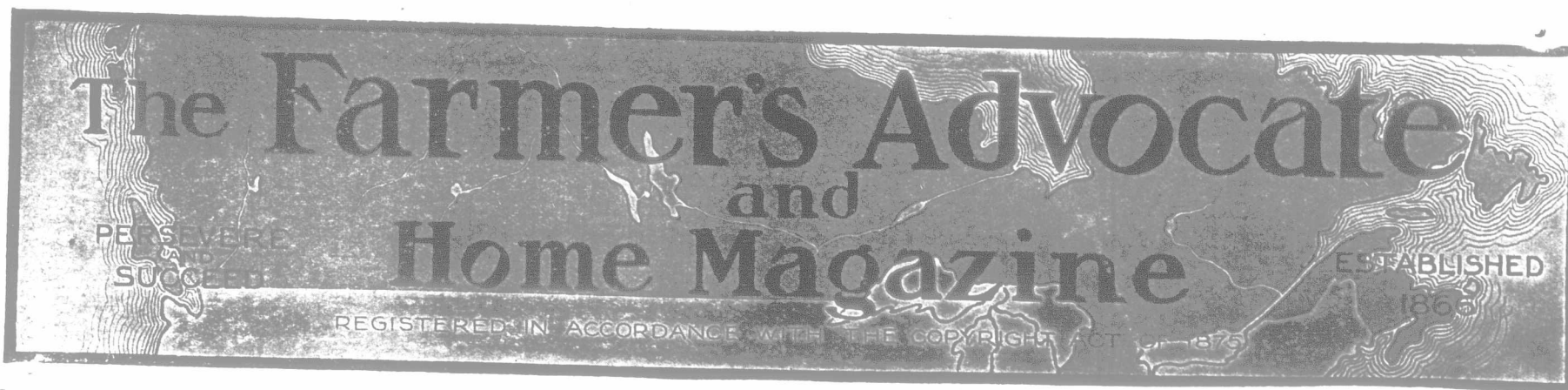
The low speed of the De Laval bowl, in combination with greater capacity for a given size and weight of bowl than is found in other separators and the automatic De Laval oiling system, make the De Laval the easiest cream separator to turn.

New Catalog will be mailed upon request

THE DE LAVAL COMPANY, Ltd.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA

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



L.II

LONDON, ONTARIO, FEBRUARY 8, 1917.

1272

EDITORIAL.

Have you seed for spring?

Buy the best to sow, it will prove most economical in the end.

Plenty of exercise and proper ventilation are essential for young and breeding stock.

Keep up the reading while the evenings are long. A few good books will brighten any home.

Promptness in all business transactions will help build up and sustain a good reputation.

Experiments have shown that the best time to apply barnyard manure is as soon as possible after it is made.

Someone will accuse the farmer of feeding his hens badly this winter so they would not lay and eggs would be high in price.

For a big country engaged in a big war and with a big and bright future ahead Canada has too many little politicians.

The cow, the feed and the care have an effect on the milk flow. How much? An article in this week's Dairy Department explains.

If you disposed of the brood sows last fall, save one or two of the best young sows out of that litter about ready to turn off.

Kaiser Wilhelm had a birthday recently, and it would doubtless be a good thing for the world if fate would decree it his last.

The man who keeps an abundance of stock rarely has a crop failure. Live stock makes the crop and the crop makes good live stock.

The best season to market horses is approaching. Are those you wish to sell in good fit? The feeder always gets well paid for feed necessary to fatten horses for sale.

Unless those who clamor for intensive farming can evolve a scheme to get a sufficient number of men on the land to work it intensively, they had better save their wind until after the war.

Canadian politics do not resemble a truce, but rather a desperate fight with one "charge" after another. Somehow most of the charges are broken by barrage fire before they reach the enemy's dugouts.

The early-hatched pullet is the one which will lay next winter. You will desire some chickens out in April. It is now time to get the incubator and incubator room in order. There may be some helpful hints for you in this issue.

Farmers complain that we do not have enough farmer representatives in parliament, and at the same time they proceed to elect lawyers, doctors, auctioneers and shopkeepers in their own constituencies because "the party" brings them out. Stop complaining! Do something different!

Many farmers are handicapped by being forced to house their live stock in unsatisfactory stables and out-buildings. Others have put too much money in elaborate buildings which make it that much more difficult to make the farm pay. There is a happy medium. We illustrate a few barn plans in this issue.

Barns and Stables.

The farmer in Eastern Canada in many cases has a large amount of money tied up in buildings. We discussed the farm house last week, and this week we publish a few barn plans. It costs more money to build now than it did a few years ago and besides most of those who put up new barns build more elaborately. There are a few essentials necessary, but on the whole we do not favor fancy stables for the average farmer. The overhead expenses are too high. They make it all the more difficult to make interest on investment. Of course, the man with plenty of money has a perfect right to keep his cows in a decorated cow-parlor if he chooses, but the average man, paying for land, must look to essentials and cut out frills. What are essentials? Sufficient size to accommodate the numbers of stock kept without crowding. Size above to hold the crops grown. Convenience in the matter of harvesting the crop, feeding the stock, and removing the litter. Plenty of light. Free circulation of air—good ventilation. Stalls and fittings handy for the purpose, comfortable for the stock, and not such as to obstruct the light. Good floors. The entire structure should be solid and permanent. Build well but not too expensively. The day of the dark, air-tight stable is past. So is that of the plank floor, (plank over cement is better than uncovered cement for horses). The modern stable should be compact. Every inch of space should be utilized. This makes it easy to work in. With it, however, there must be light and fresh air. A barn too wide is hard to fill. Look over the plans in this issue.

War Workers for the Fields.

The sound of the word "conscription", no matter how it is applied, seems to fall with a thud upon the ears of many. Doubtless most of those who object to conscription for the army are among those who would be directly or indirectly affected by such a move. On the other hand, however, there are many who would be enrolled who would be very pleased to see it. Those who object to conscription of wealth generally have some wealth, and those who would have no conscription of labor, either desire to do nothing or to do what they please. Some say that conscription cannot be applied to one or two without covering all three. The laboring man says the man with money must "pony up" if he must work for the government. And there the whole subject rests. But think a minute. Certain politicians believe that men enough for the front can be raised without enforced service. Money enough to fight the war may be raised by taxation and free-will offerings. But it seems utterly impossible to very much increase or even to maintain production on the farms without more organization. A census of Brant county, Ontario, is said to show that there is only one man to every 85 acres of land. We have heard the remark conservatively made time and again that taking the farming land of this province the man power would average little over one man per hundred acres of tillable land. Most farmers would produce more were it possible to get more help; but they cannot do much more than they are doing until help comes. Seeding is not a great way off. What will the acreage be? The West was behind with the fall work when the freeze-up came. The East was none too well advanced because of shortage of labor. Seed grain will be scarce and high-priced both East and West. Unless there is some concerted action there is a likelihood of a comparatively small acreage of cereal and hoed crops this season. Efforts are being made to get men in the United States, but at the most they cannot materially change the situation over any considerable area. At the same time that agents are trying to induce men from the country to the south to come over to Canada to work on farms,

it is said that a number of nervous and spineless young men are going from this country to the United States to evade their duty. Now what of it all? The national service cards have been turned in. One of the questions on them was: "Would you be willing to change your present work for other necessary work at the same pay during the war?" If it is important that foodstuffs be produced in larger quantity surely it would be good policy to send some of those who answered "yes" to the farms of this country. And what of the loafers?—Men who are still doing little work of any kind. Perhaps they would not be willing to work at the same pay. They might want more. Send them somewhere to do something toward the winning of the fight. For those who don't like the word "conscription" let us substitute "regulation", and let there be such regulations as will bring Canada's efforts up to the maximum in food production, in munitions making, in fighting forces. The men have shown a marvellously strong patriotic spirit in voluntary enlistment for the overseas forces. They have made a bigger sacrifice than those at home. We have the farms. The men on them for the most part have the proper spirit, but they need more help. There are men in Canada yet—thousands of them but they are not available as farm help. A little conscription to make them available might stimulate efforts in recruiting, in munitions making and in production.

Fresh vs. Rotted Manure.

One subject which comes up year after year and one which has caused a great deal of discussion, is the best method of handling barnyard manure. We are not going into it fully in this short note, but in the beginning wish to state again that for the average farmer operating on a mixed farming basis on land not too rolling or cold and wet in the spring, we have advocated getting the manure out as soon as possible after it is made. We have favored spreading it out on the snow in winter where the run-off is not a serious factor. Some have taken exception to this method, stating that it will not work out satisfactorily on their land. To such there can be only one answer: follow the system which does work out to best advantage. But the average man believes that well-rotted manure is richer in plant food than is fresh manure and so it is. In a paper read recently by Dr. Frank T. Shutt, Dominion chemist, before the convention of the Commission of Conservation, and reviewed in this issue, it was stated that for the ordinary farm crops fresh and rotted manure, applied at the same rate, have given practically equal yields. This statement referred to experiments carried on at the Central Experimental Farm, Ottawa. The manure was applied weight for weight. Readers should remember that a load of well-rotted manure would be heavier than a load of the same size of fresh, strawy manure, and as manure is generally applied by loads and not by weight this would have to be considered.

It is a fact that the same weights of the two classes of manure do not contain the same amounts of plant food. Weight for weight the well-rotted is richer in the constituents required by plants than is the fresh, but the fact remains that the fresh manure equalled the other in results. Dr. Shutt states that it is probable that the fresh manure inoculates the soil with desirable micro-organisms to a greater extent than does the rotted. These convert plant food held in the soil into an available form. Also greater warmth may be set up by the fermentation of the fresh manure which would benefit the crop in its early stages. In the ordinary farm rotation it does not pay to rot manure. With labor scarce winter seems the best time to haul out and spread manure on the average farm. "The quicker the farmer can get the manure into the land or on to the land the better, for it is never worth more than when first produced."

The Farmer's Advocate AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN THE
DOMINION.

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"The Woman—Bless Her."

BY PETER MCARTHUR.

Having just read Miss Marjory MacMurphy's book, "The Woman—Bless Her" (S. B. Gundy, Toronto,) I naturally want to make a few remarks, but am wondering if it will be entirely safe. The last time I dealt with a phase of woman's work I got "Paddy-whacks" "Lay over for Meddlers" and "Thimble-pie" and other forms of correction. I was told that "Fools rush in where angels fear to tread", but this time I can plead that the angels have preceded me and that I am merely following with cautious steps and an observant eye. Miss MacMurphy warns her readers that this is "Not as amiable a book as it sounds," but if there is anything disagreeable about it I failed to find it. It is a comprehensive review of woman's position in Canada, her opportunities and her possibilities. It is quite possible that the feature of the book that interested me was not the one that was uppermost in the author's mind when writing, but it fits in so well with some other things that I have been observing and thinking about that I wish to call attention to it. It is plainly stated that "The purpose of this book is to point women towards the proper recognition of their work in war and reconstruction." This theme is admirably worked out in these essays. Woman's work is reviewed in all its phases. Especial emphasis is laid on the fact that the care of children and home-making are of the first importance and worthy of the most careful study and training. It is also satisfactory to note that Miss MacMurphy is not one of the city women who think that Canadian women should do outdoor farm work like the women of the old countries. She realizes that they have enough to do in caring for their homes. But the sentence that arrested my attention was this: "These women, whether they are aware of it or not, are to some extent responsible for the strengthening of Canadian unity." As Canadian unity is of the utmost importance at the present time when politicians are apparently doing all in their power to create discord, the influence that the women may have may be of great value, in spite of the fact that they have no votes.

The war has put democratic institutions to new tests and there are many who fear that a triumphant militarism will result from the struggle. Fortunately this danger has been averted in a way that no one could have planned or foreseen. Anyone who is at all familiar with existing conditions throughout the country has observed the tremendous influence of the letters that are being written home by the boys at the front and on their way to the front. Although these letters breathe a determination to carry through the work in hand they are educating the people to the fact that the war

is due to rampant militarism and that when this war is ended we must have no more of it or of the forces that make war possible. The indications are that instead of war establishing a powerful centralized government it will result in a wider freedom. And this will be achieved by a spontaneous democratic development which is stimulated by the thousands and hundreds of thousands of letters from our soldiers that are coming to Canada every week and reaching every part of the country. This indicates a new phase of democracy which makes the future outlook more hopeful. If the people can bestir themselves without leaders, the lack of leadership which many are bewailing at the present time may be the best thing possible. In reading Miss MacMurphy's review of the present activities of women I seemed to recognize another force similar to that of the boys at the front that may do much to shape the future of the country—a truly democratic force that concerns itself with the development and welfare of the people rather than with their political ambitions.

Miss MacMurphy states: "Two hundred and fifty thousand Canadian women belong to national organizations; three hundred and sixty thousand are in paid occupations; between five and six thousand are graduates of women's colleges." It is true that this is only a small proportion of the 2,186,000 women between the ages of fifteen and eighty years of age, but the significant thing is that they are organized at all. A few years ago there were no women's organizations except for church work, and they worked largely as separate bands, but the organizations of to-day are Dominion wide and so thoroughly organized that they have developed systems of politics of their own. The author remarks that in some cases "A few elected leaders, and a few others who establish an unexplained influence, decide what is to be done." That sounds wonderfully like the work of the steering committee of a political party and suggests bossism. But that is only a minor blemish. These women's organizations concern themselves with all sorts of matters from missionary work to home-building and the effect is bound to be beneficial. It is well known that the best cure for political feverishness is plenty of work to do, and in throwing themselves into all kinds of work with organized force the women are doing something and may do much to counteract the baneful influences of sectionalism as developed in our political campaigns. "Women's organizations have helped to develop social feeling and friendliness, mutual understanding and sympathy amongst women. They will continue to do so if they resolutely determine to remain democratic and promote democracy. Such books as this one, so critical and so informing will do much to keep these organizations on the right track and Miss MacMurphy has done a real service not only to women but to the country at large in studying this question and setting forth her conclusions.

One of the best features of the book is the sympathetic study made of the country woman. Miss MacMurphy has little but praise for her sister on the farm as the following quotation will show.

"In all probability the finest expression of patriotism in Canadian literature was written by a country woman, Miss Agnes Kingston of Watford, Ontario. It is an epitome of the country woman's character, quiet, steadfast and natural, a surety for affection and kindness. Canadians should read it carefully, for its dignity, simplicity, deep feeling and intelligent meaning are the best exposition which can be given of the women of Canadian country districts.

"My love for Canada is bound up with my respect for the commandment—'Honor thy father and thy mother'. My father and mother hewed out a home for themselves in Canada, they are laid at rest here and I ask that my days may be long in the land.'"

I am glad to have the opportunity of quoting this sentiment of the late Miss Kingston for it has a point of view that every Canadian should maintain in the present time of trial. I am glad to know it is being taught to school children both in Ontario and in the West, and at least one inspector has had it printed on cards to be hung in all the school rooms under his care. No finer expression of patriotism could be impressed on the minds of our children.

Nature's Diary.

A. B. KLUGH, M. A.

In our discussion of the animal mind we come next to the large group Arthropoda (derived from two Greek words meaning "jointed feet") to which the Grayfishes, Crabs, Lobsters, Insects, Spiders, etc. belong. Upon the forms of this group a large amount of very valuable work has been done.

In order that we may understand the significance of the actions of the animals of this group it is necessary we have some knowledge of the types of nervous system they possess. This consists of a nerve cord which runs the whole length of the animal just beneath the abdominal wall, and on which there is a ganglion, (a group of nerve cells) for each segment, and two larger ganglia in the head, the larger of the two often being termed the "brain".

In the Crayfish each ganglion is a reflex centre for the segment in which it lies, and regulates the movements of the appendages of that segment. It is absolutely essential that we have a clear idea as to what is meant by a reflex. By a reflex we mean an action which is performed without involving the higher centres, such as the brain,—an action which is performed as it were automatically. In many of the lower forms we find that the great majority of actions are reflexes and in

man the reflexes are very numerous and important. We may illustrate a reflex in the following manner: Suppose you are standing with your back to a hot stove and you place your hand behind your back and bring a finger in contact with the stove. What happens? Do you think, "My finger is touching the stove and is being burnt; I must pull it away" and then remove your finger? Hardly! You jerk your finger away without thinking at all. As a matter of fact you jerk your finger away before you really are conscious of any pain, and an instant later you feel the pain. In this case it is the centre in the spinal cord which has acted and caused the withdrawal of your finger, then the sensation of pain has been conveyed to your brain. The involuntary blinking of the eyes when an object is thrown at the face is another example of a reflex.

There is this further and important point which we must notice about a reflex action—it requires an outside stimulus to call it forth. In this way it differs markedly from what we may term a voluntary action the stimulus for which may originate in the brain of the organism performing it.

While we find reflexes lower down in the scale than in the animals we are now considering, they are more perfect and far more readily investigated in these forms which are markedly segmented.

The next point we have to consider is the sensory equipment of the Crayfish, and here I shall briefly summarize the facts without giving the experimental evidence in detail. The sense of sight is very poorly developed, being limited to the perception of large moving objects and to distinguishing between differences in light intensities. Touch is the main sense, and the animal is sensitive to contact stimuli all over the surface of the body. This may at first sight seem strange in view of the hard covering of the body, but is readily understood when we know that there are numerous pores opening through this covering, that through these pores hairs project and that at the base of these hairs are nerve cells. The sense of touch is especially well developed on the mouth-parts, and along the edge of the tail-fin. The sense of hearing is entirely absent. In the case of animals which live in the water it is hard, if not impossible, to distinguish between the senses of smell and taste. Even in ourselves these senses are very closely allied. The sense of smell is brought into play by very fine particles of a substance floating in the air, these fine particles dissolving in the moisture of the mucous membrane of the back part of the nose, while the sense of taste is aroused by substances in solution coming in contact with the taste buds of the tongue. We see that in order for either of these senses to function we must have the substance in solution. Now in the case of an aquatic animal all substances reaching the sense organs will be in solution, and the only difference will be that in one case ("smell"), the substance will be farther off than in the other case, ("taste"). We therefore do not use the terms smell and taste in the case of these animals but group them together under the name "chemical sense." The chemical sense of the Crayfish is well-developed, and resides mainly in the little feelers, antennules, and in the mouth-parts.

That Crayfish can learn is shown by experiments in which the animals were placed in a box, with an exit which divided into two paths, one leading to the water, the other to a dry chamber. The first trials gave fifty per cent. right and fifty per cent. wrong, then the number right increased as follows, 60%, 75%, 83%, 87%, 90% and 98%. Further it is interesting to note that the right path was remembered for two weeks.

(To be Continued.)

THE HORSE.

Size Up the Stallion Now.

With the falling off in importation, necessitated largely by the war, the number of really high-class, draft stallions in Canada has not increased very fast during the past two or three years. The comparatively slow sale for geldings, fillies and in fact all classes of horses has had an effect, also, in easing up horse breeding. Indications point to an approaching change in the situation, and the demand for the right kind of heavy horses may be stronger than a good many people believe before many months. At any rate, those contemplating the purchase of a stallion for this year's service should be on the lookout now. Size and substance, combined with quality, are the things to look for in a stallion. These are what the wide-awake breeder has his eyes open for, and the stallion owner must, of course, count on pleasing the breeder if he hopes to gain patronage and do the horse-breeding industry most good. Very few little horses, those under 1,800 pounds in weight, have made a name for themselves as sires of draft horses. As a general thing, the breeder prefers a horse which will weigh from 1,900 to 2,100 pounds or more, provided he has quality with size. The draft type must be pronounced. The market pays a premium for the gelding from 15.3 to 17 hands high and weighing from 1,650 to 2,000 pounds. The breeder must keep this in mind when mating his draft mares with draft sires and consequently he looks for size in the sire, and so the man looking to purchase a sire will be well advised if he pays considerable attention to size, never forgetting quality. Even for the agricultural type of horse big sires are necessary. As a general thing, this type is bred from the smaller farm mares. The best agricultural horses stand from 15.2 to 16.2 hands high, and weigh around 1,400 to 1,600 pounds, the latter weight being rather heavy for what is generally considered an agricultural horse. Then there is the third class of chunks,

weighing around 1,200 or 1,300 pounds, but these do not command the market price obtained for horses of either of the other classes, and the breeder who desires to make most out of his operations is looking for the drafters. The best "chunks" usually come from the best sires of drafters, only the sire is to be mated to a different type of mare.

The right kind of draft stallion should weigh upwards of 1,900 pounds, in good breeding condition. The bigger the better, provided he is well coupled up with a strong back and deep middle, nicely-turned croup, heavy muscling, strong, clean, flat, flinty bone, and the fine, silky feathering which denotes quality. Horses which measure up to all these qualifications are not plentiful, and the wise buyer will buy early. Furthermore, the careful breeder will look around early in the season and select a horse with which to mate his mares later on.

To Prohibit Unsound Stallions in Britain.

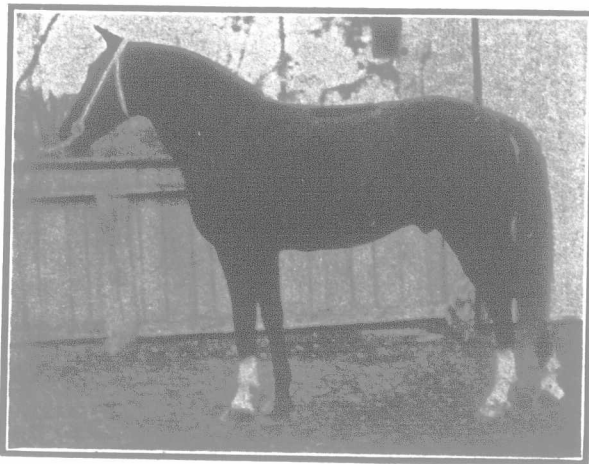
The Clydesdale Horse Society of Scotland, at a recent meeting, made some suggestions for clauses for a draft Bill designed to prevent unsound stallions travelling for stud purposes in that country. The British Board of Agriculture and Fisheries, with the co-operation of the Board of Agriculture for Scotland, is framing a Bill destined to prohibit unsound stallions from travelling for service or being exhibited for stud purposes without a license. The Board desires to get unsound horses off the road entirely. There seems, according to "The Farmer and Stock Breeder" a reason to believe that the intention is to refuse a license to horses which are (1) affected with any contagious or infectious disease, (2) affected with any disease or defect rendering the animal unsuited for service of mares, (3) any animal which, if used for stud purposes, is calculated to injure the breed of horses, and (4) any horse which has been proved to be inadequately fruitful.

Some breeders urged that it was unreasonable that a horse which had passed the veterinarian for soundness until he had reached the age of seven years should be turned down if he developed defects after that. The council of the Clydesdale Association agreed that such a Bill would be in the interests of horse breeding.

Keep the Best Breeders.

A number of farmers in Eastern Canada have more horses than they require to do their farm work. Sales have not been made just as readily as they would like during the past year or more. Many of them have been holding on, and some have been selling at lower

prices. Feed is scarce this winter and more sales are likely to be made. The market is brightening up and there are indications of a demand, partly from Western Canada and partly local. In selling under such conditions many part with valuable brood mares which should be retained on the farm, because they get a slightly higher price for them than they are offered for geldings or other horses in the stable. We have heard farmers say that they made money by keeping the old horses and selling the younger animals, because the older horses would do more work than the colts and the colts sold for higher prices than the older animals would bring. This may be true in part. It generally pays to keep the older animals in preference to geldings just coming into their prime, but with valuable brood mares and the best of the breeding fillies coming on it would seem, for the average farmer, safe policy to retain these and to sell



Peter Wilton.
First and champion Standard-bred stallion, Guelph.
Owned by Dr. T. H. Hassard, Markham.

some of the other horses as surplus stock, even though the immediate cash returns were not so high. There is an old saying that it is safer to walk when everyone else runs and to run when all others walk, and it may apply right now to the horse industry. Those who lay their plans to breed good, big drafters should not be disappointed in results, but remember we are not advising the indiscriminate breeding of all kinds of nondescript mares. Conditions are such that the horse market will pay a good price only for good horses, and the breeder must remember this.

LIVE STOCK.

England's Pig Keeping Increased.

The British Government has decided to increase pig keeping, and to encourage the fattening of baconers and the making of porkers in towns and suburban areas. An official order has gone forth ordering councils to waive by-laws which prevented townspeople from keeping pigs within 100 feet of domiciles. There is a big rush all over England to take advantage of this, and the Government, also, is formulating a scheme for the house to house collection of domestic table leavings and waste with which to feed the pigs. The Government, too, is issuing leaflets and instructions as to how to feed pigs. Small holdings are to have their styes refitted and rehhabited; allotment (garden) holders are to have piggeries on their "little lots," and any old stables and outbuildings are to be converted into homes for the porkers so long as they conform to the sanitary regulations. In London alone there are 50,000 people wanting to feed porkers; in Lancashire there is a good 100,000, and in Yorkshire quite 200,000 men in towns and in country villages are willing to follow the country's call for pig reform. Now the trouble is to provide everyone with a pig, but the respective breed societies and the agricultural co-operative societies are getting a move on, and our pig stocks instead of wavering will increase. Agricultural England is awakening with a vengeance. Great is the name of Prothero!

Following is an instruction sent out by our Board of Agriculture as to what to do:

"All pig-keepers, notwithstanding the present high price of feeding stuffs, are urged to make every possible effort to maintain the supply of pigs. Sows with access to shelter will pick up a considerable part of the feed they require out of doors. Where grass is scarce, a few swedes or mangolds, together with a pound or two of beans or finely ground palm-kernel cake, will serve to carry most sows through till farrowing time. For fattening pigs, 3 pounds of swedes, boiled, are equivalent to one pound of cereal meals or offals. Small or blemished potatoes are twice as valuable as swedes for feeding purposes; but these should be reserved for the later stages of fattening. To supplement roots, the cheapest and most suitable feeds at the present time are finely ground palm-kernel cake, bean meal, maize gluten feed and dried grains. Later on clover, sainfoin and lucerne will be available in place of roots, and small holders should consider whether they can find space to add these to their crops. Edible domestic refuse should be reserved as far as possible for pig feeding. The pig pail should be kept free from brine, lemons, corks, tins, wire and other injurious substance."

ALBION.

The Source, History and History-makers of the Hereford Breed.

Over two centuries and one-half ago on the hills and meadows of Herefordshire, England, there grazed a strain of cattle, native to that commonwealth and, some claim, native to the Island as a whole. We first read of them being wonderful oxen, but as the decades and centuries rolled by some far-seeing progenitors of the present race of Englishmen bred more for the butcher than the plow, with the result that now, and for years past we have had a breed of cattle making fast friends in practically all of the live-stock breeding countries of the world; a breed of cattle that has wrought a marvellous change in the appearance and usefulness of range cattle all over North America; a breed of cattle that stands at the very front as grazers and producers of beef. There is a certain point in the history of all breeds where a cloud of obscurity blots out the facts of the beyond, yet this remoteness and primitiveness of ancestry tends only to establish the Hereford in more popular favor, for whatever they were in the beginning, that beginning was so far back as to preclude any possibility of an undesirable character cropping out to vitiate the results of the careful breeder. The open, pleasant, cheerful countenance, the full eye, the deep chest, the smooth, well-fleshed shoulder, the broad, deeply-fleshed back, and the white face, which characterize the Hereford to-day, were attributes which appealed to Marshall when he described the breed in 1788, almost one hundred and thirty years ago. At the same time his description reads still further: "Flank large, flesh everywhere mellow, soft and yielding pleasantly to the touch, especially on the chine, shoulder and the rib; hide mellow, supple, of a middle thickness and loose on the neck and huckle; coat neatly haired, bright and silky; color a middle red with a bald face, characteristics of the true Herefordshire breed." During recent times the chief criticism of the Hereford has centred around the excessive throatiness and lack of proper development of the rump and hind quarters. However, the Americans relegate considerable credit to themselves for improvement in these regards, but we shall deal with that later. We are getting ahead of our story.

Whence the White Markings?

The controversy of one hundred years has failed to divulge the exact source of the white markings, particularly the white face of the Hereford. There is little doubt but what the original cattle of Herefordshire were red, and similar to those of Devon and Sussex. Wales, which borders on Herefordshire, had white cattle, feeding on its hills and marshes, and early writers express the opinion that the intermingling of breeds at the border produced the characteristic white face of the modern Hereford. This appears to be the most logical of all the arguments advanced. Lord Sculmore, who died in

1671, is authentically reported to have introduced some white-faced cattle from Flanders, but, if he did, it is considered that the effect of such would be more to improve or fix the type of that time than to alter it to any considerable extent. There appears to have been periods of transition, during which times the coloration of the breed underwent considerable change. Marshall, in 1788, wrote of the "color a middle red with a bald face, characteristic of the true Herefordshire breed," but when Eyton published the first Herd Book in 1845 he grouped Herefords into four classes, viz., those with mottled faces, light gray, dark gray, and red with white faces. Importations to America began in earnest about 1840, a few having come out previously, and this trade, it is said, did much to eliminate all but the white face, for the buyers from this side of the ocean did not favor the mottled colorings. About twenty-five years after the first Herd Book was published all the colors but the one we know to-day had become extinct.

Pioneer Breeders and Improvers.

So long as the Hereford breed remains extant so long will the names of Tompkins, Galliers, Tulleys, Skyrmes, Haywoods, Yeomans, Jeffries, Price and Hewers be indelibly written across the pages of its history. Starting with common cattle, the earliest of these men initiated a movement which culminated, not in their day but later, in a breed which sprang to eminence in their native land, and two hundred years after the improvement had begun, set a standard of high, auction-sale prices in America, over 5,000 miles from the place of their conception. The pioneers had only their own ideas to guide them, but they builded well with the material at hand.

From 1738 to 1815 the Tompkins family were influential in molding Hereford type. Richard Tompkins, who died in 1723, left to his son Benjamin, "the elder," a few cattle among which was the cow, Silver, and her calf. A son of his, also known as Benjamin "the younger," continued the work of his predecessors, placing considerable emphasis on early maturity, fineness of bone and character, but he was no stickler on color. His herd was ultimately dispersed on Monday, October 18, 1819, when 28 breeding cattle averaged £149, or approximately \$750. Benjamin "the younger" is reported to have bred his cattle very closely, using only bulls of his own breeding. Perhaps his best sire was the Silver bull (41), which, it is thought, descended from the cow Silver, bequeathed by Richard Tompkins to his son Benjamin "the elder." A contemporary of Benjamin Tompkins "the elder" was William Galliers, who died in 1779. The two breeders used much the same stock in building up their herds. It was alleged that William Galliers introduced a white-faced bull from Yorkshire to

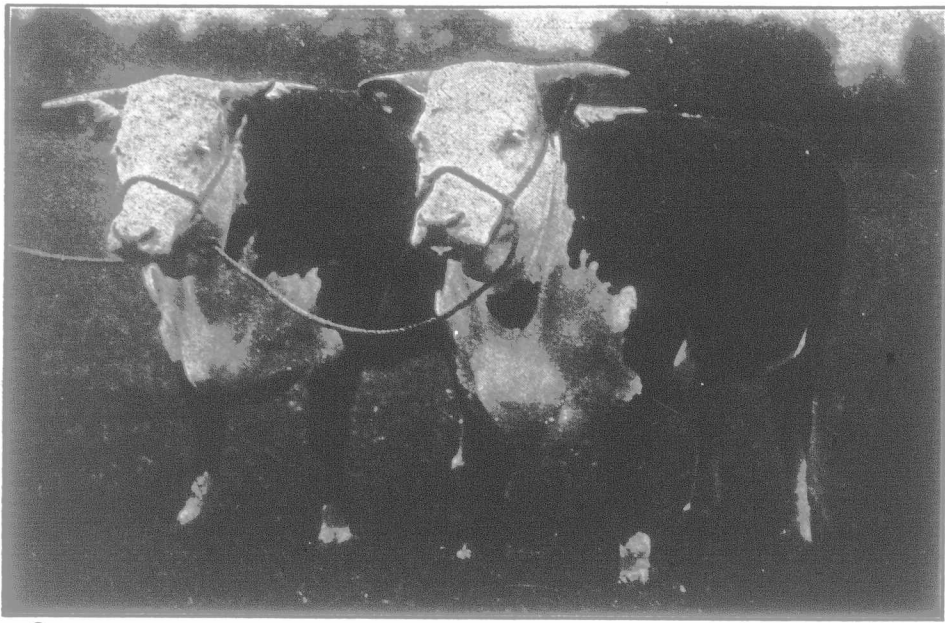
use on his cattle, but history bears no testimony to this statement. Upon his death the herd went into the hands of his son John.

Most prominent amongst the early nineteenth-century breeders were Price, Hewer and Jeffries. John Price, of Ryall, was born in 1776 and was a close friend of Tompkins "the younger." Many of the Price cattle, it is said, came from the Tompkins herd. Toby Pigeon was one of the most noted cows owned by Price, and it is believed that the majority of his herd, dispersed in 1841, sprang from her. When nineteen years old she had produced nineteen calves, having by chance bred as a calf. At three and four years of age she produced twins. John Price frequently challenged other breeders to show their stock against his own; this being a favorite way with him of settling disputes before the modern and more satisfactory method of show-ring competition came into vogue.

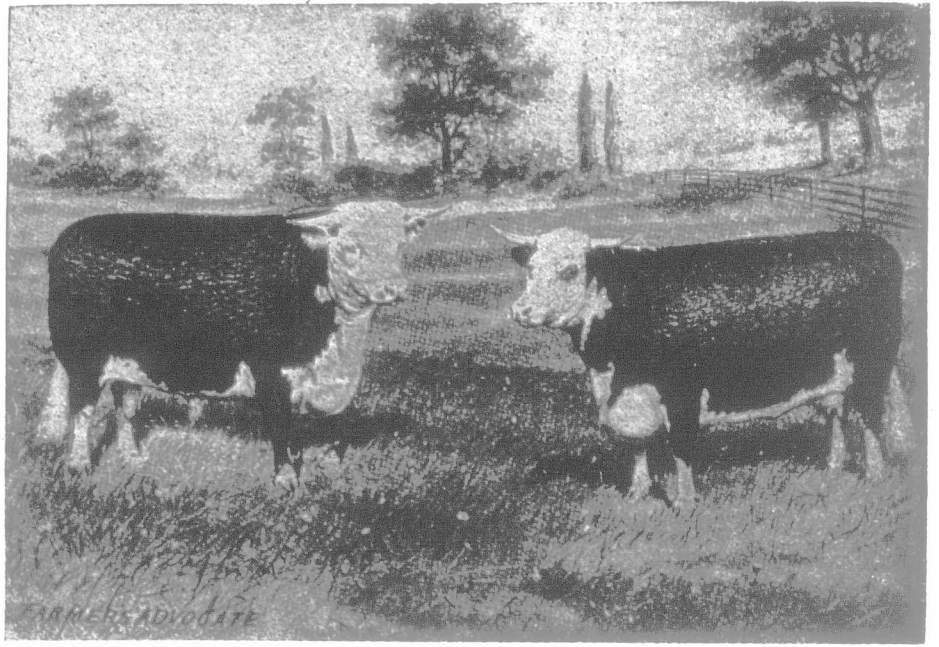
John Hewer, who lived from 1787 to 1873, was one of the later of the pioneer breeders. His four favorite strains were Countess, Lofty, Red Rose and Fanny. Besides breeding excellent cattle he influenced the type of his native country to a very remarkable extent by hiring out some of his good bulls. The General, which weighed 3,640 pounds when six years old, was let for four seasons at £84 per season; his sire, Governor, was let for £100 per season; Favorite and Defiance were each let for £200 per season. At times he had as many as thirty-five bulls out on hire. All told, he got £640 18s. for letting Sovereign; £710 for Lottery; £645 11s. for Lottery 2nd, and £525 for Defiance. Following are a few bulls bred by him which are notable among the great Hereford sires of their time: Sovereign (404), Lottery (410), Chance (355), Defiance (416), Lottery 2nd (408), Young Favorite (413), Wonder (420), Byron (440), Fitzfavorite (441), and Conqueror (412). There is seldom to be found a strain of Hereford cattle to-day which are not traceable to some of the stock bred by John Hewer.

Thomas Jeffries who lived between 1796 and 1843 began with the Hereford stock previously bred by his family, and infused into these cattle blood from the Hewer herd, hiring from that famous breeder the bulls Sovereign, Lottery, Byron and Fitzfavorite. Remarkable success was achieved in this way and many famous animals were produced, the greatest perhaps of which was Cotmore (376), by Sovereign.

It seems unnecessary to mention all the contemporary breeders. Some of the families are now extinct, while others are still breeding Herefords and the descendants are as keen and active as their progenitors. However, there is one herd, owing to the influence it has had upon the breed in America, we should discuss at this time.



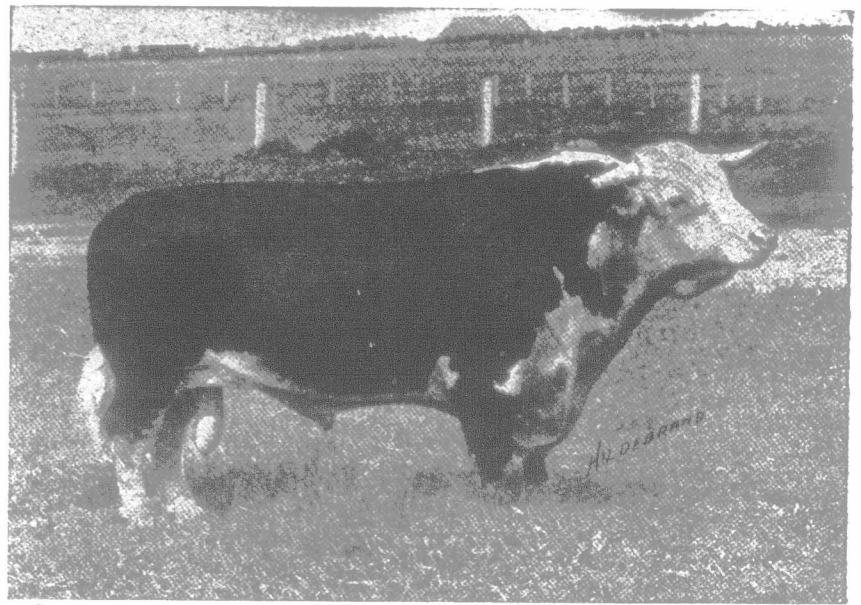
Two Smithfield Royal Winners.



Dale and Dolly 5th, Champions at Chicago, 1900.



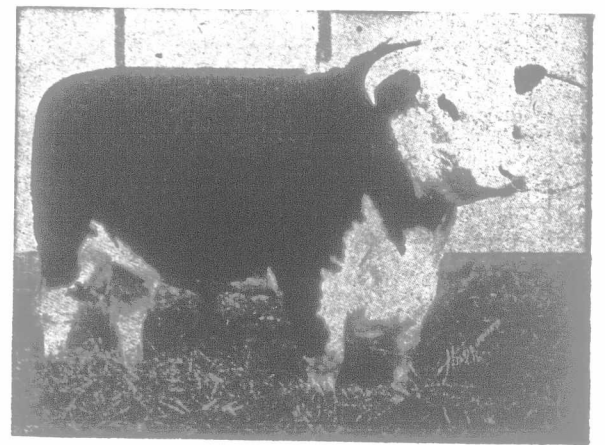
Gainsborough; Champion at the Royal in 1915.



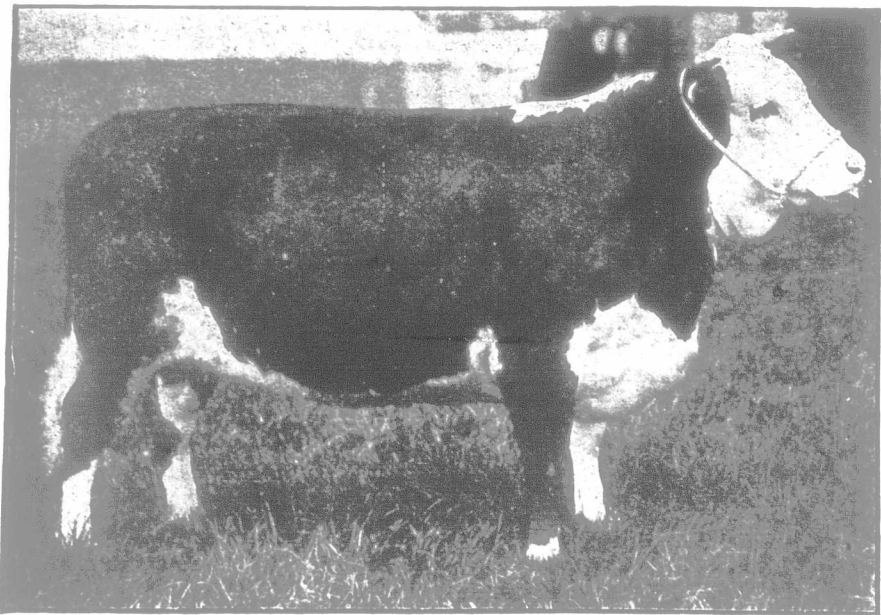
Perfection Fairfax, "the King of Hereford Sires."



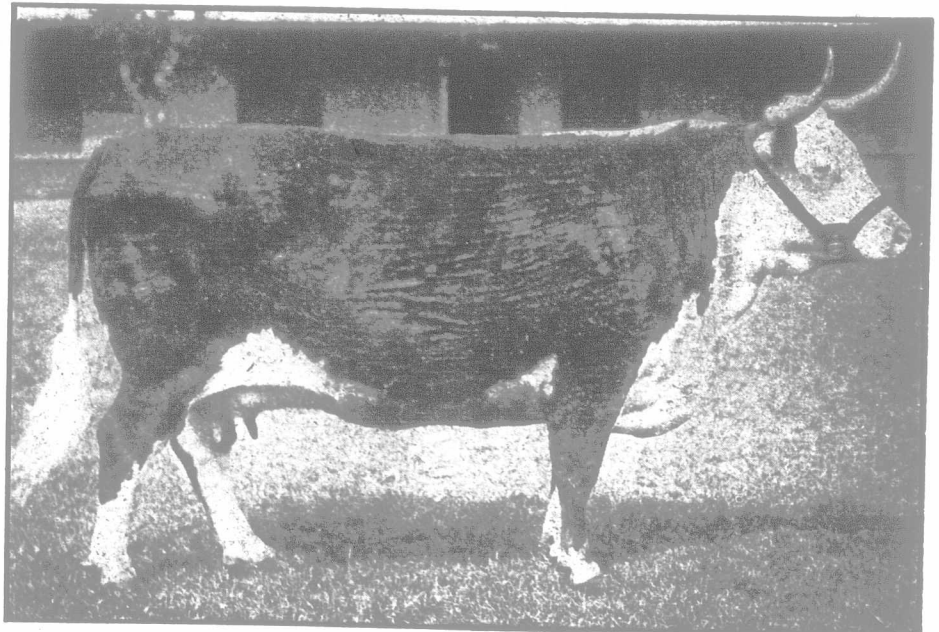
Herefords on Pasture at Home.



Superior Fairfax.
The \$10,000 son of Perfection Fairfax.



Stanway Gem, a Champion in England.



A Winner at Dublin in 1916.

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T. J. Carwardine, Stocktonbury, founded a herd in 1863 by the purchase of cows and heifers by Sir Thomas (2228). Many of the good bulls of the time were used in this herd, and some were bred on the place. The chief individual in this herd, about which our interest centres, is the bull Anxiety, by Longhorns. Anxiety was imported to America by Culbertson, of Illinois, and proved to be one of the most prepotent bulls ever introduced into the United States, but he died too young to be of the most use to the breeders of that country. Anxiety 4th, by Anxiety, made the herd of Gudgell & Simpson, of Missouri, who championed the Anxiety blood in America before its virtues were appreciated, and who eventually disseminated throughout North America so much Anxiety blood that traces of it are now to be found in almost every herd. The most noteworthy sire in the Stocktonbury herd, so far as English cattle are concerned, was Lord Wilton. He was knocked down at the dispersion sale to Mr. Vaughan, to go to America, at 3,800 guineas (approximately \$19,000), but he was never settled for and was sold again.

Among the important Hereford bulls which influenced the type and character of the breed to a considerable degree in England during the past century were: Sovereign (404), Old Wellington (507), Old Silver (540), Waxy (403), Cotmore (376), Lottery (410), Chance (348), Sir David (349), Walford (871), Sir Benjamin (1387), Sir Thomas (2228), Horace (3877), Winter de Cote (4253), and Lord Wilton (4740).

Herefords in America.

Hereford history in America has been made chiefly in the United States, and there the Anxiety cattle have been crowned with a great measure of success. In 1817 four head, one dying in transit, were imported to Kentucky. In 1825 a male and female were donated to the Massachusetts Society for the promotion of agriculture. In 1840 twenty-one cows and heifers and a two-year-old bull were brought to Albany, N.Y., by W. H. Southam and Erastus Corning Jr. During 1840, 1843, 1852 and 1855 other importations were made into the Eastern States, but neither the Kentucky, Massachusetts nor the New York introductions rose to eminence. In 1875 T. L. Miller, of Beecher, Ill., a man of wealth and influence, became interested in Herefords and did much to popularize the breed and impress its merits upon the people of the Western country. He showed at the fairs and demonstrated the adaptability of his cattle to the ranches of the West. Other people became interested and ultimately successful breeders; among these may be mentioned: C. M. Culbertson, of Illinois, and Earl, Fowler and Van Natta, of Indiana. Following these came Clark, Henry, Morgan and Leigh, of Illinois; Southam, Gudgell & Simpson, Harris and Funkhouser, of Missouri; Stannard, of Kansas; Hooker, of Ohio; Stuart, Nave and Graves, of Indiana; Curtis and Giltner, of Kentucky. Thos. Clark, of Illinois, who judged the Herefords at the Canadian National Exhibition at Toronto in 1916, is one of the pioneers, and reputed to be the oldest active breeder of pure-bred cattle in America at the present time. He was a persistent advocate of the Anxiety blood in those early days, but his bull was only a great heifer getter and thus failed to make as much impression on the breed as it otherwise would have done. To Gudgell & Simpson is due the credit for raising the Anxiety Herefords to the dominating position they attained in the United States; Anxiety 4th was the bull that made their herd. At the celebrated Shadeland Farm, in Indiana, Adams Earl was achieving excellent things with Lord Wilton blood, having imported three of his good sons, viz., Sir Bartle Frere, Romeo and Prince Edward, the former being the most successful sire. Garfield, a Royal winner, was imported to cross on the Lord Wilton females, and The Grove 3rd, a famous bull, was purchased, at eleven years of age, from Mr. Culbertson at £1,400. Other celebrated sires of early Hereford times in the United States were Archibald, Rudolph, Success, Winter De Cote and Tregrehan. There was keen rivalry between the respective owners of these noted bulls, and each sought to make his favorite strain the leading factor in the Hereford breeding fraternity.

In 1860 the late F. W. Stone, of Guelph, Ont., made an importation from England, and for several years did much to arouse enthusiasm in Hereford breeding in Canada. Prof. Brown, of the Agricultural College, Guelph, made an importation in 1884 including the bull Conqueror, 7510, purchased from her late Majesty Queen Victoria, at 500 guineas or approximately \$2,500. Conqueror was bred by Carwardine at Stocktonbury and was by Lord Wilton. A few excellent heifers were included in this shipment. The breed's interests were promoted, to a large extent in the Dominion, by the late Hon. M. H. Cochrane, Hillhurst, Quebec. In September of 1885 his herd numbered over 100 head, of which 80 were cows, heifers and heifer calves. Ten of these females imported in 1883 were by the famous Lord Wilton. The cross of Cassio, by the eminent sire, The Grove 3rd, on Lord Wilton heifers proved a very successful one. A herd at Port Cardinal, Ont., owned by Mr. Benson, was founded in 1880. Rambler 6th by Chieftain 4427 here proved a successful and prolific sire.

Again looking up the thread of history in the United States, it might be said here that Anxiety 4th, through an intensification of his blood in his offspring, improved the rumps and thighs of the Hereford, as it was being imported from England at that time. His greatest son was Don Carlos which, mated with North Pole heifers, produced some of the best bulls of their time, viz., Beau Brummel, Lamplighter, Druid, Andrew, and Western Eagle. Beau Monde and Beau Real were two Anxiety 4th bulls which sold at auction in 1884 at \$1,000 and \$300 respectively. The latter developed into an invincible show bull and getter of champions. Prime Lad,

a famous champion and prepotent sire, was by Kansas Lad Jr., a grandson of Beau Real. Distributer, the sire of Harris' high priced and celebrated Repeaters, was by an Anxiety bull, Disturber and out of Elfin Lass by Kansas Lad Jr. Similar blood is found in Standard, doing service in the herd of Cyrus A. Tow. Standard is by Bonnie Brae 8th, an intensely-bred Anxiety bull, and out of a granddaughter of Kansas Lad Jr. The Prime Lads came from a cross of Kansas Lad on a daughter of The Grove 3rd.

Much interest at the present time centres around the Perfection Fairfax strain. The celebrated Dale was bred by Clem Grover, of Indiana, and was full of the blood of the famous Shadeland herd, owned by Adams Earl. His sire was Mr. Clark's Peerless Wilton. Perfection was a son of Dale, and a more popular champion than his sire. After passing through several hands he reached the herd of Gilbert N. Hoxie at the high auction price of \$9,000 and here he sired Perfection Fairfax, Warren T. McCray's "King of Hereford sires," shown on the adjoining page, in field condition at 13 years of age. One hundred and fifty of his sons and daughters sold for \$150,000. This bull cost his present owner \$5,000. Perfection Fairfax, crossed on Anxiety females, has wrought wonders. Superior Fairfax, the \$10,000 bull at McCray's sale in May, 1916, was from a dam by the Anxiety bull Beau Donald 33rd, a son of Beau Donald.

This brings us up to the present time. Now, a few words more about the breed.

America's Type.

There is considerable controversy, at times, arising out of the claim Americans put forward that they have improved the breed. The early English Herefords were exceedingly large, but coarse in the rump and weak in the thigh. Old Country breeders claimed that the most expensive cuts of meat were to be found on the back and loin, and there their cattle were superior. The grasses, feeds and climate of Britain appeared conducive to great scale, but the American-bred Herefords have been reduced somewhat and improved behind. Importations are not so large or so necessary in these times, but the consensus of opinion is that the happy medium should be aimed at and cattle, most consistent with the demands of this country and the markets, produced by those constructive breeders who mold type for the present and future generations.

Commercial Fertilizers and Canadian Agriculture.

Recently, in Ottawa, before the Commission of Conservation, Frank T. Shutt, D. Sc., Dominion Chemist, gave a very comprehensive paper on the question of commercial fertilizers and their place in the agriculture of Canada at the present time. Space will not permit of a reproduction of the paper in its entirety, but we shall attempt to abridge it, setting forth the salient points for the benefit of our readers who are interested in the question of soil fertility and the production of farm crops.

Owing to the fact that the use of fertilizers of this kind to-day is restricted to certain areas devoted to potatoes, sugar beets, tobacco, market garden, or other "money" crops, and, further, that experiments conducted by the Experimental Farm System in this connection, and from which reliable conclusions might be drawn, have been carried on at a comparatively small number of points in the Dominion and over a comparatively short period of time, Dr. Shutt wished it understood that the results were more or less tentative in character. He did not wish to be considered at all dogmatic as to the results obtained, and expressed himself as extremely cautious in the matter of prophecies for the future. This much, however, he would say without hesitation, that, small as our use of fertilizers is, that use is steadily, though certainly slowly, on the increase, and further, "I have no doubt that with the adoption of more intensive methods which will follow as our country becomes more thickly settled, and with better, steadier markets at home and abroad established for farm produce, this use will more and more increase. The indications are certainly all in this direction. I wish, however, to say in this connection that, anxious as I am in these days of stress to do all that may be in my power towards greater production on our farms, I do not think it would be wise to advocate throughout the length and breadth of the land the general and indiscriminate use of fertilizers on all soils and for all farm crops. While we are anxious that our yields should reach the highest possible profitable limit, I have no grounds for preaching the doctrine that this can be effected simply by the application of fertilizer, as is the opinion of some. Fertilizers have a place in a rational scheme of farming, but it is most desirable that our farmers should first clearly understand what that place is, if our land is to improve rather than deteriorate and if financial loss from the purchase of fertilizers is to be avoided. We must first have sound education, the outcome of science and practice, on the principles involved in the up-keep of soil fertility, on the composition, value, care and application of farm manures, on the desirability of more live stock on our farms, and the greater consumption on the farm of the land's produce, on the importance of rotation and especially the value of clover and other legumes in the rotation for maintaining the humus and nitrogen of the soil, on the proper working of the land and the preparation of a good seed-bed. When all these matters

THE FARM.

Progress in British Agriculture.

EDITOR "THE FARMER'S ADVOCATE":

Every week passed under the new rule of the present Lloyd-George Government in Britain tends for progressive movements, on far-reaching lines, in the matter of agriculture and live stock. I recently recorded that Mr. Prothero, the newly chosen Minister of Agriculture, had fixed a price for the 1917 wheat crop at sixty shillings per quarter of 504 pounds. Now, he has just told us that the Government has agreed that the price of oats (1917 crop) shall be 38 shillings and sixpence per quarter of 336 pounds, and potatoes (main crop) in quantities of not less than six tons, free on rail, or free on board, £5 15s. a ton for delivery from September 15 to January 31; £6 a ton for delivery in February and March; and £8 10s. a ton for the remainder of the season. Mr. Prothero has defined a scheme for proper cultivation of the land. Britain is to be divided into sections, and War Agricultural Committees are to take control and watch the farming done. If any farmers shall be found to be "doing" their land badly, i. e., if they be proved to be bad farmers, the War Committee can seize their land and put someone on to it who will farm it properly—drastic but necessary measures. Motor ploughing is to be encouraged, and soldiers with experience released from their army work to tackle ploughing at a critical time in the spring.

We are certainly in for a great revival in agriculture in Britain (as I have said in previous letters) and Mr. Prothero has made lots of friends. The next thing for him to do is to tackle the live stock continued improvement scheme and take it in hand as a real national question, and not leave so much to private enterprise.

True, British live stock has thrived mainly because rich men have dipped into their pockets and paid the piper, but when the war is over a new stamp of farmer and breeder will fill their places, and state encouragement on an elaborate plan will be necessary. Our home breeding problems are still considerable nuts to crack, but Mr. Prothero should effect even that job.

ALBION.

are carefully understood and practiced then and not before may we with advantage, in general farming, advocate the judicious employment of fertilizers. Fertilizers are no panacea to remedy the evils of poor farming. They cannot be depended on solely to give profitable yields, to leave the land richer for posterity than when first broken or entered upon, and that is what we ought to aim at, for our native, fertile soils are a great and important national asset and inheritance. Our experience has shown that fertilizers cannot profitably be used as substitutes for manure, for the growing of clover, for good soil management, but that their role is rather supplemental to all these rational means for the up-keep of soil fertility."

Factors Limiting Production.

Some of the limiting factors to crop growth other than the presence of available plant food were enumerated as follows: First, there is the nature and physical condition of the soil; its capacity for holding moisture dependent upon its texture and its humus content, in other words, its power to withstand drought, its degree of aeration, its drainage, and all those qualities of a physical character which make for the easier development of the root system. Second, the character of the season, by which is meant the amount and distribution of rain, temperature, hours of sunshine, etc., and so far as can be seen to-day seasonal conditions are the most potent of all determinative factors in crop yields. Lastly, there is the inherited capacity for growth and reproduction in the crop sown. All these with some others are limiting factors that cannot be overlooked. In elaborating on these remarks, Dr. Shutt explained how impossible it would be for fertilizers to play their part in nourishing the crops on heavy, undrained clays, on light soils which readily dry up with a few days' drought, owing to a lack of humus or want of surface cultivation, for plants take their food from the soil in the form of solution. Again, if a crop is sown which has a maximum yielding capacity of 40 bushels per acre, fertilizers cannot make it yield 60 bushels by simply feeding it.

Soil, Climate and Fertility.

As might be expected there are, within the domains of the Dominion, soils of many types and classes, ranging from the most fertile to be found anywhere in the world to those so poor and thin as to be practically worthless for ordinary farm purposes, and which should be reserved for forests. Provinces differ as to the character of their soils, and this is one factor in determining what might be termed the Provincial consumption of fertilizers. Other factors to this end will be density of rural population, character of farming, proximity of markets for concentrated products, etc. It is not simply a case of relative poverty of soil, as might be at first sight supposed, that determines fertilizer consumption. It is, as is well known, in the Provinces of

Manitoba, Saskatchewan and Alberta that the largest, most continuous areas of the richest soils occur. Many of these soils, as analyses show, are veritable mines of plant food. Without entering upon any discussion as to relative agricultural values of the arable lands of our several Provinces it may suffice to say that the indications are that fertilizers will be found more particularly helpful in the Maritime Provinces, in Quebec and in British Columbia.

With regard to the climatic conditions which govern the fertility of the soil and the use of fertilizers, Dr. Shutt referred to the heavy rainfall and temperatures of the coastal regions, where conditions were important influencing factors. Reference was also made to the fact that the Canadian winter locks up for several months, practically from harvest to seeding time, the soil's fertility, particularly that form of plant food known as nitrates, which in a mild and open climate would leach from the soil.

Conclusions and Generalizations from Experimental Data.

For ten consecutive years, from 1900 to 1909, a series of fertilizer experiments were conducted on the Experimental Farms at Brandon, Manitoba, and Indian Head, Saskatchewan. The results taken one year with another fail to indicate any material increase in the yields of the fertilized over those of the unfertilized plots. There was no consistent increase due to any fertilizer and in no case was the increase sufficient to cover the cost of the fertilizer. These experiments, it must be noted, were conducted on excellent soil of high quality and wheat was the crop used. Furthermore, experiments carried on at a number of experimental stations located in Northern Saskatchewan and Alberta failed to indicate any specific want of plant food in the soil. On the whole, therefore, results have been of a negative character. Experimental work in British Columbia has been conducted largely on the Experimental Farm at Agassiz, eighty miles from the coast. The soil being of a poor, gravelly, or sandy nature. The results have been somewhat irregular, varying with the character of the season, but emphatic evidence has been obtained as to the effectiveness of fertilizer applications in conjunction with manure, more especially on the mangel crop. The most profitable results have been obtained from the use of a complete fertilizer made up according to the following formula: nitrate of soda 100 to 160 lbs., superphosphate 350 to 400 lbs., and muriate of potash 100 to 200 lbs., these amounts being per acre. On the Central Experimental Farm at Ottawa, investigational work of this character has been going on since 1888, and it should

be added that the work at Ottawa has included the comparison of fresh with rotted manure, the manurial value of clover as compared with farm manures and fertilizers, and the testing out of a number of materials not generally recognized as fertilizers.

Perhaps one of the most remarkable results obtained has been the discovery, that so far as ordinary farm crops are concerned, fresh and rotted manure applied at the same rate give practically equal yields. In this connection Dr. Shutt said: "The explanation for this is not easy to find since rotted manure, weight for weight, is very considerably richer in plant food than fresh manure. It probably lies in the better inoculation of the soil with desirable nitro-organisms for the conversion of soil plant food into an assimilable form by the fresh manure, and the warmth set up by its fermentation in the soil affecting the crop beneficially in its early stages. But, be this as it may, we have the practical deduction that there is no concomitant gain from the use of rotted manure in the ordinary farm rotation, for the labor involved in rotting it and the large losses in organic matter and plant food that inevitably accompany the operation. The quicker the farmer can get the manure into the land, or on to the land, the better, for it is never worth more than when first produced." Concerning the manurial value of clover it has been demonstrated over and over again that a crop of clover in the rotation has a manurial effect equal to an application of farm yard manure of ten to fifteen tons per acre.

Concerning results from commercial fertilizers on the Central Farms, experiments have shown a marked deficiency in the soil, though the response to nitrogenous fertilizer is perhaps the most pronounced. Almost invariably the increases have been larger and more profitable from the complete fertilizer than from an application of any one or two of the fertilizer constituents.

While in general farming fertility cannot be economically maintained and profitable yields obtained by the exclusive use of fertilizers, experiments have shown that fertilizers may be used to good advantage in conjunction with farm manure. When manure is scarce or has to be purchased at a high price then it will assuredly be found desirable to make an outlay for fertilizers, not to take the place of manure but to supplement its scanty use. Dr. Shutt emphasized this point throughout his paper, driving home the point throughout many periods of his address that only in conjunction with good soil management, plenty of humus, obtained either through manures or green crops, can fertilizers be used to the best advantage.

No profitable response has been obtained from the

direct application to the soil of finely ground untreated phosphate (apatite). Basic Slag has proven the most profitable phosphatic fertilizer on sour soils, on heavy clay loam, on soils naturally deficient in lime, on peats and mucks, while superphosphate on lighter soils rich in lime, has given the quickest returns, especially for turnips and cereals. On land in fair condition a top dressing of nitrate of soda applied in the early weeks of growth has been found beneficial to grass, more particularly when intended for hay. No potassic fertilizer has proved more valuable than good hardwood ashes. Of the three essentials potash appears to be the least needed, but on many light loams it has given a good return.

Fertilizers in Eastern Canada.

Deductions made from the work at Ottawa hold good in the main for Eastern Canada. There is, however, apparently a larger and more lucrative field for fertilizers in the East, arising out of the condition that the crops upon which they are used are more particularly money crops, such as potatoes, apples, etc., from which a larger money return can be expected. If the maximum gross returns per acre are in the neighborhood of \$150 rather than \$50, it is obvious that the prospect for a remunerative response from fertilizer is greatly enhanced. The importance of manure and clover in maintaining the humus content of the soils has been emphasized in the strongest way in all experimental work in Quebec and the Maritime Provinces. On potatoes and market garden crops generally an application of manure at the rate of fifteen tons per acre with a moderate application of a well-balanced fertilizer has given more profitable returns than either thirty tons of manure or a dressing of 800 to 1,000 pounds of a similar fertilizer without manure. The majority of experiments have shown that excessively large dressings of fertilizer have not given net profits per acre of the same magnitude as medium applications, say 400 to 600 pounds, and farmers are counselled to ascertain for themselves by experiment and the employment of an undressed area or check plot what the limits of profitable application are on their soils. There is no laboratory method by which this can be done. In conclusion the speaker said: "Our experiments in general have gone far towards establishing that a judicious and rational use of fertilizers may be depended upon to yield a profit; that the exclusive use of fertilizers will neither keep up the fertility of the soil nor yield profitable returns; that it is on soils of medium rather than poor quality that a lucrative response from their employment is to be expected; and lastly, that it is on the money crops that we shall find the application most profitable."

The Possibilities of Northern Ontario.

EDITOR "THE FARMER'S ADVOCATE":

New Ontario is divided into several districts, but the one which I am most familiar with is known to-day as the Nipissing District. This District is divided and the north part is called Timiskaming. Timiskaming is divided into Liskeard and Englehart Districts, while the north part is known as the clay belt. This clay belt extends not only across Timiskaming but also into Algoma, and we do not know as yet how far north.

The greatest mining areas of the Dominion are found in Timiskaming, although at Sudbury in Algoma the two largest nickel mines in the world are situated. The third largest mine, found so far, is farther north near the Monteith Farm. These three nickel mines produce over eighty per cent. of the world's supply of nickel. Ontario thus has a corner on nickel.

New Ontario is known to be the richest silver area in the world. It also has one of the richest gold mines in the world at Munroe, in Munroe Township. In this township is a fine lot of farming land with most of the timber all burned off, and thousands of acres almost ready for the plow. In this township there is a large out-cropping of rock in one place, and here (it seems) some prospector strolled along some ten years ago or more and found on the rocky area an out-cropping of gold. He immediately proceeded to hide his find and stake his claim. He bored four holes in the rock and covered this spot of gold over with an iron plate and then covered the spot with earth and went away and tried to peddle mining stock, with the result that he sold his claim for a few hundred dollars. The second holder was a better promoter and he sold his claim, so I am told, for about one thousand dollars, and he in turn sold it for fifteen hundred dollars to another man. This poor fellow was not a very good promoter, and after holding the claim for several years he told me that he was very glad to get rid of it even at a loss. When he sold, however, three Jews from New York took over the claim, and at once proceeded to investigate the surface gold which had been found some years before. After they had dug seventy-five feet they had taken out seventy-five thousand dollars' worth of gold, and I am told that they are still digging the shaft and have already taken out two million dollars' worth. Some of you who were at Toronto Exhibition, perhaps, saw a large piece of quartz about the size of a coal scuttle, which was taken from this mine and contained ten thousand dollars' worth of gold. This is a very rich mine, considered as one of the richest finds in the world. You may ask, why did the former owners sell so cheaply? The fact is they did not know what they had, and they were afraid to blast off the surface for fear that they would blow the bottom out of the mine.

I believe that there are hundreds, yes hundreds, of

mines in the North Country to-day, many of which will prove to be very rich, and there are still hundreds of prospectors exploring the country and millions of acres which have not been explored at all as yet. The North Country is a wonderfully rich country and becoming richer all the time. In 1914 twenty-four million dollars' worth of minerals were mined in Ontario, and mostly in Timiskaming. While the mineral wealth is the greatest source of attraction in the North Country at present, the forest is becoming more attractive from year to year.

The timber of Northern Ontario is made up chiefly of spruce, balsam, pine, poplar and balm of gilead. Pine is not found very plentifully in the northerly parts but spruce and balsam are found everywhere. The trees are not large as a rule, and it is a rare thing to find a spruce tree three feet in diameter at the butt, most of them averaging about ten inches or a little more. This accounts for cheap land clearing.

The spruce is by all means the most important, both for lumber and pulp. About 250 miles north of North Bay, pulp and paper mills have been built, one mill having cost about \$5,000,000 and another almost as much. The logs are floated down the river to the mills, where they are rossed and then ground into pulp and finally worked into paper.

Spruce, balsam and white wood lumber is being regularly shipped to Toronto to be used mostly for rough flooring or siding. Some of the white woods (poplars and balm of gilead) finish up very nicely, and can be used for inside work or even for some kinds of furniture. It is being used more and more each year for these purposes. There are millions of acres of spruce still untouched which will become more valuable from year to year.

After the lumber and pulp has been taken off it is necessary to clean the land for agricultural purposes.

At the present time agriculture work is progressing very rapidly. This is especially true in some of the sections where District Representatives have been placed within the last few years. At the present time there are eight Representatives in Northern Ontario stationed at Kenora, Emo, Port Arthur, Fort William, Sault Ste. Marie, Sudbury, New Liskeard and Monteith.

As I am more particularly acquainted with the agriculture in Timiskaming, it may be of interest to you to know about our District. The District is naturally divided by a ridge of high land which divides two large water-sheds. To the north the water flows into James Bay and the agricultural land is known as the great Clay Belt, and to the south we have a stretch of farming land known as the New Liskeard and Englehart District. This latter has been developing very rapidly.

Some of the New Liskeard farmers came in there about fifteen years ago, but most of them came in more

recently. To-day they have rural telephone and mail routes, and are thinking of starting a creamery. The government has offered to start this for them and operate it until it is put on a paying basis, when it will be handed over to the farmers.

Thousands of bushels of peas are shipped out of the District each year for seed. This seed goes to large seed houses in Toronto or elsewhere and we lose our identity. The pea weevil is unknown, and heavy yields are quite commonly seen over the whole district each year. Farmers in Old Ontario should get in touch with the District Representatives of the North, and thus be able to purchase their seed direct from Farmers' Clubs in the North.

Clover seed can be produced and heavy yields are very often threshed from the first cutting of the season. The second cutting rarely produces much matured seed, as the season is too short. The crops in the New Liskeard District were very fair this year, and most of the farmers had their seed all sown by May 15.

Going farther north over the height of land to the clay belt proper we find settlers' clearings much smaller. This is due, of course, to the fact that settlers have more recently come to this District, and in many cases the land is not taken up at all even near the railroad. The Timiskaming and Northern Ontario railroad runs almost straight north from North Bay to Cochrane, and it has some small branches running east and west. The present settlers are nearly all settled within a few miles of this road, and there are hundreds of thousands of acres still available all along the Transcontinental Railroad which runs through the clay belt. This land can be bought for fifty cents an acre, and when it is cleared it is very productive, as has been very clearly demonstrated on the Monteith Demonstration Farm and Breeding Station.

The Monteith Demonstration Farm is located 218 miles north of North Bay, and is just 35 miles south of Cochrane, which is on the Transcontinental Railroad. The government has reserved 800 acres here for agricultural purposes. The T. & N. O. Railway runs through the farm, which makes it very convenient for visitors to see it.

For three years in succession our first seed went into the ground on May 5th. This year we had quite a dry spring, while in Old Ontario it seemed to be pouring rain every day. Our weather continued to be quite dry all summer, and this made clearing easy for the settlers. Hundreds of them were putting forth every effort to clear their land by means of fire, and just here I might mention that the awful forest fire was not one great wholesale drive of fire which began in one place and drove across the country full blast. Most of our people



Four teams of oxen taking the Heaslip Farmer's Band to the Englehart Agricultural Show.



Showing a Settler's Stock. Only a Few Years Ago this Place was All Bush.

in Old Ontario have a wrong impression. The fire was made up of innumerable small fires which, in some cases, united to make large fires.

While our weather was dry our soil, being very strong held the moisture and produced a very good crop. It was commonly said before the fire that this was the most promising year which we had ever had. Our hay was good. Our clover seed was the best we ever had. Our O. A. C. No. 3 oats, which were sown on May 5th and harvested on August 5th, yielded sixty bushels to the acre, and this year our spring wheat did very well. Our root crops were commonly said to be exceptionally good. Our potatoes yielded about two hundred and fifty bushels to the acre, and our turnips yielded a little over one thousand bushels to the acre. The turnips were very large and of exceptional quality. Farmers from Old Ontario who saw the crop could scarcely believe their own eyes.

I have every confidence in the agricultural possibilities of the north. After having lived there long enough to take off three harvests I feel that we have a truly wonderful farming country, and that crops will some time be found growing as far north as James Bay. At James Bay, near Moose Factory, Indians are producing corn each year, and what is more they are producing their own seed. We had some of this brought down to Toronto Exhibition. Potatoes and turnips did well up there this year, and wild strawberries were found in abundance everywhere. This seems scarcely possible, but upon talking with a man who recently came from there I was quite assured of the fact. It will be interesting, too, to know that those people away up there at James Bay—people who are living almost 500 miles north of North Bay and more than 200 miles from a railroad or road of any kind—people who are looked upon as being indifferent to our so-called civilization should show any patriotism towards the British Empire. I saw a number of Indians at Cochrane who had just arrived there from Moose Factory. There were, I am told, fifty-six in all and the most of them were dressed in the King's Uniform. All of these had already enlisted, but they were a little short of suits at James Bay and so they were not all in uniform.

Yes, I have every confidence in the farming possibilities of the north, but it will take men with muscle and brain to develop the country. I think Ontario has sent thousands of good men to the West who might have gone up into Timiskaming. I think we should aim to keep more of our men in Ontario and thus enrich our own province. We have advantages up there which they do not enjoy in the West. We have plenty of wood and lumber with good water in abundance everywhere, and a soil that will grow a greater variety of crops, including all kinds of clover and alfalfa.

R. H. CLEMENS,
Superintendent Monteith Farm, New Ontario.

New Screens for the Fanning Mill.

EDITOR "THE FARMER'S ADVOCATE":
I wish to commend to the careful attention of your readers your valuable article on "Cleaning and Grading Grains and Seeds for the Spring Seeding," published in your issue of Jan. 11, and to make some further observations in connection with this matter.
Our investigations from year to year show us that the quality of the seed used on the average farm is very low. The vast majority of the lots we examine could be considerably improved, even with an old style fanning mill, if two or three sieves of the right kind were available. In every district in Eastern Canada there are a great many fanning mills that were bought fifteen or twenty years ago. These mills are still in good repair, but most of the screens that ordinarily came with them are lost or worn out.

Of the firms who built these mills many are out of business; others are now building a mill of an altogether new model, and haven't on hand a supply of frames to fit the old ones. Few farmers will go to the trouble of getting new sieves for their mills if they must send to the manufacturer measurements and a description or a sample of their old frames. If they could buy at a local hardware or general store enough wire to cover some of their old frames we are convinced there would be much fewer weed seeds sown in grain and grass seed.

Unfortunately there are no standard terms by which the different sizes of sieves are known. Even the wires used in making sieves are not all precisely the same size for sieves of the same mesh. The most common way of indicating the size of mesh is by giving the number of wires to the inch each way, thus, a 2 x 9 sieve is one made of 2 wires to the inch one way and 9 the other. This method is used in what follows. For cleaning grain the 8 x 8, 9 x 9, 2 x 9, 2 x 10 and 2 x 11 woven-wire sieves are all useful. The 2 x 9 and 2 x 10 are used for making the seed grade of wheat and barley. Small kernels, fine weed seeds and chaff will pass through while the plump wheat or barley is held. The 2 x 10 and 2 x 11 are useful oat screens. The 8 x 8 and 9 x 9 square mesh sieves are required where such impurities as wild buckwheat are to be removed.

The seeds of most of the weeds that grow in clover and timothy seed and ripen at the same time are difficult or impossible to remove by screens in an ordinary fanning mill. Few mills are equipped with screens for cleaning small seeds; indeed, most of them are not designed for this work. There are, however, a great many samples received in our seed laboratory that could be greatly improved by the ordinary fanning mill if the proper sieves were carefully used. For removing cinquefoil, plantain, chickweed and worm-seed mustard from timothy the 28 x 28 is about right for most samples. Red clover containing plantains, mayweed, ribgrass, lamb's quarters and some other small seeds may often be cleaned up quite satisfactorily by means of the 4 x 24 woven-wire screen. This is used as a lower sieve, the

smaller weed seeds and small, shrunken clover seed coming through it while the good clover passes over. Timothy seed containing docks, false flax, ribgrass or sheepsorrel, and clover seed polluted with night-flowering catchfly, ragweed, foxtail and black medick, cannot be cleaned satisfactorily by an ordinary fanning mill and must be disposed of to wholesale seedsmen who have special cleaning machinery, or, used in an uncleaned condition.

If farmers could induce local implement or hardware dealers or general merchants to stock four or five of the above-mentioned lines of sieving, I feel confident that it would result in improving considerably the quality of the cleaning work done on many farms.

Seed Branch, Ottawa. J. R. DYMOND.

Objects to Life Insurance.

EDITOR "THE FARMER'S ADVOCATE":
I have just read your editorial in Jan. 18th issue on "The Life Insurance Question and the Farmer"—an exhortation to insure, which reads quite convincingly until along towards the end one nasty, small word slips in to make a discord. You say, "For a small, annual outlay every sound man can have banked for him at the maturity of his policy, or at his death, \$1,000 or \$2,000 or more." Every sound man;—and so life insurance after all, has not yet managed to shuffle off all the vicious, little shortcomings of its somewhat unsavoury youth! And we who are sound must still consent to purchase for ourselves and our dependents, a protection which has to be safeguarded by the denial to others less fortunate than ourselves, of like privileges. Whatever is the matter with us that we cannot get above and beyond such primitive expedients? Shall we still be parties to the perpetuation of social machinery which operates to enhance the economic advantage over our brother man which we already enjoy? Surely not. It is no extenuation of our position that we deign to employ some small part of that advantage in the relief of those who fall by the way, or are sore pressed in the unequal struggle. It is not enough that we say to them, "We have provided government annuities for the like of you, begone; as for me and my house, we will have insurance." If government annuities are good enough that I can recommend them to others, they are good enough for me; and as a matter of fact, I think they will bear investigation by anyone, who deems it his duty to make systematic provision for the future, and either cannot or will not carry ordinary insurance. It is a system of provision for old age which we all, through our government, have a part in maintaining, and in which we all can participate on terms of equality. It does not "Only bless me and my wife, my son John and John's wife;" and it is incomparably more democratic, economically sound and just, than any system of insurance which has to exclude those most probably in need of the assistance which it has to give, in order that it may save itself, and some very respectable emoluments.
Waterloo Co., Ont. HERBERT GROH.

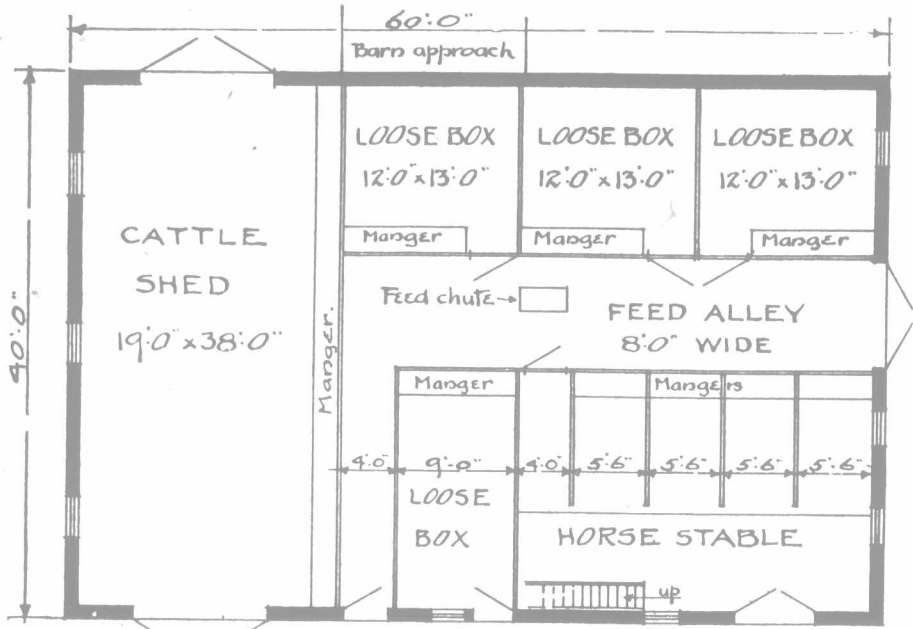


A Field of Oats in the Englehart and New Liskeard District.

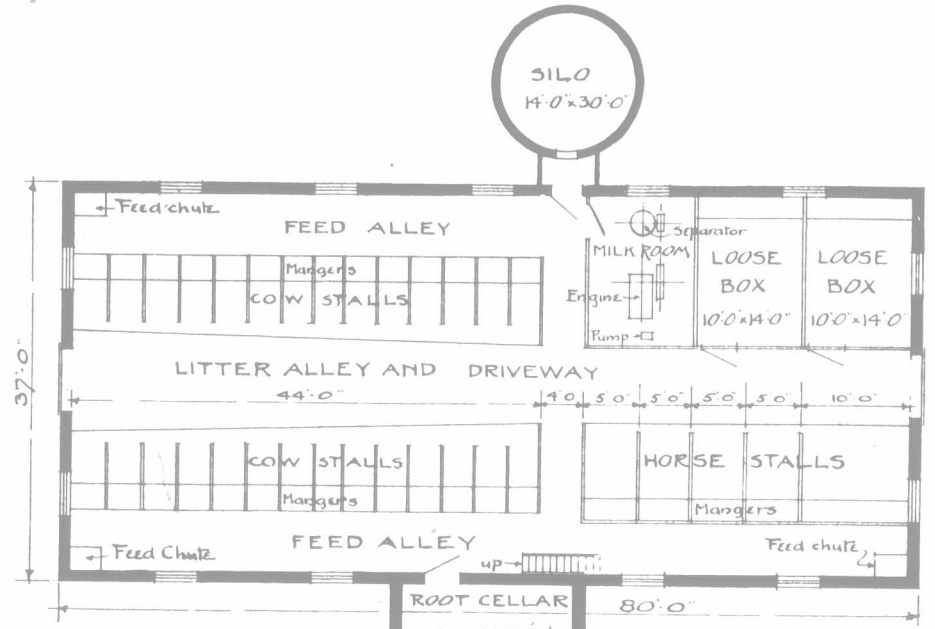


A Beginner Finds a Well-made Log House Very Comfortable.

Barn Plans and Different Styles of Construction.



Loose-feeding Barn on John McAlister's Farm, Elgin Co., Ont.



A Glengarry County Barn.

Last week we illustrated a few house plans, from which we hope readers were able to get a few helpful ideas. This week we are publishing four barn plans, and two other illustrations showing plank-frame construction. Look them over.

John McAlister's barn, as shown, is a loose-feeding barn and cattle stable. He has another barn cornering the one illustrated, in which cows and horses are kept. Our artist inadvertently put the words "horse stable" in one corner of the plan reproduced. These are double stalls for cattle. The cattle in the large shed are fed from the barn floor above.

Edwin Z. Kemkes' plan is one on which he intends to remodel his barn this year. It may interest some of our readers.

Our Glengarry Co. Subscriber says, in sending his plan, "The object when laying it out was to make it as simple as possible, and at the same time convenient. The central alley-way runs from end to end of barn, and permits of stables being cleaned by driving sleigh or cart between the rows of cows and loading manure from either side. Cement floors and drive-way are finished rough, to prevent animals slipping. Gutters are run at an angle to make provision for different-sized cows. The upper storey has barn floor thirteen feet wide in centre and on each side are two mows of equal size, with feed chutes at corners of barn and on each side of floor. The roof is of galvanized iron, with ventilators and eave-troughs of same material. The size of barn is 80 feet by 37 feet and it cost \$1,600, which includes our own time at regular wages. It would cost more than that, however, built at the present time."

P. G. Dunton says his barn is very handy, well-lighted, and is equipped with running water, a gasoline engine, and a milking machine. The stalls are all filled with milk cows, and the box stalls with calves.

New Styles of Building.

Each year it becomes more difficult to secure timbers to put up a substantial, old-time frame for a barn, and farmers who remodel their barns or are forced to erect new structures in this age are turning their attention to the use of plank and metal. From an economical standpoint in the way of available space for storage and amount of material required, the heavy frame structures

do not compare favorably with the newer type. Comparing the plank and timber frames for strength they are considered to be about equal. A frame is no stronger than its weakest part, and after cutting the mortise and tenon to hold the timbers together the weight rests on a small thickness of timber; with the plank-frame the splice retains the full strength of the lumber.

Men have many ideas regarding the type of barn and method of construction which should give most satisfactory results. What will serve the needs of one may not appeal to another. In circular No. 92, issued by

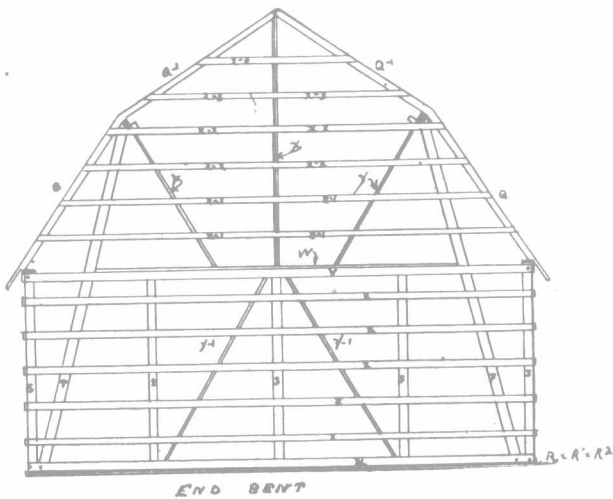
from the ground level to the ceiling. The material required for that part would be the same in all four structures, and posts for supporting the beams in the stable could be either of wood, steel or concrete. The framing of the ends of the barn is not included in the description given by Mr. Archibald, but the accompanying illustration shows a satisfactory method of framing and bracing the ends.

Heavy Timber Frame.

A method of constructing the timber frame is shown in section A, and following is a list of the materials of the loft frame of a barn 38 feet in width, including one truss and the framing of fourteen lineal feet of the barn to the next truss:

| | Board feet. |
|--|-------------|
| Wall posts—2 pieces, 17 ft. by 10 in. by 10 in..... | 284 |
| Centre posts—2 pieces, 29 ft. by 8 in. by 8 in..... | 309 |
| Wall studs—8 pieces, 17 ft. by 4 in. by 4 in..... | 182 |
| Cross girt—38 ft. by 8 in. by 10 in..... | 254 |
| Cross girts—2 pieces, 14 ft. by 8 in. by 8 in..... | 150 |
| Lineal girts—2 pieces, 14 ft. by 8 in. by 10 in..... | 188 |
| Plate—2 pieces, 14 ft. by 8 in. by 10 in..... | 188 |
| Purlin plate—2 pieces, 14 ft. by 8 in. by 10 in..... | 188 |
| Braces—2 pieces, 16 ft. by 6 in. by 6 in..... | 96 |
| Wall brace—80 ft. by 4 in. by 6 in..... | 160 |
| Props—8 pieces, 4 in. by 6 in..... | 100 |
| Rafters—16 pieces, 28 ft. by 2 in. by 6 in..... | 148 |
| Collar beams—8 pieces, 6 ft. by 2 in. by 6 in..... | 48 |

Total lumber required for the 14 feet.....2,595

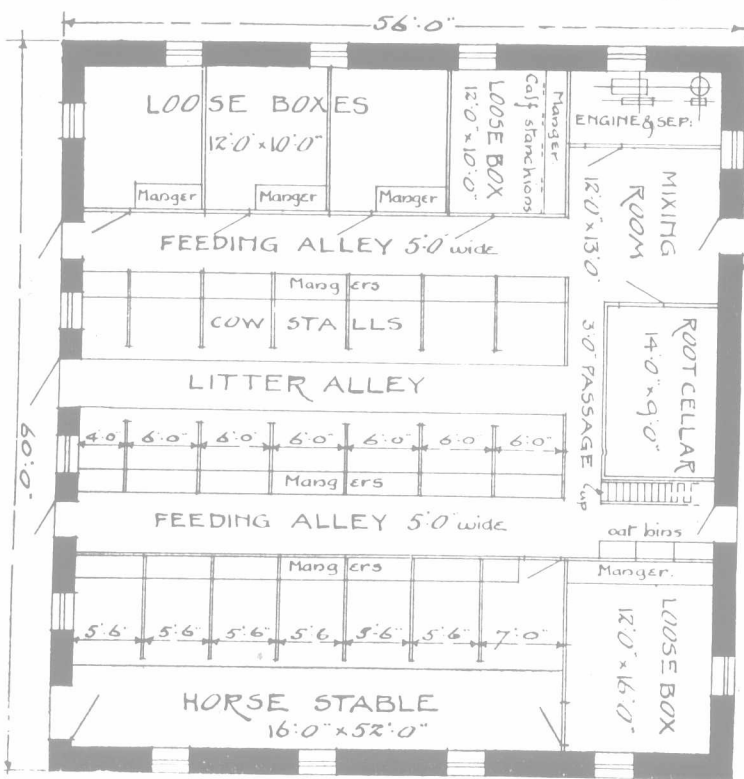


Method of Constructing End of Plank Frame Barn.

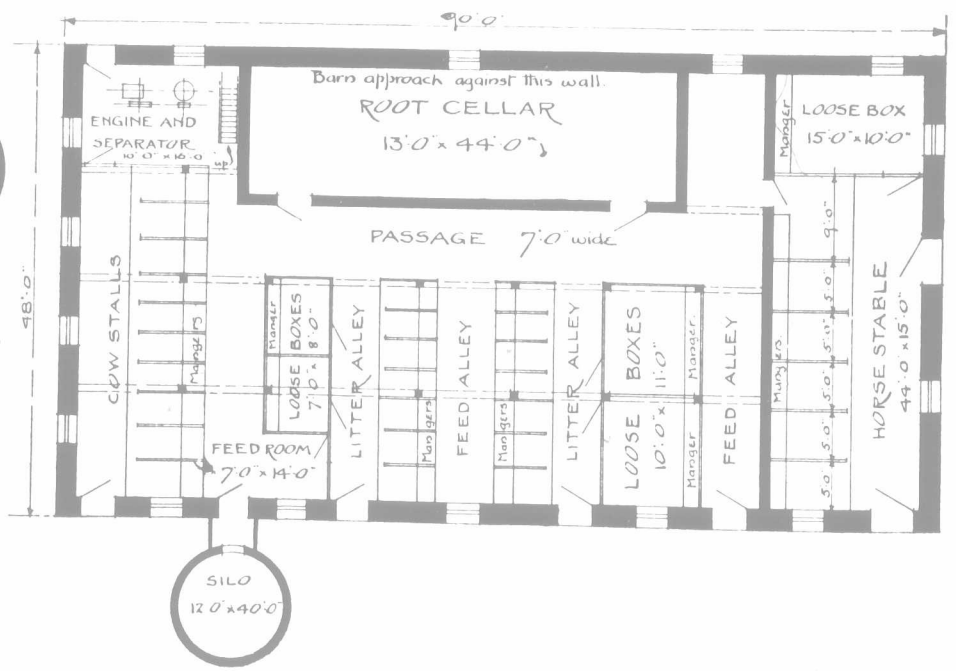
the Dominion Experimental Farms, E. S. Archibald, Dominion Animal Husbandman, illustrates four methods of construction and itemizes the amount of material required for one bent of a barn 38 feet in width. Heavy timber frame, plank truss and frame, gothic truss, and self-supporting roof are explained. We herewith publish the illustration and give the context of the description. It will be noticed that space is left for stabling, but the specifications do not include the material

Plank Truss and Frame.

It is quite possible to construct a strong frame with two-inch plank. As a rule these barns are hip-roofed, which tends to increase their capacity. They are so constructed that there are no posts to interfere with the movement of implements, etc. on the barn floor. In the three styles of plank-frames illustrated and described the frames are made of plank and boards one and two inches thick and from four to twelve inches in width. As neither mortises nor tenons are required the building can be erected in a short time. The weight of the roof is carried to the side walls at joists. Section B is claimed



Barn on P. G. Dunton's Farm, Brant Co., Ont.



Plan Sent by Edwin Z. Kemkes, Waterloo Co., Ont.

to be a very strong truss, and suitable for walls sufficiently high to allow a doorway 14 feet in height to the loft floor. The base of the truss (the bottom of the purlin prop) is spiked to a joist which in turn rests on a two by six-inch plate, and is spiked to a post. Two-inch plank is used throughout, both in the truss, posts, studs, rafters and braces. The truss should be well bolted at the splice of the purlin prop and peak prop, elsewhere should be thoroughly spiked. The truss may be made on the flat and hoisted to position by use of the gin-pole; the end frame being erected first. The list of material of the loft frame, including one truss and fourteen lineal feet, is as follows:

| | Board feet. |
|--|--------------|
| Posts—4 pieces, 15 ft. by 2 in. by 6 in..... | 60 |
| Plates—2 ply (2 by 6), 56 ft. by 2 in. by 6 in..... | 56 |
| Purlin plate—2 ply (2 by 6), spaced 2 in. apart to receive prop—56 ft. by 2 in. by 6 in..... | 56 |
| Purlin props—4 pieces, 28 ft. by 2 in. by 8 in..... | 158 |
| Peak props—2 pieces, 28 ft. by 2 in. by 8 in..... | 79 |
| Truss braces—80 ft. by 2 in. by 6 in..... | 80 |
| Wall studs at 24-inch centres—12 pieces, 15 ft. by 2 in. by 6 in..... | 180 |
| Rafters (14-foot lengths)—32 pieces, 2 in. by 6 in..... | 448 |
| Collar beams—8 pieces, 8 ft. by 2 in. by 6 in..... | 64 |
| Total lumber..... | 1,181 |

Gothic Truss.

Section C illustrates the method of constructing the gothic truss. It is made from 2 by 8 inch plank cut with the desired curve, and thoroughly spiked and bolted together in four thicknesses, thus making a solid 8 by 8 continuous truss from the foundation to the peak. There are no props, plates or purlins, and the trusses are placed at 14-foot centres. The space between trusses is filled with studs continuous to the peak made from 2 by 8-inch plank. The walls and roof are usually strapped, and the ends of the barn are diagonally braced. A one and one-quarter inch steel guy rod with turnbuckle in the centre is the only brace on each truss. An objection to this style of structure is the large amount of waste

in cutting the segments to the proper curve. The barn has slightly more storage than B type, but the framing is more expensive.

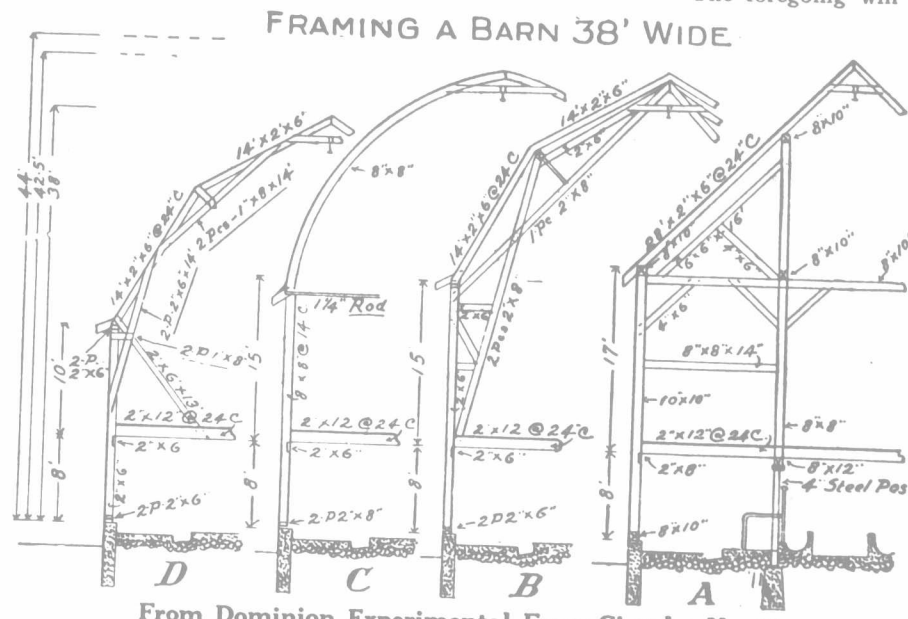
Self-supporting Roof.

Section D illustrates a type of framing suitable for narrow barns where only short wall posts are required in the loft. It is not advisable to use this type of construction in barns over 40 feet in width. There is no special truss nor are there any purlin plates, consequently each stud and rafter placed at 24-inch centres must form a truss in itself. The joists are set on a plate and each must be spiked to the wall stud. As no purlins nor purlin props are used it is essential that each stud and pair of rafters be made into a complete truss to support the roof. The material necessary to construct 14 lineal feet of a 38-foot barn is as follows:

| | Board feet. |
|---|--------------|
| Wall studs—16 pieces, 19 ft. by 2 in. by 6 in..... | 160 |
| Plates—2 ply (2 by 6), 56 ft. by 2 in. by 6 in..... | 56 |
| Rafters—32 pieces, 14 ft. by 2 in. by 6 in..... | 448 |
| Plate tie—16 pieces, 13 ft. by 2 in. by 6 in..... | 208 |
| Lower rafter props—32 pieces, 14 ft. by 2 in. by 6 in..... | 448 |
| Upper rafter props—32 pieces, 14 ft. by 1 in. by 8 in..... | 299 |
| Collar beams—8 pieces, 2 ft. by 1 in. by 8 in..... | 43 |
| Short braces at plate and hip—130 ft. by 1 in. by 8 in..... | 87 |
| Total lumber..... | 1,749 |

The foregoing will give an idea of the amount of

lumber required for a barn 38 feet in width, and the method of construction can be followed from the different sections of the illustration. There is considerable difference in the capacity of the different types of frames. Mr. Archibald has figured out that the full hay capacity of 14 lineal feet of mow in the heavy timber frame is 23.2 tons; in the plank truss and frame type, 26.1 tons, and in the self-supporting roof frame, 20 tons. These figures indicate that the B type of plank frame structure affords the greatest capacity of the four types illustrated. By using plank from smaller trees than when building the timber frame, and the labor involved in teaming and framing is lessened.



From Dominion Experimental Farm Circular No. 92.

Canada's Young Farmers and Future Leaders.

Topics for Discussion for Young Farmers.

Each week we shall announce topics for discussion in this department. Topics will appear each week during the winter season, with the dates upon which manuscript must be in our hands. Readers are invited to discuss one or more topics as they see fit. All articles published will be paid for in cash at a liberal rate. Make this department the best in the paper. This is the boys' and young man's opportunity. Here are the topics:

1. The Difficulties and Advantages of Crop Rotation.

Discuss long and short rotations as they apply to the soil and methods of farming on your own farm. Outline the best rotation for your soil. Be sure to describe the soil and class of farming followed. Have articles at this office by February 10.

2. Treating Crops to Prevent Loss.

Give data regarding methods of treating oats and wheat with formalin to control smut, stating quantity used, method of application and figures to show difference in yield resulting from the treatment. Give results of treating seed potatoes to destroy scab, stating material used and method of application. What experience have you had treating seed corn to prevent crows ravaging the young crop? Name material used, strength and method of application. Mail copy to reach this office by February 17.

Teach the Value of Farming.

EDITOR "THE FARMER'S ADVOCATE":

It is conceded by most people that the farm is the best place (morally and physically) to raise a family. Most men who have made a success in life attribute their success to having been raised on the farm. If all farmers believed these facts fully and endeavored to teach their children their importance, very few boys and girls would leave the farm from pure dislike of it. Farms can be made attractive to children by teaching them that the food of the world's millions is grown there, and that as producers of the world's supplies they have the most important share of the world's work.

Another way of making the farm attractive is by teaching children the different steps in the cultivation, the sowing and the harvesting of certain crops by actually doing the work themselves and sharing in the profits. The same plan might very profitably be followed in the feeding and caring for the live stock.

Alternating work and play keeps the work fresh to children. By parents keeping the confidence of the children, joining in their games and amusements, the farm home may be made to them the most pleasant place on earth. I have said nothing about the farm house and outbuildings being neat, convenient and comfortable—beautiful trees to give shade from the sun's heat in summer and a protection from the cold winds of winter; a vegetable garden where the choicest

vegetables may be grown at the least cost, also berries and small fruits and apples. These all help to make home comfortable and happy.
Huron, Co., Ont.

G. H. MAGEE.

Good Stock and Early Training.

EDITOR "THE FARMER'S ADVOCATE":

Reading different opinions, the result of varied experience, in the young men's column has inspired me to give my views on the topic, "What is needed to make the farm home more attractive to the boys and girls?"

Perhaps on a number of farms conveniences and surroundings could be greatly added to, so farm life would be more enjoyable, but these are being constantly improved year by year, especially where there are young men with ambition to go ahead or desire to accomplish.

One of the greatest drawbacks, on a number of farms, and one which disheartens any young man as to the attractiveness of the home, is I believe, the poor class of live stock. Nothing is more displeasing to any young man. Starting in to build up the present herd of cows is not so encouraging to him, as it takes years to get them to the desired standard. It would be far better to buy a registered cow or two and start to raise pure-bred cattle, in which the young man would take great interest and would strive to improve.

In the winter months a good many farm homes are very quiet with nothing to interest the young people. If there are a number of boys and girls in the community, why not join together and get up a concert or play or, perhaps better still, organize a literary club. These are easily accomplished if a few of those interested make the start. The rest will soon see that the work is educational and beneficial, besides very enjoyable. In this community we try to get up at least two plays each winter and get together and practice two or three times each week. The proceeds generally go to the Red Cross or some other good cause. We present each play three or four times in nearby towns, so in this way quite a large sum of money is realized and the work is most enjoyable, and besides it breaks the monotony of a good many evenings which otherwise would be spent at home to no great advantage. There are always a few who will not leave the comfortable fire-side in winter, but would rather stay home and just do the necessary chores and sit beside the fire to spend the rest of their time.

There are parents who keep their families home too much, until they are eighteen or twenty, when they let them do as they wish, thinking they are capable of looking after themselves. They immediately see and hear of others prospering at some other occupation and they soon develop a dislike for farm life and become dissatisfied, so they leave the farm for the occupation that looks easy to them. If these young men had become better acquainted with the ups and downs of life when younger, the parents would have had more influence over them, and at the age of twenty they could resist more of the temptations, and they would grow up to be men of higher standard and broader minds, and would enjoy farm life with the rest of the community.
Kent Co., Ont.

A FARMER'S SON.

This Ought to Help.

EDITOR "THE FARMER'S ADVOCATE":

I am greatly interested in "The Farmer's Advocate" as a whole, but more so in the young men's section. I was greatly pleased to see among the subjects for discussion "What is Needed to Make the Farm Home More Attractive to Boys and Girls?" and I certainly think that it is better conveniences, more attractive surroundings and, on the whole, "better everything" that is needed. You hear the older folks on all sides complaining, "I don't know what is the matter with the young folks nowadays, they are so dissatisfied." It is true that some are dissatisfied without just cause, while others have considerable room to complain. You can't blame the young men for wanting attractive surroundings. It is quite natural. You don't see the birds building their nests in old, dead trees without a leaf on them, nor do you find wild animals living on a prairie without a tree or shrub anywhere near.

Then, too, it is too much asking young men or boys to do their work the hardest way when there is an easier one to be had, or asking them to work twelve to sixteen hours a day when it can be avoided, or when their city chum works ten hours for the same or more money. Nobody with spunk would do that and be satisfied. Yet many do it, and the folks wonder why they complain.

I think that if boys had a little more say and a chance to do something independent of the rest of the family it would help some. This makes me think of John who lived at home. He had, by saving spending money, accumulated a small sum of money with which he bought five small pigs. For days and weeks and months John carried swill and chop; the pigs grew and got fat. One day father sold them. He gave John the money he paid for them and no more. Do you blame John for moving himself and baggage to town? I don't. Another instance: Arthur, a young lad of eleven, was taken from school and set to work. It was Arthur come here, Arthur go there, Arthur do this, Arthur do that, all the long, weary day. He bent over fork handles and ploughs until he was humped like an old man. Now his parents wonder why he stays at home so much and hasn't even got a mind of his own. They forget that they kept him at home and didn't give him a chance to use his own mind. This goes to show how "All work and no play makes Jack a dull boy." also that if boys have to work too hard they can't take the same interest in life.

How about the girls? They are dissatisfied too, and no wonder when you think of how they sweep and dust, bake, sew, feed chickens, milk cows, and what do they get in return? They see their city friends with good clothes, soft hands and a fat, little purse. This certainly must be tempting to girls who want to see something besides cows and a milk pail and learn something besides baking. More conveniences, attractive surroundings and more time for recreation would be a great benefit.

Now, how about the community at large? Mr. Jones will not help his neighbor because he is lazy and no good. Mr. Brown will not let his family go to the young people's meetings because the Smiths go and they are bad people. The Smith girls can't go to the social

because they hadn't a special invitation. Isn't this unnecessary hard lines. I think if all the people were more neighborly, and if the home was more attractive and convenient as means would allow, things would be better for everybody concerned, and young people far more contented.

York Co., Ont.

AN INTERESTED READER.

Sociability Lacking.

EDITOR "THE FARMER'S ADVOCATE":

The needs of the farm home is a big subject, but it is a subject that should be discussed more as there are so many young people leaving the old farms and going to the cities. Of course, I will not say that no young man or young woman should go to the city for some may do better there than on a farm, but there have been many who have gone to the city, to make a fortune, and have made a failure. Just now the call comes loudly for the farm boy to go to the city either to enlist or work in a munition shop. No doubt he could be spared from the farm during the winter, but for the farm boy to enlist (where he is the only one on that farm,) this should not be advised.

The young man or young woman with a good home and attractive surroundings, will not be very likely to want to leave the farm to go to the cities, but if they will go, no doubt a winter away from the farm in town, will not do them any harm, and it will make them think more of the farm when they return again.

One thing that will attract the young people to the farm is better live stock in the place of scrub animals, which are kept on a large number of farms in the country. The boy on the farm where a good herd of cattle or a good flock of sheep are kept will take an interest in them and will help to take care of them, and will not be ashamed to show his stock to anyone who happens along that way, and if the young girl is given a good flock of poultry to care for she will also take an interest in them.

The young people should get out and mingle with other young people and not "sit by the kitchen stove all winter", as one young man aptly stated it in your columns a few weeks ago. They must get out and see and hear other people. If they can't do this in the country they will somewhere else, and I do not blame them. No young man or young woman with any "push" in them wants to be kept from the public all the time. There is the literary society which has been discussed in your paper and it is a benefit to any community. There is the short course in agriculture held in almost every county, and it is a good course for those who take time to attend. The young man at this course is given the chance to debate and speak in public. These are important for the young man who cannot get up and say a few words in public should not consider that he is his own master.

But the young people must not think constantly of pleasure for it is not for the farm people as much as the town or city folk. Nor must they think of all work for the old saying always comes true, "All work and no play makes Jack a dull boy."

What is lacking in the country? Sociability among the young people.

York Co., Ont.

ROSS E. RATCLIFF.

Five Reasons for the Trek.

EDITOR "THE FARMER'S ADVOCATE":

There are, in my opinion, five causes for city life being more attractive to young people than life in the country. These I will endeavor to explain in turn. They are: Lack of modern conveniences; lack of social intercourse; want of easy travelling facilities; want of well-bred stock; and unattractive home surroundings.

Many of the farms are very poorly equipped with labor-saving machinery, while the owners have a fat bank account and perhaps a mortgage on some of their neighbor's farms. Still, they seem to think their boys should be content to work away with the same crude implements that they used in their boyhood. They seem to forget that there is not one man on the farm to-day for every two or three there were forty years ago, and consequently it is so much harder to get over all the work. If they had modern, labor-saving machinery the work would be much easier done and more interesting. And these same farmers expect their wives and daughters to work away with the same household utensils used forty years ago. While such conveniences as a water system in the house, cream separator, coal-oil stove, etc., would do the work far better and with much less wasted energy. I have observed that the farmer who keeps up with modern conveniences inside and out has not much trouble keeping his young people on the farm.

Another cause for the drive cityward, is the lack of

social intercourse. To-day in most rural communities there are people living only on every second farm, making company so much scarcer, and yet some of the older people seem to expect the young folks to remain at home from one week end to another without any company except their own. Under such circumstances it is no wonder life on the farm becomes monotonous. There is where a Farmer's Club, Literary Society and a weekly market do a world of good, giving the young people an opportunity to come together and discuss current events, their different methods of doing things, and a chance to spend a couple of pleasant hours.

On many farms the young people are obliged to remain home nearly all the time, because the horses are too tired to go on the road after working all day. There is where a good driving horse and buggy, or, if circumstances permit, a car will help to keep the young people interested and give them a chance to drive out and see the country at its best, for if young people have to remain home all the time life on the farm becomes dreary, and that is one of the main causes for the trek to the city. When boys are proud to take their friends and neighbors through their stables and show them the fine points of their dairy cows, their fine horses and well-bred sheep and hogs, and hear their complimentary remarks, it goes far towards making them satisfied with farm life. And what girl is not pleased to possess a fine flock of Barred Rocks and some large geese, especially if she gets her share of the profit?

The lack of attractive home surroundings makes many young people dissatisfied. If farmers would plant more trees and flowers, keep fences and gates in good repair and use a liberal supply of paint, to keep their buildings brightened up, instal the telephone, have the rural mail, and spend an hour in recreation each evening, many young people would not desert the farm for the city.

Wellington Co., Ont.

JOHN J. FLAHERTY.

Cultivate Interest.

EDITOR "THE FARMER'S ADVOCATE":

At the present time there seems to be so much to call the boys and girls from the farm home. Human nature is predominant, they see the many attractions and conveniences that the city boy and girl enjoy, their own life seems quiet and uneventful compared with the former; there is that restless spirit of youth within them, and before the quiet, home-loving parents are aware of it the city has lured their birdlings from the home-nest.

Not many years ago city conveniences on the farm were unknown, but, in the past few years farming has gone ahead by leaps and bounds, and is now considered a science, not merely a way to gain a livelihood. We, who were born and raised "near to nature's heart," should cultivate in the child love for the beautiful things of nature, God-made and God-given.

Let the farm house and barn be as convenient as possible. Within the house let there be books, a cheery fireside, cosy, warm rooms in the winter, not necessarily large and expensively furnished, but with the true spirit of home prevailing everywhere. In the barn let "cleanliness" be a motto, let the herd and horses be well kept. Give the boy something of his own, if it isn't more than a pair of bantams, but start as soon as he is able to care for them, that a lasting interest may be created.

Do not give the boy to understand that because he is to be a farmer he needs no education. How many useful lives have been handicapped in this way! Do the very best you can for the boy and girl in this line, and you need not be wealthy to do a great deal, for "where there's a will there's a way." Teach the boys and girls to plan ways and means that they may enjoy the instructive courses at the agricultural college; give them a calf, colt, lambs or pigs, or let them take over part of the poultry for a time, that they may help to earn their own way in life. For who is not the better for having struggled with adversities?

The daily papers bring us in touch with the city; we have the opportunity of ascertaining the dates of oratorical or musical treats. Plan a holiday occasionally that the boys and girls may attend some of these, and see how grateful they will be, and how it will raise their ideals for the best in life. Then when they have obtained some experience and a fair education they will not fear to mix with the people of the commercial world.

In the past parents have paid too little attention to the possibilities buried within the child-life. There has been a lack of education, a lack of interest, too much of a "work-a-day" life connected with farming. Production is most necessary, but while we aim at greater efficiency in this line in the future let us not fail, as they have done in the past, to cultivate that much-needed spirit of interest in the farm boy and girl.

Haldimand Co., Ont.

"OLD BOY."

Farm the Farm not the Boys.

EDITOR, THE "FARMER'S ADVOCATE":

Farm homes, as the name implies, are of necessity more or less isolated, and to this isolation with its attendant loneliness the boys and girls take exception, if the social intercourse of the community happens to be dead. But, fortunately, most parents in farm homes are as deeply interested in the social as in the physical and religious welfare of their children, though in a small minority—a very small minority—of the farm homes the farmer not only farms his farm, but farms his children as well. While it may be wise to instil in the minds of the young ideas of industry and thrift, it is just possible that children may be overworked. A large bank account accumulated at the end of a life-long struggle against adversity may be a comforting climax, but if when one reaches the end of the road and gazes around at his grown-up family grown old before their time, through lack of proper nourishment and overwork, is not the cost too great? Invariably it is the children's welfare for which the parents are living. The farm is without a doubt the ideal place to rear a family to perfect manhood and womanhood, with all that word "perfect" implies morally, mentally and physically. And, in that noble office with which Providence has blessed them, it seems sad to think that some should allow themselves to degenerate into mere money-making machines.

The financial feature is of interest all right, and after a young man is of age, or near it, he feels that if he stays on the farm he should have some remuneration for his work. A frank and open discussion of the matter between father and sons would help to make the farm home more attractive. Cases are on record, too, where the farmer is backward about investing in labor-saving machinery for such jobs as pumping water, etc., where a few dollars spent might prove a very profitable investment, relieving the boy of some never-ending jobs connected with a dairy farm.

A part of my own personal experience that still lives fresh in my memory from boyhood was having to fill two water tanks every day for the dairy cattle, often after a hard day's work when I felt more like going to bed. I finally bought an old windmill from a neighbor for a few dollars and cut out that drudgery of water pumping forever. Another bugbear was the high-wheeled lumber wagon. It surely made the harvest season little short of agony, and hauling manure a similar pleasure. But in bringing about a change I was as usual forced to take the initiative myself.

Dundas Co., Ont.

CHESTER ROSE.

A Worker With Ideas.

EDITOR, "THE FARMER'S ADVOCATE":

I cannot understand good sensible young men and women leaving a farming community where they have a literary society or where there are even young people enough to organize one, but with a community like I live in, where, in a radius of six or seven miles you would not find a sufficient number to organize such a society there is an excuse for dissatisfaction. Young people are leaving the farms fast and have been for years. Why? Cases differ. Some find no pleasure on the farm for it is useless to plan improvements, or more and better stock for the young man simply has no say in that matter whatever. He went to public school with probably fifteen or twenty other pupils; he may have got in the fourth book and possibly passed the entrance, then he stays home. In the course of three or four years he gets restless and dissatisfied. He goes to town and meets his fellow town-boy dressed in the most fashionable clothes and always smiling and "lording" around as if he owned a farm or two. Bill comes home with his heart full of sorrow and envy. If he does pick up and leave the farm and go to town, it is ten chances to one that his life ends a failure, and if he stays on the farm he succeeds his father and follows the same old road. What is aking? Just what "The Farmer's Advocate" says: "Organize a literary society, educate the young farmer and give him an interest in the farm." It may be a little extra expense, but because father or mother never were educated, nor could debate or speak in public, is no reason why the next generation should not get a chance. A good education is worth a heap of gold, though a man with a narrow mind and no education (and an uneducated person's mind often grows narrow) cannot see that value. Now I am one of that uneducated class. I completed my public school education some seven years ago, and in that time my mind and my pen have grown rusty (never having been very bright). I see most of your writers to the new department are educated farmers, some university students, the kind of men needed for Canada's future leaders, but from boys of my standing you never hear and therefore you cannot fathom our dissatisfaction.

York Co., Ont.

G. A. D.

Automobiles, Farm Machinery and Farm Motors.

Alcohol Beats Kerosene.

A report came from Western Canada the other day that a number of large firms, which employ a great many automobiles for delivery purposes, had been using kerosene or coal oil in their radiators in order to prevent freezing. As a result of this information some Eastern Canadians have been unwise enough to follow a poor example. Do not use kerosene in your radiators under any circumstances, as it is extremely injurious to the rubber hose connections. If you find it necessary

to employ an anti-freeze solution follow this schedule: Alcohol and water—for zero weather use water 75%, alcohol 25%; for 10 below zero, water 70%, alcohol 30%; for 20 below zero, water 60%, alcohol 40%. Glycerine and alcohol—not lower than 5 below: alcohol, 15%; glycerine, 15%; water, 70. Not less than 20 below: alcohol, 20%; glycerine, 20%; water, 60%.

While we are on the question of winter driving we may just as well issue two warnings. The first is this: do not allow a loose, non-skid chain connection to bang against the inside of your fender, as the enamel will

be removed so that it can never be properly replaced, and the pressed steel itself will be given a number of unsightly dents. The second hint is a matter concerning the question of driving through deep snow in passing vehicles or in turning. Try to go as straight as possible in any given direction enough to clear the snow, as turning the front wheels kills the momentum at the most annoying times. This should be readily appreciated. The cold winter has also brought up the subject of steam cars, and perhaps a word or two about them will not be out of place. Their invention was at first thought

to be a distinct advance in the motor trade, but the terrible delays and annoyances of getting steam up were not at all pleasant. Then, too, the mechanism contained many delicate parts, and the constant renewal of the water provided never-ending anxiety and work. We are prepared to state, however, that most of the disadvantages in steam cars have been overcome, and the time does not seem very far distant when a steam propelled road vehicle will be a common sight upon our highways.

In last week's issue we told you something of the innovations that were promoted at the different motor shows. In this issue we are in a position to give some news of the outstanding features which characterized the the salon or semi-private exhibitions of high-class cars. The mechanical changes are not at all radical. Some models showed tilting steering wheels, while others had ball and socket joint fittings for the radiators. A single make showed a slightly improved exhaust pipe, and, of course, 16 valve engines were not unfamiliar sights. The big changes, however, are in the bodies, the majority of which contained straight lines with the panels only slightly curved. Not much difference was noticed in the upholstery, although an odd machine contained a flowered pattern. None of the lights are solid, but fold into recesses in the same manner that the lights operate in the best standard Pullman cars. Two or three autos had what is known as a plough front. The name conveys an accurate idea of the construction, the front coming to a point and sustaining two sets of wind shield glasses. Most of the trimming is constructed of real mahogany, and the locked boxes, as well as the receptacles, were usually of the finest grain leather or an expensive wood. Extra accessories, such as smoker's outfits, toilet cases, etc., were noticed in every machine. We mention these things not because the average agriculturist will have his mind set upon them during the present year, but simply as an indication of what is yet to come. When you are driving your car along the road you make it a point not to look directly in front of the wheels but a long way ahead. So, in discussing the automobile, we wish to follow the same system, from year to year. The things that now seem impossible and out of the question will soon become possible and of every day use.

AUTO.

THE DAIRY.

The Cream Separator.

First-grade cream cannot be produced unless the cream separator is kept clean, but, aside from the quality of cream, a clean machine will skim more closely and last longer than one that is not thoroughly washed after each separation. Slime always collects on the bowl of the machine and tends to lessen the separating efficiency by reducing the space in which milk is exposed to the separating influence of the centrifugal force. When a machine is not washed particles of slime, which collect and dry, become dislodged by the fresh milk and con-

taminate the cream. Wash the separator every time it is used. It entails a little extra work, but it pays to keep it clean. It is a good plan to run warm water through the separator after the milk to remove all milk and cream. It also tends to loosen the slime, which makes subsequent washing easy. Some make a practice of using a cloth to dry the bowl and its many parts, but an easier method is to rinse them in scalding water and then put them in a clean place to drain. If the water is scalding hot they will dry in a few seconds.

Comparison of Food Values of Oleo and Butter.

EDITOR "THE FARMER'S ADVOCATE":

It seems that many farmers are adverse to the manufacture of margarine in this country. Their reasons have been variously stated, but few of the arguments have given the essential features of the case. I think farmers are too broad-minded, as a class, to wish legislation to be passed in their behalf which would be prejudicial to others. So I think the question should be approached from another side, namely the nutritive value of margarine, or oleomargarine as it is called in the United States, as compared with that of butter.

Fats are composed of three main constituents, stearin, palmitin and olein. The first two fats are solid and the latter liquid. The degrees of hardness of any fat depends upon the proportions in which these are mixed. Those containing most olein are soft, lard being an example, and those containing least olein, as mutton or suet, are much harder. Butter is rich in olein, containing 40 per cent., so it has a low melting point and is easily digested. In fact, butter-fat closely approximates body-fat in the proportion of olein it contains. Mutton-fat and ox-fat are both harder to digest, because their melting points are higher. Fat must be melted before digestion takes place, and so these latter fats are not so valuable as constituents of our dietary. Besides this they are not so palatable. But, if these animal fats can be changed so as to resemble butter in composition and nutritive value they would become valuable foods. This, in fact, is what is done in the manufacture of margarine. Ox-fat is mainly employed. The clarified fat is melted and then allowed to cool slowly. Stearine solidifies first, being the constituent with the higher melting point, and the more fluid parts are removed by pressure and churned with milk to give them the flavor of butter. The product is dyed with vegetable dyes and is ready for use. The average composition of 35 samples analyzed by Atwater is as follows: Water, 9.3 per cent.; proteid, 1.3 per cent.; fat, 82.7 per cent.; ash, 6.7 per cent. The proportion of fat is the same as in an average specimen of butter. Moreover, margarine is absorbed almost as completely as butter. Expressed in figures, 102 pounds of margarine are equal to 100 pounds of butter in nutritive value and very much cheaper. The flavor of the best kinds is equal to that of butter.

Fats form a very necessary part of every dietary,

and at present the price of butter places that main source beyond the reach of many families, consequently children suffer from lack of this food constituent. Margarine, as made in the United States, is manufactured from pure fats, and is a perfectly clean food product. The purity of this food could be ensured to the consumer in Canada by government inspection. Margarine then would be a cheap and safe source of fat. On the other hand, there is no danger that margarine will displace butter as a food. People have always paid high prices for flavors and probably always will. Do we not value strawberries and oysters, despite the fact that their cost is not at all commensurate with their nutritive value? I think the majority of citizens will still buy the delicately flavored product of the dairy, even were margarine manufactured. But, what about that class of people who cannot afford so necessary but expensive food as butter? Margarine would then be welcomed as an adequate and cheap substitute.

York Co., Ont.

A FARMER'S DAUGHTER.

Serums for Abortion.

Geo. B. Rothwell, Assistant Dominion Animal Husbandman, writes re the use of serums in contagious abortion: "We have tried a large number of so-called cures for abortion which included commercial serums. The results obtained were far from uniform, gave no opportunity for definite conclusion, and from our trials were ineffective. More recent work, however, carried on by the Health of Animals Branch at the Biological Laboratory on the Experimental Farm, would lead us to be decidedly optimistic as to the use of serums where the work necessary in their preparation is under skilled direction. There is, however, apparently a wide difference between commercial and special laboratory preparations.

"Further with regard to the disease, the question comes up, as to the number of times a heifer will abort. The reply is that, as a rule, abortion might take place during the two successive gestation periods or three times in succession. There are, of course, many exceptions. With the cow, while the same might apply, a case of abortion being followed by one or two premature calvings,—it is more generally noticeable that abortion is followed by sterility or barrenness."

Cows Under Test.

Between December 9 and January 15 twenty-six Ayrshire cows and heifers qualified in the Record of Performance test. Lady Jane leads the mature class with a record of 19,405 pounds of milk, testing 4.05. The four-year-old class is led by Rose, with a record of 12,913 lbs. of milk in 365 days, testing 3.76. In the three-year-old class White Lady of Craigielea 2nd produced 9,525 lbs. of 4.03 milk in 308 days. Lady Alice of Inglewood was first in a class of 14 two-year-olds. She has 12,098 lbs. of 3.79 milk to her credit in 365 days.

Individuality, Feed and Care Influence Milk Production.

Statistics for the past year or two show that the yield of milk over the Dominion has been increased, with but slight if any increase in the number of cows. This has resulted from better individuals being kept on the farms, more liberal feeding of the cows and heifers, or the giving of better care to the herds the year round. Possibly it was a combination of all three items that was responsible for raising the yield. Neglect of any one has a detrimental effect on production. The individual may be bred right and possess the desired conformation, but if sufficient quantities of the right kinds of feed are not forthcoming the cow cannot do her best, nor will feed and breeding make up for allowing the cow to endure drafts, exposure or unsanitary surroundings. Individuality, feed and care go hand in hand on the successful dairy farm.

It is not natural for a cow to produce the phenomenal yields that are recorded in this age. The aboriginal cow was not a high producer of either milk or fat, consequently the tendency of the present-day cows to revert to lower production is but natural. Man's power of selection and ability to improve the quality of animals through judicious mating has greatly increased the average production and made possible the yields of 30,000 pounds of milk and 45 to 50 pounds of butter-fat per cow. Concerted action on the part of numerous dairymen is gradually improving the producing qualities of the various breeds. Experience, experiments and scientific research are revealing the food requirements of the dairy animal and showing how food may be administered to best advantage. The close observer of the herd soon determines to what extent cleanliness, light and ventilation in the stable, and kindness at all times increase the milk yield and general health of his animals. There is no getting away from the fact that it is the man who studies the animals which comprise his herd and pays attention to details who gradually and surely climbs the rungs of the ladder of success in dairying. Haphazard methods of breeding, feeding and caring for the animals not only keep the breeder at the bottom of the ladder, but sooner or later result in chaos. If things are allowed to take their course the trend is always backward. A supreme effort is essential to progress.

Individuality.

There is no way of picking out a heifer from appearance and knowing definitely that she will produce

so many thousand pounds of milk in a lactation period. The mature cow in milk is very deceiving, as many have found out to their loss. However, there are certain outward indications which are characteristic of good milkers, and, as like has a tendency to beget like, the performance of the ancestors may serve as a guide when separating the heavy producers from the mediocre. But there are exceptions to every rule, and disappointments may occur even when exercising the utmost care. The fact remains that if the herd is to be materially improved in form and production, an endeavor must be made to secure a little better blood to mate with each successive generation.

Certain type and conformation generally goes with heavy milk production, making it fairly easy to cull our inferior animals, but the demarcation is not so clear between good and extra good animals; or, in other words, between cows giving 400 and 700 pounds of butter-fat in one lactation period. The recognized dairy type is an angular form, showing great capacity and a thrifty condition, but carrying no surplus fat when in milk. Size, shape and development of the udder, and length and fullness of the milk veins are an indication of the animal's ability to produce milk. A cow with a large udder which is meaty, and is almost as large after being milked as before, seldom pleases her owner by her production. Look for an udder extending well up in the rear and well forward, with quarters of uniform size. The size and placing of the teats is also important. When the milk is drawn the skin of the udder should be loose and pliable. Large veins indicate heavy production, as they are the channels through which the blood flows after supplying the milk-secreting cells of the udder with necessary material. The larger the veins, the greater their capacity for blood, consequently it is but reasonable to expect that the milk flow would be larger than when the veins are small. When purchasing heifers it is advisable to examine the miniature udder and veining, and note the placing of the teats. The individual lacking in capacity or deficient in constitution seldom proves a heavy producer. The vital organs must be strong to do the heavy work imposed upon them. Outward indications of a milker are gradually being substantiated by the record sheets, which show the milk yield at every stage of the lactation.

It is becoming more and more recognized each year that the milk and fat record is the barometer which indicates an animal's value at production. If the pedi-

gree shows the blood of high producers for several generations back, the value is enhanced to the extent of the records. To present-day dairymen individuality includes more than form and appearance. The ability to produce and transmit those qualities to the progeny is seriously considered. The two are inseparable. Of what use is form if the animal does not possess the inherent tendency to give milk? On the other hand, of what value is the blood to produce if the constitution is weak, and the capacity to consume raw material small?

A poor individual in the breeding ranks not only damages the one herd but the influence extends over a wide area, if the progeny is used for breeding purposes. Milk production cannot be raised by mating low-producing animals. It is the blood which instills the milk-producing qualities into an animal, and many herds are mediocre producers to-day because their owners did not consider the quality of blood which flowed in the veins of animals used in the herd. There is very little lottery about purchasing a young animal whose ancestors for several generations have made high records, but an inferior animal by inheritance cannot be made a profitable producer, no matter what amount of feed is given. Her offspring will partake of her tendencies, and the only avenue of improvement is through a good sire. The individuality of an animal regarding inherent milk producing proclivities cannot be changed by feed and care. On the other hand, feed and care may limit the production of the well-bred cow. Many of the cows of outstanding records in all the dairy breeds possess a marked individuality and have shown their ability to transmit it. Cows may look alike, but there is a vast difference when it comes to production.

Feeding for Milk.

The cow is a factory which manufactures raw material produced on the farm into a marketable product. Like every other factory the output depends on the capacity of the machinery and the supply of raw material. The best cow known cannot make a large flow of milk out of timothy hay and wheat straw, but give her access to legume hay, silage, roots and concentrates, such as oat chop, bran, oil cake, cotton seed meal, brewers' grains, etc., she will, under ordinary conditions, give a profitable flow of milk, although her stablemate equipped with inferior machinery might not be able to do so. It is poor economy to withhold the milk-produce-

ing feeds from a cow capable of handling them, and it is equally poor economy to continue keeping an inferior cow in the stable to consume high-priced feeds. The most successful feeders closely watch their animals and aim at catering to their appetites. One animal may be able to use more of one kind of feed than another, and it sometimes pays to put a little extra care on the preparation of the feed for some cows. In herds where high records are made the attendant does all in his power to induce the animal to eat, knowing full well that a cow which gives a large flow of milk must of necessity consume a large amount of feed. In order to practice economy in feeding, it is advisable to keep records of the milk produced and feed high-priced concentrates in proportion to the milk yield. Without the scales it is difficult to know what cows are paying for the grain part of the ration.

The size of the mature animal and the amount of milk during the first lactation period is slightly influenced by the way the growing heifer is fed. It is possible, by feeding heavily on grain, to have a heifer mature six months sooner than one raised entirely on roughage. If the heifer is in poor condition at time of freshening, it is impossible for her to produce as much milk during that lactation period as the heifer which has been well cared for. In "Dairy Farming," by Eccles & Warren, the authors claim "that the size of the animal when mature is influenced to some extent by the manner of feeding during the growing period." The case is cited of heifers fed a liberal ration measuring over an inch more in height when mature than heifers fed a ration containing less nutrients. At the age of eighteen months the difference was nearly 3.5 inches, but the group receiving a lighter ration continued to grow for several months after the heavier-fed group had ceased growing. However, the former remained slightly smaller. The age at which a heifer freshens also influences the size of the cow when mature. The authors of "Dairy Farming" go on to say that a Jersey freshening at from twenty to twenty-two months, or a Holstein at from twenty-two to twenty-four, will not develop into so large an animal as it would had it been older. However, the difference will not be very marked unless the animal has also been fed on a light ration. Heavy grain feeding while young, accompanied by late breeding, will develop a heifer to the maximum size. If the heifer is fed exclusively on roughage she is rather slow in reaching maturity; for that reason it is often advisable to feed a little grain during the winter season. It has been found that the milking tendency of the cow when mature is not influenced to any great extent by variations in the ration during the growing period. The dairy characteristics are a matter of inheritance, and are evidently not influenced very extensively by feeding. The young animal must be kept in a thrifty, growing condition from the time it is dropped until mature in order to develop size. It is unreasonable to expect a big, strong, robust cow to be developed from a stunted heifer.

If the cow has the right breeding but has been on short rations it is possible to increase milk production by feeding properly. At a meeting some time ago it came up in discussion that a herd of cows averaging 3,000 pounds of milk had been taken over by another dairyman, who was a good feeder, and the average production was raised to 5,600 pounds. These cows were mated with a good sire, and the heifers produced as high as 10,000 pounds of milk in one lactation period. This is an example to show that cows capable of production were prevented from producing to their maximum by improper feed and care. In this case feed and not breeding was the limiting factor.

Care of the Individual.

The animal may be bred right and fed right, and yet be hindered in production by lack of proper care and attention. The dairy cow is a sensitive creature, and excessive cold, heat, worry or fright, may cause a serious decrease in the milk flow, consequently the attendant should exercise care at all times when going among the herd. Every dairyman has noticed the effect of chasing the cows rapidly with a dog; the effect of the animal being unprotected against flies, and of being permitted to stand in an unsheltered place when a raw, cold wind was blowing. The man who gets the most out of his cows must avoid allowing the things mentioned to occur. In the stable gentleness should be practiced at all times. Hitting the cow with the fork or milk stool at milking time has caused a decrease of several pounds of milk from certain cows. Regularity in feeding is also essential, and the regular use of the currycomb has a beneficial effect. The best results cannot be obtained if either breeding, feeding or care is neglected. No matter how much attention is paid to two of these items, it is quite possible for the other one to be the limiting factor in profitable production.

EDITOR "THE FARMER'S ADVOCATE":

Your paper is well and truly named, "The Farmer's Advocate," its policy being to advocate and uphold all that is beneficial to the farmer, and as readily denounce everything detrimental to him or his interests. We appreciate your efforts very much, and wish you a prosperous New Year.
Ontario Co., Ont.

D. A. McCracken.

EDITOR "THE FARMER'S ADVOCATE":

We have been taking "The Farmer's Advocate" ever since it was first published, and look for it as regularly as we look for our dinner. It is the best agricultural paper printed, a great help to the farmer. Wishing you every success.
King's Co., N.B.

JOHN RAYMOND.

HORTICULTURE.

Commercial Apple Growing.

EDITOR "THE FARMER'S ADVOCATE":

The reasons why some have not made money growing apples while others have, are numerous, but are mainly three in number: First, on account of a bad selection of varieties; second, on account of unsuitable location; third, because of lack of good management.

For many years it has been known and proven that suitable varieties on suitable soil can be made to produce regularly very profitable crops, but the care necessary to do this has not been given in cases where profits have not been made, sometimes because of lack of knowledge, but generally because the orchard was small or was badly run down or getting very old, all of which were reasons, partially at any rate, warranting neglect, but all of this continued neglect has so reduced the acreage of really productive orchards that there is more likelihood of a shortage of apples in Canada than of a glut in the years to come. Now is the time to plant proper varieties on proper locations, and on a scale large enough to warrant the time and study necessary to rear the orchard and care for it after it is reared in a really intelligent and scientific manner; and when I say scientific, I only mean according to the well-known rules and regulations which any man of ordinary intelligence can apply.

It is well known that some varieties yield well, that some varieties are long lived, that some bear at a very early age and bear heavily continuously, and that some varieties sell at double the price of others. We then should study to take advantage of all the well-known characteristics as far as we possibly can. Apple trees are now cheap. It will be a generation, I verily believe, before they are again as cheap, if ever. Nurserymen now have on hand for sale all the best varieties in plenty, and are offering them at prices much below the present

will produce, if not the most, at any rate equal to the heaviest producers grown in this country. The other half I would plant chiefly with Snow, McIntosh and Scarlet Pippin. These are all most excellent red dessert apples that always have brought and always will bring the highest prices because of their intrinsic merits that cannot be excelled. If planting a very large orchard I might put in some Blenheim in the southern half of Old Ontario, and a few Tallman Sweet. In making up mixed cars for our greatest and best market, viz., our home market, and especially the Western Provinces, a few barrels of Tallman Sweet are always called for, and it is an easy apple to grow, being very productive, an ideal tree and very hardy. Then I would plant between these trees in the row, and a row between each two rows of the permanent orchard, so that when the orchard is planted the trees would be 17½ or 20 feet apart each way, varieties from the second list, and my selections would be Duchess, Wealthy, Ontario. Some prefer Wagner, some would perhaps set Ben Davis or Gano; any of them bear at four or five years of age, and will keep right on until they die. At the age of about seventeen, or when the branches begin to touch, I would cut out two-thirds of these fillers, leaving the tree in the centre of each square of permanent trees for a few years longer and then cut it out. In this way an orchard will commence to return a handsome revenue at the fourth or fifth year, and keep it up for a hundred years, if planted on suitable soil and kept in a healthy condition by following the plain and simple directions laid down by our horticultural authorities, at Guelph and Ottawa, who are provided for us by the Governments of Ontario and the Dominion in order that we may obtain, free of charge, the most up-to-date information on all horticultural matters and especially on apples, for which our Province of Ontario is so admirably suited, where these choice varieties can be grown to as great perfection as in the most favored spot in the world. This old Province, almost surrounded by the Great Lakes, is the home of the Northern Spy and all of the varieties grown in the

North Temperate Zone. We ought to grow these choice varieties, Spys, Snows, McIntosh, etc. and let other countries grow other cheaper selling sorts if they wish. These varieties will command a market when even such good old sorts as Baldwin and Greening are selling too cheaply. This winter and last spring Spys have been bringing in Montreal and Ottawa \$6.00 and \$7.00 per barrel, with Baldwin and Greening \$2.00 a barrel less, and McIntosh and Snow \$7.00 to \$8.00 a barrel. Spys, at time of writing, are \$9.00 a barrel in Montreal.

A neighbor of mine this year sold \$10,000 worth of fruit, gross value, chiefly apples from ten acres of ground. He is a good cultivator. He prunes and sprays according to the well-known rules—that is all. His land is good land, but no better than tens of thousands of acres in Ontario. He took from sixty Northern Spy apple trees an average of \$50 per tree, gross. A friend of mine rented an orchard of Northern Spys, twelve acres, from the farmer who had reared it and became discouraged when the orchard was about twenty years of age because it had not paid. He had not cared for it. My friend pruned and sprayed it, and in the second year of his lease sold \$6,000 worth of Spys from it, and has taken repeated crops since of equal value.

What finer asset can a father leave his son than a twenty-acre orchard planted with these fine sorts, of which the Spys only get to their best at the age of thirty and will produce for generations, conditions being right? Such an asset would be worth more than a very large life insurance policy, and would be a source of revenue after five years instead of a constant drain all one's life, to be realized upon only by one's heirs and perhaps then dissipated in some risky venture.

Wentworth Co., Ont.

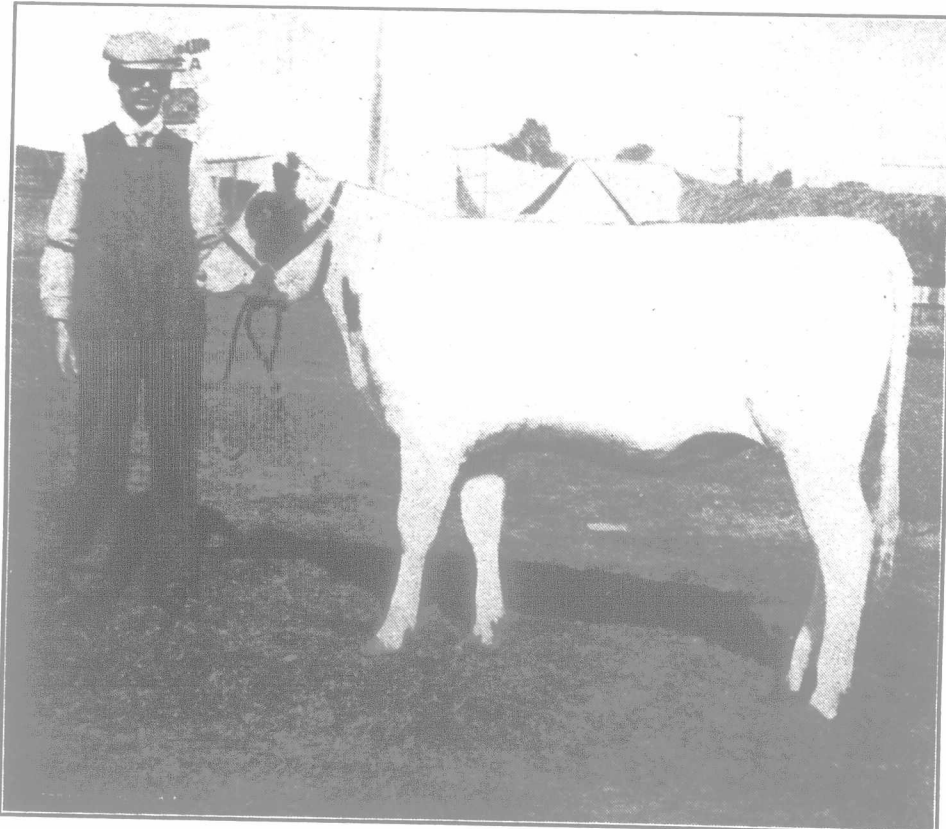
E. D. SMITH.

How to Grow Melons for Home Use.

EDITOR "THE FARMER'S ADVOCATE":

How many of us have had melon beds from year to year, but with such poor results that we have given up in despair and resorted to the fruit shop to secure the melon and even then have so often met with disappointment. Having passed through years of disappointment and evolved a plan for growing melons, which has given good results I shall submit my plan to others. I am only an amateur and therefore shall not attempt anything like a professional treatment of soil and cultivation, but simply outline my method.

First, we must recognize that the melon is a fruit



A Typical Holstein Friesian Calf.

A First-prize winner wherever shown.

cost of producing them. They will not continue to do this. They have for two years past cut down their plantings to, perhaps, too great an extent. I believe in Canada there will not be nearly half the trees for sale next year or any year in the near future that there are this year. The trees for sale this year having been started before the slump in sales, due to the depression in 1914 and the war since that time.

I would say that it costs at least twenty-five per cent. more to grow nursery stock now, and has for the last three years, than what it used to cost, so that this coming spring will be the time when the planter can get his trees very much cheaper than he ever can again in some years at any rate.

Now as to varieties.—What are they that sell for most money? Answer—Snow, McIntosh, Scarlet Pippin, King, Northern Spy. Why? Because of their high quality and red color.

What are the varieties that produce very heavy at a very early age? Answer—Duchess, Wealthy, Wagner, Ontario, Gano, Ben Davis.

Of those in the first list all are heavy bearers once they start, except King. It is only a moderate yielder. This is the only fault with the King. The apples are large, the stem is short and stiff and, therefore, the apples are somewhat liable to blow off. If I were planting an orchard for profit, I should confine it to a few of the very best varieties. I should plant a permanent orchard with the trees 35 to 40 feet apart, according to the fertility of the soil—on choice land, 40 feet each way. This orchard, I would plant one-half Northern Spy, which I consider not only the best all-round apple for market, but an apple that in the first sixty years after planting

that very readily cross fertilizes, and the effect of cross fertilization is apparent in the fruit of the same year. This is most apparent when the melon bed is too close to a cucumber bed, and cross fertilization takes place, and the flavor of the cucumber is often quite apparent in the melon. This is equally true when growing melons of various sorts near one another. For instance a green-fleshed melon grown near a salmon-fleshed melon will often result in fruit that has neither the distinctive color of the one nor the other; and this also applies to the flavor, resulting in a nondescript melon and disappointment. Select the one sort of melon you particularly want; grow it and nothing else, and keep your cucumber and squash beds at a safe distance.

Text books tell us that melons require deep cultivation and well-enriched soil, and I have no doubt that the deeper the cultivation and the richer the soil the better success you will have; but I do not treat my melon bed differently from the rest of my garden, I just do the best I can with it all.

The melon bed is marked off with two rows 4 feet apart with a hoe making a drill about 1 inch deep. In this drill the seed is dropped about 12 inches apart, and each seed covered with a handful of dark loam. This is done about May 15, or a day or two earlier if the season is promising. The dark loam has no particular merit in it except that it marks the spot where each seed is sown. About a week later, plant another seed in between those of the former sowing and cover lightly. This will leave each row with seeds 6 inches apart. Now you may have good germinating weather with the first sowing and not with the second or vice versa. The first sowing may come up readily and be caught with a late frost, which the second sowing misses. In any case you are fairly sure of having plants of uneven vigor about every six inches, that is if your seed was good. Many gardens find an enemy in the cut worm. Convert it into a helper, and let it select the plants it likes best—the weakly ones: they are more tender and seem best to suit its taste. Thank it and keep the more vigorous plants for yourself. As these grow and develop select the most vigorous plants that stand about 3 feet apart in the row, and weed out the others. Sometimes the plants may be left only a foot apart in the row. That is to say, I would rather have two vigorous plants a foot apart than select a weaker plant two or three feet off. The ground, all the time, must be well raked and kept free from weeds. If the weather is dry do some watering, especially when the seed is germinating and the roots setting.

When the plants send out their first runners nip off the ends after the second or third blossom. This forces out the laterals upon which the fruit will set. The laterals are encouraged as much as possible to distribute themselves over the bed and not encroach more than is necessary upon each other, and the ends are again nipped when they have reached the limits of the bed.

When the fruit has nearly reached its full size and before it begins to ripen raise it upon inverted, small flower pots. This is done to keep the fruit off the moist ground and out of reach of worms.

The melons are picked from the vines when they show

a decided crack at the stem, and readily drop from the vine. They are then placed outside in a protected place exposed to the full rays of the hot sun to ripen. This may take two or three days or more after picking, according to conditions. When a melon is properly ripened the calyx end will be indented easily with a very slight pressure of the hand. This method of ripening will apply only for melons for home use. The fruit would then be too ripe to stand shipping. When purchasing melons from a store they are often greatly improved in flavor if they are exposed for a day or two to the hot sun before being cut for the table.

So far as I know this plan is original; it is simple and gives good results.
York Co., Ont.

L. H. BALDWIN.

How I Grew my Winning Acre of Potatoes.

EDITOR "THE FARMER'S ADVOCATE":

When I decided to enter the acre-profit competition conducted by our Junior Farmers Improvement Association I selected potatoes as the crop with which I should be most successful, for the reason that this section of Middlesex county known as Caradoc township has been long known as a potato centre, second to none in the province. The soil is a deep, rich sandy loam, with a clay sub-soil and has been under continual cultivation for the last fifty years. It is particularly adapted to the production of clean, smooth potatoes of high table quality, and very free from any kind of scab or imperfection of the skin. The acre on which I grew the prize potatoes was naturally drained, which I consider the best kind of drainage. Good drainage whether natural or artificial is very essential in growing potatoes as well as other crops. The previous crop was fall wheat. After harvest the stubble was gang plowed between three or four inches deep, then harrowed and cultivated at frequent intervals until winter set in. In the spring a liberal coat of good stable manure was applied with a manure spreader. This was at once plowed under and well harrowed.

The variety planted was the Dooley, a very popular sort in this section. It is a white, oval potato and is noted for its ability to yield. It has not so many eyes as most potatoes, averaging from six to eight, therefore it takes a trifle more seed per acre than some other kinds. It requires fifteen bushels to plant an acre. They were planted with a machine planter, which does very accurate work with sets of uniform size. The rows were thirty-four inches apart and the sets planted a trifle over a foot apart in the row, and about four inches deep. Care should be exercised in cutting to have sets uniform and of good size.

After planting, frequent harrowing was given until the plants were up. This was done to conserve the soil moisture which I consider one of the prime factors in producing a large yield, especially in a dry season. After the plants were up the scuffer was used for the same reason, as well as to keep down weeds. Fall cultivation removes many weeds and any grass which

may exist. When the tops fill in between the rows, further cultivation is dispensed with. Any weed which cannot be removed by the scuffer is taken out with the hand hoe.

The beetles were controlled by use of Paris green and a horse sprayer. It is very necessary to begin in time to control the beetles if it is to be done successfully. From two to three pounds of Paris green to forty gallons of water make an effective spraying solution. I did not spray for blight as the bluestone has become so expensive and hard to get, but I believe it aids very materially in increasing the yield per acre.

Harvesting was begun about October tenth and was done with a potato digger. The digger is a great labor saver and if enough pickers can be had, four or five acres can be dug in a day. The potatoes are picked in bushel boxes which are loaded on low flat racks and hauled at once to the place of storage.

In conclusion I may say that I attribute my success chiefly to these reasons; suitable soil, good seed, and conservation of soil moisture by special cultivation. Over the first I had not very much control, any more than to have it clean and in a good state of cultivation. Good seed can only be obtained by careful hill selection year after year, and growing a special seed plot from those thus selected. In regard to the conservation of soil moisture it has been previously explained how I conducted that system.

To produce a yield of 320 bushels on one acre at a cost of \$44.67 and making a net profit of \$275.33 in a year like 1916 when weather conditions were so unfavorable requires a good deal of patience and perseverance combined with a knowledge of natural conditions, and how to cope with them.
Middlesex Co., Ont.

WM. S. COURTIS.

POULTRY.

Egg-Laying Competition.

There are 101 pens of five birds each entered in the Philadelphia North American International Egg-laying Competition, for the sixth year. During the first eleven weeks of the competition the 505 birds, representing nineteen breeds, have produced 8,013 eggs. It may be interesting to note the number of eggs laid by the highest pen of the different breeds. November, December and January are considered the most difficult months to secure eggs. However, some of the pens have done remarkably well. Tom Barron's White Wyandottes again lead with 224 eggs to their credit; a pen of Rose-comb Rhode Island Reds are second, having laid 222 eggs. The highest production for Barded Rocks for the eleven weeks was 103 eggs; White Rocks, 101 eggs; Columbian Rocks, 183 eggs; Single-comb Rhode Island Reds, 180 eggs; Rhode Island Whites, 194 eggs; Single-comb White Leghorns, 212 eggs; Buff Leghorns, 103 eggs; Speckled Sussex, 182 eggs; other breeds entered fell below the 100-egg mark.

Incubation and Brooding on a Commercial Poultry Farm.

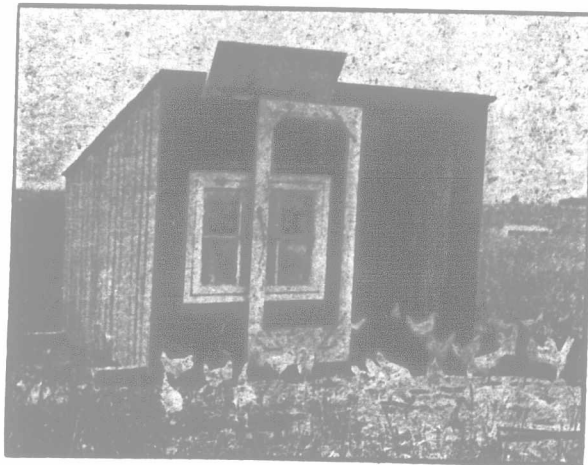
It is one thing to manage the mature flock so that it will produce an abundance of eggs when the price is high, but it is an entirely different and more difficult problem to run an incubator and brooder so as to raise a large percentage of strong, healthy chicks. Incubators and brooders are not "fool proof," and to get the best results they must be operated by one person during the entire season. A variation of several degrees in temperature, in either, may prove fatal to the chicks. Even hatching and brooding chicks by the natural method entails a lot of work and attention. Hens leaving nests, broken eggs in the nest and vermin on hens and chicks must be guarded against. Where only a few chicks are raised the natural method usually proves quite satisfactory, but on a commercial plant where hundreds or thousands of chicks are hatched each year the artificial method is indispensable.

On Oldham Poultry Farm the number of chicks raised runs into the thousands. This end of the business is looked after almost entirely by the owner, Lewis N. Clark. A new brick incubator cellar 66 by 20 feet and a 6,000-egg incubator will be utilized for the first time this spring. The business has outgrown the old cellar and the capacity of the small incubators. The system of selecting and mating the birds to secure eggs for hatching on this farm was described in the last issue of "The Farmer's Advocate." In order that pullets may be sufficiently well developed for egg laying by early fall, the chicks are hatched from April 10 to May 20. This necessitates filling the machines about March 20, and they are set three times in the season. If pullets are hatched much before the earliest date mentioned, there is danger of them moulting in the fall, thus delaying egg production. On the other hand birds hatched much later than May 20 do not become sufficiently developed to commence laying before the cold weather sets in, and then it is difficult to get them started before late winter.

The large machines are heated with hot water from a coal furnace. They are run a few days before the eggs are put in, in order to regulate them so as to secure a steady heat. They are always thoroughly disinfected before filling. Care is taken to keep all eggs for hatching at from 50 to 60 degrees temperature and out of any draft. For the first few days a temperature of 102½ degrees is maintained in the incubator and this is raised to 103 degrees. All machines used have sand trays

which are wet every day to supply moisture to the eggs. It is essential that the eggs be turned twice a day. In the small machines this work is done by hand, but an automatic device turns the eggs in the larger machines, thus saving an immense amount of time. It is necessary to cool the eggs every day. No definite time can be given for leaving them out of the machine, as it depends on the temperature of the cellar. When they feel cool to the face they are returned to the incubator. In order to secure good results the temperature of the incubator cellar must be fairly uniform from day to day, but at the same time must have good ventilation. Both these points were taken into consideration by Mr. Clark when constructing his new cellar.

Leghorn eggs are candled on the fifth day and Rock eggs on the eighth, and both again the fifteenth day. All infertile, cloudy eggs and dead germs are removed from the machine the first testing. Taking an average of the past three years of all eggs set on Oldham Farm, the Leghorn eggs have run 94¼ per cent. fertile, and Rocks 82 per cent. Leghorns hatched 83 per cent. of total eggs set and Rocks 68 per cent. This is an ex-



A Satisfactory Home for Growing Chicks.

ceptionally good record and a very large percentage of the chicks hatched are raised, as during the period of brooding the mortality for the time mentioned has been remarkably low, averaging but 2¼ per cent. with the Leghorns, and 9½ per cent. with the Rocks.

As soon as the sexes can be distinguished the cockerels of both breeds are separated from the pullets and fattened to supply a broiler trade. The pullets are placed in colony houses and are given the run of the corn and clover fields.

Brooding the Chicks.

The brooder house facing south is 14 feet wide and long enough to accommodate twenty hovers. It is constructed to facilitate work and give the chicks every advantage for development. An alley-way runs along one side the full length of the building, and the platform for the hovers is raised a couple of feet above the floor, thus lessening the amount of stooping in looking after the chicks. Twenty-seven-inch hovers are centred in a space 3 feet wide; beyond this is an enclosure 3 feet by 7 feet, thus each lot of 100 chicks have ample room to exercise in a bright, airy, clean pen. Outside are small yards which are thickly sown with oats each spring, so that the young chicks are able to secure plenty of green feed before they are placed on free range.

The hovers are heated by a hot-water furnace, and the pipes are arranged in such a manner that the floor is kept practically cool. The heat strikes the backs of the birds, which nature proves is the proper way. Experience has shown that bottom heat has a tendency to cause leg weakness. A good deal of care is taken in regulating the temperature of the hover, as excessive heat or cold may cause the loss of many chicks. If the chicks are crowded up in the middle of the brooder it is an indication that they require more heat; on the other hand, if they are scattered about the pen when not feeding they are likely too warm. Mr. Clark watches the chicks very closely, and in past years has had remarkable success in raising a very high percentage of those hatched. The hovers are heated to about the temperature of the incubator so that the birds do not notice much change. When they become accustomed to their new place the action of the birds largely determines the amount of heat necessary. There is not so much danger of vermin infesting the machine-hatched chicks

as when natural incubation is used. For that reason no hens are used for hatching or brooding on this farm.

Feeding the Newly hatched Chicks.

A little milk and water is permissible the first forty-eight hours; after that solid feed is placed before the chicks. The infertile eggs from the incubators are boiled hard and mixed with breadcrumbs in the proportion of one part of the former to three of the latter. This constitutes the diet for the first three days, and five meals are served each day. After the third day chick grain replaces two feeds of bread and eggs. After the fifth day two feeds of chick grain are given and three feeds of mash, composed of a mixture of 100 lbs. bran, 100 lbs. corn meal, 100 lbs. fine, sifted beef meal, and 33 lbs. of fine bone meal. This is moistened with sour skim-milk. The chicks have access to water or milk to drink, and are fed sprouted oats until the oats in the yard have grown sufficiently for them to pick. Chick grit is also necessary from the time the birds are put in the brooder. As they become older they are fed fewer times each day but are given more at a feed. The drinking fountains and feed troughs are kept scrupulously clean at all times. This aids in keeping the birds thrifty and healthy.

Self-serve System of Feeding for the Growing Chicks.

When about six weeks of age the pullets are moved from the brooder house to clean, attractive, well-built, nicely-painted colony houses, which are scattered over the farm. These buildings afford shelter for the birds, which have free access to the corn and clover fields. Mr. Clark considers a well-cultivated corn field an ideal place for growing chicks. They are in close touch with the fresh soil, and through the hottest part of the season the corn affords them shade. Each colony house is the home for a certain number of birds. They go there at nights and are locked in, thus eliminating danger of rodents destroying the young birds.

A hopper divided into six spaces and covered with a roof holds the feed, and allows the birds to lunch at any hour of the day. Dry mash, composed of 100 lbs. bran, 100 lbs. cornmeal, 100 lbs. feed flour, 100 lbs. finely-sifted beef meal, and 33 lbs. of fine bonemeal is placed in one division; wheat in another; cracked corn in another; grit, oyster shell and charcoal each have a separate compartment. The birds have a choice of feeds. The gallon fountains are filled with fresh water every morning; it is colored slightly with potassium permanganate, which has been found to be a preventive of the spread of disease. With the environment and rations mentioned the pullets grow rapidly. They are never short of feed, and are usually sufficiently developed by September that a large percentage of them are laying by the first of October and continue to lay throughout the winter, when eggs are high in price. The pullet which is left largely to search for her feed in the fields during the summer can hardly be expected to commence laying in the fall. Mr. Clark has found that it is necessary to feed heavily in order to develop the birds for winter laying. Consequently, the hopper system of feeding is in vogue on his farm. The feeds mentioned have given splendid results.

Feeding Cockerels.

When the pullets are placed on free range, the cockerels are put in the fattening pen to be fitted for the broiler market. Both the Leghorns and Rocks meet the demands of the trade very satisfactorily, although it usually takes a few days longer to condition the Leghorns than it does the Rocks. They are fed a mixture of 100 lbs. feed flour, 100 lbs. cornmeal, and 40 lbs. of beefmeal, made into the consistency of a batter with skim-milk. As a rule the birds are ready for market at from nine to ten weeks of age.

On the average farm, as well as on a poultry plant, the strongest and thrickest chicks come from eggs which are the result of mating healthy yearling hens with vigorous cockerels. The question of brooding is also an important factor to take into consideration. Chicks which get a setback during the first few weeks of their life never make as profitable birds as they would have had they been given every chance. Thousands of dozens of eggs are wasted each year owing to their being infertile, and an enormous number are also wasted through carelessness in running the incubator or having restless hens doing the incubating. The loss of chicks amounts to a big item every year. By paying more attention to these phases of the poultry business a considerable saving could readily be made. The system followed by Mr. Clark largely eliminates loss through the sources mentioned. Selection of breeding birds should be made on every poultry farm before the breeding season commences, and the system of feeding outlined is applicable to a flock of 10 as well as 5,000 birds.

FARM BULLETIN.

Put Co-operation on Proper Basis.

EDITOR "THE FARMER'S ADVOCATE":

Noticing in recent issues of "The Farmer's Advocate" your comments touching some reports of co-operative club work, we were impressed anew with the belief we have had for some time, that the Advocate has, perhaps, the most clear-cut and correct conception of the fundamental principles of true co-operative business of any of the public advocates, either press or platform, of which we are acquainted at present.

Listening more recently to some of our active co-operative workers discuss the practices and principles of co-operation, I was convinced more than ever of the dearth of a clear conception of the fundamentals of this potent movement.

My active participation in, and responsible positions filled in the carrying through of various co-operative schemes during the past twenty-five or thirty years have served to convince me of at least two great truths: (1) There is no other weapon to-day so effective for the emancipation of the farmer from the unjust and unequal burdens he bears, in the economy of society, as that of co-operation, rightly so called. And this weapon hangs freely at the hall-door of every farmer, to be taken with him as he goes out to join the ranks of his co-workers in the great constructive battle of society. (2) There is no greater menace to the success of this great movement to-day than the noisy participation in co-operative movements of men who know little and care less about the real fundamentals of co-operation and the consequent general lack of knowledge of the participants. For these reasons we feel constrained to add our feeble commendation of your efforts, through the medium of the widely-read pages of the Advocate, to inculcate a better understanding of what co-operation is and is not.

Co-operation is a system of ethical economics, or moral business relations. It is not merely a policy or combine to undo someone for personal ends. Co-operation dethrones money and passes its power to men; it recognizes the fact that money has its limits of value just as much as man has. It recognizes that both man and money are required to carry on the affairs of men, as to production, preservation and distribution of his wants, but when man has his just reward for the part he plays in this system and money has its just award, then what remains must belong to those of the system who brought it into being. Thus, the system itself, the producer, and the consumer—if systematically co-operating, would share in what is usually called profit.

Whatever effect co-operation may have on prices and value, it is not its primary function either to smash downwards or boost up prices, but rather, by economic business methods, to accomplish savings and make an honest allotment of them to the rightful owners. All this of itself suggests that co-operation can only prosper or exist in the atmosphere of a proper community spirit, of charity and confidence, and cannot develop and grow without corresponding development of the higher attributes of man. Thus, it is a social system of ethics as well as economics and rational politics. To put the co-operative system into practical operation, simply means joint action under such rules and regulations as will conserve its principles. We will not discuss these at length here, but we will say that the leaders in the co-operative movements of this country will need to recognize that the problems to be solved and difficulties to be overcome are more of a psychological nature than economic, and these difficulties have been intensified by the erroneous teachings and practices of the past.

In our commercial undertakings real progress will only come when we have evolved to the stage of profit-sharing dividends in proportion to the patronage of the members. So convinced have we been of this that the Trade Bulletin No. 14, the last one we issued from the office of the United Farmers' Co-operative Co., Ltd., under date of July 15, 1916, just as we had severed our connections as manager, contained the following:

"When on the first of March, 1915, we assumed the responsibility of Manager of the business it, was an insolvent concern, with debts to pay. Ten months later the debts were paid, a profit balance announced, and a seven per cent. dividend on stock declared. Six months later, at the Directors' meeting on the 10th inst., the auditors' report showed a balance of profit on hand of \$5,049.80, including \$906.50 received on stock during the period.

"The statement further shows the total business done during the first six months of this year as \$213,015.96, as against \$225,000.00 for the whole of last year.

"As we review these results of our past sixteen months' efforts to place our Co-operative business upon a sound basis, and knowing as none other knows, the difficulties confronting us, also that these difficulties are not from the sources generally to be expected, we are assured that with a correct application of past experiences, the elimination of weaknesses, the instituting of improvements and the installing of good management, the success of the work is a verity, and will roll in tens of thousands of dollars of profits. This, divided among the members in profit dividends done on business through the Central, will so stimulate confidence and that business profits may be recorded in terms of hundreds of thousands.

"The writer has now spent sufficient time and thought investigating the co-operative problems of agricultural Ontario to be thoroughly convinced that the time is opportune, the conditions right and the common peoples' needs imperative enough to enable co-operation to bestow unbounded economic and social benefits if intelligently controlled."

We have not yet received the financial statement of the Company, but we are certain that conditions warrant the hope that at least a profit will be available sufficiently ample to give a nice trade dividend back to the real co-operators, and thus prove the fact of such a stimulus of the movement.

Waterloo Co., Ont.

ANSON GROH.

[Note.—We are sorry that owing to press of material this letter had to be held over for two weeks.—Editor.]

An Antidote for Poison Gas.

EDITOR "THE FARMER'S ADVOCATE":

Please allow me space in your columns to pass a few remarks about some statements which Mr. A. A. Ayer, of Montreal, expert farm lecturer, but who exports cheese in order to make money, made at the Eastern Ontario Dairymen's Association, at Napanee, a short time ago.

I shall proceed to take the statements referred to as they come: First, he says farmers should feed in order to make the largest production possible, "even if it does not pay." Now what do you think of a man who will make statements like that, when there isn't one manufacturer or cheese exporter in Canada who will do likewise. How long would Mr. Ayer stay in the cheese business if he thought he wasn't going to come out at the big end of the horn? Just so long as it would take him to sell his interests in that business. We are assured by Sir Sam Hughes that our city friends would not undertake to make munitions until they were sure that they would make handsome profits, yet "foghorns" from the city have the gall to tell farmers they should work harder and longer without any profit, and I guess they wouldn't care if we did it at a loss.

Secondly, we are told that there never was a time when farmers could afford to pay as big wages for help as now. I live in a district where mixed farming is the sole operation, and I feel sure that help is no scarcer here than in any other part of Ontario, and I also know that every farmer, or at least ninety per cent., should have another hired man in order to produce to full capacity, and we might as well try to stop the sun as for every man or for every third farmer to hire an extra man, for the simple reason that they are not to be had. But, for the moment, we will suppose they were to be had and the farmers all engaged a man, what would be the consequence? It would place the farmer very much between the devil and the deep sea, because he would have to meet the manufacturers' labor price, which is from \$2.00 per day up to \$5.00 or \$6.00, and the minute he did that the manufacturer and cheese exporter would boost the wage price possibly two dollars per day more, in order to entice the men from the country. And then the recruiting officers would come on to each farm to endeavor to persuade the help to enlist, and if the farmer uttered any protest said officers would call him disloyal for trying to keep his man from enlisting.

Thirdly, Mr. Ayer rants about farmers not paying any war taxes whatever when every farmer knows that to be an absolute falsehood, and about farmers buying automobiles, when he must surely know that in our cities, where there are street cars within easy reach of all, there are more autos to be seen at some corners any hour in the day than one would see in a week in the country.

Fourthly, Mr. Ayer says that milfeeds haven't gone up over fifty per cent., while milk has doubled in value. Now let us examine the first part of this assertion closely. On looking at Toronto prices bran is selling at \$34 and shorts at \$38 per ton; these prices are, I presume, wholesale. Before the war bran and shorts were selling, where I deal, at \$20 or \$22 retail. Is an advance from \$20 to \$22 retail to \$34 and \$38 wholesale "scarcely fifty per cent.?" It seems to me it's nearer 100 per cent. So much for the first, now for the second part of the fallacy, namely, that "milk has advanced more than double." Possibly whole milk has, but we are not all in a position to deal in whole milk, but we do know that skim-milk, marketed as pork, hasn't advanced that much, as pork isn't twice as dear as it was before the war. As for cheese, we find on referring to the Advocate that in February, 1912, cheese was selling for 14 and 15 cents per pound, now it is quoted at 26 cents, which, although nearly twice as dear, is still hardly what one would call more than doubled. But it is in butter prices that we see his figures are in error, as it has only advanced from 33 cents per pound, in 1912, to 41 cents as at present for creamery prints. One couldn't exactly call that more than doubling the price.

Fifthly, Mr. Ayer says our women will have to help outdoors, as in France, as if they had not already done so and have been for years by raising poultry, milking cows, making butter, gardening, etc. Possibly these may only be considered as a form of recreation by our city cousins, but let one of them come to the country and do a little at each of these things seven days a week, and cook, bake, scrub, wash, raise a family and keep things sanitary and tidy about, and in the house, and I am afraid they won't want to do much work in the fields.

And sixthly and lastly, we find the most amazing and absurd statement of the whole epistle, i. e., that the farmers should work harder with longer hours. Caesar's ghost! I am not going to say anything about this; it speaks for itself. I am, though, going to make a suggestion which is that Mr. Ayer, or some other of the same school, give us an idea, 1, of how long and hard we do work; 2, how long and hard we ought to work, and 3, of how long and hard he works himself. It seems to me that France is not the only place where poison gas is poured forth from a gas bag.

Dufferin Co., Ont.

LEWIS COTTON.

Brant District Holstein Club Hold Successful Sale.

On Wednesday, January 31, the Brant District Holstein-Friesian Breeders' Club held their third annual sale of pure-bred Holsteins in the city of Brantford. The attendance was easily several hundred above that of any previous sale, and the bidding on the fresh cows in particular was exceptionally brisk. Forty-eight females and five young bulls made a total of \$7,325, an average of \$138 per head. This, of course, included a number of young calves, and the five bulls averaged only \$100 each, which tended to bring the average down. Twenty-seven cows made an average of \$167.80, while twenty-one calves and one and two-year-old heifers averaged \$109.28. The top price of the sale was \$275; this figure was paid for a four-year-old cow from S. Lemon's consignment, and also for another of the same age from the consignment of T. W. Craig. A fourteen-months son of Lakeview Dutchland Hengerveld 2nd, from W. G. Bailey & Sons' consignment, topped the bull sales at an even \$200. A large percentage of the entire offering went to outside countries. Following are the names of the animals, the buyers and their addresses, together with the price paid:

| | |
|--|-------|
| Mercena Rosedale, O. L. Jordan, Mandamin..... | \$125 |
| Mercena Starlight Fayne, O. L. Jordan..... | 110 |
| Butter King's Daisy, O. L. Jordan..... | 200 |
| Annie Posch Clay, O. L. Jordan..... | 260 |
| Daisy Ann's Pride, O. L. Jordan..... | 235 |
| Pauline Favorit Daisy, Jas. Davis, Thorold..... | 200 |
| Eva De Kol, Jas. Davis..... | 115 |
| Abbekerk Bell Dhu, A. M. Patterson, Echo Place..... | 180 |
| Nona Pauline Rooker, T. A. Edworthy, Copetown..... | 140 |
| Jewel Pietertje Netherland, A. J. Vansickle, Alberton..... | 145 |
| Patsy A. Castleton, Geo. E. Wood, Cainsville..... | 110 |
| Maple Leaf Johanna, Jno. Berry, Middleport..... | 145 |
| Blanch Akkrum 3rd, O. L. Jordan..... | 200 |
| Shadelawn Perfection, Alex. Young..... | 115 |
| Pauline Calamity Jewel, A. J. Vansickle..... | 105 |
| Dora Pietertje Posch, Geo. H. McFadden, Mandamin..... | 275 |
| Evelyn Netherland De Kol, P. Purdy, Cainsville..... | 110 |
| Mechthilde, Neil McGugan, Shedden..... | 110 |
| Sevangeline De Boer, W. Brown, Cainsville..... | 275 |
| Tinie Pet De Kol, G. H. McFadden..... | 150 |
| Vida Princess Ormsby, E. M. Chalcraft..... | 140 |
| Layna of Oakland, D. M. Panabaker, Hespeler..... | 115 |
| Sadie Schuiling, Robt. B. Parks, Troy..... | 105 |
| Spofford Posch, H. Matthews, Putnam..... | 105 |
| Starlight Beauty Fayne, E. E. Robb, Troy..... | 100 |
| Daisy May Lassie, Edward Dyson, Guelph..... | 220 |
| Jessie Orphan, H. Woodley, Waterford..... | 110 |
| Queen Favorit Dhu, A. Whicker, Caledonia..... | 155 |
| Abbekerk Favorit Maid, W. J. Edworthy, Copetown..... | 105 |
| Francy Netherland Calamity, F. L. Atkins, Putnam..... | 100 |
| Viola Countess Spink, Neil McGugan..... | 100 |
| Maggie Wood, D. M. Panabaker..... | 150 |
| Mabel Posch, O. L. Jordan..... | 110 |
| Little Perfection Herms, M. L. Jones, Brantford..... | 190 |
| Pasma Pontiac Calamity, G. H. Madyen, Mandamin..... | 120 |
| Isabell Mechthilde, A. Edward, Brantford..... | 205 |
| Spink Lady De Kol, D. A. Thomson, Cainsville..... | 200 |
| Madam Bank's Posch, O. L. Jordan..... | 150 |
| Pandora Cornucopia Lass, W. H. Shellington, Harley..... | 120 |
| Effie Cornelia Zozo, Jno. S. Smith, Hill Grove..... | 145 |
| Fairfield Acme Wayne, Jas. Davis..... | 130 |
| Smithdale Favorit Wayne, Jno. A. Lindsay, Hagersville..... | 110 |
| Snowflake Hengerveld, Wilbert Butler, Norwich..... | 200 |
| Sir Hartog De Boer, O. L. Jordan..... | 100 |
| Lambert Korndyke, D. M. Panabaker..... | 100 |

Holstein Sale at Straffordville.

The sale of pure-bred Holsteins, the property of Cecil Nevill, of Straffordville, was well attended and considering that a large proportion of the offering ranged from eight months to two and one-half years of age, the prices received were fairly good. Twenty-six head totalled \$3,375. Following is a list of the animals selling for \$100 or over, together with the names and addresses of the purchasers:

| | |
|--|-------|
| Sunnybrook Sophia, Roy Nevill, Straffordville..... | \$130 |
| Sunnybrook Lily, Roy Chute, Port Burwell..... | 155 |
| Star of Sunnybrook, I. Atkinson, Tillsonburg..... | 110 |
| Sunnybrook Nince Segis, Roy Nevill..... | 155 |
| Bessie Pietertje De Kol..... | 150 |

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|---|-----|
| Lady Pontiac Calamity, A. Johnson, Straffordville..... | 150 |
| Sunnybrook Segis Floss, L. A. Maguire, Kinglake..... | 105 |
| Guillemette De Kol Abbekerk, C. Hetherington, Glen Moyer..... | 125 |
| Monie Grace 2nd, M. Claus, Belmont..... | 100 |
| Blanche Hengerveld, Roy Nevill..... | 175 |
| Dolly Segis of Sunnybrook, F. C. Thomson, Port Burwell..... | 145 |
| White Bessie De Kol, I. N. Howe, Brampton..... | 135 |
| Colantha Calamity Pride, J. Smith, Ostrander..... | 175 |
| Princess Julian of Middleton, J. Foreman, Ostrander..... | 135 |
| Daisy Teake Dorliska, M. Armstrong, Tillsonburg..... | 155 |
| Elmdale Gem, L. H. Lipsitt, Straffordville..... | 260 |
| Princess Netherland De Kol, F. C. Thomson..... | 105 |
| Sunnybrook Prilly Clothilde, M. Siple, St. Thomas..... | 125 |
| Sunnybrook Lady Hengerveld, Roy Nevill..... | 125 |
| Violet De Kol DeBoer, Roy Nevill..... | 120 |
| Oceola Prilly Pauline, Roy Nevill..... | 125 |

Shorthorns Make \$365 Average in the Big Toronto Sale.

The two-day sale of Shorthorns, held at Toronto on Thursday and Friday of last week, was one of the most successful auctions of pure-bred stock ever held in Canada. There have been years when the top prices at this sale were higher, but the splendid average of \$365.25 should be decidedly encouraging to not only the consigners themselves but to all admirers of the breed in general. Sixty-eight females averaged \$365.60, and thirty-three bulls \$364.40, making the grand total of \$36,890.00 for the 101 head sold. The top price of the sale was \$1,500, a figure which was paid by the O. A. C., Guelph, for the imported nine-months-old bull "Kinellar Yet," from the Gardhouse consignment. The two-year heifer, Countess Missie from the consignment of A. F. & G. Auld, brought the top price in females, going to P. Salter, of Augusta, Kansas, at \$1,100.

The attendance on both days was easily around the thousand mark, and buyers from the United States as far south as Kansas and states and provinces as far West as Washington and Alberta seemed almost as numerous as those from the home province.

Consigned by Robert Miller, Stouffville:—

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|---|--------|
| MALES. | |
| Royal Sunbeam, Wm. Henniford, Kitchener, Ont..... | \$ 190 |
| Gloster Lad, J. M. Perdue, Chatsworth..... | 225 |
| Royal Lovelace, Wm. Kitley..... | 295 |
| Prince Lovelace, G. W. Henry, Sask..... | 225 |
| Claret's Choice, J. Turner, Washington..... | 1,075 |
| Roan Major, P. Salter, Augusta, Kan..... | 275 |
| Red Jacket, Mt. Victoria Farm, Hudson Heights, Que..... | 500 |
| Major Ramsden, W. F. Gooderham, Todmorden, Ont..... | 170 |
| Augusta Gloster, R. O. Miller, Iowa..... | 220 |
| Royal Gloster, P. Salter, Augusta, Kan..... | 275 |
| Lavender Hero, Geo. Burt, Hillsburg, Ont..... | 225 |
| Benefactor, Jas. E. Mordue, Cainsville, Ont..... | 145 |

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| FEMALES. | |
| Duchess of Gloster, J. A. Watt, Elora, Ont..... | 400 |
| Bella Hillhurst 9th, Percy De Kay, Elmira, Ont..... | 240 |
| Stamford Mary, A. J. Howden, Columbus, Ont..... | 200 |
| Balsam Lady 9th, M. E. Harris, Mohawk, Ont..... | 160 |
| Miss Primrose 4th, M. E. Harris, Mohawk..... | 320 |
| Matilda 2nd, J. Turner, Washington..... | 300 |
| April, J. Turner, Washington..... | 300 |
| Goodwood Gift, Barber & Sons, Missouri..... | 255 |
| Mina Princess 4th, W. D. McQuillan, Michigan..... | 255 |
| Beauty Lind, Geo. Allin, Nebraska..... | 325 |
| June Bud, H. H. Cherry, Xenia..... | 195 |
| Ora Pride, Chas. Yule, Carstairs, Alta..... | 200 |
| Matilda 3rd, E. A. Agnew, Cookstown, Ont..... | 380 |
| Crimson Victoria, P. Salter, Augusta, Kan..... | 825 |
| Lomond's Secret, J. Turner, Washington..... | 300 |
| Stamford Maiden, C. J. Giers, Mich..... | 200 |
| Mina Princess 3rd, H. H. Cherry, Xenia, Ohio..... | 190 |

Consigned by J. Miller, Ashburn, Ont.:—

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|--|-----|
| MALES. | |
| Shady Nook Lad, J. A. Henderson, Blair, Ont..... | 170 |
| Augusta Chief, Peter Stewart, Guelph..... | 510 |
| Sittyton Selection, E. F. Smith, Indiana..... | 500 |
| Nonpareil King, P. Salter, Augusta, Kan..... | 275 |
| FEMALES. | |
| Martha 10th, J. A. Coburn..... | 315 |
| Belle Gloster 4th, R. D. Ferguson, Pt. Stanley, Ont..... | 140 |
| Village Queen B, T. L. Mercer, Markdale, Ont..... | 220 |
| Wimple Pride, Kerr Bros. & Reynolds, Wisconsin..... | 385 |
| Sittyton Lovelace 2nd, F. W. Scott, Highgate, Ont..... | 225 |
| Topsy, W. A. Dryden, Brooklin, Ont..... | 320 |

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|--|-----|
| Miss Primrose 15th, Jackson & White, Dakota..... | 240 |
| Sittyton Lovelace, Barber & Son, Missouri..... | 225 |
| Matchless Belle 5th, R. D. Ferguson, Pt. Stanley, Ont..... | 250 |
| Shadynook Bud, J. Turner, Washington..... | 150 |
| Sittyton Lady Lind, W. J. Hill, Minnesota..... | 725 |
| Bunty, Chas. Yule, Carstairs, Alta..... | 275 |
| Heather Sprig, Thos. Isbister, Gravenhurst, Ont..... | 300 |
| Three-year-old cow (sub.), Hastings Bros., Crosshill, Ont..... | 155 |
| Gowanlea, Thos. Isbister, Gravenhurst..... | 250 |
| Bonnie Jean, Nelson Hope, Tilbury..... | 240 |
| Graceful Maude, Barber & Sons, Mo..... | 290 |
| Graceful Girl, P. Salter, Augusta, Kan..... | 480 |
| Rosemary of The Manor, Hastings Bros., Crosshill..... | 310 |
| Nonpareil of Parkhill, Fred. Warner, Hastings, Ont..... | 430 |
| Matchless Belle 4th, P. De Kay, Elmira..... | 275 |
| Jean, P. Salter, Kansas..... | 210 |
| Graceful Lady, P. Salter..... | 250 |
| Village Queen, P. Salter, Kansas..... | 290 |
| Graceful Mary, J. Turner, Washington..... | 305 |
| Morning Dewdrop, P. Salter..... | 275 |

Consigned by J. M. Gardhouse, Weston:—

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|---|-------|
| MALES. | |
| Marksman, Garden & Weaver, Ohio..... | 500 |
| Kinellar Style, Carpenter & Carpenter, Wisconsin..... | 400 |
| Kinellar Prince, M. Littlejohn, Highgate..... | 525 |
| Marigold King, M. McNeil, West Toronto, Ont..... | 375 |
| April Storm, Ira Minor, Lowbank, Ont..... | 300 |
| Baronet, Jas. Haffey, Mono Mills, Ont..... | 465 |
| Double Gloster, R. Buchanan, Chatham, Ont..... | 190 |
| General Rosedale, Jas. Douglas, Caledonia, Ont..... | 135 |
| Kinellar Yet, O. A. C., Guelph, Ont..... | 1,500 |

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| FEMALES. | |
| Walnut Missie, R. O. Miller, Ohio, U. S. A..... | 210 |
| Maid of Promise 26th, W. A. Dryden, Brooklin, Ont..... | 625 |
| Marigold Ruby, Gardner & Weaver, Ohio..... | 450 |
| Nonpareil Lady 5th, H. H. Cherry, Xenia, Ohio..... | 175 |
| Lady Strathallan, J. Miller, Ashburn, Ont..... | 225 |
| Jubilee 14th, J. G. Wilkinson, Sask..... | 450 |
| Jubilee 10th, Thos. Wilson, Lake Forest, Ill..... | 700 |
| Roan Jubilee, Jas. Douglas, Caledonia, Ont..... | 390 |
| Jubilee 11th, Barber & Sons, Missouri..... | 350 |
| Jubilee 13th, P. Salter, Augusta, Kan..... | 550 |
| Jubilee 12th, Fred. Warner, Hastings, Ont..... | 530 |

Consigned by Kyle Bros., Drumbo:—

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| MALES. | |
| Gold Mint, Rob't. McLaren, Douglas, Ont..... | 500 |
| FEMALES. | |
| Nell Buckingham, Jackson & White, Dakota..... | 250 |
| College Goldie 2nd, J. Turner, Washington..... | 250 |
| Lady of the Valley 10th, Weaver & Garden, Iowa..... | 300 |
| Lady of the Valley 11th, Jackson & White, Dakota..... | 300 |
| Spring Valley Lovely, Jackson & White, Dakota..... | 280 |
| Spring Valley Goldie 2nd, Jas. Bousfield, McGregor, Man..... | 140 |
| Village Maid 39th, Thos. Wilson, Lake Forest, Ill..... | 290 |
| Golden Drop 20th, J. F. Osborne, Bowmanville, Ont..... | 500 |
| Spring Valley Goldie, R. M. McDonald, Rodney, Ont..... | 300 |
| Dora, Chas. Yule, Carstairs, Alta..... | 350 |
| Broadhooks 28th, Jackson & White, Dakota..... | 475 |
| Fancy 20th, P. Salter, Augusta, Kan..... | 305 |

Consigned by A. F. & G. Auld, Guelph:—

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|--|-----|
| MALES. | |
| Emperor, A. Turner, Elmvale, Ont..... | 150 |
| Gallant Cavalcade, Gordon Smith, South Woodlee, Ont..... | 105 |
| Uam-Var, A. Jones, Winnipeg..... | 145 |
| Imperator, Jas. Pardee, Oxburn, Sask..... | 250 |
| Royal Favorite, J. Turner, Washington..... | 575 |

Consigned by W. R. Elliott & Sons, Guelph:—

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|---|-----|
| MALES. | |
| Royal Bandsman, Chas. Yule, Carstairs, Alta..... | 300 |
| Peerless Victor, Geo. Miller, Claremont, Ont..... | 340 |
| FEMALES. | |
| Roan Lady, Thos. Wilson, Chicago..... | 425 |
| White Lady, Garden & Weaven, Ohio..... | 200 |
| Sybella 16th, J. Gibbons..... | 265 |

Consigned by Geo. Amos & Sons, Moffat:—

| | |
|---|-----|
| MALES. | |
| Lancaster Jewel, J. John, Winnipeg..... | 155 |
| Rosewood Friar, R. D. Ferguson, Pt. Stanley, Ont..... | 305 |
| FEMALES. | |
| Mysie 52nd, Garden & Weayer, Ohio..... | 550 |
| Belle of Waterloo, M. A. Harris, Mohawk..... | 300 |

[Note.—In the case of animals sold to the United States the state only is given in most instances.]

Toronto, Montreal, Buffalo, and Other Leading Markets.

Toronto.
Receipts of live stock at the Union Stock Yards, West Toronto, Monday, Feb. 5 consisted of 75 cars, comprising 1,463 cattle, 183 calves, 379 hogs and 77 sheep. Butcher cattle, cows and bulls active, and 25 to 35 cents higher. Stockers, feeders and milkers and springers steady. Sheep, lambs and hogs steady. Veal calves slow and 50 cents lower. The total receipts of live stock at the

| | | | |
|--|------|--------|--------|
| City and Union Stock Yards for the past week were: | | | |
| | City | Union | Total |
| Cars..... | 57 | 461 | 518 |
| Cattle..... | 770 | 4,874 | 5,644 |
| Calves..... | 138 | 612 | 750 |
| Hogs..... | 556 | 11,314 | 11,870 |
| Sheep..... | 295 | 1,041 | 1,336 |
| Horses..... | 77 | 1,571 | 1,648 |

The total receipts of live stock at the two yards for the corresponding week 1916 were:

| | | | |
|-------------|------|-------|-------|
| | City | Union | Total |
| Cars..... | 28 | 343 | 371 |
| Cattle..... | 189 | 3,213 | 3,402 |
| Calves..... | 20 | 425 | 445 |
| Hogs..... | 617 | 6,384 | 7,001 |
| Sheep..... | 254 | 788 | 1,042 |
| Horses..... | 19 | 1,883 | 1,902 |

The combined receipts of live stock at the two markets for the past week show an increase of 147 cars, 2,242 cattle, 335 calves, 4,869 hogs, 294 sheep and lambs, but a decrease of 254 horses when compared with the corresponding week of 1916. The live stock market opened last week with 2,244 cattle of all grades on sale. With a few exceptions the quality was not

so good for the bulk of cattle as is usually offered on a Monday. Trade opened strong, drovers asking 25c. to 50c. more than the previous week's close. Buyers were in no mood to haggle over prices. Cattle they wanted and cattle they must have, even if they did pay a good deal more than the animals were worth. As a result drover's prices were accepted and every grade of butcher cattle advanced a good 25c. to 50c. over the close of the previous week. One firm sold 2 steers, 710 lbs. each, at \$11.35 per cwt., 40 steers and heifers at \$11.00, and 146 cattle at from \$10.00 to \$10.65. Another firm sold 8 steers, 1,320 lbs., at \$11.25,

and 375 steers and heifers at from \$10.50 to \$11.00. Cows were also in strong demand, choice selling at from \$8.25 to \$8.75 and a few extra good cows sold at \$9.00. Bulls were decidedly firm, choice selling at \$9.00 to \$9.50 and extra choice at \$9.75. Tuesday's trade was a repetition of Monday in butcher cattle, while a few cows and bulls sold higher. A few extra choice cows sold at \$9.10 to \$9.50, and less than 6 bulls sold at \$10.20 to \$10.40. Wednesday's trade with nearly 1,200 cattle and sale was a shade slow; very few choice cattle were on sale and they brought the same high prices, but common cattle were from 25c. to 35c. lower. Thursday's trade was better in all classes of cattle, and the quotations given below represent fairly this week's trade. Stockers and feeders were steady to strong throughout the week, and trade in milkers and springers much improved. A few extra fine cows sold at from \$110.00 to \$125.00 each, but the general price for best cows were \$80.00 to \$110.00. Calves were active and slightly higher in price. Sheep a steady trade and lambs slow and slightly lower in price, mostly on account of the poor quality of lambs coming on the market. Hogs—The hog market has been very uneven, Thursday's market fairly represents the week's trade, when fed and watered hogs sold all the way from \$13.85 to \$14.25 per cwt., and weighed off cars at \$14.25 to \$14.50.

Live stock quotations.—Heavy steers, choice \$10.75 to \$11; good, \$10.50 to \$10.75. Butcher steers and heifers, choice, \$10.25 to \$10.60; good \$9.75 to \$10; medium, \$8.75 to \$9.50; common, \$8 to \$8.50. Cows, choice, \$8.25 to \$8.75; good, \$7.50 to \$8; medium, \$6.75 to \$7.25; common, \$5.75 to \$6.50. Canners and cutters, \$5 to \$5.40. Bulls, choice, \$9 to \$9.50; good, \$8.25 to \$8.75; medium, \$7.50 to \$8; common, \$6.50 to \$7.25. Stockers and feeders, best, \$8.50 to \$8.75; medium, \$7.75 to \$8; common, \$6 to \$7. Milkers and springers, best, \$85 to \$110; medium, \$60 to \$75. Sheep and lambs—Lambs, choice, 14c. to 14½c. lb.; culls, 9½c. to 11½c. lb. Sheep, light, 9½c. to 10½c. lb.; heavy, 8c. to 9c. lb. Calves, choice, 13c. to 14c. lb.; medium, 9½c. to 12c. lb.; heavy, fat, 7c. to 9c. lb.; grass and common 6c. to 8½c. lb. Hogs, fed and watered, \$14 to \$14.25; weighed off cars, \$14.25 to \$14.50. Less \$2.50 to \$3.50 per cwt. off sows, \$4 to \$5 per cwt. off stags, \$1 to \$2 per cwt. off light hogs, and \$2 to \$3 per cwt. off thin feeder pigs, and one-half of one per cent., government condemnation loss.

Breadstuffs.

Wheat.—Ontario, according to freights outside, No. 2 winter, new, in car lots \$1.70 to \$1.72, No. 3 winter, new, \$1.69 to \$1.70. Manitoba wheat (track, bay ports)—No. 1 northern, new, \$1.91; No. 2 northern, \$1.88; No. 3 northern, \$1.83; old crop trading 4c. above new crop. Oats.—Manitoba, track, bay ports, No. 2, C. W. 67½c.; No. 3, C. W., 65½c.; extra, No. 1 feed, 65½c.; No. 1 feed, 64½c.; Ontario oats, according to freights outside, No. 2, white, 63c. to 65c. nominal; No. 3, 62c. to 64c. nominal. Peas, according to freights outside, No. 2, \$2.25. Barley, according to freight outside, malting, \$1.18 to \$1.20. Buckwheat, according to freights outside \$1.28 to \$1.30. Rye, according to freights outside, No. 2, \$1.40 to \$1.42.

American corn (track, Toronto), No. 3, yellow, \$1.11, subject to embargo. Flour.—Ontario winter wheat, \$7.10 to \$7.20, in bags, track, Toronto. Manitoba flour, first patents, in jute bags, \$9.50; second patents, \$9; strong bakers' \$8.60.

Hay and Millfeed.

Hay, No. 1, per ton, car lots, \$13; No. 2, per ton, car lots, \$12 to \$12.50; mixed, per ton, \$10 to \$11.50. Straw.—Car lots, per ton, \$9. Bran.—Per ton, \$34; shorts, \$39; feed flour, per bag, \$2.70 to \$2.80.

Country Produce.

Butter.—Butter was slightly easier in price on the wholesales during the past week. Creamery, fresh-made pound squares, selling at 46c. to 47c. per lb.; creamery solids, 41c. to 42c. per lb. dairy, 33c. to 34c. per lb.; separator dairy, 39c. to 40c. per lb. Eggs.—New laid eggs in cartons declined 5c. per dozen; wholesale, selling at 55c. per doz.; new laid in case lots selling at 50c. per doz., the cold storage varieties remaining unchanged. Cold storage selects, 45c. per dozen, and fresh case lots, 42c. per dozen.

Beans.—Hand-picked \$6 per bushel; prime white, \$5.40 per bushel; Lima, 10c. per lb.

Cheese.—June, per lb., 26c.; twins, 26½c.

Honey.—Sixty-lb. tins selling at 12c. per lb.; glass jars, \$1 to \$2 per dozen; combs, \$2.50 to \$3 per dozen.

Poultry.—Live-weight prices, chickens, 18c. per lb.; ducks, 15c. per lb.; turkeys, 25c. per lb.; fowl, 4 lbs. and over, 18c. per lb.; fowl, under 4 lbs., 16c. per lb.; squabs, dressed, \$3.50 to \$4 per dozen.

Hides and Skins.

City hides, flat, 20c.; country hides, cured, 20c.; country hides, part cured, 18c.; country hides, green, 17½c.; calf skins, 30c.; kip skins, 23c.; sheep skins, city, \$2.50 to \$3.50; sheep skins, country, \$1.50 to \$3; lamb skins and pelts, \$1.50 to \$2; horse hair, per lb., 38c.; horse hides, No. 1, \$7 to \$8; No. 2, \$6 to \$7; wool washed, 44c. to 47c. per lb.; wool, rejections, 35c. to 38c. per lb.; wool, unwashed, 34c. to 37c.; tallow, No. 1, cake lb., 9c. to 10c.; tallow, solids, 8c. to 9c. per lb.

Wholesale Fruits and Vegetables.

Potatoes again advanced in price, the New Brunswick Delawares selling at \$2.85 to \$3 per bag; Ontario's at \$2.85 per bag.

Cabbage, which has been off the market for sometime, came in again during the week, and sold at the exceedingly high price of \$5.50 to \$6 per bbl.

The first straight car of horse-radish to come to Toronto arrived Thursday last. No. 1 grade selling at \$11 per bbl. and No. 2 at \$7 per bbl.

Vegetables of all descriptions continued to bring high prices. Carrots selling at \$1.50 to \$1.65 per bag; beets at \$1.50 to \$2 per bag; parsnips at \$1.75 to \$1.85 per bag; turnips at 75c. per bag.

New carrots and beets were offered at 75c. to \$1 and \$1 to \$1.25 per dozen bunches, respectively.

California cauliflower of choice quality came in, the latest shipment selling at \$2 per case of 12 to 17 heads.

Lettuce continued to be rather scarce; the leaf variety selling at 25c. to 35c. per dozen bunches, while the Florida head lettuce brought the high price of \$4.50 to \$5 per hamper.

Hot-house tomato receipts have been very light. No. 1 grade selling at 28c. to 30c. per lb.; No. 2's selling at 20c. to 25c. per lb., according to quality; the small shipments of Florida outside grown ones bringing from \$7 to \$8 per six basket crate—a very high price.

The onion market continues to be quite firm; Spanish selling at \$6 per large case, \$3.25 per half case and \$2 per small case; yellows, \$5 per cwt., and reds \$3.75 per 75 lbs.

The apple prices firmed slightly, some choice No. 1 Greenings selling at \$7 per bbl.; the prices ranging from \$3.50 to \$7 per bbl., for the different grades and kinds; very few going as low as \$3.50. Oranges kept firm—the California Navels selling at \$3 to \$3.50 per case; the Floridas selling at \$3.50 to \$3.75 per case.

Hot-house rhubarb was received in small quantities and sold at \$1 to \$1.25 per dozen bunches.

Montreal.

Trade in the cattle market last week was only moderately large. Receipts were fairly light, this being due in part, it is believed, to the number of snow storms having interfered with shipment of stock. However, demand was not heavy, and, as a consequence, prices continued practically unchanged. Good steers sold at 9½c., and a few of the better ones at 10c. per lb. Fair quality brought 9c. to 9½c., and medium a little below this figure, with lower grades ranging all the way down to 7½c. to 8c. per lb. Butchers' cows were practically steady at 6½c. to 8c. per lb., according to quality, while bulls ranged from 7½c. to 8¾c. per lb. Packers and canners were ready buyers of all the canning stock offered, and a fairly active trade took place at 5c. to 5½c. per lb. for cows, and 5½c. to 6c. for bulls. Sheep and lambs were limited in supply and prices held about steady, ranging from 13½c. to 14c. for Ontario lambs, and 13c. to 13½c. for Quebecs. Sheep sold at 8¾c. to 9½c. per lb., and stall-fed calves at 5c. to 7½c. per lb. Hogs continued steady, but the market showed a rather easier tone. Selected lots changed hands at 14½c. to 15c. per lb., and good selects at 14½c. to 14¾c. weighed off cars.

Horses.—There was practically nothing doing in this market at the present time. Prices were unchanged at \$200 to \$250 for heavy draft horses, weighing 1,500 to 1,700 lbs.; \$150 to \$200 each for light draft, weighing 1,400 to 1,500 lbs.; \$100 to \$125 each for small horses, and \$50 to \$75 each for culls. Choice saddle and carriage horses sold at \$200 to \$250 each.

Poultry.—The market for poultry was rather firmer last week and supplies were limited. Turkeys sold as high as 30c. per lb. for choice, and ranged down to 26c. and 27c. for ordinary. Chickens sold as high as 25c., and down to around 17c. and 18c. for common. Fowl ranged all the way from 15c. to 20c., while geese sold at 18c. to 20c. per lb., and ducks from 20c. to 24c. per lb.

Dressed Hogs.—The tone of the market for dressed hogs was temporarily on the easy side, although prices were practically unchanged. Abattoir, fresh-killed stock sold up to 21c. for choice, while country hogs were 20c. for best, and down to 18½c. for heavies.

Potatoes.—The market for potatoes was extraordinarily strong. The United States is anxious to obtain supplies, and would, no doubt, take larger purchases in Canada were it not for the difficulty in obtaining cars for delivery. It was difficult to obtain Green Mountains at less than \$2.65 to \$2.75 per bag of 80 lbs., in a wholesale way, ex-store, while Quebec varieties ranged around \$2.50.

Maple Syrup and Honey.—Demand for honey was exceptionally light and prices continued unchanged at 15c. for white clover comb; 13c. for white extracted and brown clover comb, and 11c. per lb. for brown extracted. Buckwheat brought 9c. to 10c. per lb. Maple syrup was in light supply, as is usual towards the end of the season. No change took place in price, 8-lb. tins being 95c.; 10-lb. tins, \$1.10, and 13-lb. tins, \$1.25 to \$1.50, according to quality.

Eggs.—Although there was a slightly easier feeling throughout the egg market, prices showed no actual change, unless it be towards temporary higher levels. The feeling is, however, that the new season's now almost on. Quotations for strictly new-laid continue around 60c. per doz., while fall fresh eggs are 55c. to 58c.; No. 1 selects, 46c. to 48c.; No. 1 candled, 43c. to 45c., and No. 2 candled, 36c. to 38c.

Butter.—This market continues quite firm for the most part, although some finest fall creamery has changed hands at 42c. to 43½c. per lb., fine qualities being about ½c. below these figures. Winter makes sell at 40½c. to 41c., and undergrades at 39c. to 40c. Dairy butter sells all the way from 36½c. to 38½c., according to quality.

Cheese.—Prices continue firm, being 25½c. to 25¾c. for finest Western colored, and 24½c. to 24¾c. for Eastern colored. White cheese is ½c. less than colored. Winter goods are 22c. to 23c. per lb.

Grain.—The wheat markets are very unsettled and prices are coming down each day. Canadian Western oats are lower, No. 2 being 69½c. per bushel; No. 3, 68½c.; No. 1 feed, 67½c.; No. 2 feed, 66½c., and tough and No. 2 extra, 68½c. to 69c. Sample oats are 67c. to 67½c. per bushel, ex-store.

Flour.—The market for flour has declined along with the market for wheat, and first patent Manitobas are now quoted at \$9.60; seconds at \$9.10, and strong bakers' at \$8.90 per barrel, in bags. Ontario 90 per cent. patents are steady at \$8.50 to \$8.80 per barrel, in wood, and \$4.10 to \$4.25 per bag.

Millfeed.—The market is steady at \$33 per ton for bran in bags; \$36 for choice; \$38 to \$40 for middlings; \$45 to \$48 for pure grain mouille, and \$43 for mixed, ex-track.

Hay.—Prices continue unchanged at \$13 per ton for No. 2, \$11.50 for No. 3, and \$10.50 for clover mixed, ex-track.

Hides.—The market holds steady at \$26c., 25c. and 24c. per lb. for beef hides; 38c. and 36c. for calf skins; \$3.90 each for lamb skins.

Buffalo.

Cattle.—Cattle trade was on a high basis again last week, with receipts dropping below general requirements. Shipping steers, of which there were around fifteen to twenty loads—the best run of good weight cattle for several weeks past—sold full strong, while choice butchering steers and heifers showed full strong to higher prices. Best shipping steers sold from \$10.85 to \$11.10, with the best handy butchering steers bringing

from \$10 to \$10.35; some handy steers, with heifers included, selling up to ten cents. Lighter and commoner butchering steers and heifers sold strong and were ready sale. Stock and feeding cattle brought higher prices, while bulls generally ruled stronger. On milk cows and springers, the real choice, large ones sold higher, while the medium and common kinds, that go for beef, looked about steady. Offerings for the week totaled 4,825 head, as against 4,200 for the preceding week, and 3,625 head for the corresponding week last year. Quotations:

Shipping Steers.—Choice to prime natives, \$10.50 to \$11.50; fair to good, \$9.50 to \$10.25; plain, \$8.50 to \$9; very coarse and common, \$7.50 to \$7.75; best heavy Canadians, \$9.75 to \$10.35; fair to good, \$8.25 to \$8.60; common and plain, \$7.75 to \$8.

Butchering Steers.—Choice heavy, \$9 to \$9.75; fair to good, \$8.50 to \$8.75; best handy, \$8.75 to \$9.30; fair to good, \$7.75 to \$8.50; light and common, \$6.75 to \$7.25; yearlings, prime, \$9.50 to \$10.25; fair to good, \$8.50 to \$9.

Cows and Heifers.—Best heavy heifers, \$8.25 to \$8.75; best butchering heifers, \$7.50 to \$7.75; fair butchering heifers, \$6.50 to \$7.25; light and common, \$5.25 to \$6.25; best heavy fat cows, \$7 to \$7.50; good butchering cows, \$6.50 to \$6.75; medium to fair, \$5.25 to \$6; cutters, \$4.75 to \$5; canners, \$4.25 to \$4.60.

Bulls.—Best heavy, \$7.50 to \$8; good butchering, \$7 to \$7.25.

Stockers and Feeders.—Best feeders, \$7 to \$7.25; common to fair, \$5.25 to \$5.60; best stockers, \$6.50 to \$7; common to good, \$5 to \$5.50.

Milchers and Springers.—Good to best, in small lots, \$80 to \$100; in car loads, \$70 to \$75.

Hogs.—The highest American market in over fifty years prevailed at Buffalo last week. Monday it was generally a \$12.25 market for better weight grades, with pigs selling from \$11.25 to \$11.50; Tuesday one deck reached \$12.30, with bulk selling from \$12.15 to \$12.25, and pigs dropped to \$10.75 and \$11; Wednesday it was another \$12.25 market for good hogs, and pigs went from \$11 down; Thursday, which was the high day, the range was from \$12.35 to \$12.50, with pigs unchanged, and Friday a \$12.50 top was made but not many reached above \$12.35, and pigs went from \$11 to \$11.25. Roughs sold up to \$11.50, and stags from \$10 down. Last week receipts were 25,600 head, as against 28,813 head for the week before, and 33,800 head for the same week a year ago.

Sheep and Lambs.—Buffalo made new records for sheep, yearlings and lambs last week. Monday, which was the banner day, lambs sold up to \$15 per cwt., yearlings reached \$13.75; wether sheep made \$12, with a small bunch scoring \$12.50, and ewes, in full car lots, sold up to \$11. After Monday the demand was light and a decline in values was noted the next four days, top for lambs on Friday being \$14.60, with others selling from \$14.35 to \$14.50. Cull lambs the fore part of the week sold up to \$14, and on Friday they were hard to sell above \$13.50. Yearlings dropped to \$13.50 before the week was out, wether sheep went down to \$11.50, and ewes from \$10.75 down. Receipts last week were 23,500 head, as against 18,323 head for the week previous, and 18,100 head for the same week a year ago.

Calves.—Last week started with top veals going at \$15.50, but after Monday the market was lower, choice lots the next four days selling mostly at \$15. Cull grades showed a wide range under tops, these selling from \$11 down. Market was quite active all week, and little went over unsold. Receipts last week totaled 2,350 head, being against 2,080 head for the week before, and 1,875 head for the same week a year ago.

Chicago.

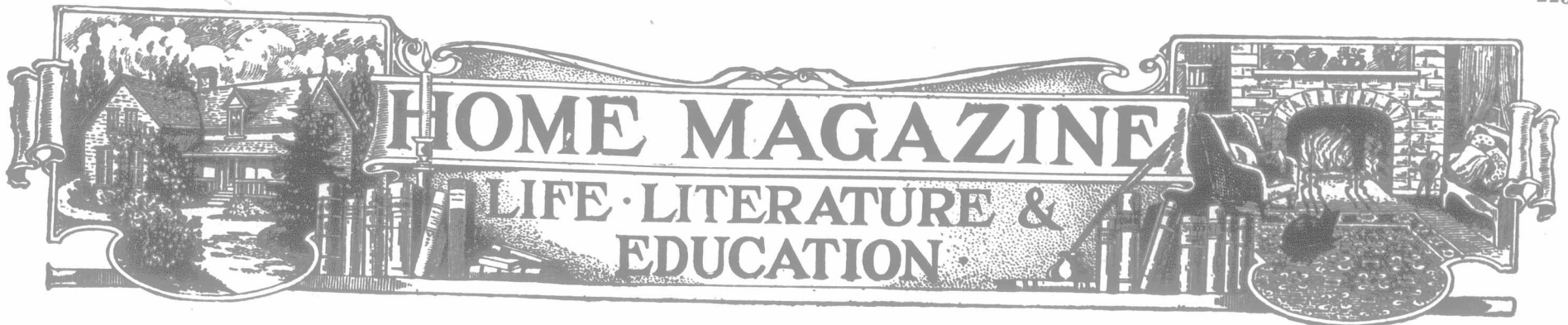
Cattle.—Beeves, \$7.75 to \$12; western steers, \$7.75 to \$10.15; stockers and feeders, \$6 to \$9.10; cows and heifers, \$5 to \$10.25; calves, \$10 to \$14.

Hogs.—Ten cents to 15c. higher; light, \$11.25 to \$11.90; mixed, \$11.40 to \$12.05; heavy, \$11.45 to \$12.05; rough, \$11.45 to \$11.60; pigs, \$9.25 to \$10.50.

Sheep.—Lambs, native, \$12 to \$14.65.

Cheese Markets.

Montreal, finest westerns, 26c. to 26½c.; finest easterns, 25c. to 25½c.; New York, prices unchanged.



The Blind Soldier.

(By Katherine Mann, in the 'Sphere,' London.)

Will ye answer a question, mother, say,
Is it morn or early night?
It's funny just at first, you know,
Not having your own sight.
If I'm botherin', tell me outright.

Dearie boy, it's the mornin' now;
Don't you be 'shamed to ask.
Of course I'll answer a hundred an' more,
An' never think it a task.

Then tell me, d'ye see in the distance there
A misty haze o' blue,
That hangs like a bunch o' grapes un-
touched
Where the purple land's ploughed new?
Mother, d'ye see the view?

I see it, dearie, now you've spoke.
My, how your eyes do see!
I've thought I've saw all that was there
Since iver I was three!

Look ye again; don't a red blush creep
Through the pines where the field dips
low?

It used to mind me o' a man an' maid
A-kissin' with cheeks a glow.
Mother, d'ye see the show?

Did iver! It's jist like that, dearie,
As like as life, an' fine;
But it's queer I've niver saw before
The look o' that bearded pine!

And close by, d'ye see the willows wavin'
Jist watch them in the breeze.
They're whisperin' noddin', blinkin',
I bet ye,
Like gossips at their teas.
Mother, d'ye see the trees?

I do, an' it's smilin' (an' cryin') I am
At the lot you've made me find;
For to think it's you that's seein',
An' me the wan that's blind!

Numberless women have gone wrong simply because the world has set them down as gone wrong. With scarcely an exception all bad women would immediately become decent if they could suddenly become possessed of the thought that everybody considered them to be decent.

The happiest people are the workers. Look at the dinner pail brigade going to the factory of mornings. Their faces are shining, their step is free and glad. And then look at the guests of the Grand Hotel de Luxe, at the summer resort where it costs fourteen dollars a day for board and room, and, before they begin to rouse themselves with alcohol, notice how jaded and faded and bored they look.

There's a vast deal of nonsense written about "the man with the hoe." He is a much more cheerful individual than the man with the golf-stick—except when he is a fool. Happiness is the child of weariness from work. It is the shadow cast by the light from work. Resting is not good when you rest all the time. But it is mighty good after a ten-mile tramp. People who have turkey every day cannot enjoy a banquet. Christmas means nothing to the child whose hands are full of dolls and sweets and tin soldiers all the year round. The law that "he who will not work shall not eat" is no truer than Nature's law than "he who does not work cannot eat."

Work is the mother of Joy. To find a task, making something useful, is the art of life.

Work is the mother of Truth. Not by studying but by Doing, does the real Truth about anything soak into your soul, whether it be botany or sign-painting, languages or car-building, philosophy, theology, or politics.

Doubt and despair love to take lodgings in the mind out of a job.

As Society grows it becomes more and more conventionalized, it becomes a huge Factory, and men are forced into pigeon-holes. And the pigeon-holest rules.

A man who is glued to his desk and does nothing year in and year out but keep track of the white goods sales, may grow rich; he ought to; but the man who can play the piano a little, who knows a little Greek and a little chess, who can mend the clock, and fix the stove, who is interested in art and music and machinery, will get more fun out of life.

We doubtless need the specialists. They had them in Egypt, the paraschists, who did nothing but open the sides of corpses for embalming; and in Greece, experts in surgery and the making of hair-nets; and in Rome, artists who specialized in removing scars from the faces of freed slaves; and, now, from manicurists to ophthalmologists; but somehow it is dreadful to think of a human soul slipping into a little box with a spring lock.

If you love me tell me so.
Do not be always praising me. Above all do not say things you don't mean, just to please me. Bring me no borrowed or artificial stimulants to my affection.

But if ever there is a motion of your desire toward me, if some moment my eye or lip or hand or any attitude of mine pleases you, do not fail to note it, and upon proper occasion confess it to me.

The one thing love needs as its daily food is expression. You may be shy, timid, naturally self-restrained. It may be constitutionally difficult for you to give vent to any generous admiration. You may even fear it will sound hypocritical. You may dread being misunderstood.

No matter. Keep trying. Form the habit of saying outright what you think—if you think love. If you conceal

Hope's Quiet Hour.

Ready For Hard Service.

Thou therefore endure hardness, as a good soldier of Jesus Christ. No man that warreth entangleth himself with the affairs of this life; that he may please Him who hath chosen him to be a soldier. —II Tim. 2:3, 4.

Yesterday I read the following lines, written by Mrs. Thayer. I feel sure she will not object to my action in passing on her forceful words.

'Oh, to strike one blow for England before I die—
One blow—swift, silent, sure,
And constant to endure;
One blow—grim, bare and stark,
Unswerving to its mark.
Oh, may I keep myself well fit,
In body, and soul, and brain and wit,
With instinct trained to know the hour
When my weak hand is clothed with power,
To strike one honest, sturdy blow
Before I go!'

I saw in to-day's paper the report that consumptives from the German hospitals were being sent to the front. That may be only a wild rumor; but—if it were true—what desperation it would show! A soldier will fail his commander in the hour of fierce testing; unless he has learned, by practice, to endure hardness. Mrs. Thayer says that she aims to keep herself "fit" (a soldier's expression) in body, soul, and mind, so that she may be able to make full use of Opportunity as it flashes past her.

Our soldiers are not severely tested in the front trenches until they have become "fit," have learned to "endure hardness" through the discipline of camp life. They don't encumber themselves with luxurious outfits; but are ready to go in any direction at the word of command. They don't make themselves soft and tender by luxurious living—or, if they do, they are injuring their country's cause, and may be as a broken reed in the hand of their leader when he depends upon them for some great deed.

St. Paul declared that some indulgences which were "lawful" for a soldier of Jesus Christ were "not expedient." It is wrong, as well as foolish, to weaken our will-power and our physical strength by self-indulgence. We may feel that tea and candy are harmless things; but, if we find that we "can't do without" our tea or candy, it is time we proved ourselves free by doing without. It is easy to sing boastfully that "Britons never, never will be slaves"—let us make very sure that we ourselves are not slaves. Soldiers learn to endure hardness cheerily, long before they reach the firing line. Let us—who claim to be soldiers of the Great Commander—keep ourselves ready to obey His orders at a moment's notice. We have no right—as "good soldiers"—to entangle ourselves with the affairs of this life. Neither business nor pleasure may be offered as sufficient excuse when duty calls.

It is expedient to endure hardness sometimes, so that we may grow strong in body and spirit. It is necessary to be temperate in "all things," if we want our bodies and souls to be ready for hard service.

There is no need for asceticism. Our Leader did not seek pain, but accepted quietly and unquestioningly both the joys and the sorrows which came to him. Are we doing that? Perhaps we pray earnestly for some cross to be lifted, for some mountain of difficulty to be removed from our path. There is no sin in such a prayer, if—like our Lord—we also say heartily: "Nevertheless, not as I will, but as Thou

Among the Books

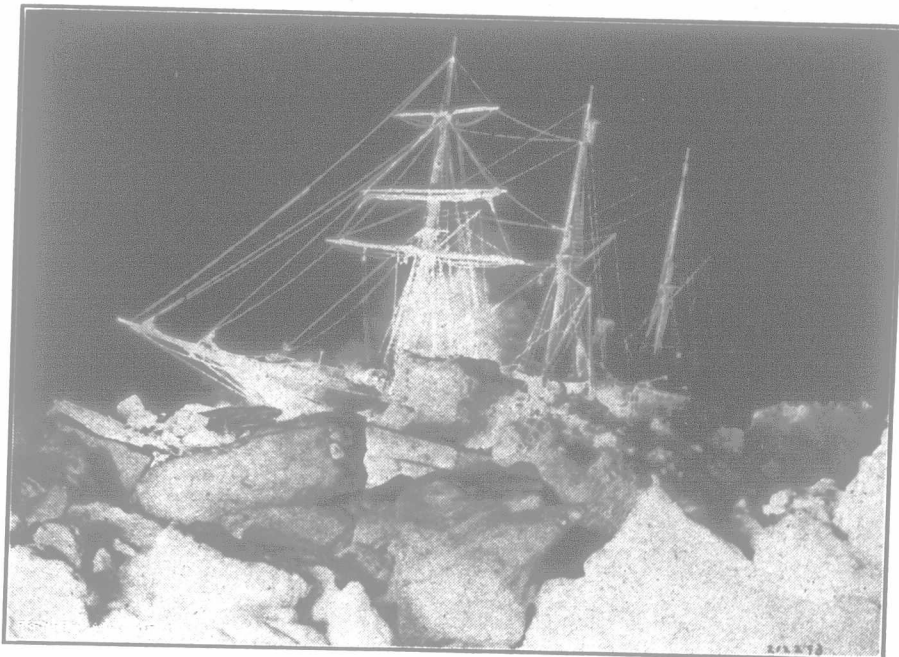
"Footnotes to Life."

[A book that might well find a place in every home in America, city or country, is *Footnotes to Life* by Dr. Frank Crane. It is made up of a number of short essays, each complete in itself, which were first written for publication in a number of papers and magazines, hence is especially to be recommended as a "pick-up" book, no small consideration to a great many people in these busy days. One can take up *Footnotes to Life* and read two or three complete essays in fifteen minutes, nor is there a single essay without its grain of gold. The following selections will illustrate better than a ton of description. *Footnotes to Life* may be procured from The Oxford University Press, 25-27 Richmond St., W. Toronto, at the very reasonable price \$1.00.]

A sure trait of human nature, a persistent law of psychology that men have never quite understood, is that people will become that which you accuse them of being. The idea is found in the saying, "Give a dog a bad name and hang him," the point being that if you steadily call even a dog bad he really grows bad and ought to be hung.

Keep on asserting that your boy is lazy or stupid or disobedient, and by and by he unconsciously becomes so.

When there were laws punishing witches, when clergymen preached against them, there were witches; the poor, ignorant wretches actually thought they did have dealings with the devil. With the disappearance of witch-hunters witches disappeared.



Shackleton's Ship, The Endurance, Fast in Antarctic Ice.

Photo taken in the darkness of the ninety-two-day night of the Antarctic. Flashlight photograph taken by aid of an oil stove fire.

This was Carlyle's gospel, and a good one: "Find thy task, and, in God's name, produce! Produce! if only the smallest fraction!"

It is very restful to find the All Round Man, and the specialist is apt to bore us.

When the family, in Mr. Barrie's play, was ship-wrecked on a desert island, it was found that only the servant, the admirable Crichton, could turn his hand to anything. So while they lived on the island he was boss. In a state of nature, Jack of All Trades is always king.

anything, let it be the little repugnances I arouse in you. For these must needs be, both being human.

And when it is all over—as it will be in a few years at least, perhaps days, who knows?—it will be these "little nameless unremembered acts of kindness and of love" that will make fragrant the memory of our days together, when but one of us is left.

"Ah!" exclaimed Carlyle, over his dead wife, "if only I had five minutes with her, if only to assure her that I loved her through all that!"



Help Coming at Last.

The scene on Elephant Island on August 30, 1916, when Shackleton, after three unsuccessful attempts, reached the twenty-two men he had left there four months before. Sir Ernest is seen coming into the bay in a row boat from the steamer "Telcho", which is hidden by the hills.

wilt." If the cross still has to be endured, and if we still have to wrestle with difficulty; that does not prove that our prayers are disregarded. Why, if God were to make the way always smooth and easy for us, we could never be conquerors in the day of battle. Our real prayer—our heart's desire—is that we may be good soldiers of Jesus Christ. We want to "please Him Who hath chosen us to be His soldiers." How can we be ready for the mighty conflict if we have had no practice in endurance? Whatever you may be called upon to endure, never lose your confidence in the wisdom and love of the Divine Commander of the Great Army. He personally oversees the training of each soldier. He knows the future, and is preparing each of us by daily discipline, so that we may not disappoint Him and ourselves by failure. We have good reason to thank Him for the little trials of every day, by which we have the chance to win self-control; and we should also try to be thankful for the great trials. "Souls mount swiftly on the ladder of pain," and we can see for ourselves how often the furnace of affliction beautifies and strengthens souls. We can see the value of discipline in other lives—can we not trust God when He does not give us all the sweet things we are asking for?

He knows that a time is coming when you will need all the strength you can gain. He knows—and you also know—that more reserve strength is won by soldierly endurance of hardships than by a life of luxurious ease. Perhaps your strength will be needed to help those you love best. Would you not rather bear the discipline God has ordained for you, now, than be too weak to supply their need, when they turn to you for help? Then do not lose faith because God is answering your desire to be strong, brave and helpful, rather than your childish prayer to escape discomfort.

We may escape some burdens if we selfishly determine to have an easy time and let other people look out for themselves. But a good soldier of Christ has orders to follow his Commander and bear the burdens of those who need help. Is this a time to be "clothed in purple and fine linen, and fare sumptuously every day?" The sick neighbors at our gate (across the way, in Europe) are hungry and cold. Dare we waste—in criminal self-indulgence—the time and money given into our hands as a trust? We are stewards, not owners.

It is a great mistake, anyway, to fancy that we are happier when we are living for selfish pleasure or gain. It is not a visionary idea but a proved fact that "it is more blessed to give than to receive." Think of the happiest people you know—are they living selfishly?

Yesterday I received a letter from a Norwegian in Alberta, enclosing ten dollars for the needy, and it is plain from his letter that he has been bearing his own

burden, and the burdens of others, ever since childhood. He seems so pleased to be able to give a lift to those in need, that I suspect he has gone without something for himself in order to give that money. It would be small pleasure to a millionaire to give ten dollars, because it would not involve any giving of himself. "The gift without the giver is bare"—Christ deprived Himself of riches, and for our sakes became poor, so that He might give Himself. How glad He was to do it! Think of the joy in His eyes as He went about doing good. The leper, crouched down in the misery of a hideous disease, felt that wonderful touch on his head, and new life thrilled through his veins. The healed went away rejoicing—think of the joy of the Healer! We read of men whose awful burns have been healed through the patient study and experimenting of a hard-working surgeon. Think of the overwhelming joy that surgeon must feel! Would he change places with a man who is living in luxury and spending his priceless years for his own pleasure?

We call our Lord the "Man of Sorrows,"

yet He was so full of joy that He offered to share that great possession with His friends. Those who shirk the discipline of life lose its joy. Those who set their hearts on gaining happiness for themselves don't know the meaning of joy.

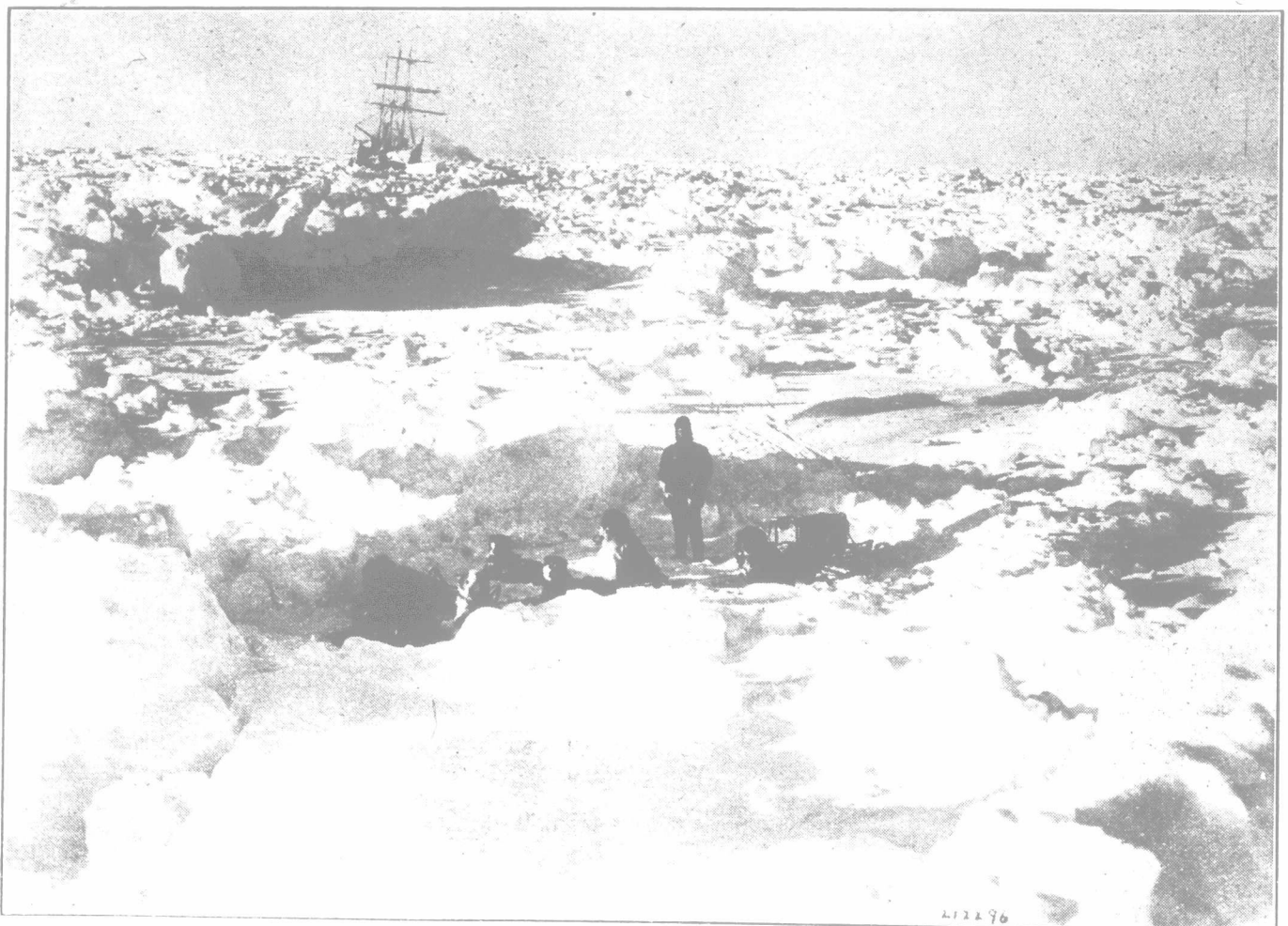
"To him that overcometh, a crown of life is given,
The glory of God's children, the perfect rest of heaven,
The morning star for jewel, a robe of purest white,
The morning star for jewel, a robe of purest white,
And Christ our Lord will own him His follower in the fight."

DORA FARNCOMB.

The following verses were written by one of our readers.

The Pleading Voice and the Answer.

Turn ye, turn ye, from your evil ways,
for why will ye die? Ezek. 38 : 11.



A View of the Big Ice Field in which the Endurance Drifted for Two Months in the Weddell Sea.

"Turn ye, turn ye, for why will ye die?"
This message from Jesus, who dwelleth on high,
Who looks pityingly down, as with outstretched hand,
He beckons to those who still in doubt stand.

Thus softly His pleading: "Oh! why will ye die?
Why carry your burden with groan and with sigh?
Lay it down at the cross and from sin be made free,
And remember the sufferings on Calvary's tree."

Lord Jesus I'm coming, I'll come to Thee now,
Oh! hear my petition as humbly I bow,
My robes are as scarlet, make them whiter than snow,
And teach me to love Thee in this world below.

When at last I may enter that bright Home above,
Where angels are singing and where God is Love,
Then may I sing praises to Thee evermore,
And wear a bright crown on that Heavenly Shore.

WILD ROSE.

The Windrow

The lightest wood in the world is called "balsa"—a tree closely related to the silk-cotton tree—which grows in the West Indies and Central America. Locally it is called "corkwood" and "floating-wood." It weighs only 7.3 lbs. per cubic foot, whereas maple weighs 43.0 lbs.

* * * * *

This is the day of the poets and America the land of their thriving. Another English poet has just come to our shores to lecture and to read from his work—and, of course, to see America. Wilfrid Wilson Gibson belongs to the younger English school of realists, writing of our own times, and having a passion for beauty—the beauty of form and expression and the beauty that shines through the ugliness and sordidness of so much of modern life. For Mr. Gibson is a poet of the people—the people who live in slum tenements, on the moors, who do the hard work of the world in mines, factories, freight-yards, the people who face the storms and winds, who are concerned with the large and simple things of life—dying and being born and working for their daily bread. These and the England he loves are his inspiration—and the work of Rupert Brooke, whose disciple he is.—The Bookman, New York.

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Crisp Sugary Cookies

FROM the cutting of the sweetened dough until the pan of crisp, sugar-sprinkled cookies is brought forth with a warm, appetizing whiff from the oven, little folks find kitchens most inviting places.

Upon the quality of your sugar depends in no small degree the rich crispness of your cookies.

Dominion Crystal Sugar

is the sugar for cooky making. Dissolving quickly, it imparts, freely and uniformly, its concentrated sweetness.

Dominion Crystal Sugar is the only sugar that may rightly be called "Canadian from the ground up."

We do import the finest of raw cane sugar and refine it. But our pride is in the product we make from Canadian sugar beets—its use is dictated by good judgment as well as by patriotism. There is none better.

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This Washer Must Pay For Itself

A MAN tried to sell me a horse once. He said it was a fine horse and had nothing the matter with it. I wanted a fine horse, but I didn't know anything about horses much. And I didn't know the man very well either.

So I told him I wanted to try the horse for a month. He said "All right, but pay me first, and I'll give you back your money if the horse isn't alright."

Well, I didn't like that. I was afraid the horse wasn't "alright" and that I might have to whistle for my money if I once parted with it. So I didn't buy the horse, although I wanted it badly. Now this set me thinking.

You see I make Washing Machines—the "1900 Gravity" Washer.

And I said to myself lots of people may think about my Washing Machine as I thought about the horse, and about the man who owned it.

But I'd never know, because they wouldn't write and tell me. You see, I sell my Washing Machines by mail. I have sold over half a million that way. So, thought I, it is only fair enough to let people try my Washing Machines for a month, before they pay for them, just as I wanted to try the horse.

Now, I know what our "1900 Gravity" Washer will do. I know it will wash the clothes, without wearing or tearing them, in less than half the time they can be washed by hand or by any other machine.

I know it will wash a tub full of very dirty clothes in Six Minutes. I know no other machine ever invented can do that without wearing the clothes. Our "1900 Gravity"



Our "GRAVITY" design gives greatest convenience, as well as ease of operation with quick and thorough work. Do not overlook the detachable tub feature.

Washer does the work so easy that a child can run it almost as well as a strong woman, and it doesn't wear the clothes, fray the edges nor break buttons, the way all other machines do.

It just drives soapy water clear through the fibres of the clothes like a force pump might.

So, said I to myself, I will do with my "1900 Gravity" Washer what I wanted the man to do with the horse. Only I won't wait for the people to ask me. I'll offer first, and I'll make good the offer every time.

Let me send you a "1900 Gravity" Washer on a month's free trial. I'll pay the freight out of my own pocket, and if you don't want the machine after you've used it a month, I'll take it back and pay the freight, too. Surely that is fair enough, isn't it?

Doesn't it prove that the "1900 Gravity" Washer must be all that I say it is?

And you can pay me out of what it saves you. It will save its whole cost in a few months in wear and tear on the clothes alone. And then it will save 50 to 75 cents a week over that on washwoman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 60 cents a week, send me 50 cents a week till paid for. I'll take that cheerfully, and I'll wait for my money until the machine itself earns the balance.

Drop me a line to-day, and let me send you a book about the "1900 Gravity" Washer that washes clothes in six minutes.

State whether you prefer a washer to operate by Hand, Engine Power, Water or Electric Motor. Our "1900" line is very complete and cannot be fully described in a single booklet.

Address me personally, M.H. MORRIS, Mgr.,
Nineteen Hundred Washer Co., 357 Yonge St., Toronto, Ont.,

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.]

"My Days and Dreams."

Dear Ingle Nook Friends.—This time it is a book,—but why not? I might write a very impersonal review and put it in the "Among the Books" department, but occasionally there comes to me a volume so intimate that I want just to chat away to you about it, as though we were talking over a cup of tea, in the unhampered fashion which such sociability induces. And so to-day we come to *My Days and Dreams*.

To begin with, the title was very attractive,—then we saw a very appreciative criticism of the work in an English magazine, and sent away for the book. A very imposing address had to go on the envelope—"George Allen and Unwin, Ltd., Publishers; Ruskin House, 40 Museum St. W. C., London, England,"—and in due time it had effect and the book arrived. The price, 7s. 6d.

We turned it over curiously, a rather large volume, nicely printed on dull paper, with a number of illustrations interspersed, chiefly of the author at all ages, showing, at the prime of life, a decidedly interesting-looking man, tall, strongly if loosely built, dressed in a comfortable negligee, the face that of a man who might be dreamer one minute, doer the next—and this, indeed, exactly describes Edward Carpenter.

Edward Carpenter?—We knew nothing of him, although someone said he thought he had heard of him. So it was "up to us" to find out, and to me fell the pleasant task of a first reading of the book.

At first I am afraid I was a bit disappointed. I could not get greatly interested in the history of forbears and the circumstances surrounding childhood, but perhaps that was because I was not just in mood for reading on beginning the book; or my indifference may have been due to a constitutional make-up that confines my keenest interest to the present and the future, taking little account of the days that are gone except as they directly affect events now happening or likely to happen. Others, of more historic bent, might, I am sure, enjoy every word of this first part of the narrative.

Edward Carpenter, to be brief, is an Englishman,—I say "is" because he is still living, hale and well at seventy years of age. Indeed *My Days and Dreams* was published only last year.

He was educated for the Church, and, even took holy orders, but almost immediately felt that he could not realize his especial mission in that connection, and so asked to be relieved. It took six months, he says, and one can read a smile between the lines, "to unfrock me." After that he became writer, lecturer, farmer on a small scale, cutting himself free from the privileged classes, to which by birth and education he might have belonged, and taking up the cause of the great mass of the people.

My Days and Dreams is a most fascinating account of the way in which he did this, of the friends he made, and the books that influenced him of the queer fotsam and jetsam of people that bobbed up against him or that sought him out in his retreats—for Edward Carpenter was sought out, wherever he went, one of the examples of the truth expressed by Emerson that whenever one does anything extra well, no matter how quietly he may live, the world will "make a path to his door."

Indeed before I had read half through

the book I began to feel ashamed of myself that I had not heard of him, and then I began to enquire. "Did you ever hear of Edward Carpenter?" I asked a quite noted physician, whom many of you in Western Ontario know. "Yes," he said, "I had a letter of introduction to him once when I went to England, but he was living in a cabin somewhere up in the north, and I couldn't make it convenient to go up."—Then the man became very real to me, for didn't I know all about "Millthorpe"?—the cabin with "its feet almost in the water" of a rippling brook, in whose quietude so many of Carpenter's books took upon them a body in which to send his soul to us, his readers.—A beloved spot to its owner was Millthorpe, and in tribute to it one of the chapters of "My Days and Dreams" has been called "Millthorpiana."

Mr. Carpenter never married, and, after trying various experiments, the most satisfactory solution of the house-keeping and gardening arrangements was found to be a sort of partnership with an errant yet very musical and very lovable young workman, George Merrill. "It thus became possible to realize in some degree," says Mr. Carpenter, "a dream which I had had in mind for some time—that of making Millthorpe a rendezvous for all classes and conditions of society. I had by this time made acquaintances and friends among all the tribes and trades of manual workers, as well as among learned and warlike professions. Architects, railway clerks, engine-drivers, signalmen, naval and military officers, Cambridge and Oxford dons, students, advanced women, suffragettes, professors and provision-merchants, came into touch in my little house and garden; parsons and positivists, printers and authors, scythe-smiths and surgeons, bank managers and quarrymen, met with each other. Young colliers from the neighboring mines put

on the boxing-gloves with sprigs of aristocracy, learned professors sat down to table with farm lads. Not, thank heaven! that this happened all in the lump; but little by little and year by year my friends of various degrees and shades got to know each other—and this was a real satisfaction to me."—Isn't that delightful?—*personality* the only necessity of comradeship.

—But it was inevitable that some who were not exactly of the "circle" should also make Millthorpe a point of pilgrimage—well-meaning poor souls too,—and so, Mr. Carpenter continues, with a kindly twinkle between the lines, "And faddists of all sorts and kinds considered me their special prey. I don't know what I had done to deserve this—but so it was. Vegetarians, dress reformers, temperance orators, spiritualists, secularists, anti-vivisectionists, socialists, anarchists—and others of very serious mien and character—would call and insist in the most determined way on my joining their crusades—so that sometimes I had almost to barricade myself against them. A friend suggested (and the idea was not a bad one) that I should put up at the gate a board bearing the legend 'To the Asylum' on it. Then the real lunatics would probably avoid the neighborhood."—Yet it must not be understood that Mr. Carpenter here intends to score all that he lists; he was himself something of a vegetarian, and his sympathies were very strongly with the moderate socialists.

I just can't help quoting you this, further—because it is so delightful—before passing on to more philosophic matters: "On a other occasion" he says, "it being summer-time, a party of forty Spiritualists came over from Manchester to spend Sunday at a neighboring farmhouse, and with the intention of digging me out in the course of the afternoon. Providence, however, inter-

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is composed of clean, whole young leaves. Picked right, blended right and packed right. It brings the fragrance of an Eastern garden to your table.
BLACK, MIXED OR GREEN

"There's no place like home" when

PURITY FLOUR

makes the pies, cakes and bread.
More Bread and Better Bread



THE NATION'S NEED

Canada's National Importance this year will be measured by the resourcefulness of its production. The patriotism of the Canadian farmer will be proven by the effort expended to grow all the Grain, Fodder, Vegetables and Roots that our bountiful Dominion can produce. It is our means of contributing to the Nation's Need and the golden opportunity of enlisting the Canadian Farming community in the honor roll of the Empire.

TAKEN FROM RENNIE'S
SEED ANNUAL FOR 1917
JUST ISSUED

When Writing Please Mention Advocate

posed and sent pelting rain all day, and the poor things having to walk several miles from the station arrived at their farmhouse simply drenched, and when they had their dinner, and partially dried their clothes, were naturally in no mood or condition to turn out again—with the exception of ten or twelve of the more heroic, who came on and called on me. What I had done to merit this honor I do not know, as I had had very little experience of Spiritualism; but they sat round and told all sorts of wonderful stories. In the middle of it all, a splashing was heard outside in the rain, a knock at the door, and a young lady sandal-enthusiast arrived. She was a neat-looking, well-made girl, in sandals, with bare, unstocked feet, and she wore a simple navy blue serge dress; but of course she was wringing wet. We had not seen her before; her name was Swanhilda something (somehow it sounded appropriate); she had set out to walk all the way from Sheffield (nine miles). On the way the rain had come on, and the sandals had nearly come off. She had no umbrella or waterproof; and she was decidedly more than damp. Mrs. Adams, who was then in charge of our ménage, took her upstairs and gave her a change, and she presently joined the Spiritualist party, looking, it must be confessed, like a ghost; but full of spirit and pluck. Her pluck (as I found afterwards) as a dress-reformer was really splendid. On this occasion, after tea, she refused all offers of a bed for the night, donned her still damp clothes and her sandals, and joining the forty Spiritualists, they all splashed back across the hills to the station."

There are some books that require that, for their understanding, one be more than casually acquainted with certain other books, and *My Days and Dreams* is one of these. From chapter to chapter Mr. Carpenter talks in such an intimate way about a number of writers—Whitman and Thoreau, Kropotkin, William Morris, Oliver Schreiner, Shelley, Wordsworth, Henry Salt, Henry George and others—that if one is not already conversant with their works one wants to set out forthwith and become so. More than once he speaks of the Bagavat Gita and Hindu philosophy, a rather interesting item in these days when the brightest occidental minds are discovering that the Eastern peoples, as voiced by such men as Rabindranath Tagore, have discovered a few gems of thought seldom to be found in such purity in the treasure-stores of the rather smug West.

I was glad to find that Mr. Carpenter notes the finding of Thoreau as an event. "Two other things happened in 1883," he says, besides my migration to Millthorpe, and publication of *Towards Democracy*—namely, my first acquaintance with the Socialist movement, and my reading of Thoreau's *Walden*. . . . Just about the very day that I got into my new house and on to my plot of land—the realization of the plotting and scheming of some years—that book fell into my hands, which took the bottom completely out of my little bucket! Having just committed myself to all the exasperations of carrying on a house and market garden and the petty but innumerable bothers of 'trade', the charming ideal of life below the level of all such things was opened out before me—and for the time I felt almost paralyzed. . . . Whatever the practical value of the Walden experiment may be, there is no question that the book is one of the most vital and pithy ever written."

During the next year Mr. Carpenter came to America to visit Walt Whitman, and in reading his account of the trip it strikes one as most interesting to find that he also came right here to our city of London to visit Dr. Bucke, who was mentioned last week in this column. "I found him very interesting," he says. And again, "Dr. Richard Bucke, by the publication (in 1901) of his book *Cosmic Consciousness* made a great contribution to the cause of humanity. The book was a bit casual, hurried, doctrinaire, un-literary, and so forth, but it brought together a mass of material, and did the inestimable service of being the first to systematically consider and analyse the subject. Strange here again we find that his book—though always spreading and circulating about the world, beneath the surface

—has elicited no serious recognition or response from the accredited authorities, philosophers, psychologists and so forth, and the subject with which it deals is in such circles practically ignored—though in comparatively unknown coteries it may be warmly discussed. So the world goes on—the real expanding vital forces being always beneath the surface and hidden, as in a bud, while the accepted forms and conclusions are little more than a vari-colored husk, waiting to be thrown off."

Of William Morris, beloved of all who know anything of him (biographical sketches of Thoreau, Morris and many others appeared in the *Farmer's Advocate* a few years ago) Mr. Carpenter says: "His sturdy, brusque, sea-captain-like figure, with his fine-outlined face and tossing hair, his forcible unpolished speech, yet all so direct, sincere, enthusiastic—brought inspiration and confidence wherever he went. . . . Having set the 'Sheffield Socialists' going in '86, he came one day and stayed at Millthorpe a night or two. . . . He certainly was no drawing-room sort of man. His immense energy did not run to small talk. As a rule in conversation, seized by his subject, and oblivious of the arguments of others, he would jump from his chair and stride up and down the room in ardent monologue—condemning the present or picturing the future or the past. I once asked his daughter May what he did in the way of recreation. 'My father never takes any recreation,' she said, 'he merely changes his work.' And so it was. When he had been toiling at Merton Abbey all day, and preaching Socialism at a street corner all the evening, then at night—sick of the ugly life around him—he would come home and dream himself away into the fourteenth century, and for his recreation produce a masterpiece like *John Ball*. Be it said, nevertheless, that he sometimes did relax, and that when in the humour, no one enjoyed a pipe and the jovial company of friends and the telling of good stories more than Morris."

If William Morris is as real a personality to you as to me, you have enjoyed reading that. I have a picture of him on a wall of the rooms in which I live, and often as I look at it, I have a vision of the big sunny-faced man rushing off from his experiments in dye-stuffs, his arms indigo to the elbows, to "spring upon" some friend a sudden idea that had come to him for the cause that was his life-work—the good of the whole people. It was for this, to bring beauty into the lives of the "common folk" that he potted with dye-stuffs and wall-paper designs, architecture and models for furniture—for before his time none but the wealthy in England could command things of beauty and taste. It was for this that he founded his model working men's homes in connection with his printing plants, in which beauty and clearness of printing became so established that even to-day Kelmscott type is a familiar word in printing houses. And it was for this—to bring the beauty of better laws for the working people, that he spent himself during long days and nights of speechmaking—and persecution.—Dear William Morris, borne at last to his resting place, as he desired, on "a cheerful red waggon" embowered with branches from trees and wild-flowers from the lanes, his funeral cortege made up of a mile of "common folk"—never common to him—who saw their best friend's body so carried, but, perhaps, saw not his spirit which still lives for them in his works.

I simply cannot leave Mr. Carpenter's book yet and so must talk about it another day.

—JUNIA.

(To be Continued.)

Language of Flowers.

In reply to "Jeanie" who asked for the "language of flowers," "Daisy" "Eva" and "Peggy" have all sent lists which we have combined.

- Carnations—disdain.
- Clover—think of me.
- Daisy—innocence.
- Forget-me-not—remembrance.
- Ivy—friendship.
- Lily (white)—purity.
- Lily (yellow)—gayety.
- Pansy—thoughts.
- Rose (red)—love.
- Rose (yellow)—jealousy.

Rose (white)—freedom, or "I am worthy of you."
 Sweet pea—hope.
 Violet—modesty.
 Everlasting—never ceasing remembrance.
 Water lily—silence.
 Fuchsia—adoration.
 Hawthorn—hope.
 Hyacinth (pink)—devotion.
 Lilac—first love.
 Peach blossom—my choice.
 Poppy (red)—consolation.
 Poppy (white)—disaster.
 Rose-bud—confession.
 Tulip—vanity.
 Strawberry—a pledge.
 Myrtle—constancy.
 Dandelion—coquetry.
 Aster—beauty.
 Balsam—impatience.
 Calla—delicacy.
 Chrysanthemum (red)—love; (white)—truth; (yellow)—wealth.

Another List.

"Uneducated", Stanstead Co., Que., adds a few more.—I have cut out duplicates I want to publish her letter in full, because I know, from it, that she is not really "uneducated", and that there are great possibilities for her, since she has the love and the longing to know. She can do wonders for her own self just by reading and keeping her eyes open in her daily work as, I am sure,

she is doing. I wonder if she would like me to give her, some day, a list of books that might be helpful. Her letter is as follows:

Dear Junia.—I have wanted to write to your Nook for a long time. Just to let you and the Nookers know how much you all help me, but as I have hardly any education I feel shy about writing. As I saw Language of Flowers asked for, I thought I would try. I am a farmer's wife and I have four children, so I think I will have a chance to learn something while I am trying to educate them. It is all very true about education in the homes, as Junia wrote for the Nook not long ago. I think the farm is a great place to learn. I do love the farm and flowers and I think Jeanie does too or she would not want to know the Language. I will try and tell her the meanings of a few.

Four-leaf Clover—be mine.
 White Clover—think of me.
 Fern—fascination.
 Golden-rod—be cautious.
 Heliotrope—devotion.
 Water-lily—purity of heart.
 Lily of the Valley—unconscious sweetness.
 Mignonette—Your qualities surpass your charms.

Their is another thing that the flowers speak and that is God's love. For why else would He give us such beautiful

things? With best wishes for the Nook. "UNEDUCATED".
 Stanstead Co., Que.

Seasonable Cookery.

Fig Layer Cake.—Make any good stock layer cake and bake in two layers, then put together with the following filling: Cook ¼ lb. figs in a little water until the skin is tender and the water about evaporated. Chop the figs fine and return to the liquid. Add 2 tablespoons sugar and let cook a few moments. Put whipped cream on top of cake.

Apple Sauce Cake.—Cream together 1 cup sugar and ½ cup butter. Dissolve 1 teaspoon soda in a little hot water and mix with 1 cup cold unsweetened apple sauce. Combine the two mixtures, then add 2 cups flour sifted with 1 teaspoon cinnamon and ½ teaspoon cloves. Last of all add 1 cup seeded and floured raisins. Bake in a moderate oven about ¾ hour.

Cocoa Cake.—Cream together 1 cup sugar and ½ cup butter. Add 1 cup sour milk in which has been dissolved 1 teaspoon soda. Sift together 2 cups flour, 2 tablespoons cocoa and 1 teaspoon cinnamon, and add, beating well. Bake in a shallow pan.

Prune Salad.—Wash, soak and steam 1 lb. prunes, when cold remove stones

and fill the cavities with chopped nuts. Arrange on lettuce leaves on individual dishes, sprinkle with lemon juice and put mayonnaise dressing on top. Serve cold.

The Scrap Bag.

Cutting Cheese.

To cut soft cheese without breaking use a stout thread instead of a knife.

Use for Ugly Pictures.

Turn pictures that are an eye-sore into serving trays. Put pretty chintz under the glass instead of the picture, fit brass handles on the frame, and glue felt over the back.

Lemon Pie Hint.

Instead of cornstarch grate a good-sized raw potato to each pie. The effect is much that of coconut.

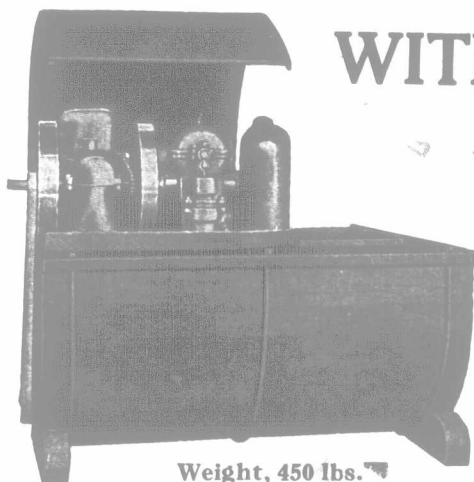
Dip Your Toothbrush in Salt to Destroy Germs.

It has been found by experiments that a toothbrush becomes infected after a single using. Each bristle serve as an inoculating needle, and any part of the gums which may be penetrated by a bristle is vaccinated with whatever germs happen to be flourishing on the brush. The tooth powders and pastes com-

SPRAY for CLEAN FRUIT

The Names of Satisfied Customers are the Best Guarantee That Our Sprayer is All We Claim for it.

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- G. C. Renfrew, Kelowna, B.C.
- Corporation of Morden, Man.
- C. H. Schell, Rutland, B.C.
- Co-operative Fruit Co., Penticton, B.C.
- A. J. Mercer, Toronto, Ont.
- W. B. Mather, Weston, Ont.
- Jas. Ineson, Scarboro Jct., Ont.
- G. R. Benson, Cobourg, Ont.
- Jas. Harcourt, Port Hope, Ont.
- Fred Purdy, Trenton, Ont.
- W. J. Crews, Trenton, Ont.
- Frank Dempsey, Carrying Place, Ont.
- Lorne Brickman, Rednersville, Ont.
- McIntoch Nursery Co., Dundela, Ont.
- Jas. Kenney, Hemmingford, Que.
- The Co-operative Fruit Soc., St. Hilaire, Que.
- J. W. Burgess, Sheffield Mills, N.S.
- Geo. Weese, Albury, Ont.
- Port Elgin Fruit Co., Port Elgin, Ont.
- F. W. Hamlick, Goderich, Ont.
- Stocks & Jackson, Creston, B.C.
- Birchbrook Orchards, Birchbank, B.C.
- Co-operative Fruit Co., Wyndell, B.C.
- Appleton Bros., Proctor, B.C.
- W. A. Fraser, Trenton, Ont.
- John Little, Trenton, Ont.
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- 60 machines in the Niagara District.
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Weight, 450 lbs.

THE I.X.L. POWER SPRAYER
 The I.X.L. is made in three size tanks, engine and pump mounted on top. Has three h.p. motor, gear driven, vertical cylinder pump, cypress tank, 50-ft. hose, two poles and nozzles, complete, ready for use. Weight, 450 lbs.

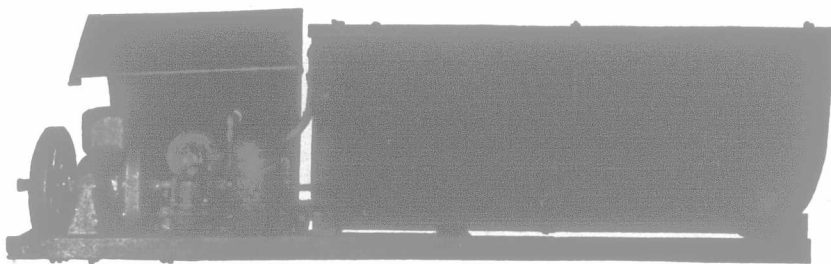
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EACH machine will handle 2 lines of hose at 250 lbs. pressure, deliver 6½ gals. of mixture a minute, and easily apply from 1,200 to 1,500 gals. of mixture a day.

Engine can be instantly released for other POWER PURPOSES, such as pumping water, sawing wood, etc.

Engine parts interchangeable with "Ford" motor parts. Therefore STANDARD.

OR PONTIAC SPECIAL POWER SPRAYER



Weight, 650 lbs.

The Pontiac Special is made in 2 size tanks, 150 and 200 gal.

Engine, and Pump mounted at end, on angle steel frame.

Outfit can be used on any waggon or truck.

The machine is equipped with the same Engine and Pump as the I.X.L. as well as equipment.

Here is What Two of Our Users Say:

The one-horse sprayer that I used, with one line of hose, did our 40 acres of nine-year-old trees in three days, which formerly took from ten to twelve days. We used three and a half gallons gasoline and one pint Engine Oil. The pressure was continually at 225 lbs., and did not vary more than five pounds at any time.
 (Sgd.) A. J. FINCH, Penticton, B.C.

We have sprayed our orchard of 11,000 trees with our Sprayer, purchased from you, and have never had to stop five minutes on account of machine. We recommend it for orchardmen.
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 Name
 P.O.
 Number of trees in orchard

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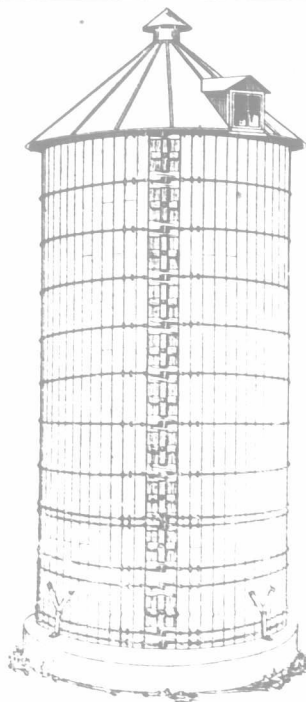
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Burlington Silos keep ensilage as a perfect fodder. Air-tight, adjustable doors and frames. Keep out the cold—keep in the heat. Patented Cable Band on Burlington Silos, stretch and take up with expansion and contraction of silo. Hold it erect and perfect whether filled or empty.

Everything supplied complete—guy wire, anchors, wrench and easy erecting instructions.

Fill in coupon TO-DAY for "Direct To You" Price List and information.

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City Hospital School of Nursing. Registered by the University of the State of New York. Course, 2 years and 6 months, including 3 months preparatory term. Hospital bed capacity 1,000, affording exceptional opportunities for study. Minimum Requirements—One year of High School or equivalent. Allowance—\$10 per month first year, and \$12 per month remainder of course. Uniforms are furnished. Nurses' Residence—Most desirable location, homelike atmosphere. For information, address Principal, City Hospital School of Nursing, Blackwell's Island New York City.

In many details of its construction, the SHERLOCK-MANNING "Canada's Biggest Piano Value" has no equal found in no other make. Write Dept. 48 for catalogue "T," which gives a full description of these exclusive features. THE SHERLOCK-MANNING PIANO CO., London, Canada. No street address necessary.

monly used contain nothing powerful enough to destroy the microbes in a toothbrush. Even a one-in-twenty solution of carbolic acid will not kill them. A simple method suggested by Dr. Hugh F. W. MacMillan for keeping the toothbrush free from dirt and the germs of disease is so simple that it is surprising nobody ever thought of it before. It consist merely in applying to the brush each time you are through using it enough ordinary table salt to cover every bit of the bristles with a thick coating.

First rinse the brush thoroughly in running water, sprinkle it liberally with salt and hang in a dry place where it will not be exposed to dust and dirt. The salt is dissolved on the wet brush and penetrates thoroughly to the center of each tuft of bristles. By the time the brush is needed again the water will have evaporated and each bristle will be covered with a deposit of crystals.

"One cannot imagine germs living in such an environment," says Dr. MacMillan. "Bacteriologists may take exception to this, for it is doubtful if salt is fatal to all germs. But it is fatal to many, and there is probably no microbe whose growth will not be hindered seriously by the thick coating of salt."

The Dollar Chain

A fund maintained by readers of "The Farmer's Advocate and Home Magazine" for the soldiers and all who are suffering because of the war.

Contributions from Jan. 26th to Feb. 1st: Mrs. T. J. Berry, Middlesex Co., Ont 1st:

Mrs. T. J. Berry, Middlesex Co., Ont., \$1.00; Christina Sewing Circle, \$6.00; I. H. G., \$1.00; "Terry," R. 1, Warsaw, \$5.00; W. H. Partridge, Barrie, Ont., \$1.00; "Toronto," \$2.00; Mrs. Robt. Lackie, R. 1, Mt. Elgin, Ont., \$5.00; F. P. Instant, Stella, Ont., \$2.00; Jas. Shaw, Caledonia, Ont., \$2.00; T. C. M., \$5.00; "For Belgian Child," Greensville, Ont., \$1.00; A Friend, Orillia, Ont., \$1.00; "Reader," R. 9, Peterboro, \$10.00 (for the Armenians); H. O. Wood, Russell, Ont., \$50.00; Wallaceburg Women's Institute, \$5.00.

For Byron Military Hospital.—"Ekfrid," \$1.00; Mr. T. J. Berry, Middlesex Co., Ont., \$1.00; "A Reader," Strathroy, Ont., \$1.00; I. H. G., \$1.00; Jas. H. Richards, Melbourne, Ont., \$5.00; William Ball, R. 2, Alliston, Ont., \$1.00; K. D., Owen Sound, Ont., \$1.00; Mrs. F. Standaeven, Sr., St. Mary's Ont., \$1.00; Joe. Standaeven, R. 8, St. Mary's Ont., \$3.00; "H. A. B.," London, Ont., \$5.00.

Previously acknowledged \$3,538.50
Total to Feb. 1st \$3,655.50

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

Thanks for Serbian Relief.

To "The Farmer's Advocate":

Your kind contribution for the "Serbian Relief Fund" was received by me. Our Committee find that through your splendid efforts we are enabled to supply our ward in the "Scottish Women's Hospital in Serbia." The amount required is \$115.00 every six months, and this has largely been contributed through your "Dollar Chain." We wish your splendid magazine every success in all this needy work.

Very sincerely yours,

FANNIE L. EDWARDS.
London, Ont. Treas. of Funds.

Current Events.

An airship plant is to be established at Camp Borden.

France has ordered the mobilization for national service of her entire population from 16 to 60.

The American relief ship Euphrates, homeward bound from Europe, was torpedoed and sunk in the English Channel.

It is now known that 350 were lost by the sinking of the Laurentic, which

struck a mine off the North Coast of Ireland on Jan. 26.

The sensation of the week has been the breaking off of diplomatic relations with Germany by the United States. This step followed upon the threat of Germany to extend her submarine warfare, to form an almost complete blockade of the British Islands, coast of France and parts of the coast of Holland, the traffic of the United States to be restricted to one vessel to and from Falmouth per week. The United States is now preparing for the possibility of war, and President Wilson has called upon all neutral countries to sever diplomatic relations with Germany, whose mad ruthlessness must be crushed if peace is to be obtained and maintained in the world. German Ambassador Bernstorff was given his passports in Washington on Feb. 3rd.

Our Serial Story

Serial rights secured from the Bobbs-Merrill Publishing Company.

The Brown Mouse.

CHAPTER XVIII.

JIM GOES TO AMES.

The boat tipped over, and Jim Irwin was left struggling in the water. It was in the rapids just above the cataract—and poor Jim could not swim a stroke. Helpless, terrified, gasping, he floated to destruction, and Jennie Woodruff was not able to lift a hand to help him. To see any human being swept to such an end is dreadful, but for a county superintendent to witness the drowning of one of her best—though sometimes it must be confessed most insubordinate—teachers under such circumstances, is unspeakable; and when that teacher is a young man who was once that county superintendent's sweetheart, and falls in, clothed in a new made-to-order suit in which he looks almost handsome despite his manifest discomfort in his new cravat and starched collar, the experience is something almost impossible to endure. That is why Jennie gripped her seat until she must have scratched the varnish. That is why she felt she must go to him—and do something. She could not endure it a moment longer, she felt; and there he floated away, his poor pale face dipping below the waves, his sad, long, homely countenance sadder than ever, his lovely—yes, she must confess it now, his eyes were lovely!—his lovely blue eyes, so honest and true, wide with terror; and she unable to give him so much as a cry of encouragement!

And then Jim began to swim. He cast aside the roll of manuscript which he had held in his hand when the waters began to rise about him, and struck out for the shore with strong strokes—wild and agitated at first, but gradually becoming controlled and coordinated, and Jennie drew a long breath as he finally came to shore, mastering the waves like Triton, and master of the element in which he mowed. There was a burst of applause, and people went forward to congratulate the greenhorn who had really made good.

Jennie felt like throwing her arms about his neck and weeping out her joy at his escape, and his restoration to her. Her eyes told him something of this; for there was a look in them which reminded him of fifteen years ago. Bettina Hansen was proud of him, and Con Bonner shook his hand and said that he agreed with him. Neither Bettina nor Con had noticed the capsizing of the boat or saw the form of Jim as it went drifting toward the cataract. But Jim knew how near he had been to disaster, and knew that Jennie knew. For she had seen him turn pale when he came on the platform to make his address at the farmers' meeting at Ames, had seen him begin the speech he had committed to memory, had observed how unable he was to remember it, had noted his confusion as he tried to find his manuscript, and then his place of beginning in it—and when his confusion had seemingly quite overcome him, had seen

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him begin talking to his audience just as he had talked to the political meeting that time when he had so deeply offended her, and had observed how he won first their respect, then their attention, then apparently their convictions.

To Jennie's agitated mind Jim had barely escaped being drowned in the ocean of his own unreadiness and confusion under trying conditions. And she was right. Jim had never felt more the upstart, uneducated farm-hand than when he was introduced to that audience by Professor Withers, nor more completely disgraced than when he concluded his remarks. Even the applause was to him a kindly effort on the part of the audience to comfort him in his failure. His only solace was the look in Jennie's eyes.

"Young man," said an old farmer who wore thick glasses and looked like a Dutch burgomaster, "I want to have a little talk with you."

"This is Mr. Hofmyer of Pottawatomie County," said the dean of the college.

"I am glad to meet you," said Jim.

"I can talk to you now."

"No," said Jennie. "I know Mr. Hofmyer will excuse you until after dinner. We have a little party for Mr. Irwin, and we shall be late if we don't hurry."

"Where can I see you after supper?" asked Mr. Hofmyer.

Easy it was to satisfy Mr. Hofmyer; and Jim was carried off to a dinner given by County Superintendent Jennie to Jim, the dean, Professor Withers, and one or two others—and a wonderfully select and distinguished company it seemed to Jim. Jennie seized a moment's opportunity to say, "You did beautifully, Jim; everybody says so."

"I failed!" said Jim. "You know I failed. I couldn't remember my speech. I can't stay here feasting. I want to get out in the snow."

"You made the best address of the meeting; and you did it because you forgot your speech," insisted Jennie.

"Does anybody else think so?"

"Why, Jim! You must learn to believe in what you have done. Even Con Bonner says it was the best. He says he didn't think you had it in ye!"

This advice from her to "believe in what you have done,"—wasn't there something new in Jennie's attitude here? Wasn't his belief in what he was doing precisely the thing which had made him such a nuisance to the county superintendent? However, Jim couldn't stop to answer the question which popped up in his mind.

"What does Professor Withers say?" he asked.

"He's delighted—silly!"

"Silly!" How wonderful it was to be called "silly"—in that tone.

"I shouldn't have forgotten the speech if it hadn't been for this darned boiled shirt and collar, and for wearing a cravat," urged Jim in extenuation.

"You ought to've worn them around the house for a week before coming," said Jennie. "Why didn't you ask my advice?"

"I will, next time," Jennie said Jim. "I didn't suppose I needed a a biting-rig—but I guess I did!"

Jennie ran away then to ask Nils Hansen and Bettina to join their dinner party. She had a sudden access of friendliness for the Hansens. Nils refused because he was going out to see the college herds fed; but at Jennie's urgent request, reinforced by pats and hugs, Bettina consented. Jennie was very happy, and proved herself a beaming hostess. The dean devoted himself to Bettina—and Jim found out afterward that this inquiring gentleman was getting at the mental processes of a specimen pupil in one of the new kind of rural schools, in which he was only half inclined to believe. He thanked Jim for his speech, and said it was "most suggestive and thought-provoking," and as the party broke up slipped into Jim's hand a check for the honorarium. It was not until then that Jim felt quite sure that he was actually to be paid for his speech; and he felt a good deal like returning the check to the conscience fund of the State of Iowa, if it by any chance possessed such a fund. But the breach made in his financial entrenchments by the expenses of the trip and the respectable and well-fitting suit of clothes overcame his feeling of getting something for nothing. If he hadn't given the state anything, he had at least expended something—a good deal in fact—on the state's account.

To be continued.



FIVE ROSES FLOUR

for Breads-Cakes-Puddings-Pastries

TO holidays, birthdays, weddings and festive occasions, the flavour of a Five Roses Cake adds another pleasant impression.

A Five Roses user writes:

"I made my own Wedding Cake from this book* over two years ago, and we had a piece of the top story yesterday. It was beautiful. I always make my Xmas and birthday cakes from page 96 ("English Christmas Cake") and it is delicious."

*The famous Five Roses Cook Book.



Every Farmer positively needs this book

Many money-saving improvements on your farm are made possible by the instructions contained in this Book. To be without it is to remain in ignorance of one of the big, vital aids to farming-at-a-profit. You cannot get the most out of farming without the improvements of Concrete, which this book tells you how to make IN YOUR SPARE TIME. So clear, so practical, are its instructions that you can do practically all your concrete work yourself. Ask for the book and check off on the coupon the subjects in which you are interested.

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LINSEED OIL CAKE "Maple Leaf" Brand
With a trial ton order we will send you free "The Veterinarian," a valuable book about the diseases of cattle.
THE CANADA LINSEED OIL MILLS, Ltd.
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SEED GRAIN
We have a choice lot of home-grown O. A. C. 21 barley and 72 oats of good quality; pure and true to name. Oats, \$1.20; barley, \$1.50 per bushel. Cotton bags, 15c, and 30c.
JOHN ELDER & SONS,
Hensall, Ont. Huron Co.

Phonola
A choice, clear sound producing machine with a marked absence of all rasping and harshness. Priced from \$15 to \$250. Write for free illustrated catalogue and name of local dealer. Agents wanted.
The Pollock Mfg. Co., Ltd., Kitchener, Ont.

Large Ducks
WANTED ALIVE
ALSO
Fat Hens
Write for price list.
WALLER'S
702 Spadina Ave., Toronto, Ont.

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 advertisements inserted for less than 50 cents.

AUSTRALIAN WHITE LEGHORN NOTED laying strains, also exhibition breeding, White, Brown and Buff Leghorns; White and Buff Orpingtons; S.-C. Ancona; Single and Rose Comb Rhode Island Reds; White Wyandottes; Silver-breasted Polands; Bearded and Non-bearded Barred Plymouth Rocks; cockerels from the above breeds for sale, from three to five dollars; eggs two and three dollars per fifteen, in season. The Idlewild Poultry Yards, Burlington, Ont. C. F. Coleman, Prop.

BARRED ROCKS - GRAND LAYING strains; cockerels, pullets, eggs. Prices right. Central Poultry Yards, Colborne, Ont.

CLARK'S WHITE AND BUFF ORPINGTONS - Grand laying strain - 50 vigorous cocks and cockerels, \$3 upwards; 50 hens and pullets, \$2 upwards; 10 O.A.C. laying strain Barred Rock cockerels, \$3. J. W. Clark, Cainsville, Ont.

FOR SALE - MAMMOTH BRONZE TURKEYS heavyweights, bred from imported stock. Angus Beattie, R.R.1. Wilton Grove, Ont.

GOOD REDS, SINGLE COMB, LENROCK strain; utility and exhibition stock and eggs, \$3 and \$5. Dr. Vance, Watford, Ont.

QUALITY BUFF ORPINGTONS, ANDALUSIANS, Fawn Indian Runner ducks. Write for prices. E. E. McCombs, Fenwick, Ont.

RINGLET BARRED ROCKS - PURE-BRED, Trapped, heavy winter layers. Beauty and utility combined. Settings \$2.00. 100% fertility guaranteed. Book order now. Particulars - Coldham, Kingston, Ont.

50 BARRED ROCK AND BLACK SPANISH cockerels. Special price to close out. Indian Runner chicks. Partridge Wyandottes, Partridge Rocks. John Amesser, Tilbury, Ont.

LAST CALL!

For thirty days I will sell at special prices to clear my Tom Barron's famous strain of bred-to-lay S.-C. W. Leghorns, 282 eggs, and R.-C. W. Wyandottes, 283 eggs, early-hatched cockerels; strong, vigorous, beautiful birds. Your chance to secure the best bred-to-lay blood in the world.

G. L. DOHERTY, Clinton, Ontario



Advertisements will be inserted under this heading, such as Farm Properties, Help and Situations Wanted and Pet Stock.

TERMS - 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. No advertisement inserted for less than 50 cents.

SCOTCHMAN, EXPERIENCED, HAS HELPED handle fifteen cows, has been with imported stallions and cattle. Could work and manage hundred acres. Would go West. Write Box B, Farmer's Advocate, London, Ont.

WE REQUIRE PARTIES TO KNIT MEN'S wool socks for us at home, either with machine or by hand. Send stamp for information. The Canadian Wholesale Dis. Co., Dept. S., Orillia, Ont.

WANTED - MARRIED MAN EXPERIENCED in farm work. Wages \$40 per month, free house, garden and milk. Yearly engagement. S. A. Moore, Burnfoot Stock Farm, Caledonia, Ont.

WANTED - YOUNG GIRL FOR GENERAL housework in a centrally located town. Assistance given; good home; every convenience; good wages. Apply, with particulars, and references if possible. Mrs. Lester Weaver, Hespeler, Ont.

PATENTS AND LEGAL FETHERSTONHAUGH & CO., Patents Solicitors - The Old Established Firm. Head Office, Royal Bank Building, Toronto, and 5 Elgin Street, Ottawa, and other principal cities.

BABCOCK & SONS ESTAB. 1877. Formerly Patent Office Examiner, Master of Patent Laws. Book, full information, free. 99 St. James St., Montreal. Branches at Ottawa and Washington.

FOR SALE TWO IMPORTED CLYDESDALE STALLIONS Celtic Laird [5413] (12899), and Star of Roses [11551] (3614). Sure foal-getters. Prices reasonable. Write J. W. Manarey, Duntroon, Ontario

Questions and Answers.

1st - Questions asked by bona-fide subscribers to "The Farmer's Advocate" are answered in this department free.

2nd - Questions should be clearly stated and plainly written, on one side of the paper only, and must be accompanied by the full name and address of the writer.

3rd - In veterinary questions, the symptoms especially must be fully and clearly stated, otherwise satisfactory replies cannot be given.

4th - When a reply by mail is required to urgent veterinary or legal enquiries, \$1.00 must be enclosed.

Miscellaneous.

Feeding Loose or Tied.

When feeding beef cattle is it best to leave them loose or tie them up, and if tied up are chains the best or stanchions?

J. E. D. Ans. - Good-feeding cattle will make satisfactory gains either way. Tests have shown a slight advantage in feeding loose where satisfactory manger and feeding arrangements are made. Either chains or stanchions make satisfactory ties if properly arranged.

Silage for Sheep.

Will you kindly answer through your paper if silage is good for sheep, and how much would be plenty for them? Some say sheep loose their lambs if fed corn.

G. A. C. Ans. - Silage is sometimes fed in small quantities to sheep with fairly good results. Be sure the silage is of good quality, not moldy or soured. Start on a very small quantity daily and gradually increase. Start giving a pound or two to each matured sheep daily. Pregnant ewes have been fed up to four pounds or four and one-half pounds daily with no bad results. Of course, clover hay and a few oats and if possible a few roots should be fed as well. Be sure the silage is good. Under no circumstances feed sheep spoiled silage.

Gossip.

The London Concrete Machinery Co., Limited, have published a miniature catalogue illustrating the entire line they manufacture. This they will send on request.

Coming Events.

Feb. 8 and 9. - Annual Convention of the Ontario Fruit Growers' Association, Toronto.

Feb. 13 to 16. - Corn Show and Convention, Kingsville.

Feb. 14. - Annual Convention of Ayrshire Breeders' Association, Montreal.

Feb. 28 to March 2. - Annual Convention of the United Farmers of Ontario, Toronto.

Sale Dates.

Feb. 9. - M. J. Elliott, Newtonbrook, Ont.; Shorthorns.

Feb. 13. - Thos. Bagg, Weston, Holsteins.

Feb. 14. - R. J. Clifford, Putnam, Ont.; Holsteins.

Feb. 21. - W. W. George, R. No. 2, Mossley, Ont.; Holsteins.

March 1. - I. N. Howe, R. No. 2, Mossley, Ont.; Holsteins.

March 6. - Wm. Dunlop, Dunure Mains, Ayr, Scotland; Clydesdales.

March 7. - Guelph Fat Stock Club, Guelph; Pure-breds, J. M. Duff, Secretary.

March 9. - W. J. Abernethy, Beeton, Ont.; Shorthorns, Oxford Down sheep.

March 15. - Elias Snyder, Burgessville, Ont.; Holsteins.

March 15. - Union Stock Yards, Toronto, Ont.; Horses.

March 28. - Oxford District Holstein Breeders' Club, Woodstock, Ont.; Holsteins.

March 28. - Western Ontario Consignment Sale Co., London, Ont.; Shorthorns.

MASSEY-HARRIS PLOWS

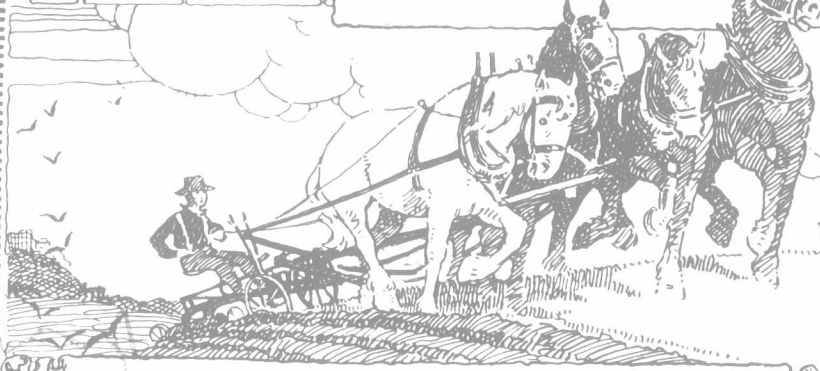
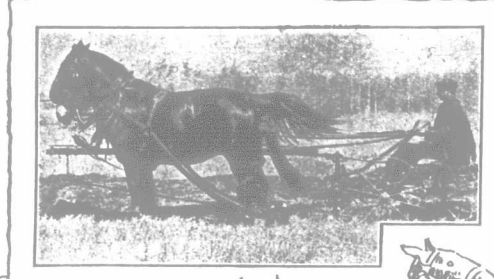
Are Backed by an Experience of over 56 years

You take no chances when you buy a Massey-Harris Plow - It has stood the test of time.

Made in Canada, in one of the best equipped Plow Factories in the world, and in a great variety of styles to meet various conditions.

They are light draft and easy to handle - they are popular with both man and beast.

They turn perfect furrows, putting the ground in the best possible condition for the work which follows.



MASSEY-HARRIS CO., Limited. Head Offices - Toronto, Canada.

BRANCHES - Montreal, Moncton, Winnipeg, Regina, Saskatoon, Swift Current, Yorkton, Calgary, Edmonton. Agencies Everywhere

Nevermore!

Just how desperately different provincial lodgings are from a home, or even a good inn, may be inferred from a pat quotation written in a certain visitor's book known to Mr. Seymour Hicks.

There is always a visitor's book in theatrical lodgings, the eminent English actor explains. They often bristle with fearful and wonderful quotations, and appreciations, of the same quality, of the landlady's house and her motherly character. But the line over the name of Charles Brookfields is: "Quoth the raven -"

A parent's life is one long responsibility. It's a wonder that so many of the genus discharge their duties so acceptably. A writer in the Cleveland Plain-Dealer has discovered another parental problem; or perhaps he merely calls attention to one which many fathers have discovered for themselves.

"How's the family?" one inquired of a happy married West Sider yesterday.

"Well, my children are at a difficult age now."

"Difficult? Why, they've all passed the measles and teething stage, haven't they?"

"Long ago. But you don't know a



Prize ButterMakers Use Windsor Dairy Salt

THE CANADIAN SALT CO., LIMITED

father's troubles. My children are at the age where if I use slang my wife says I'm setting a bad example. And if I speak correctly, the kids think I'm a back-number. Which would you do?"

WISCONSIN INCUBATOR AND BROODER BOTH FOR \$14.50

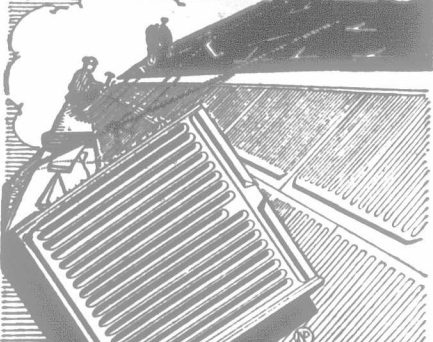
130 Egg INCUBATOR 130 Chick Brooder BOTH FOR \$14.50 Freight and Duty PAID

If ordered together we send both machines for only \$14.50 and we pay all freight and duty charges to any R. R. station in Canada. We have branch warehouses in Winnipeg, Man. and Toronto, Ont. Orders shipped from nearest warehouse to your R. R. station. Hot water, double walls, dead air space between, double glass doors, copper tanks and boilers, self-regulating. Nursery under egg tray. Especially adapted to Canadian climate. Incubator and Brooder shipped complete with thermometers, lamps, egg testers - ready to use when you get them. Ten year guarantee - 30 days trial. Incubators finished in natural colors showing the high grade California Redwood lumber used - not painted to cover inferior material. If you will compare our machines with others, we invite before you buy. Remember our price of \$14.50 is for both Incubator and Brooder and covers freight and duty charges. Send for FREE catalog today, or send in your order and save time.



WISCONSIN INCUBATOR CO. Box 228, RACINE, WISCONSIN, U. S. A.

PEDLAR'S "GEORGE" SHINGLES



ARE you really saving money by neglecting to re-shingle that barn roof? You know that each additional patch lessens the value of your building. You know each widening leak means rotting, loosening shingles and early decay. You know that only by Pedlarizing your roof can you get enduring freedom from repair and rot. Pedlar's "George" Shingles bring you the durability and wearing qualities of steel at a price, when laid, about that of a good wooden shingle roof. A Pedlarized roof will last for generations, protecting you at all times from the danger of lightning and fire. The "Right Roof" Booklet L. F., telling you all about steel shingles and how to lay them, is free. Write to-day.

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Nursery Stock AT WHOLESALE PRICES

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RIDGEVILLE : : ONTARIO

Better Be Sure Than Sorry
Your profits depend upon the health of your fock.

Pratt's POULTRY REGULATOR
Regulates the blood, bowels and digestive organs. Keeps fowls active and makes them lay more eggs. Prevents disease.



Write for FREE Book, "Poultry Wrinkles."
PRATT FOOD CO.
of Canada, Limited
68 Claremont St.
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Seed Corn for Sale

I am able to supply first-class Seed Corn on the cob in the standard varieties of Dents. Reduction on club orders. If undecided as to most suitable variety, enquire, stating your locality.

Robt. W. Knister, Comber, Ontario

O. A. C. NO. 72 OATS

Foundation stock registered. No noxious weed seeds. (Oxford Co.) Samples and prices on application.
HENRY H. SCHLICHTER,
New Dundee, Ont.

Gossip.

A Big Scottish Clydesdale Sale.

We draw attention to an advertisement in this issue of a big dispersion sale of Clydesdales in Scotland. Wm. Dunlop, the noted breeder, Dunure Mains, Ayr, has instructed James Craig Ltd., Auctioneers, to sell at Ayr, Scotland, fifty of his world-famed stallions, brood mares and youngsters. Descriptive catalogues have been forwarded to this office and will be posted free of charge to any desiring them. Get a catalogue and watch next week's issue for more particulars. We can send you a catalogue.

W. W. George, R. R. 2, Mossley, Ontario, is retiring from the dairy business and is offering his entire herd, of 45 head of registered Holsteins, without reserve, by public auction, on February 21. The herd consists of daughters and granddaughters of such noted bulls as Pontiac Hermes, King Segis Pontiac Duplicate, Sir Korndyke Boon, Hengerveld De Kol, and Pontiac Korndyke. Record-making females have been sold from this herd. The farm is located at Putnam Station, on the Woodstock and St. Thomas branch of the C. P. R. See the advertisement in this issue; write for catalogues and particulars.

Ayrshire Bulls and Females of R. O. P. Breeding.

Craigielea Farm, "The Home of High-quality Ayrshires," so runs the advertisement of H. C. Hamill, appearing elsewhere in these columns. This sometimes means much and other times very little, but in Mr. Hamill's case we believe we are right when we say it means a very great deal. Craigielea Ayrshires have, for the past fifteen years, figured largely in both the show-ring as individuals and in the reports of many of our greatest public dairy tests, as well as in nearly every report issued by the Association in the results of the Record of Performance tests. At present the herd numbers around forty head, and the senior sire in service is the noted young bull, Freetrader of Brookside. On his sire's side he is a grandson of the once noted show bull, Freetrader (imp.), while his dam, Sarah of Brookside, was a full sister to Jean Armour, the first cow of the breed to make over 20,000 lbs. of milk in the year, and her three-year-old heifer has since broken that record. Most of the cows are freshening now to this sire. He has also been used almost exclusively on the daughters of the former chief sire Helen's Monarch, whose sire and dam were both imported and both qualified in the R. O. P. In all there are 21 heifers and young cows by this sire, and a more uniform lot were never left by any sire the breed has ever produced. Several of the young cows that have already freshened average 5 per cent. butter-fat for the year, and several are included in Mr. Hamill's present offerings of females. They are from such foundation cows, all of which are still in the herd, as White Lady of Craigielea, which has been a prominent winner in several dairy tests. In her first two lactation periods she produced 19,099 lbs. of milk and dropped her third calf within 24 months. Queen of Springbank, another mature cow, has averaged over 60 lbs. a day for the first 3 months of her R. O. P. test. Annie Hume of Ingleside, still another R. O. P. dam and a prominent winner at different dairy tests, has produced three heavy producing daughters, and at present has a choice, 9-months bull calf that is perhaps the choice of the half dozen bulls offered. Prices and full particulars on these as well as a dozen or more females will be gladly furnished on application. Address H. C. Hamill, R. R. 1, Markham, Ont.

This anecdote portraying the biting side of Mark Twain's wit comes from "Little Stories About Mark Twain." The humorist once asked a neighbor if he might borrow a set of his books.

"You're welcome to read them in my library," replied the neighbor, ungraciously, "but it is my rule never to let my books leave my house."

Some weeks later the same neighbor sent over to ask for the loan of Mark Twain's lawn-mower.

"Certainly," said Mark, "but since I make it a rule never to let it leave my lawn, you will be obliged to use it there."

Brains & Production

This Call for more food is a call to the Farmer who thinks.

More acres under crop? Yes, if you have the land. Yes, again, if you can get the labor.

But greater yield to the acre! That takes brains.

And that is the real problem that most farmers who answer the call must solve.

Attend your conference.

Consult your own crop records.

Get the Government Bulletins.

Use every means to gain from the experience of other men.

Your plans for bumper crops

will require all the study you can give them, and plant food in a commercial form must be a part of those plants.

On that point we can help you.

You will want to do some figuring before you lay out money for fertilizers. "Bumper Crops" is just the book you need. It tells clearly what fertilizers to use for each crop, and what quantity per acre is usually required. Besides, it has many practical pointers on the soil, cultivation, seed, weeds, etc., etc.

When you have read this book you will see that we can give you further help in studying your own problems, and we invite you to consult us.

But the first important thing is to get the book and read it. It is FREE.

We have arranged to mail copies promptly. Please use the coupon.



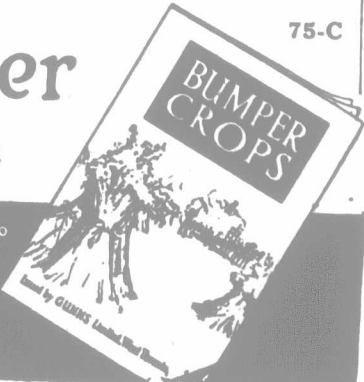
Gunns Shur-Gain Fertilizer

75-C

GUNNS LIMITED,
West Toronto.

Gunns Limited
West Toronto

I am interested in GUNNS Shur-Crop Fertilizer.



ADVANTAGES OF DUST SPRAYING

This season, 1917, we want you to consider this method of protecting your orchards—a method that will control all insect pests and fungous diseases at just three-quarters of your last year's cost. Think of it. Read what Mr. E. D. Smith, of Winona, says about the

Niagara Dusting Method

"We are liking it well enough to try it again next year. One thorough dusting of the sulphur for an orchard was cheaper than one spraying of Bordeaux, counting the labor and all the material cost us."

Senator Smith controls one of the largest nurseries and fruit farms in Canada. He does not make rash statements. Many other prominent orchardists experienced most gratifying results in 1916.

40 acres a day can be covered under average conditions. Two men and one team do in three hours, the work that three men and one team would take three days to do by liquid sprays. Time is vital in early spraying.

No water to haul. Enough material for one-half day's work carried on the wagon.

Weight of equipment less than 1,000 lbs. Can be used on soggy ground or in wet seasons. Equally efficient for highest trees or lowest plants. Averages 25% less cost than liquid spraying. Does not burn foliage, as materials are insoluble in water. Many problems that liquid spraying could not overcome, are solved by dusting. Individual advice given on application.

Send for Free Book on Dusting

It contains information invaluable to all orchardists. The reputation of the Niagara Brand Spray Co. is too valuable, and has cost us too much time and money to attain, to permit us to take the risk of recommending anything that is not thoroughly worthy and proven.

Date.....
The Niagara Brand Spray Co., Ltd.
Burlington, Ont

FILL IN THE COUPON TO-DAY

Gentlemen: Please send me free book on Niagara Dusting Method as outlined above.

The Niagara Brand Spray Co., Ltd.

Burlington, Ontario

The size of my orchard is

Name

Address

SEEDS FIFTY YEARS SERVICE
1866 1916

Buy Early

Present Seed Prices. Sacks Free

Government standard No. 2 Bush.
Timothy (extra No. 1 purity) \$4.50
O.A.C. No. 72 Oats, Unregistered 1.15
Banner Oats, Registered 1.50
O.A.C. No. 21 Barley, Registered 1.85
O.A.C. No. 21 Barley, Unregistered 1.55

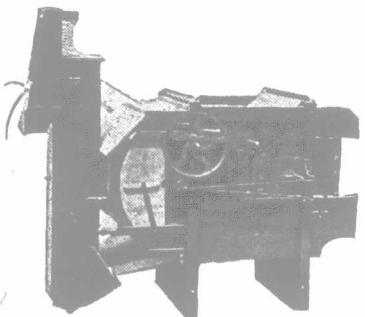
CORN
Wisconsin No. 7, Golden Glow, Leaming, Bailey, White Cap, on cob, nail or rack cured, in crates \$3.15 bus., in bags, \$3.00, crib cured, \$2.50, Longfellow, Compton's, North Dakota, nail or rack cured, on cob, in crates, \$3.25; rack cured, in bags, \$3.10; crib cured, in bags at \$2.50 bus.

Send us your name and address, and we will mail you free, one of our 1917 catalogues just as soon as they are off the press.

This is not only a catalogue, but is full of information which every progressive farmer wants to know. No exaggeration, just plain facts—our prices are right. Bear in mind, also, we pay railway freight in Ontario and Quebec if your order amounts to \$25 or more. Mail us a post-card with your name and address without delay.

We are buyers of Alayke, Alfalfa, Red Clover, Timothy and Seed Grain. Send samples. We are especially in need of Rye Buckwheat, Spring Rye, Emmer, Daubeney Oats, Black Oats, Black Hulless Barley, Two-rowed Barley, Pearce's Tree Beans, Hairy Vetch, Siberian and Hungarian Millet.

GEO. KEITH & SONS 124 KING ST. E. SEEDS TORONTO



We challenge competitors to put their fanning mills in our barn for a trial test with the **KLINE FANNING MILL**

We welcome such a test, because in no other way is it possible to so decisively demonstrate the superiority of the KLINE on all kinds of grain. It is absolutely unequalled for separating wild oats, chaff, all small seeds and smut. In grading seed grain this mill will pay for itself three times over in one year off 40 acres, giving heavier yield per acre than any mill built. Write for full particulars, price and terms. Agents wanted in unrepresented territory.

KLINE MANUFACTURING CO.
Beeton Ontario



THRESHERMEN, READ THIS!

The Improved Veteran Endless Canvas Drive Belts will give you better service than any other. You want the best. Order now. Sold only by

WINDSOR SUPPLY CO.,
57 Sandwich Street West, Windsor, Ont.
Headquarters for Suction Hose and all other Thresher Supplies. Write for catalogue, "Engineers' Bargains".



MAIL CONTRACT

Sealed Tenders, addressed to the Postmaster General, will be received at Ottawa, until noon, on Friday, the 16th day of March, 1917, for the conveyance of His Majesty's Mails, on a proposed Contract for four years, six times per week, over Mount Brydges No. 2 Rural Route, from the Postmaster General's pleasure.

Printed notices containing further information as to conditions of proposed Contract may be seen and blank forms of tender may be obtained at the Post Offices of Mount Brydges and Strathroy, and at the office of the Post Office Inspector, London, G. C. ANDERSON, Superintendent.

Post Office Department, Canada, Mail Service Branch, Ottawa, 2nd February, 1917.

Please mention **Farmer's Advocate**

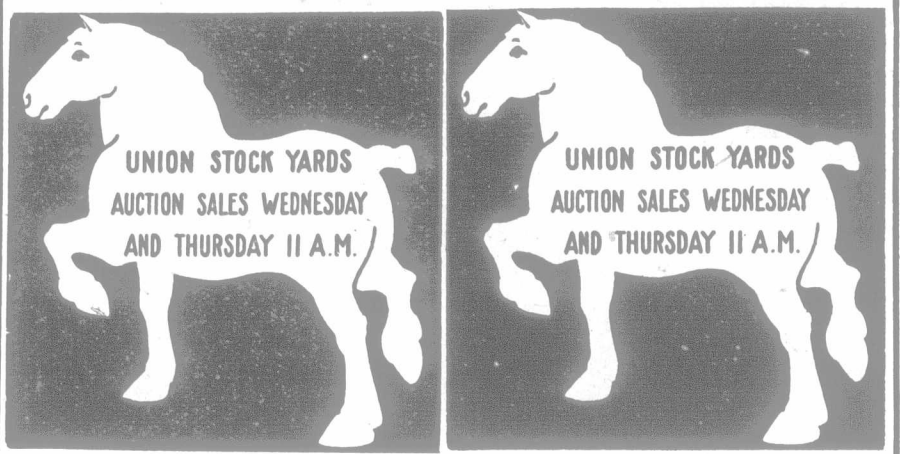
Gossip.

The Dominion Government have appointed a Board of Pension Commissioners for Canada with offices in Ottawa. As this Board wish to cause as little delay as possible in dealing with communications with regard to pensions, they wish the public to correspond directly with the Board of Pension Commissioners, Ottawa. A great deal of delay may be caused by communications being sent through other Departments of the Government. The Patriotic Fund Association and the Military Hospitals Commission have kindly consented to give information and assistance to those wishing to write direct to the Board of Pension Commissioners. These societies have offices in certain localities throughout Canada. In addition, in order to facilitate the granting of pensions, the Board is opening branch pension offices in Vancouver, Calgary, Edmonton, Regina, Winnipeg, London, Hamilton, Toronto, Barrie, Kingston, Ottawa, Montreal, Quebec, St. John and Halifax. All information with regard to pensions may be obtained from these offices.

R. O. P. Holsteins at Hamilton.

Farmer's Advocate readers have long been familiar with the high quality of the splendid Holstein herd kept by the Ontario Government at the Hospital for the Insane at Hamilton. Under the direction of the present Superintendent, Dr. English, the Hospital herd has, in ten years, developed into one of the most noted dairy herds we have in Canada, and has, under this careful management, brought the yearly average, for all cows kept at the farm, up from a little below 4,000 lbs. to well over 9,000 lbs., or double that of the average of Ontario's dairy cow.

In all fairness to the pure-breds we must state that all cows kept on the farm are not registered. Many are as yet Holstein grades, but taken all through, as seen recently by a representative of this paper, we believe that at present no other stables in Ontario house a better lot of grades than those that came before us at the time of our visit. It was quite noticeable, however, that in most cases they were perhaps equally pure in breeding as many of the best that the herd books have recorded. In numbers, the pure-breds register between forty and fifty head, and up until the present the chief sire in service has been Sir Korndyke Wayne De Kol, a son of a 16.26-lb. daughter of Korndyke De Kol Burke and sired by the noted son of Pontiac Korndyke, Sir Korndyke Boon. With females no attempt is made at seven-day work, but nearly everything of milking age is at all times entered in the Record of Performance test, and the mature females have reached as high as 17,500 lbs. of milk and 676 lbs. of butter for the year. Mechthilde Ruby Burke made this record with an average test of 3.9 per cent. fat, and her daughter, Ruby Netherland of Hickory, has 10,043 lbs. of milk and 460 lbs. of butter at 2 years of age. There is a nice 6-months bull from the latter and by Sir Korndyke Wayne De Kol for sale. Ormsby De Boer of Hickory is another 2-year-old, and from March 24 to December 31 in the R. O. P. has 10,456 lbs. of milk with an average test of 3.8. Aaggie Grace Zozo, a 3-year-old, has 11,401 lbs. of milk from April to December. Aaggie Le Strange of Hickory, in the same period has 8,980 lbs. testing 3.8 per cent., and Toitilla Le Strange also, from April to December, has 8,924 lbs. of 4.2 per cent. milk. These latter two are by the former herd sire, mentioned above, and among his first daughters to freshen. Others in the herd look equally promising, and to use on these, Dr. English has in the young sire, Sir Dutchland of Hickory, one of the best individuals that could be selected. He carries the blood of Dutchland Colantha Sir Mona and the great heifer Lakeview Le Strange 28.34 lbs. The present offering includes several sons of Sir Korndyke Wayne De Kol, one being a 10-months son of Aaggie Burke De Kol, a 12,771-lb. 3-year-old with an average test of 4.8 per cent. The following are a few of the breeders that have recently purchased good record sons of Sir Korndyke Wayne De Kol: A. W. Beaven, Prescott; Smith Bros, London; R. E. Young, Hannon; B. Carr, Forestville; Wm. Daniels, Dunnville; Jno. Dearing, Palermo; Gideon Adams, Wades, all of Ontario, and S. P. Knight, of Stanbridge East, Quebec. If you are in the market for a young sire it will pay you to get Dr. English's prices.



UNION STOCK YARDS
CAPITAL— of Toronto, Limited CANADA'S GREATEST LIVE STOCK MARKET
\$1,500,000

HORSE DEPARTMENT—Walter Harland Smith, Manager

Auction Sales of Draft and General Purpose Mares and Geldings, every Wednesday and Thursday Large stock on hand for private sale every day.

GREAT ANNUAL BREEDERS' SALE

of Registered

Clydesdale and Percheron
Stallions and Mares

Will be held on

Thursday, March 15th, 1917

At 10.30 a.m.

We have already received particulars of large consignments from the following well-known importers and breeders: Mr. J. B. Hogate, Weston, Ont.; Mr. Wm. Pears, West Toronto; Mr. W. E. Anderson, Rossmore, Ont.; Mr. W. H. Littlefield, Brantford, and many others.

Send for entry forms. Make your entries at once. Entries must be made and full particulars in hand not later than Feb. 15th. Many requests have already been received for catalogues. Send your address at once, and catalogue will be mailed as soon as published.

Consignors to this great sale are under no expense for advertising—all they pay is the commission on actual sales and 60c. per day for feeding. Full particulars on application. Correspondence invited with all large breeders and dealers wishing to arrange dates for Special Sales of Pure-bred or other stock. Our facilities are the best and most economical in Canada.

Walter Harland Smith, Manager Horse Department.

A WOMAN wondered one day what she would have for a lunch. On looking through her cook book she found a recipe for serving grated cheese with crackers. She bought a box of McCormick's Jersey Cream Sodas, and the result was even better than she had expected. There are any number of such dishes, any one of which, if McCormick's Sodas are used, will help a woman at her wits' end for something new and appetizing for her table.

McCormick's
Jersey Cream Sodas
In different sized packages. 61

CREAM WANTED

We hesitate to quote prices, because the figures for to-day may be too low for to-morrow.

Our guarantee is:
Prompt Service
Accurate Records
Highest Prices
Write for particulars—it will be worth your while.

TORONTO CREAMERY CO., Ltd.
9 Church Street, Toronto.

SHIP US YOUR

CREAM

We sell direct to consumer, therefore we can pay the highest price. We supply cans, pay express, settle for cream once a week. Give us a chance.

GOLDEN CREAMERY
697 Bathurst St. Toronto, Ont.

Sweet-clover Seed Wanted. A quantity of white blossom Sweet-clover seed, hulled and unhulled. Send sample and price, for sale—O.A.C. 21 Seed Barley, and O.A.C. 72 Seed Oats. Geo. D. Fletcher, Erin, R.R. 1.

**MAKE YOUR DOLLARS
FIGHT
AT THE FRONT.
BUY
DOMINION OF CANADA
THREE-YEAR
WAR SAVINGS CERTIFICATES**

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| \$ 25.00 | FOR | \$21.50 |
| 50.00 | " | 43.00 |
| 100.00 | " | 86.00 |

INDIVIDUAL PURCHASES LIMITED TO \$1500.

FOR FULL PARTICULARS APPLY AT ANY BANK
OR ANY MONEY ORDER POST OFFICE

FINANCE DEPARTMENT
OTTAWA

JAN. 9, 1917

CALDWELL'S

Clean, Pure Chick Feed

Finely cracked—perfectly balanced, and containing all the food elements required in a Baby Chick Food. It is easily digested by young chicks, and they thrive rapidly on it. You will have few "sickly" birds with drooping wings if you feed them

Caldwell's Chick Feed

If you have never used it, give it a trial. Most feedmen handle it in 100-lb. sacks, or we will supply you promptly. Send for our free booklet.

The Caldwell Feed & Cereal Co., Ltd.
Dundas, Ontario

Makers of all kinds of Stock and Poultry Feeds

STANDARD FEEDS

BISSELL Double Action Harrows will thoroughly cultivate and pulverize any soil.

One Harrow is Out Throw; the other is In Throw. They are simply constructed, rigid and durable. The Gangs are flexible and the Disk Plates are so designed that they "hang" right into the soil. Bissell Harrows are built in sizes and weights suitable for horse or tractor use. Write Dept. W for free catalogue.

98
T. E. BISSELL CO., LTD., Elora, Ont.

BE SURE AND ASK FOR THE
Maxwell

Line of WASHERS, CHURNS, BUTTER-WORKERS, FOOD CUTTERS, GAS ENGINES, etc. Write for Catalogue.
MAXWELLS LIMITED, St. Mary's, Ont.

DO YOU NEED
FURNITURE

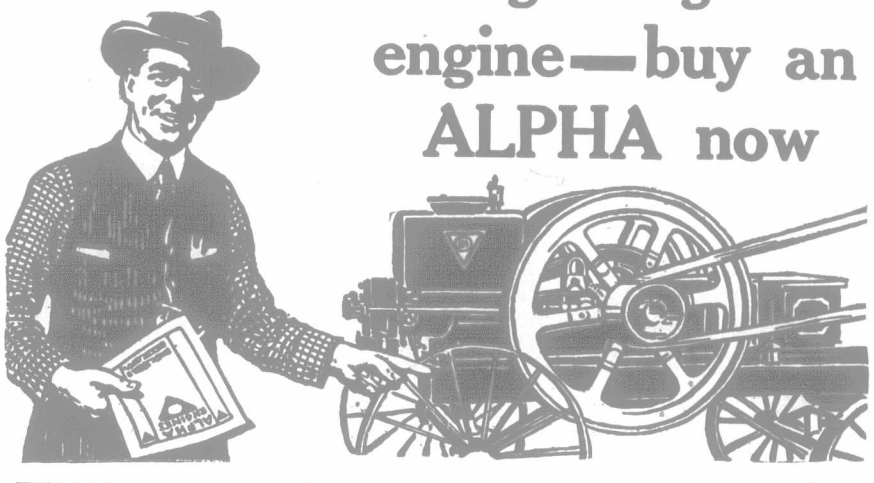
Write for our large photo-illustrated Catalogue No. 7—it's free to you.
THE ADAMS FURNITURE CO., Limited
Toronto, Ontario

Gossip.

Canada's Richly Bred Bull at Service.

Outstanding individuality and outstanding pedigree are terms that best describe the young bull, May Sylvia Pontiac Cornucopia, advertised for service elsewhere in these columns by a syndicate composed of several prominent Holstein breeders from the district of Unionville, Ontario. Although in breeding this young sire is without doubt on a par with the best the breed has ever known, we believe we are placing credit where it is due by putting individuality before breeding, for he is assuredly one of the greatest individuals of any of Canada's young sires. When you look over his pedigree you will find that he combines the greatest combination for milk and butter production the breed has ever produced. Starting with his dam for the reason that his ancestors on his dam's side are perhaps better known to Canadian breeders, we will first of all say that he is out of a daughter of the great May Echo Sylvia, one of the greatest milk producing cows the world has ever seen. Her one-day record of 152.1 lbs., and her 7-day record of 1,005.8 lbs. from which she made 41 lbs. of butter, still stands, as it is likely to for some time, far in excess of the record of any cow in the world of any breed. Both her record, and her breeding in fact, are too well known to Canadian breeders to need even this comment here. Then, on the other hand, the sire of this daughter, which is the dam of May Sylvia Pontiac Cornucopia, is the noted bull King Pontiac Artis Canada, which as a five-year-old sire has more tested daughters than any other sire of the breed, having in all 25 officially tested daughters. He also heads the list for the largest number of 20-lb. two-year-old daughters. His sire, King of the Pontiacs, has now almost 200 A. R. O. daughters, and his dam, Pontiac Artis, has won more money from the American Holstein-Friesian Association for official records than any other cow ever recorded. On the sire's side, May Echo Sylvia Cornucopia, once again has numerous world's records for butter production. His sire is Spring Farm Pontiac Cornucopia, a bull of great individuality, and his dam, K. P. Pontiac Lass, was the first 44-lb. cow of the breed. She also at one time held the world's record for 100 days. This gives May Sylvia Pontiac Cornucopia an average for both his grandams of 42.59 lbs. of butter for 7 days and 170.5 lbs. for 30 days, being also a world's record. It has been stated on good authority that the service

You need a good gas engine—buy an ALPHA now



THERE is no question about your needing a good gas engine. Every day you can see ways in which it would be a big help. Why delay the purchase any longer? You are not saving money by doing without an engine. You are actually losing money. You will not begin to save the price of a good engine until you buy an Alpha and let it do the saving.

But be sure the engine you buy is a good engine—a high-grade, reliable, durable engine that you can depend upon to do the work you expect of an engine.

The first cost is the last thing to consider. The lower the first cost, the lower the quality of an engine, and you cannot get reliable service, durability, low repair and fuel costs, with such an engine. Buy your engine with an eye to the future.

There is nothing mysterious about the superiority of an Alpha. The better design of this engine, the quality of material and workmanship that go into it, are easily seen. Every feature of this engine has in it some sound reason why the Alpha will give you better service and last longer.

Ask for and read our large engine catalogue carefully, and you will see where the extra value comes in.

Alpha Gas Engines are made in eleven sizes, 2 to 28 H.P., and each size is furnished in stationary, semi-portable, or portable style, with hopper or tank-cooled cylinder.

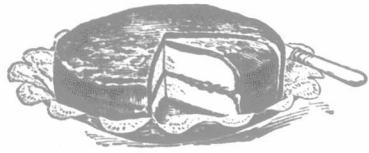
THE DE LAVAL COMPANY, Ltd.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA.
Sole distributors in Canada of the famous De Laval Cream Separators and Alpha Gas Engines. Manufacturers of Ideal Green Feed Silos.
Catalogue of any of our lines mailed upon request

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

fees alone for Spring Farm Pontiac Cornucopia have in the past three and a half years totaled well on to \$60,000. Full particulars regarding the service fees, etc., of May Sylvia Pontiac Cornucopia to a limited number of selected cows can be obtained by writing any of the breeders mentioned in the club's advertisement, or by applying direct to W. F. Elliot, Sec. P. O. address, Unionville, Ont.

In directing attention to Richardson Bros.' Shorthorn advertisement appearing elsewhere in these columns, a word or two regarding the breeding and individuality of some of the imported bulls offered, as well as a reminder of the choice breeding of the home-bred stuff might be of interest to many of our readers, especially those who will be needing a change of sires this year. Taking the imported ones first, there are four in all and their ages run from 12 to 18 months. Ardlethen Clarence, bred by Robert Copland, Aberdeenshire, Scotland, is the oldest bull of the four. He is a straight-bred Clara, got by the Duthie-bred bull Sittyton Moonlight and has a wealth of even fleshing. He is surely a great, big, good calf. Ardlethen Laird is a thick, low down, good haired roan by Primrose Archer, of Duchess breeding, while the other two are much the same breeding, being also by Primrose Archer and out of Marr and Cruickshank breeding. A better bred lot of youngsters could not be found, and all have size and an abundance of even fleshing. In addition to the imported bulls there is an excellent offering in home-bred stuff, all sired by their present Flora-bred sire, Proud Monarch, the noted breeding son of Blood Royal. Every one from this sire has his great scale and character stamped in them to a noticeable degree, and the present offering of bulls are as good a lot as we have seen for some time. These are from the big, roomy cows of Duchess of Gloster, Rosemary, Broadhooks and Crimson Flower breeding that have made the herd famous. Many of these, too, are excellent milkers, and if breeding counts Messrs. Richardson should be in a position to furnish something which, for combined milk and beef, compares with the best the breed produces. If you have been thinking of a young imported bull or even a home-bred bull that will be capable of winning in the show-rings amongst strong company next year, you should visit the farm and see this offering. Address all correspondence to Richardson Bros., Columbus, Ont.



Coffee Icing

Cook two cups of Lantic Sugar with half a cup of strong coffee until the syrup forms a soft ball when dropped in cold water. Add a teaspoonful of vanilla extract and beat until cold enough to spread.

Lantic Sugar

"The All-Purpose Sugar"

is specially good for cake baking on account of the fine granulation.

The Sugar with the red ball trade-mark

Packed in 100-lb. Bags

For book, address Atlantic Sugar Refineries, Ltd. Power Building, MONTREAL 13

Gossip.

A New Stock Bull at Alloway Lodge.

With the great demand for cattle of the early maturity sort, for which purpose the Angus are noted, the herd of Robt. McEwen, Byron, Ont., is now in line for supplying breeders, catering to that trade, a very choice lot of bulls, and customers are invited to inspect the many good ones now ready for service. Amongst them is one of the first-prize calf herd at the Western Fair, London, and others of similar merit and breeding. A very important addition has been made to the herd recently in the purchase of a stock bull, the champion-bred Edward's Queen, first prize at the 1916 Indiana State Fair. He is sired by the champion Blackbird Ito 2nd, and out of a daughter of Queen Mother Johnson, the dam of the International grand champion, Queen Mother Johnson 8th. A bull of this show-yard record and ancestry should prove a worthy sire for the many high-class cows in this herd.

The flock of Southdowns was never stronger in either numbers or breeding, as a glimpse at winnings will reveal. At Toronto, every first, except on aged ram and aged ewe; at Syracuse, New York State Fair, every first; at the Chicago International in the breeding classes, every first but two; in the section for ram lambs, first, second and third. At the Toronto Union Stock Yards Show, a pair of 3 wether field lambs won first, and fetched at auction 30 cents a lb. live weight. The good results obtained in the experiments conducted by the Provincial Agricultural Colleges and the State Universities, establishing the value of the use of the Southdown sire, have been the means of creating an increased demand, and the enquiries for high-class ewes and rams cleaned up everything for sale. This seems to indicate the necessity for an importation this year if circumstances will permit.

Collies are only bred in limited numbers and meet a ready sale.

Some Bulls That Must be Sold Quickly.

Cloverlea Farm, the property of Griesbach Bros., Collingwood, Ont., and noted the province wide for high-testing Holstein cattle, was visited recently by a representative of this paper, who found the herd in its usual high productive condition. Since our visit of a year ago Messrs. Griesbach have had the misfortune to lose their residence by fire, and, with the new one under construction and farm help at a premium, very little testing has been undertaken in the past six months, although a large percentage of the cows are now fresh, and from every appearance many are in shape to go on and increase their records. Daisy Pietertje Johanna, with a 10-year-old record of 27.14 lbs. of butter in 7 days, is still the highest record cow in the stables. She has a daughter and several granddaughters still in the herd, and she is again bred to King Segis Alcartra Sir Calamity, Mr. Abrogast's \$2,000 son of King Segis Pontiac Alcartra. There are also two daughters of Sir Admiral Ormsby in the herd. One of these, Ormsby Belle, has over 24 lbs. of butter in 7 days, and has proven to be one of the best foundation cows in the herd. The other daughter has for dam Francie Korndyke, a 24 lb. 4-year-old cow, and has herself a 17.11-lb. 3-year-old record. There is an exceptionally nice 10 months bull from this heifer in the present offering and sired by the present herd sire, Pontiac Norine Korndyke. He is sired by Sir Korndyke Boon, the noted son of the great Pontiac Korndyke, which is now the sire of almost 200 A. R. O. daughters. For dam, Pontiac Norine Korndyke has Norine Wayne Mercedes, a daughter of Count Calamity Mercedes, which was the first Canadian-bred two-year-old to produce 20 lbs. of butter in 7 days. All the offering, which includes two 11-month bulls from a 12.55 lb. 2-year-old, and a 14.7-lb. 3-year-old, respectively, as well as seven or eight young ones, are all sired by Pontiac Norine Korndyke, and in nearly every case they are exceptionally well grown, and like the Korndyke Boon stuff are all very typey. In view of the fact that their time is more or less taken up with the building Messrs. Griesbach informed us that these bulls are priced away down so as to move them quickly. Only bulls from tested dams will be offered. Address Cloverlea Farm, Collingwood, Ont.

PEERLESS PERFECTION

Absolute Security

WHEN you go away for a day or turn in for the night, you are certain your stock is locked in—they can't get over, under or through the spaces—a perfect fence for hilly or uneven ground, through streams; protects poultry, ducks, geese, sheep and hogs. Can't sag or break down and will turn an unruly horse.

Peerless Perfection Fencing

is made of best heavy Open Hearth steel fence wire, the impurities burned out and all the strength and toughness left in. Makes the fence elastic and springy. It will not snap or break under sudden shocks or quick atmospheric changes. Our method of galvanizing prevents rust and the coating will not flake, peel or chip off. Every intersection is securely clamped with the famous Peerless Lock.

Send for catalog. It also describes our farm gates, poultry fencing and ornamental fencing.

Dealers nearly everywhere. Agents wanted in unassigned territory.

The Banwell-Hoxie Wire Fence Co., Ltd.
WINNIPEG, MAN. HAMILTON, ONT.

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Perfect hearing is now being restored in every condition of deafness or defective hearing from causes such as Catarrhal Deafness, Relaxed or Sunken Drums, Thickened Drums, Roaring and Hissing Sounds, Perforated, Wholly or Partially Destroyed Drums, Discharge from Ears, etc.

Wilson Common-Sense Ear Drums "Little Wireless Phones for the Ears" require no medicine but effectively replace what is lacking or defective in the natural ear drums. They are simple devices, which the wearer easily fits into the ears where they are invisible. Soft, safe and comfortable. Write today for our 168 page FREE book on DEAFNESS, giving you full particulars and testimonials.

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"FRENCH ORLENE" absolutely cures Deafness and Noises in the Head, no matter how severe or long standing the case may be. Hundreds of persons whose cases were supposed to be incurable have been permanently cured by this New Remedy.

This wonderful preparation goes direct to the actual seat of the trouble, and one box is ample to effectually cure any ordinary case.

Mrs. Rowe, of Portland-crescent, Leeds, says: "The 'Orlene' has completely cured me after twelve years' suffering."

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Under the most severe weather conditions, you will get plenty of eggs if your hens are properly housed and fed Royal Purple Poultry Specific as directed.

Jno. Cutting, Osprings, Ont., writes as follows:

"Dear Sirs.—Kindly send me your free booklet on Stock and Poultry. I have used your Poultry Specific all winter, and I would not want to be without it. For fattening chickens, and making hens lay it can't be beaten. I have also used the Stock Specific, and find it as represented."

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In summer, fowl get grain, herbs, grass and insects, which are Nature's assistants for producing eggs. In the winter and spring, fowl get practically the same grain, but must have a substitute for the herbs, insects. Royal Purple Poultry Specific, manufactured from Roots, Herbs, Minerals, etc., is a most perfect substitute, increases the egg production at once, and makes the hens lay as well in winter as summer—keeps the fowl active, vigorous and healthy—prevents chicken cholera and kindred diseases.

Sold in 25 and 50c. packages, also \$1.50 and \$5.00 air-tight tins. We also manufacture Lice Killer, 25 and 50c. packages; Rouge Cure, 25c.; Disinfectant 25c., 50c., \$1 sizes.

Secure these products from our dealer in your town.

W. A. Jenkins Mfg. Co., Limited
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FREE LAND FOR THE SETTLER IN Northern Ontario

Millions of acres of virgin soil, obtainable free, at a nominal cost, are calling for cultivation. Thousands of farmers have responded to the call of this fertile country, and are being made comfortable and rich. Here, right at the door of Old Ontario, a home awaits you.

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But their cost, if invested in an Imperial Life policy, might mean the difference between poverty and comfort for your family after your death.

Think of it—a quarter a day—for a man between 25 and 30 will maintain approximately \$4,000 of life assurance.

And the \$4,000 in cash will be there for your wife and family immediately, if you own an Imperial policy, and your call should come suddenly.

You can afford to smoke, sure! But you can also afford an Imperial Home Protection policy to protect your wife and little ones.

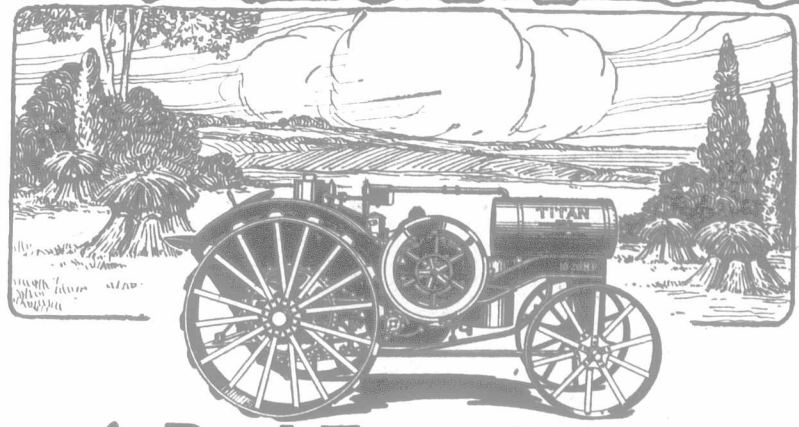
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A Real Farm Helper

AT a recent tractor demonstration a farmer remarked "Our short season demands a lot of reserve power for rush work that I have never been able to get out of horses. I am taking home a Titan 10-20 because it looks to me like a real farm helper."

Was he right or not? Look over your own conditions and judge from them. Aren't there times in the year when you would give almost anything for more power to get the plowing done on time or to get in the grain and thresh it?

A Titan 10-20 kerosene tractor gives you that extra power that you need in rush seasons, and gives it at a price you can afford, because it operates successfully on cheap kerosene and uses fuel and oil (feed) only when it is working. It will do more and better work than any horses you could buy for the same money, and it's more dependable than horses. Keep it working hour after hour and day after day.

All the details of construction, design, and sizes of the Titan line of real farm helpers are given in books and catalogues we would like to send to you. Titan tractors are popular. To have your tractor for spring work you should begin investigating now. Write to the nearest branch house.

International Harvester Company of Canada, Limited

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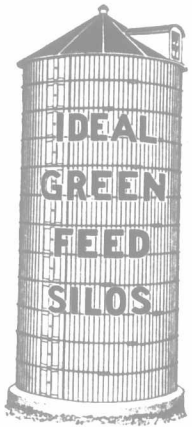
WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.
EAST—Hamilton, Ont., London, Ont., Montreal, Que., Ottawa, Ont., Quebec, Que., St. John, N. B.

Gossip.

Some Choice Stallions for 1917.

As the passing of every week now draws us that much nearer to the horse-breeding season, farmers in every locality are, no doubt, wondering as to the kind of sire that is going to be represented in their particular district for the season of 1917. With the view of giving our readers a line on the stallions that are now being offered by some of our larger importers, our representative called recently at the stables of T. H. Hassard, of Markham, Ont. Under normal conditions the Clydesdales and Percherons in these stables number about equally, but at the present time the choice in Percherons is unusually small. There have been times, too, when we have seen the Clydesdale numbers larger, but at no time in the past ten years have we seen a higher quality lot than Mr. Hassard brought out for our inspection. Size and quality predominate all down the line of good breeding stallions that now make up the season's offering. Marathon, the big, good horse, first and champion at Guelph last December, is only one of many good ones. He is got by Marcellus, while his dam is by Prince of Carruchan, one of the very best sons of the famous old Prince of Wales. Aside from being a sire of merit he has perhaps won more first and championship ribbons than any other sire in Canada. Standing reserve to Marathon at Guelph was the Canadian-bred sire, Count of Hillcrest, the pride of the Hassard stables. Aside from his record breeding there is perhaps no other Canadian-bred sire that has met with such unparalleled success in the show-ring of any country. He is got by the noted champion winner, The Bruce, he by Revelanta, and he by Baron's Pride. On the dam's side he is from a granddaughter of Marcellus, while his second dam was Maggie Miller by Magnet, bringing in again another one of the best breeding sons of Baron's Pride. His third dam again was by Darnley's Model, and he by Darnley. With breeding such as this it is little wonder that he has made almost a clean sweep since coming out first at Regina as a two-year-old. Getting back to imported ones again, Dunure Henry, is a good-quality ton horse got by Baron of Buchlyvie, and his breeding and individuality combined should be ample proof to any buyer that

This is the time of year when an IDEAL GREEN FEED SILO would pay big returns



Made in Canada

Rich, juicy silage would give you 25% more milk and cut a big slice off your feed bill into the bargain.

Grain is expensive, and cows fed only on grain and hay will not begin to produce as much milk as cows on a silage ration.

A cow's milk yield falls off during the winter months simply because under the dry feeding system she does not get the stimulating green

feed that she has during the summer. Silage supplies this green feed and reproduces, to a great extent, the conditions that make her give a big yield of milk in the summer months when she is out at pasture.

Silage is the cheapest feed and the greatest milk-producing feed known. While it is especially valuable in the cold winter months when dairy products are bringing their highest prices and cows ordinarily give less milk, it is hardly less valuable during the dry summer months when pasturage is scarce. Many cow-owners find that it pays to feed carried-over silage when pastures fail, because by so doing they prevent the falling off in the milk yield that is never fully restored, even with the return of good pasturage in the fall.

A good silo is the best investment you can make—an investment that will return you 100% every year you have it. No other equipment you could add to your farm will give you as great returns. Make up your mind now that you will not let another winter find you without an Ideal Green Feed Silo.

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Sole distributors in Canada of the famous De Laval Cream Separators and Alpha Gas Engines. Manufacturers of Ideal Green Feed Silos.

Catalogue of any of our lines mailed upon request.

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

he is a money-making sire. Netherby, foaled in 1908, got by Silver Cup, dam by Sir Thomas, is a right good kind of Clydesdale, and by his get has already proven himself one of Canada's best breeding sires. Selangor, by Oyama, is a nice bay, 6 years old, right at the ground and top, while Hillhead Premier, by Hillhead Chief, is another worthy sire that has left some choice things in the district. Royal Penny is a great big, two-year-old, an expert mover, and is got by Prince of Aden out of a dam by Fullarton. He, too, will please, while Royal Whitson, a yearling got by Gallant Carruchan, dam by MacQueen, is one of the sensations of the year. He was first in a strong class of twelve at Guelph in December and has the promise of a great future. These with several other stallions from two year olds up and fifteen high-class, registered mares are well worth inspecting, and can, we understand, be sold at reasonable prices with terms to suit. The mares are by such well-known sires as Dunure Foreman, Hillhead Victor, Mahratra, and others which are equally as well bred.

Attention is drawn to W. B. Ferguson's advertisement of seed oats in another column of this issue. The farm is particularly free from noxious weeds, and Mr. Ferguson is making a specialty of growing oats. In order to avoid danger of mixing, only one variety of one kind of grain has been grown on the farm for several years. Special screens have been fitted in a good fanning mill in order to ensure the best possible grade of seed, which passes inspection before leaving the farm.

Thirty-four female Holsteins and two bulls, including the herd sire, King Hengerveld Pietertje, will be offered at R. J. Clifford's sale at Putnam on Wednesday, February 14. See the advertisement in this issue and write for catalogue and particulars.

Nursing for Farm Girls.

Farm girls who are desirous of becoming nurses might do well to consider the advertisement of the City Hospital School of Nursing, Blackwell's Island, New York City, which appears elsewhere in this issue. Many nurses are required at this institution, which gives exceptional opportunities for study and efficiency.

IF YOU HAVE A
Steel Truss Barn
 you won't be afraid of
Lightning
 It is fire-proof, durable and roomy.
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| No. 2 Alsike..... | | 12.50 |
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| No. 3 Timothy..... | | 3.25 |
| White Blossom Sweet Clover..... | | 13.00 |
| No. 1 Alfalfa (Northern grown)..... | | 13.00 |

Terms cash with order. Bags extra, at 30 cents each.
 We pay the freight on all orders of \$25.00 or over east of Manitoba.
 Send for samples if necessary.
Todd & Cook, Seed Merchants
 Stouffville, Ontario

**THE BEST
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 is saved by the
Dominion Canners Farms
 WELLINGTON : : ONTARIO
 Our own results, and those of our customers, show that every pound of this seed will produce at least 75,000 vigorous plants.
 We specialize on the premier canning varieties, viz.—Chalks, Early Jewel and John Baer.
 See that your local factory is prepared to furnish your requirements for 1917 from this specially selected seed.

SEED CORN
 on the cob
 Some of the best corn in Essex Co., second to none in germination. Satisfaction guaranteed or your money refunded. In sacks or crated. Flints and dents on the cob.
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BROWN BROTHERS Co.
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SEED CORN
 FOR SALE—Many varieties of high germination test. No. 1 seed corn from No. 1 growers.
The St. Joachim Seed Corn Growers' Club
 Box 4, St. Joachim, Ont.

O. A. C. 72 Oats—Prize crop winners last three years, and at Ottawa Winter Fair, 1917. Tested weight 37 pounds, \$1.10 per bushel. Sacks free.
J. BAKER, R.R. 1, Hampton, Ont.

Stallion for Sale
 Clydesdale "Glenlea Pride" (17844) inspected and enrolled, Form 1. Black, good markings, foaled June 23rd, 1913. Got by imported sire and dam, stylish, with excellent quality. Priced right. Apply at once to
John McLean & Son, Rodney, Ontario
 P.O. and Station, M.C.R., & P.M.R.R.
 We have some young cows with calf at foot or to calve, by the Augusta bull, Angustine Imp. = 101804 =. Also 2 red and 3 roan bulls, smooth and fleshy. We invite inspection. **John Seun & Sons, Caledonia, R.R. 3, Haldimand Co.**

Gossip.
Manor Farm Holstein Friesians.
 Those of our readers who are more or less interested in pure-bred Holstein-Friesian cattle have, no doubt, read with interest the advertising copy inserted weekly in these columns for the past month by Gordon S. Gooderham, of Manor Farm, Clarkson, Ontario. The announcement that Manor Farm was once more equipped with the finest and most modern stabling accommodation in the Dominion, and coming as it did so soon after the big fire in February of 1915, was more than a pleasant surprise to the entire Holstein fraternity, as a large percentage of both the Canadian and American breeders are not only familiar with the high quality of the Manor Farm herd but are also personally acquainted with Mr. Gooderham, and, therefore, are in a better position to appreciate the splendid efforts he has put forth in the past ten years for the advancement of the breed in general. It was the writer's good fortune recently to spend a full day at the farm, and in company with Mr. Gooderham, leisurely inspect the one hundred females headed by the two great young sires King Segis Pontiac Posch and Sir Sadie Korndyke Keyes; the daily milk sheets, etc., to say nothing of the already mentioned extensive stables which domicile the herd. Speaking of the breeding females they are, with the exception of the more mature foundation cows, nearly all daughters of the former sire in service, Prince Hengerveld of the Pontiacs. This sire, it will be remembered, was a son of the great King of the Pontiacs with 186 A. R. O. daughters, and which is often referred to as the greatest bull living or dead. There is a whole row in the long stable by this sire, and besides being all from tested dams many now, in fact all that are of milking age, have excellent records themselves. His first eight daughters to freshen, for instance, including two 2-year-olds and two 3-year-olds, have records from 21.15 lbs. to 25.05 lbs., and there are thirteen others with records greater than 18 lbs., nine of these being two year olds. All of these daughters of Prince Hengerveld are large and exceptionally typey, and his youngest daughters now in the herd are 11 two-year-olds. These will all be freshening between now and May 1. A list of the good record mature cows in the herd, many of which are the dams of these heifers, may be in good form here, but before giving these we should like to give a short review of the individuality and breeding of the young sire, King Segis Pontiac Posch, which is now being used on all of these heifers. Showing at Toronto and London both as a senior yearling and in the two-year-old form he easily annexed the red ribbon, and up until the fall of 1916 had never been obliged to take second place. His sire is King Segis Pontiac Alcartra (the \$50,000 bull), and his dam, Fairmont Netherland Posch, made 29.62 lbs. of butter in 7 days at 3 years, and 32.54 lbs. at 4 years and 26 days. At the time her record was made she was the youngest cow of the breed to make 29.50 lbs. of butter in 7 days. Thus, it will be seen that King Segis Pontiac Posch is not only a show bull of merit but is backed by unexcelled record breeding, and the young bulls of this breeding at Manor Farm may well be expected to soon find themselves at the heads of many of Canada's best herds at the prices Mr. Gooderham is asking. At present no females of this breeding will be sold; and as they come of breeding age all will be bred to the junior sire, King Korndyke Sadie Keyes, whose sire, Sir Sadie Korndyke Segis, is a brother to Mabel Segis Korndyke, a 40-lb. 4-year-old cow; while his dam, Lulu Keyes with 36.05 lbs. of butter in 7 days, has often been pronounced the most perfect individual recorded in the Canadian Herd Book. It was our intention to give a list of the good records of the more mature cows in the herd, but as we have already taken more than our allotted space it will perhaps be as well to add that they run all the way from 25 to 30.68 lbs. of butter in 7 days, and the majority are now fresh or freshening in early spring to King Segis Pontiac Posch. Mr. Gooderham will be glad, at all times, to answer correspondence regarding everything in the herd and if you are in need of a young sire it will pay you to get particulars and prices regarding his offering before placing your order elsewhere.

Highly Pedigree Clydesdales
 DUNURE MAINS STUD
 Important Scotch Dispersal
 It is an honor to us to announce that having concluded arrangements with WM. DUNLOP, ESQ., an event of outstanding importance in the Clydesdale world will take place on
Tuesday, March 6th, 1917
 Within The Horse Repository, AYR, SCOTLAND
 When we will expose for sale, absolutely without reserve a draft of
50 Highly Pedigree Clydesdales
 COMPRISING:
16 Stallions, 3-year-old and upwards, hired for the forthcoming season by Breeding Societies throughout Scotland and England.
6 Stallions, 3-year-old.
5 Stallions, 2-year-old. **9 Brood Mares.**
3 Fillies, 2-year-old. **5 Fillies, 1-year-old.**
4 Colts, 1-year-old. **2 Geldings.**
 Hour of sale, 12 o'clock.
 While a full description of each lot appears in the catalogue, which can be obtained from the office of this paper, post free, it could here be of interest to note that included in the lot of 16 hired horses are such famous prizewinners and breeding sires as "Dunure Vintage," "Dunure Freshfuel," "Dunure Peer," "Dunure Footline," "Dunure Tower," "Dunure Walker" and "Dunure Vortex." Then, again, among the 2- and 3-year-old stallions, prizewinners are again in evidence. The brood mares are a noteworthy lot, embracing that outstanding animal, "Dunure Toby," with its great show-yard record, gaining premier honors on every occasion shown, excepting when meeting her stable companion, "Dunure Chosen," which latter mare has an unbeaten show-yard career. There again appear such well-known mares as "Dunure Voice," "Dunure Imogene," "Dunure Sympathy," "Dunure Esther," "Dunure Graceful" and "Balcairn's Primrose," which latter mare gained leading honors in 1915 at all the important shows in Scotland and England, and reserve for the Cawdor Cup, the coveted trophy of the year. Of the catalogued mares, "Dunure Voice" and "Sarah Pride" are served with "Dunure Footprint." "Sweet Floweret" has two championships, three firsts and one third prize to her honor. Of the 2-year-old fillies, one of them carried her class at last year's Royal Show, two are sired by "Footprint" and one by "Auchenflower." And, again, of the five yearling fillies, "Dunure Footprint" is the sire of three, and one is sired by "Dunure Birkenwood." Lastly, of four yearling colts, one is sired by "Sir Stephen" and three by "Dunure Footprint." It will be noted from the foregoing the prominence of the progeny of that great stallion, "Dunure Footprint," a son of that Clydesdale wonder, "Baron o' Buchlyvie," auctioned a few years ago for £9,500. "Dunure Footprint" was bred, and is owned, by Mr. Dunlop, and is universally recognized to be the outstanding horse of his breed to-day. His dam was acknowledged to be a really ideal mare and the finest type of a cart horse in her day.
 NOTE.—The sale is of an absolutely unreserved character, and is rendered necessary on account of the numerical increase of stock, combined with the paucity of labor through the exigencies of war.
JAMES CRAIG, LIMITED, Live Stock Salesmen, Ayr, Scotland
 Catalogue may be obtained from Farmer's Advocate Office, London, Canada.

We Will Make You a Suit for \$13.25
 in London, Eng., That Would Cost You \$25 in Canada, and Will Deliver it to You Duty Free and Carriage Paid
 Clothes are cheaper in England. That is why many thousands of Canadians buy their clothes from us. They save about one-half what they would have to pay if they bought them from a local tailor.
 We will prove this to you absolutely, if you will just fill out the coupon below and mail it to us. Upon receipt of it, we will send you, without charge, our New Season's Style Book, many pattern pieces of fine English suitings and a letter explaining our system of doing business. Then you can make comparisons of the values we offer with anything you can buy locally. Surely that is fair enough?
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 If you don't want to cut this paper, just mention The "Advocate" when you write. Address:
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REGISTERED O. A. C. 72 OATS
 These oats are inspected and sealed by Dept. of Agriculture, Ottawa, before leaving my granary. Official germination test, 99 per cent. Price \$1.25 per bush.; bags included.
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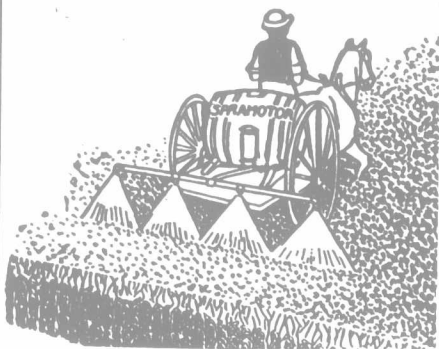
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tell how you can increase your farm profits and build up your farm through more profitable farming methods, including the use of fertilizers. Crops, soils, seeds, lime, cultural methods, harvesting, marketing, drainage, cover crops, farm manures, rotations, etc., are among subjects discussed.

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Present high prices for farm products make larger yields doubly profitable. Our soil books are free. You should have a set to study before planting season opens. Inform yourself by writing for them.

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Beg to announce that their

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is now ready. Write for copy at once.

Our New Stocks Have Already Arrived.

133 King St. East Toronto, Ont.

O. A. C. 21 Seed Barley \$1.50, O. A. C.
72 Oats \$1.40, Banner Oats \$1.30
per bushel Sacks free.

JACOB LORENTZ
St. Clements Ontario

Questions and Answers.

1st—Questions asked by bona-fide subscribers to "The Farmer's Advocate" are answered in this department free.

2nd—Questions should be clearly stated and plainly written, on one side of the paper only, and must be accompanied by the full name and address of the writer.

3rd—In veterinary questions, the symptoms especially must be fully and clearly stated, otherwise satisfactory replies cannot be given.

4th—When a reply by mail is required to urgent veterinary or legal enquiries, \$1.00 must be enclosed.

Miscellaneous.

Negligent Employee.

1. Can a hired man be made pay for anything he breaks or damages while working?

2. If a man is allowed to drive to the village at night can he be held good for any damage done horse or rig?

Ontario. OLD SUBSCRIBER.

Ans.—1 and 2. Strictly speaking, yes, if the breakages or other damages resulted from negligence on his part.

Weights of Sheep.

1. What are the standard weights of rams and ewes in the following varieties: Shropshire, Leicesters, Southdowns and Oxfords?

2. What would be a fair price to pay for pure-bred breeding ewes? Not high scoring show specimens, but ones with the breeding that would produce the good ones?

3. How would it do to freeze fresh pork, the same as beef, and keep it frozen until time for using it on the table?

C. A.

Ans.—1. The average weight of Leicester rams is from 225 to 250 pounds; ewes, 175 to 200 pounds; Oxfords, ram 250 to 275 pounds, ewes 175 to 220 pounds; Southdowns, ram about 175 pounds, ewes 135 pounds; Shropshires, ram 225 pounds, ewes 150 to 160 pounds.

2. It is difficult to state a price as it depends upon the breed, the breeding, and the condition of the animal. Prices range all the way from \$20 to \$75 apiece.

3. It is not customary to freeze pork, as it is readily packed in salt or brine. However, we see no reason why it would not keep as well as beef when frozen.

Uncleaned Drain.

In October, 1915, I notified parties interested in an award drain to have it re-cleaned within 30 days. Two out of five failed to do this, and I attended council and asked advice. The reeve told the clerk to give me the address of their engineer, which he did, and told me to write to him. But thinking that the parties would do their portion in the spring of 1916 I did not notify engineer until the fall of 1916, in the meanwhile seeing the engineer personally and asking his advice—which was to give the parties 30 days' notice again before calling him. This was done without result, and the engineer was accordingly notified to come and sell the job. He sent me bills of sale to post, which was done, sale being set by him for the 19th day of December, 1916. On day of sale engineer failed to appear, and when written to since has not answered my letter.

1. Who should have sent for the engineer—myself or clerk of township?

2. What steps should I now take to have this drain re-cleaned?

3. Who is responsible for damage to crop and also for portion of drain which has been re-cleaned?

L. E.

Ans.—1. Under the circumstances we think it was proper for you to call in the engineer.

2 and 3. We cannot say without seeing the award, and would, therefore, suggest that you consult a solicitor personally about the whole matter, taking with you to him a copy of the award for his consideration.

Stewart M. Graham, of Lindsay, Ontario, writes: "I have recently sold to Angus McDonald, of Edmonton, Alta., four very good females. I also assisted him in securing the balance of his carload. To J. J. Lee, Traverse, Alta., I sold one bull and seven heifers. Mr. Lee has in this lot a few outstanding heifers, the get of such bulls as Newton Ideal (imp.), Prince Arthur and Lavender Chief. Besides these I have sold a few females and several young bulls. Nearly all the bulls were sold to parties who purchased bulls from me three years ago. I have six choice young bulls to offer, and could spare a few females."

CALDWELL'S

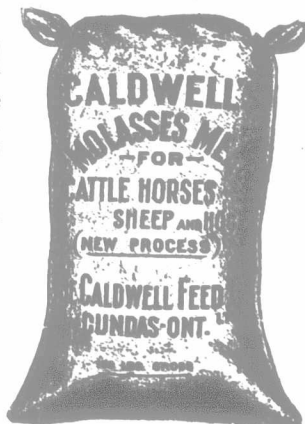
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When feeding our meal you decrease the quantity of other grain fed, and get much better results. Stock eat it greedily, and soon show marked improvement. Order a 100-lb. sack—or more from your feedman or direct from us and give it a trial.

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45 head Registered Holsteins

1 MALE, 44 FEMALES

As I am retiring from the dairy business I am offering my entire herd, without reserve, by public auction on

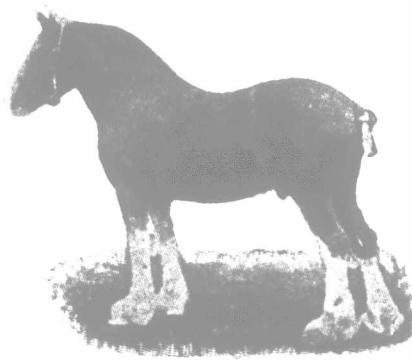
February 21st, 1917

at 1 o'clock, at Merton Lodge Stock Farm, Putnam Station

on the Woodstock and St. Thomas branch of the C.P.R. All trains will be met at Putnam. The farm is 7 miles from Ingersoll. One of the oldest established herds in Canada. Our herd consists of daughters and grand daughters of such noted bulls as Pontiac Hermes, King Segis Pontiac Duplicate, Sir Korndyke Boon, Hengerveld De Kol, and Pontiac Korndyke. We have had the honor of selling from our stable an untested heifer that since has broken the World's record, and cows that have made records up to 30 lbs.

Write for catalogues. Sale under cover.

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THE COUNT OF HILLCREST
ONE OF OUR NOTED CHAMPIONS

CLYDESDALES PERCHERONS

WE would like you to see our 1916 Guelph champions in their own stables. We also have other Clydesdale stallions that were never out, as well as several high-class Percheron stallions and some choice Clydesdale mares and fillies.

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For 10 successive years The Great-West Life has written the largest Canadian business of any Canadian company—quite a reason why you should make yourself acquainted with policies so popular. Write to-day for full information—stating age.

THE GREAT - WEST LIFE ASSURANCE CO.
Dept. "Z" Head Office: Winnipeg

Robert Miller Pays the Freight.—I have now ready for sale some extra choice young Shorthorns known to me, and of good form as well. I have some young cows and a lot of heifers. All that are old enough are in calf to great sires, amongst them some of the best in both breeding and form that I have ever had.

I have several cows that have made wonderful records, others are in the making; will spare a few of them if desired. Two cows in the lot are making records of over 13,000 lbs. milk that is rich in butter-fat. These cows are well bred, and they are the ideal dual-purpose type. The bulls are bred from them and their sisters.

Write for what you want and you will get an immediate reply with full particulars. Stouffville Post Office, Telephone, Telegraph and Station. I live near station. Robert Miller, Stouffville, Ont

When writing please mention Advocate



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Why envy others who reap larger crop yields than your land produces? Commercial fertilizers, properly selected, are increasing the war-time profits of growers everywhere. Is it not well worth your while to look into this great opportunity? Even if your land is producing big crops, you can get bigger and better yields and make more money by using

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These natural fertilizers stimulate the plant, without impoverishing the soil. They nourish both land and crop. They are made from blood, bones, etc., and have no unnecessary filler in them. Every ingredient has proven fertilizer value. Everyone of our twenty-five different fertilizers is a proven success.

Write for bulletins and booklet. We will promptly mail them to you free of charge.

Ontario Fertilizers, Limited
WEST TORONTO, ONTARIO

Questions and Answers. Miscellaneous.

Oleomargarine—Goats.

1. A healthy cow aborted a partly matured fetus. The outside of the sack containing the fetus showed several large scruvy white spots. She also passed a little thick, white matter before and after abortion.

2. What are some good fillers to use when home mixing fertilizers?

3. What is oleomargarine and how is it made?

4. What length of time does the goat require to produce young? How much milk will a good one give in a lactation period? What will it test? D. F.

Ans.—1. The spots were possibly the buttons which attach the membrane to the walls of the womb. The passing of white matter is not uncommon in case of abortion.

2. We cannot see the need of using a filler, as it only increases the labor of applying the fertilizer. However, such material as sand, road-dust, or wood ashes have been used. With some fertilizers lime may be used. It is a fertilizer in itself, and it is necessary to exercise care in mixing it with some brands of fertilizers as it may start chemical action resulting in loss of plant food.

3. Oleomargarine is imitation butter made from the fat of cattle and lard of the hog. The fats are clarified and the liquid oil is mixed with milk and churned to give it the desired flavor. Its natural color is white, but it may be colored to resemble butter.

4. The period of gestation in goats is about five months. From six to eight hundred quarts in a lactation period is considered a good yield of milk from the Saanen and Toggenburg goats. The common goat will barely make half this record. The test varies but averages around 1 1/2 per cent. fat.

CLYDESDALES FOR SALE

We are offering for sale the imported stallion **Kirkland Chief**, also a number of imported and Canadian-bred mares and fillies. These are large, strong mares, with splendid breeding, and two are reasonable price. Here is an exceptional opportunity to get good foundation stock at a reasonable price. For full particulars, write or visit

Stoneycroft Stock Farm, St. Anne de Bellevue, Quebec.
H. M. MORGAN, Owner. L. C. McQuat, Manager.

Imported & Canadian-bred Clydesdales

We have some big, drafty, good-quality stallions, from our 1915 fall importation. They have been winners wherever shown. We have other proven sires, imported a year ago, as well as a choice lot of Canadian-bred stallions and mares. SMITH & RICHARDSON, COLUMBUS, ONTARIO

Highest Quality Hillsdale Clydesdales Richest Breeding

I am now offering a number of in-foal young mares from imp. sires and dams, bred from Scotch and Canadian winners and champions for generations. They represent the highest standard of the breed's quality and breeding. B. Rothwell, Ottawa, R.R. 1, L.-D. Bell 'phone. Farm, 3 miles from city.

ABERDEEN-ANGUS

We have a number of young bulls to offer at reasonable and attractive prices. At the recent Canadian National Exhibition, with 15 animals shown, we won 24 prizes, among which was Grand Champion and Gold Medal for best female of the breed. To insure prepotency of the right kind in your next herd bull, buy him from

Berkshire Swine, Shropshire and Southdown Sheep **Larkin Farms, Queenston, Ontario**

Oakland Shorthorns

John Elder & Sons, Hensall, Ont.

Fifty-eight to select from. Twenty breeding cows and as many choice heifers, many of them bred; also a lot of choice bulls from 9 to 16 months old. The grand roan bull, Crown Jewel 42nd, heads this dual-purpose registered herd. No big prices.

Several Choice Shorthorn Bulls

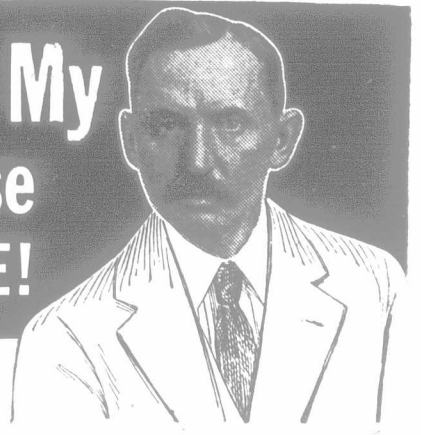
Two are of breeding age, while the others are May and June calves. All are sired by the noted Lavender-bred bull Senator Lavender. We never had a better lot, and would like you to see them. Visitors welcome. JOHN T. GIBSON, Denfield, Ont.

Spruce Glen Shorthorns

When in want of Shorthorns visit our herd. We have 70 head to select from. Minas, Fames, Miss Ramsdens, Florences, age level, thick, mellow fellows, and bred just right. James McPherson & Sons, Dundalk, Ont.

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I don't care what's wrong with it—whether it kicks, rears, bites, balks, shies, runs away, or whatever else it may or may not do, I guarantee you can correct the fault, make the horse worth more to the owner, and pocket a good fee yourself in the doing of it. I've been doing that very thing all my life. Now, since I have quit the arena I have shown some 41,000 successful graduates; how to win popularity and good incomes the self-same way.

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The only correct system is that based upon actual experience with all types of horses. And this system takes into consideration the disposition of a horse, which is of first importance. You can do most anything with a horse when you know its disposition.

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"I bought the worst hulk I could find to test your methods. Paid \$5 for him. Handled him a few hours—sold him for \$15. He is one of the best pullers in the State now."

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And I can just as surely enable you to win fame and a good income this way. And to prove it I will send you my Introductory Course, ABSOLUTELY FREE. All I ask you to do is to send the coupon. That's easy, isn't it? Then prove your ambition by sending it NOW. This offer may soon be withdrawn. When sending coupon also tell me about your horse.

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| Refusing to lead. | Running away when halter or bridle is removed. | Getting fast in the stall. | Howling in the stall. | Pawing while in stall. | Fighting halter or bridle. | Tender bit. | Pausing on one rein. | Logging on the bit. | Refusing to stand. | Refusing to back. | Shying. | Afraid of automobiles. | Afraid of rifles. | Afraid of clothes on line. | Afraid of cars. |
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Please send, without charge or obligation on my part,
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Rabbits.

Is the Cotton-tail rabbit found in the northern part of Simcoe County? In their summer dress how can you tell the Cotton-tail from the Snow-shoe rabbit?

E. J.

Ans.—The Cotton-tail can always be distinguished from the Snow-shoe rabbit, with a specimen in hand, by the fact that in the Cotton-tail the hind foot is shorter than the head, while in the Snow-shoe rabbit the hind foot is longer than the head. I cannot say definitely if the Cotton tail now occurs in northern Simcoe County. Ten years ago it had spread north of Guelph and was still spreading. However, with the method of distinguishing the two species in question in mind you should be able to settle this point for yourself.

A. B. K.

Registering a Clydesdale.

How many top crosses does it take to get a pure-bred Clydesdale? What have I to do in order to have one registered? What proof must I have?

Ans.—Canadian-bred Clydesdales admitted to registry are: Clydesdale stallions having five top crosses by sires recorded in the Clydesdale Stud Book of Canada, and Clydesdale mares having four top crosses by sires recorded in the Clydesdale Stud Book of Canada. In all cases of Canadian-bred animals, the dam must be recorded before a stallion is eligible, or in case of a mare with five top crosses her dam must be recorded before she is eligible. Applications for the registry of four-cross pedigrees shall be certified and sworn to or affirmed by the breeder before an officer authorized to administer oaths. For blank forms and further particulars regarding registration write J. W. Brant, Accountant National Live Stock Records, Ottawa.

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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.

Alloway Lodge Stock Farm

Angus—Southdowns—Collies

SPECIAL this month:

CHOICE BULLS

ROBT. McEWEN, R.R. 4, London, Ont.

BEAVER HILL Aberdeen-Angus

Males and females, all ages, for sale. prices right.

ALEX. MCKINNEY

Cheltenham, G.T.R. R.R. No. 1, Erin, C.P.R.

BALMIE ABERDEEN-ANGUS

Get a 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-yr.-old heifers.

T. B. BROADFOOT, FERGUS, ONT

Aberdeen-Angus. For Sale, several choice young

bulls, one from imported sire. Present head of herd, Middlebrook Abbot 2nd, first prize in class, Toronto and Ottawa, 1915. Apply A. Dinsmore, Manager, "Grape Grange" Farm, Clarksburg, Ont. 1 1/2 miles from Thornbury, G.T.R.

WANTED—By the Cleveland Farmers Club, one

Dairy Shorthorn Bull, 2 years old and upwards. One Yorkshire boar, 1 year old, and one Shropshire ram, lamb or yearling. Address—

Chester C. Healy, Sec. Treas., R. R. No. 3, Richmond, Quebec.

Questions and Answers. Veterinary.

Crippled Pigs.

I got two pigs when five weeks old. I have kept them in a warm, well-ventilated pen with wooden floor and fed them on sweet milk, shorts and buttermilk. They are stiff in their hind legs, they sometimes squeal and seem dizzy. They are two months old now. How much milk and shorts should they be given?

J. B.

Ans.—It is rather hard to account for the crippling under the circumstances. It must be due to lack of exercise. Give each 1 oz. Epsom salts and follow up with 2 grains nux vomica three times daily. Feed on milk, shorts and raw roots and see that they get daily exercise. It is usually well to allow pigs all they will eat with a relish, but under these circumstances it will be better not to give quite enough to satisfy them until the stiffness disappears.

V.

Unthrifty Mare.

When mare, coming three years, came off grass, she was in good condition. Now she has a poor appetite and she has failed. Her hind legs stock and fetlocks are getting sore. She sometimes has difficulty in rising. Am feeding hay and boiled oats.

A. C.

Ans.—Have her teeth examined, and if the crowns of the first and second molar in each row have not shed, have them removed. (This is a common cause of unthriftiness in horses of this age.) Mix equal parts of powdered sulphate of iron, gentian, ginger and nux vomica and give her a tablespoonful three times daily. Cease feeding boiled oats. Get the oats rolled, and also give a feed of dampened bran twice weekly. A couple of carrots or a turnip daily will give good results. Give her daily exercise, and provide her with a roomy, dry, comfortable and well-bedded box stall if possible. Dress the sore parts with oxide of zinc ointment three times daily.

V.

Unthrifty Colt—Itchy Legs.

1. Colt six months old will eat nothing but a little hay and is becoming poor and weak. It bites and chews boards.

P. C.

2. Clydesdale mare bites and rubs her legs all the time.

Ans.—1. Give it 15 grains salicylic acid three times daily. In addition mix equal parts of sulphate of iron, gentian, ginger and nux vomica, and give it a heaped teaspoonful three times daily. Feed a little grain and a carrot or two daily in addition to good hay, and gradually increase the amount of grain as appetite and digestion improve.

2. Purge with 10 drams aloes and 2 drams ginger. After the bowels have regained their normal condition give 2 oz. Fowler's solution of arsenic sprinkled on her food twice daily for a week. If she be in foal omit the purgative. Make a solution of corrosive sublimate, 30 grains to a pint of water. Heat to about 105 degrees Fahr., and rub well into the skin twice daily until itchiness ceases.

V.

Swollen Legs.

1. Horse has swollen legs. I purged him and gave Fowler's solution of arsenic and he looks better, but the swelling has not all disappeared. Shall I repeat the treatment?

2. What is the best method of giving a horse a dose of aloes?

E. F.

Ans.—1. It will be good practice to repeat the purgative, but do not repeat the arsenic, as too much arsenic injures the general constitution. Give him 1 dram of iodide of potassium twice daily. Hand rub and bandage the legs when in the stable and give him daily exercise.

2. Moisten with treacle, glycerine, oil of tar or even water, make into cylindrical form, roll in tissue paper, catch the tongue in left hand and with the right hand force the ball well back past the root of the tongue, then release the tongue. Those who cannot administer a ball mix the aloes in a pint of cold water and give as a drench. It makes little difference how it is given, so long as it is swallowed.

V.

A Helpful Mistake.—"What do you suppose has come over my husband this morning, Sophia," exclaimed a conscientious little bride to the new servant. "I never saw him start down town so happy. He's whistling like a bird!"

"I'm afraid I'm to blame, mum. I got the packages mixed this morning and gave him birdseed instead of his regular breakfast-food, mum."—United Presbyterian.

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Royal Purple will increase the flow of milk from 3 to 5 lbs. a day if used according to directions. Mr. Norman C. Charlton, Scott, Sask., states:

"I am from Ontario and fed your Royal Purple Stock Specific when in Brownville. My cows made the largest average and tested 5 pounds over average at C. M. P. Brownville. I believe you make the best conditioner on the market."

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The great farm animal conditioner and fattener is used in almost every progressive stock-raiser's stable in Canada. Good for all stock in a run-down condition. Can be used occasionally or continually without showing bad after-effects. Royal Purple Stock Specific is purely a digester and blood purifier. It aids digestion to such an extent as to produce the very best results and obtain the maximum amount of good from the food eaten. It will enable you to fatten your steers and hogs a month earlier, thereby saving a month's feed and labor.

Mr. Malcolm Gray, of Lomoka, states:

"In regard to the feeding of Royal Purple Stock Specific. I had two lots of hogs. To the first lot I fed Royal Purple Stock Specific and when I sold them they averaged 196 lbs. each. On the second lot I did not use Royal Purple Stock Specific, and at the same age they averaged only 150 lbs. each. They were both the same breed and one lot had as good a chance as the other. We have also fed Royal Purple Poultry Specific with excellent results."

Royal Purple Stock Specific is put up in 50c. packages and large \$1.50 and \$5.00 tins. Secure our products from our dealer in your town. Write for free booklet on how to treat all common diseases of stock and poultry. Tells how to build hen houses and how to raise calves without milk.

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These tools do the work of 3 to 6 men

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No. 25 Planet Jr Combined Hill and Drill Seeder, Double and Single Wheel Hoe, Cultivator and Plow will work two acres of ground a day. It is a great tool for the family garden, onion grower, or large-scale gardener. Is a perfect seeder and combined double and single wheel hoe. Unbreakable steel frame.

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SALEM SHORTHORNS

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

J. A. WATT,

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Imported Shorthorns

J. A. & H. M. Pettit, Freeman, Ont.

40 more imported Shorthorns have arrived home from quarantine. We now have 18 heifers in calf and 19 cows with calves at foot, also a few good imported bulls. They are all good individuals and represent the choicest breeding. We can meet visitors at Burlington Jct. at any time if notified.

SHORTHORNS AND SHROPSHIRE—T. L. Mercer, Markdale, Ont.

Have sold all the Shropshires I can spare this season. Present offering in Shorthorns—ten really choice young bulls, sired by Broadhocks Golden Fame =50018= (Imp.), and out of such noted families as Campbell-bred Clarets, Nonpareils, Marr Missies, Stamfords, Crimson Flowers, Village Girls and Charming Gems, ranging from 9 to 16 months old. All are good reds and roans.

IMPORTED SHORTHORNS

Cows and heifers in calf, or with calf at foot. Yearling bulls and bull calves. One of the best importations of the year. You will be surprised when you see them.

WILL A. DRYDEN,

Maple Shade Farm,

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Pleasant Valley Herds

from. Inspection invited. Farm 11 miles east of Guelph, C. P. R., 1/2 mile from station.

—For sale: Several good young bulls, reds and roans, of the very best breeding; also females of all ages; all the leading families represented; 100 head to select from.

Geo. Amos & Sons, Moffat, Ont.

SPRING VALLEY SHORTHORNS

Herd headed by the two great breeding bulls, Newton Ringleader (Imp.) 73783, and Nonpareil Ramsden 83422. Can supply a few of either sex.

KYLE BROS.,

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Wm. D. Dyer, R. No. 3, Oshawa, Ont.

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If you want a good young bull, a promising stallion colt, or a young cow or heifer of Scotch breeding and beef type, having dams eligible or good enough for R.O.P. Come, see, and satisfy yourself and please the owner. Prices reasonable, that they may be sold. Visitors welcome.

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Deliveries of fence this year will undoubtedly be delayed on account of scarcity of material. While we are doing our utmost to secure such a stock in hand that we can fill all orders from at least our old customers, we cannot, at this writing, guarantee promptness in all cases, and hence we suggest that you place your fence requirements with us as far in advance of the actual time of need as possible.

Our new catalogue, and also new cash price list, showing prices direct to user, ready for mailing on request.

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Are You Building in the Spring?

IF SO—

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Free samples sent on request.

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Car lots or less. Prices on application.

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1854 Maple Lodge Stock Farm 1916 SHORTHORNS and LEICESTERS

A few sheep left for sale. Also 2 roan bull calves, 12 months. Quality and breeding first-class.

Miss Charlotte Smith, Clondeboye, R. R. 1
The farm is one mile west of Lucan Crossing, G. T. R.

For Sale--Shorthorn Stock Bull

Highland Chief #9043; also young bulls from 8 to 16 months old, all direct from imp. stock at prices that will please.

L. K. WEBER, HAWKESVILLE, ONT.

Shorthorn Bulls

for sale, by Miss Bow (18th Gen.). Also a pair of red and white. GEO. R. ARMS-STRONG, Teeswater, Ontario.

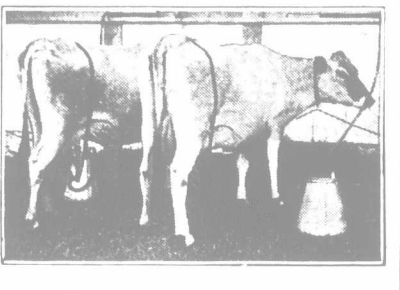
Scotch Shorthorns

We are offering for sale a pair of red and white. GEO. R. ARMS-STRONG, Teeswater, Ontario.

Maplewood Farm Shorthorns and Lincolns

Maplewood Farm, Shorthorns and Lincolns. GEO. R. ARMS-STRONG, Teeswater, Ontario.

HINMAN THE UNIVERSAL MILKER



Hinman Simplicity

No complicated pulsating mechanism—no air-pipe lines—no vacuum tanks. Just a simple combination of pump-vacuum in valve chamber and natural action (not upward squeeze) teat cups.

Write for FREE Booklet "H" and learn why you cannot afford to be without this simple machine.

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More Wool and More Mutton

More wool and better grade Wool comes from sheep whose fleece is kept free from ticks by the use of Zenoleum, the great standard Coal Tar Disinfectant. Zenoleum-treated sheep have fine, white fleece, which brings best price. Sheep kept healthy by Zenoleum put on weight and are more profitable for marketing as mutton.



SHEEP DIP



As a "dip", Zenoleum is clean, and does not leave fleece stained or greasy. It is a powerful germicide, stronger than carbolic acid, yet is not poisonous, is not inflammable and is not injurious to handle nor does it burn or irritate the skin as most other preparations do. Used by 50 Agricultural Colleges. FREE copy of our Booklet, Diseases of Livestock and Their Cure, sent post-paid on request.

ZENNER DISINFECTANT CO.
Sandwich St. East, WINDSOR, ONT.

Escana Farm Shorthorns

FOR SALE—Two imported bulls, proven valuable sires; 12 bulls, 10 to 20 months old, all by imp. sires and from high-class dams; also for sale 20 heifers and young cows, several with calves at foot, all of very choicest breeding and especially suitable for foundation purposes.

Mail orders a specialty. Satisfaction guaranteed. MITCHELL BROS., BURLINGTON P.O., ONT. Jos. McCrudden, Manager. Farm 1/4 mile from Burlington Jct.

Young Bulls

of serviceable age. Young cows with calves by their side and re-bred. Heifers well on in calf. A few good Shropshire ewes bred to good rams. A nice bunch of ewe lambs.

Myrtle Station—C. P. R. and G. T. R.

John Miller, Ashburn, Ontario

ROYAL BREEDING SCOTCH SHORTHORNS HIGH-CLASS TYPE

of high-class, fashionably-bred Scotch Shorthorns in calf to Sittytan Sultan's Dale, a Mink-bred son of Ayrshire, dam by Whitehall Sultan, is of interest. Come and examine my offering.

A. J. HOWDEN, Columbus, Ont. Myrtle, C.P.R., Brooklin, G.T.R.

Glengow Shorthorns, Cotswolds

Glengow Shorthorns, Cotswolds. W.M. SMITH, COLUMBUS, ONT. Myrtle, C.P.R., Brooklin, G.T.R.

Maplewood Farm Shorthorns and Lincolns

Maplewood Farm, Shorthorns and Lincolns. GORDON SMITH, WOODSLEE, ONT.

Questions and Answers. Miscellaneous.

Leading a Cow—Sowing Grass Seed.

1. Can you give me a plan of a good device for leading a cow? We have used the butchers' iron halter, but that hurts the jaw. Putting a rope in the mouth is not severe enough.

2. I use a disk seed drill. Do you prefer sowing grass seed in front of the disks or behind? Our land is a sandy loam. W. T.

Ans.—1. A system which we have found to be quite satisfactory is to put a surcingle or rope around the body just behind the forelegs. Take two fairly long ropes, put one end of each through the surcingle and tie to the front legs just above the hoof. By this method the cow is driven rather than led. If she goes too fast a slight pull on the rope will bring her to her knees. She can also be guided by the ropes. Her head is free and she is not as liable to become excited or vicious as when a rope is attached to the head.

2. It depends considerably on the amount of pressure which you apply to the disk, but we would prefer, under ordinary conditions, to sow before the disk, as we believe that seed would be more uniformly covered and nearer the surface than if sown behind.

Alfalfa.

I sowed 10 acres to alfalfa last fall, but it looks very thin. I would like to secure some information regarding this crop. J. L. W.

Ans.—Alfalfa will not do well on soil where the water table is anywhere near the surface, nor on land that is inclined to be acid. Artificial drains can be put in to remove surplus water, and a dressing of lime usually corrects the acidity of the soil. Experience has proven that alfalfa cannot be successfully grown on all classes of soil. The seed has considerable to do with the success of the crop. Plants from seed grown in the Southern States seldom winter through in Ontario. The Ontario-grown seed is preferable for this country. Alfalfa is a legume and for its successful growing, nodules which contain bacteria must develop on the roots of the plants. Before sowing the seed on soil which has not previously grown a crop of alfalfa it is advisable to inoculate it with nitro-culture, which can be secured from the Bacteriology Department of the Ontario Agricultural College. Not knowing the nature of the soil, kind of seed sown, or whether or not the seed was inoculated, we cannot state definitely the cause of a thin stand, except that the severe drought of last summer was hard on all kinds of seeds. If the field is clean and soil conditions are right, it might pay to give it a stroke with the harrows and scatter some fresh seed on it this spring, as it may have been the weather conditions which prevented a good stand.

Veterinary.

Nasal Gleet.

Horse has had nasal gleet for some years. Last month one nostril became completely closed. I was advised to steam the nostrils, but it has done no good. J. R.

Ans.—It is probable that the cavity in the skull called the "maxillary sinus," has become so full of pus that the bones have been forced downwards, occluding the nasal passage. It is possible that a veterinarian might relieve the situation by trephining into the cavity and removing the pus, but the administration of drugs or any thing that an amateur can do will do no good. V.

Apoplexy and Crippling.

Pigs are 4 months old. About a week ago, when they commenced to eat, one suddenly staggered, fell down and gasped for breath. It has acted this way several times. It is now getting stiffened up. Later I noticed another acting the same. I am feeding chop, shorts and corn, and keep them on a cement floor. C. L. F.

Ans.—The apoplexy is due to high feeding and want of exercise. The crippling is due to the same cause aided by sleeping on cement floor. Purge each with 1 to 2 oz. Epsom's salt. Feed on milk, shorts and raw roots. Build a board platform for them to sleep on, and see that they get daily exercise. As soon as they get better give them a hot, gentle and gradually increase the quantity provided constant water is before them. V.

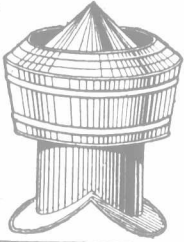
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Ventilation stops fires saves health

Proper ventilation will prevent fires from spontaneous combustion

"HALITUS" Ventilator

For barns and houses. Very simple, very efficient, very durable. Rain-proof.

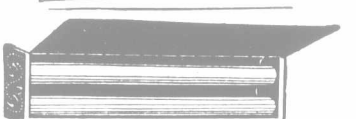


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Very easy to put on. Extra strong, durable and watertight. Movable or stationary sash.

"KING" Ventilator FOR BARN

An inexpensive and ornamental Ventilator. Grand value. Ask us for prices.



"SPIRO" Intake Ventilators

Fresh air without drafts. Swinging damper. Keep the air pure and your stock healthy.

Write to-day for prices and booklet on "M. H. Co." building materials. 175

METALLIC ROOFING CO. LTD. TORONTO & WINNIPEG

PERFECTION Seed & Grain Separator
(Patented 1901)

The best and latest mill for Cleaning and Grading all kinds of Seed and Grain.

See nearest Agent or write for Catalogue to
THE TEMPLIN MFG. CO., FERGUS, ONTARIO

GLENFOYLE SHORTHORNS

7 bulls, big, straight, smooth, fleshy fellows, some from cows milking 40 to 60 lbs. a day. Also a few put-standing heifers that are bred. Three young cows. Prices right. Bell phone.

Stewart M. Graham, Lindsay, Ont.

Scotch Shorthorns

FOR SALE. 1 extra good young bull of breeding age, with best Scotch breeding; also bull calves and females of different ages. Write your wants.

Geo. D. Fletcher, Erin, R. R. 1
Erin Sta., C.P.R. L.-D. Phone.

Dual-Purpose Shorthorns

Plaster Hill Herd—Five young bulls, seven to fifteen months old. A number of cows in our herd with high records. Visitors always welcome.

F. Martindale & Son, Caledonia, Ont.

Mardella Shorthorns

Bulls, cows, heifers. Have size, quality; breeding dual-purpose cattle over 40 years. Have great milkers and beefers. Glad to have you see them, or write—Thomas Graham, Port Perry, R. R. No. 3

Questions and Answers. Miscellaneous.

Outlet for Water.

In order to get outlet A puts tile across corner of B's farm into tile on C's farm, with both parties' consent. Now, can B tap A's tile at any point?

R. J. H.

Ans.—If this is an outlet drain B is privileged to tap A's tile at any point when it runs through his own place, but if A met all expenses of the first drain it would be necessary for B to contribute a certain amount when the drain is benefiting him. B would be required to pay for the increase in size of tile required to carry off his water.

Feeding Hogs.

1. Barley was badly weathered in the shock and heated in the bin. Is it profitable feed for hogs?
2. Would it be better to grind corn and mix with shorts, oats and barley, or feed it whole?
3. About how many pounds of the above-mentioned feeds should pigs get daily to put on weight rapidly, from the time they are weaned at six weeks until they are six months old?
4. How many pounds of the same feed should a brood sow receive to keep her in thrifty condition?
5. Would it be profitable to sow spring wheat, oats and barley together for hog feed?
6. What crop would you advise me to sow for a hog pasture?
7. Would Delco Light and power be satisfactory for an ordinary farm? What would be the average cost of maintaining it after it was installed?

Z. G.

Ans.—1. Unless the barley heated so that it moulded badly in the bin, it should be all right for hog feed.

2. Experiments have proven that there is very little gained by grinding the corn. However, there is usually less waste in feeding the ground corn.

3. Milk, shorts, and finely-ground oats make the best feed for young pigs, and very little is required the first few weeks after weaning. Care should be taken at all times to have the pigs clean up the feed in the trough after every meal. The feeder must use his judgment as to the amount of grain to feed. All pigs have not the same appetite, consequently no set amount can be stated. However, a table is given in Productive Swine Husbandry, which gives the average amount of feed eaten per day by hogs of different weights. Up to 50 lbs. in weight the amount is 2.23 lbs., and the average gain .76 lbs.; from 50 to 100 lbs. 3.35 lbs. of feed was consumed per day, with a gain of .83 in weight; pigs weighing from 100 to 150 lbs. consumed 4.79 lbs. of feed and made an average gain of 1.1 lbs.; from 150 to 200 lbs. 5.91 lbs. was the average amount of feed eaten and the gain was 1.24 lbs. This will give some idea of the amount of grain to feed. When the pigs get around 100 lbs. corn and barley could be added to the ration in considerable quantities, and a reduction made in the amount of shorts and oats. The latter two feeds contain considerably more bone and muscle-forming material than do the former feeds, consequently they should be fed during the early part of the pigs' life.

4. It will depend a good deal on the size and natural tendency of the sow. Some keep in good condition on much less feed than others. It is a matter of observing how the sow does on the feed given. If she is failing in flesh, increase the feed.

5. Mixed grain makes very suitable feed for hogs, and, as a rule, the yield is slightly higher than when these crops are grown separately. It may be necessary towards the end of the feeding period to add a little more barley or corn to the ration.

6. Rape is an excellent pasture crop for hogs. Alfalfa also gives excellent results and is considered one of the best perennial pastures. Sweet clover is sometimes grown, but it is advisable to pasture it the first year.

7. It is claimed that 6 twenty-watt lamps can be used 4 hours a day at a cost of from 3 to 5 cents, depending on cost of gasoline or kerosene.

* Tommy (in the trenches, observing the sky above him thick with aeroplanes): To think that I paid 'arl-a-crown at Endon to see two of 'em. Bust it—"Tatler".



I want to tell you that WORMS more than anything else keep animals from thriving.

Dr. Hess Stock Tonic Expels Worms

Spring will soon be here. Get your animals in condition. Start in now, first get rid of all worms with Dr. Hess Stock Tonic. Then they are in shape for you to enrich the blood, give them better digestions. Horses on dry feed are likely to have stocky legs—and their bowels need cleaning out. Dr. Hess Stock Tonic will get them ready for the hard spring-work. Cows should have it before calving time and to prepare for full milking. Feed it to the brood sows, it will tell on the litter. This is the true live stock gospel:

CONDITION ALL YOUR ANIMALS NOW
So sure am I that Dr. Hess Stock Tonic will put your animals in a thriving condition, make the ailing ones healthy and expel the worms, that I have authorized my dealer in your town to supply you with enough for your stock, and if it does not do as I claim, return the empty packages and my dealer will refund your money.

Never peddled. Sold Only by dealers.

Dr. Hess Poultry Pan-a-ce-a
Feed it to your hens and get more eggs—more strongly fertile eggs. Weak parent stock is sure to give you weak chicks that cannot live. Chick diseases make greatest ravages on the weaklings. Pan-a-ce-a conditions, gives strength and vigor. Costs a penny for 30 fowls per day. 1 lb. 35c; 5 lbs. 85c; 12 lbs. \$1.75; 25-lb. pail, \$3.50 (duty paid).

Dr. Hess Instant Louse Killer
Kills lice on poultry and farm stock. Provide your hens with a dust bath, to which add Dr. Hess Instant Louse Killer occasionally. The hens will do the rest. For lice on stock, with one hand rub against the hair and with the other sift the Louse Killer. Rub thoroughly into the skin. 1 lb. 35c; 3 lbs. 85c (duty paid).

DR. HESS & CLARK, Ashland, Ohio

Write Dr. Hess about any live stock trouble, enclosing 2c stamp. He will advise you free.

Why Pay the Peddler Twice My Price?
25-lb. pail, \$2.25; 100-lb. sack, \$7.00 (duty paid)



Apples selling at \$6 and \$7 per bus.

Wouldn't you rather grow them. We have as fine trees as can be grown. Beautiful root system, sure to grow. Also other SHRUBS, ROSES and TREES, from a berry bush to a shade tree. We ship direct from Nurseries to Customers (no agents). Nearly 40 years at it and know how. Send for our priced catalogue to-day before placing spring orders, to

CENTRAL NURSERIES, A. G. Hull & Son, St. Catharines, Ont.

COMPLETE DISPERSAL SALE OF
36 Head of Holstein Friesian Cattle
The Property of R. J. Clifford, will be held at the farm on
WEDNESDAY, FEBRUARY 14, 1917
at 1 o'clock p.m.

This herd consists of 34 females and 2 bulls, including herd sire King Hengerveld Pieterij, (23333). The entire herd was purchased from Wm. Couch of Putnam. Mr. Couch raised them all, excepting one cow and the herd sire. Write for catalogues and terms. Lunch will be served to those from a distance. Trains will be met at Putnam, C.P.R., and Rochester, G.T.R.

T. MERRIT MOORE, & ROSE & BRADY, Auctioneers. **R. J. Clifford, Prop., Putnam, Ont.**

Two Holstein Bulls—Born April 1916
Either will make show animal. No. 1—Two nearest dams average 100 lbs. milk a day, and over 30 lbs. butter a week. No. 2—Dam and granddam average 24,000 lbs. milk in the year. Three nearest dams average 100 lbs. milk a day and over 30 lbs. butter a week. Can spare a few females.

D. C. FLATT & SON, R. R. 2, HAMILTON, ONT.
LONG DISTANCE PHONE

Riverside Holsteins Herd headed by "King Johanna Pontiac Korndyke," a brother of Pontiac Lady Korndyke, 35.02 lbs. butter in 7 days. 156.92 in 30 days—world's record when made. His ten nearest relatives have official records that average 34.94 lbs. butter in 7 days. His daughters have made good in official test. The present R. of P. cow of Canada was bred here. Choice young bulls for sale.

J. W. RICHARDSON, R. R. No. 2, Caledonia, Ont.

DOUGLAS EGYPTIAN LINIMENT

Cures Chilblains and Frostbites

For Sale Everywhere

DOUGLAS & COMPANY MFRS. ONTARIO

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American CREAM SEPARATOR

ASOLID PROPOSITION to send new, well made, easy running, perfect skimming separator for only \$16.95. Closely skims warm or cold milk. Makes heavy or light cream. Bowl a sanitary marvel, easily cleaned. Different from picture, which illustrates larger capacity machines. See our easy Monthly Payment Plan

Shipments made promptly from Winnipeg, Man., Toronto, Ont. and St. John, N. B. Whether dairy is large or small, write for handsome free catalog and easy payment plan.

AMERICAN SEPARATOR CO. Box 3200 Bainbridge, N. Y.

CREAM

Where are you shipping now? And what are you getting for your cream?

We want more individual shippers, and more men to gather cream for us.

Write for our proposition.

SILVERWOODS LIMITED
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LINSEED MEAL
FLAX SEED
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COTTON SEED MEAL

Write for Prices.

CREAM WANTED

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

Ontario Creameries, Limited
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"King Segis Pontiac Duplicate" is a son of "King Segis Pontiac", sire of more high-priced bulls than any other in U.S.A. Duplicate's dam is by King of the Pontiacs, having made 21 lbs. butter, 17,500 lbs. milk at 2 years, and is sister to two 40-lb. cows (one 44-lb.), seventeen 30-lb. cows, also sister to 185 A.R.O. cows, a showing made by no other bull, living or dead. One of Duplicate's first tested daughters is Queen Pontiac Ormsby, first heifer in Canada to give 600 lbs. milk in seven days. Write and get a brother of this great heifer for your next sire. R. M. Holtby, Port Perry, Ont.

RIDGEDALE HOLSTEINS offers three young bulls (one ready for service) at special prices. One is by Pontiac Hengerveld Pietertje and the others are by King Segis Pontiac Duplicate. Can also supply a few females. R. W. Walker & Sons, Port Perry, R.R. 1, Manchester, G.T.R., Myrtle, C.P.R.

Willowlea Holsteins Offers a 20-months son of Sir Natoye Oaklund. Others younger by Siepkie of Lakeview 2nd. Ask us also about our females. A. E. MIGHT, BRAMPTON, R.R. 5, ONT.

Questions and Answers.
Miscellaneous.

Wild Carrot and Ox-eye Daisies.

I have two fields which are pretty well seeded with wild carrot and ox-eye daisies. What is the best means of checking them?
J. K.

Ans.—Both these weeds are commonly found in hay and pasture fields. Seldom do they over-run cultivated ground, or appear to any great extent in grain crops. However, both are rather persistent weeds; the wild carrot being possibly the most persistent. Prevent the plants from going to seed. A short rotation of crops in which a hoe crop occurs, is one of the best and cheapest methods of ridding the farm of these two pests. Do not leave the land in sod more than two years. On permanent pasture land keep the plants cut low so they cannot reproduce.

Returns From a Farm.

What is the average gross returns from a 100-acre, mixed farm in Ontario after the farmer has lived off it? What do you consider the average net profit for a period of five years?

Ans.—It is very difficult indeed to say what is the gross average returns from a 100-acre farm in Ontario. There are so many factors which enter in to swell or reduce the returns. It depends a good deal on the class of farming followed. On a mixed farm one man may devote his energies to raising and feeding steers; another man to dairying and hog raising, while another may aim at keeping a few head of all classes of live stock and also sell a certain amount of grain. The climatic conditions are a big factor to contend with. One year the weather may be favorable to crop growing on certain kinds of soil; this same weather may be detrimental on a farm with soil of different texture but located in the same neighborhood. A very great deal depends on the ability of the man who manages the farm. Some are able to secure double the returns that their neighbors can. Other factors which influence the returns are the nature of the soil, quality of stock, management of stock, natural fertility of the soil, ease of working the fields, roads and distance to market, cultural methods, quality of seed used, cost of machinery, cost of horse labor, continuity of employment, wages, rate of interest, price of products, amount of capital invested, natural or artificial drainage, amount of rainfall and sunshine and temperature during the growing season.

We have known of 100-acre farms which gave gross receipts of over \$3,500 from sale of dairy products, hogs and poultry. However, farms in the same neighborhood, of apparently the same fertility, did not give one-half these returns. Consequently, it is almost impossible to give an average. On one 100-acre farm enough roughage was grown one year in the way of corn and straw to winter 70 head of cattle, for which \$840 was received. Other cash sales on this farm were clover seed \$200; seed oats, \$200 and wheat, \$450, making a total of \$1,690. A good 100-acre farm should carry 12 good milk cows and their followers. These cows should produce enough milk and butter-fat to be worth \$800 for the year. The same farm should carry two brood sows, and it is not out of the way to expect that 32 hogs be raised. If these pigs weighed 200 lbs. apiece and were sold for 9 cents a pound, it would mean about \$576. If five acres of wheat was grown and yielded 30 bushels to the acre it would bring in \$150, at \$1.00 per bushel. There would be a few calves for sale, and possibly a cow or two each year. Properly handled the poultry should return a fair revenue, and on a well-managed farm there should be a colt or horse for sale. It might be necessary to purchase a small amount of millfeed to balance up the ration for the cows, or to finish off the hogs, but it will not require very much if the farm is properly handled and the season is favorable. This gives some idea of what a fairly good 100-acre farm should return, but the fact remains that all farms do not give as liberal returns, while some are known to do better. The farmer has no control over the weather, and it really makes or spoils the crop.

Owing to the difficulty in securing a number of farms where the capital invested and the wages paid are similar, it is impossible to give average net profits.



KING SEGIS PONTIAC POSCH—Senior Sire in service at Manor Farm. Sire—King Segis Pontiac Alcartra (the \$50,000 sire). Dam—Fairmont Netherland Posch, 32.59 lbs., 4 years old.

Important Announcement!

For the first time since our fire in February, 1915, we are in a position to invite all those interested in the Black and White breed to visit *Manor Farm* and inspect our herd of

100 PURE-BRED HOLSTEINS

Since this announcement first appeared a few weeks ago, I have been flooded with enquiries for young sons of King Segis Pontiac Posch. His great individuality is stamped in every one of his offspring, and this, combined with his extremely rich breeding, has made the demand for his young sons of serviceable age greater than the supply. If you have been thinking about one of these for your next herd sire, you should get your order in early.

Gordon S. Gooderham, MANOR FARM Clarkson, Ont.

May Sylvia Pontiac Cornucopia

"The most perfectly bred bull of the breed," and a perfect individual. Sire, Spring Farm Pontiac Cornucopia, a son of the 44.18-lb. cow, K. P. Pontiac Lass. Dam, May Echo Pontiac, a daughter of the great May Echo Sylvia, champion milk cow of the world. The butter records of his two grandams average 42.59 lbs. in 7 days, and 170.5 lbs. in 30 days, being also another world's record.

Apply early, as only a number of approved cows will be accepted. Terms, a matter of arrangement.

Owners—W. F. Elliot, A. J. Camplin, C. R. Dyke, L. M. Kennedy, G. Brownsberger.
W. F. ELLIOT, Sec., (Bell Phone) Unionville, Ont.

Yearling Heifers For Sale

As our stables are full, and expect several more calves shortly, offer for quick sale 3 yearling daughters of Dutchland Colantha Sir Mona; also 2 beautiful daughters of Pontiac Korndyke Het Loo. The 35-lb bull is sold. We also have a 17-months' bull by King Pontiac Artis Canada, and out of a 25-lb. sister of the great May Echo. Another, same age, by Dutchland Colantha Sir Mona, and from the noted 25-lb. show cow, Cherry Vale Winner. Come and see these, you will like them.

Gordon H. Manhard, Supt.
W. L. Shaw, Newmarket, Ont.
Stops 69 Yonge St. Toronto and York Radial Cars

Hospital for Insane, Hamilton, Ont.

The choicest lot of young bulls we ever offered—is the best description we can give you of the half dozen we are now pricing—from our Korndyke bull and R.O.P. dams, testing 4.08 per cent. butter-fat. Ages range from three to twelve months. No females offered.

Apply to Superintendent

HIGHLAND LAKE FARMS

Jointly, with J. Alex. Wallace, of Simcoe, we have leased for the season the great young bull, AVON-DALE PONTIAC ECHO, a son of MAY ECHO SYLVIA, 41 lbs. butter in seven days, 152 lbs. milk in one day, and other world's records for milk production.

Two fine young bulls of serviceable age for sale, one from a 34-lb. bull and a daughter of a 30-lb. son of the great KING SEGIS, the other from a son of the \$35,000 bull, both grand individuals and from high R.O.M. cows. Over seventy females to choose from. Send for pedigrees and prices.

R. W. E. BURNABY, (Farm at stop 55, Yonge Street Radial) Jefferson, Ont.

Dumfries Farm Holsteins

175 head to choose from. We have on hand at present about 20 young bulls by De Kol Mechthilde Prince, a son of Prince Aaggie Mechthilde. Can also spare a few fresh cows. Visitors always welcome.

S. G. & ERLE KITCHEN, St. George, Ont.

CLOVERLEA HOLSTEINS

We have too many young bulls on hand at present. We want to sell them—our prices will surprise you. They are all from tested dams and by our herd sire, Pontiac Norine Korndyke. Write quick

GRIESBACH BROS., COLLINGWOOD, ONT.

EVERGREEN STOCK FARM—High-Class Registered Holsteins

To breeders who wish to make secure their future success we are offering some extra choice bull calves at living prices. Two of these are from daughters of a son of Lulu Keyes, 36 lbs. butter 7 days and 121 lbs. milk per day, and sired by Prince Colantha Abbekerk, whose dam made 32 lbs. butter 7 days and 104 lbs. milk per day.

A. E. HULET, NORWICH, ONT. Bell Phone 48 r.3

ORCHARD LEIGH HOLSTEINS

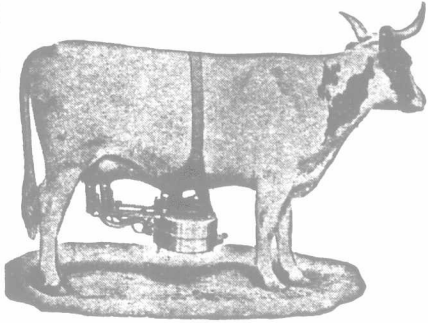
Bulls ready for service, from cows with records up to 29.20 lbs. butter in 7 days, and 93 lbs. milk in 1 day, sired by King Veeman Ormsby, whose dam gave 83 lbs. milk in 1 day, 559.5 lbs. milk and 25.81 lbs. butter in 7 days. Write, or come and see them. You will want one sure.

JAS. G. CURRIE & SON, (Electric Car stops at gate) INGERSOLL

King Segis Walker, through his daughters, is proving to be a worthy son of his illustrious ancestors. All of his daughters over two years have now been tested, at an average age of two years and six months, making 400 lbs. milk and 20 lbs. butter. Youngsters for sale.

A. A. FAREWELL, Oshawa, Ont.

OMEGA Milking Machines



Care of Milking Machines

Excerpts from an article in the "Implement News":

"One of the most important needs of users of milking machines is that of quick cleaning. It should be done properly at the proper time. The machines should never be allowed to stand until the casein hardens on the rubber tubes or cups."

Omega has NO RUBBER TUBES

Short transparent celluloid tubes take the place of long rubber ones. They do not decay or harbor germs, and are easily and quickly cleaned. This is an exclusive OMEGA feature; another is that the pail and milking parts are suspended from the cow's back, and the teat-cups cannot fall to the floor and such up filth.

WRITE TO-DAY

for illustrated booklet describing the many exclusive features of the OMEGA.

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The purest and best

OIL CAKE MEAL

THE DOMINION LINSEED OIL CO., Ltd. Manufacturers, Baden, Ont.

CRAIGIELEA FARM

The home of high-quality Ayrshires. Look up our records in public dairy tests and R. O. P. made under normal conditions. A few young bulls and females up to a carload.

H. C. HAMILL, R. K. No. 1, Markham, G. T. R. Station. Locust Hill, C. P. R. Home phone. Bell connection at Markham.

Lakeside Ayrshires

A few young bulls for sale, from Record of Performance dams, imported and Canadian-bred, sired by Auchenbrain Sea Foam (imp.) 35758, grand champion at both Quebec and Sherbrooke. Write for catalogue.

GEO. H. MONTGOMERY, Proprietor Dominion Express Bldg., Montreal, Que. O. McArthur, Manager, Phillipsburg, Quebec

Glencair Ayrshires

Herd established 40 years. Producing ability from 8,600 to 11,022 lbs. If that sort of production appeals to you, we have heifers all ages and young bulls for sale. Thos. J. McCormick, Rockton, Ont. Copetown Stn., G. T. R.

Dungannon Farm Ayrshires

Offers two eleven-months-old bulls by Humesbaugh Prince Fortune, and from good dams. Also younger stock.

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JERSEY BULLS For Sale

Knoolwood's Raleigh, sire Fairy Glen's Raleigh (imp.), 22 daughters R. O. P.; dam Eminent Honeymoon (imp.) R. O. P. 996 lbs. butter; reserve champion on island. Capt. Raleigh ready for service. sire Knoolwood's Raleigh, dam Mabel's Post Snowdrop; first as calf; 1914, first Junior Champion, 1915, 2nd 1916, Toronto. Milked 38 lbs. day, 6 per cent. milk first calf. Ira Nichols, Burgessville, Ont. R. R. No. 2.

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WOOL

HIDES, SKINS, HORSEHAIR,

WRITE FOR OUR PRICES BEFORE SELLING

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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 prices

WILLOWBANK DORSETS

Amongst our ram lambs is the 1st prize ram lamb at Guelph, 1916, a very fine animal. Also a few other lambs bred from imported sire and dams.

Jas. Robertson & Sons, Hornby, Ont.

Questions and Answers. Miscellaneous.

Summer Pasture.

I purpose sowing ten acres for summer pasture with one bushel each of wheat, oats and barley. Will fall wheat be suitable, or must I get spring wheat? Is it necessary to sow clover with it? This is the last year of my lease, and I do not wish to sow clover unless I get benefit therefrom this year.

R. C. Y.

Ans.—We understand that fall wheat is quite suitable. It is not absolutely necessary to sow the clover, as the grains will furnish the bulk of the pasture this year.

Remodelling Barn.

We purpose raising our barn in the spring and would like to get a plan for the cellar. We have a 50-acre farm. The barn is 47 by 48 feet, including the shed. We want room for 5 horses, 10 cows, box stalls for pigs and sheep, a root cellar and harness-room.

S. R. W.

Ans.—In a future issue we purpose publishing a number of barn plans which may give you an idea which will work out satisfactorily in your case. Owing to a large number of our subscribers desiring plans of buildings, no two of which are of the same dimensions, we are unable to comply with their wishes, but we publish general plans which may suggest ideas. A practically square cellar is more difficult to lay out conveniently than a longer cellar. The horse stable will require at least 23 by 25 feet for passageway, feed alley, mangers and stalls. This is allowing 5 feet in width for each stall. This leaves practically 22 feet on the end of the stable, which is wide enough for a row of cows. Consequently it might be economy of space to stable the cows along one end. Cow stalls should be about 3½ feet wide. A small space could be secured at the end next the horses for a harness-room. In this case it would be well to have the cows facing the centre of the stable. Three box stalls of fair size could be placed along the side opposite the horses, and between the horse feed passage and the box stalls there would be room for two small pens which would do for the hogs. This leaves a space practically in the centre of the cellar for roots and feed alley.

Rations for Cows and Steers.

1. Our cattle are getting cut out straw and mixed hay, with a few pulped turnips mixed with the cut feed and dampened with water. Long hay is also fed. With oats at \$1.80 per cwt.; corn, \$2.15; shorts, \$1.95; bran, \$1.75; oil-cake, \$2.80, suggest a mixture to give best results for milk cows, also for finishing yearling steers weighing about 800 lbs. each.

2. Grade Shorthorn heifer, 31 months old, freshened Jan. 11 and is now giving 25 pounds of milk per day. Is this a fair amount for a heifer? When should she freshen again to make the best cow?

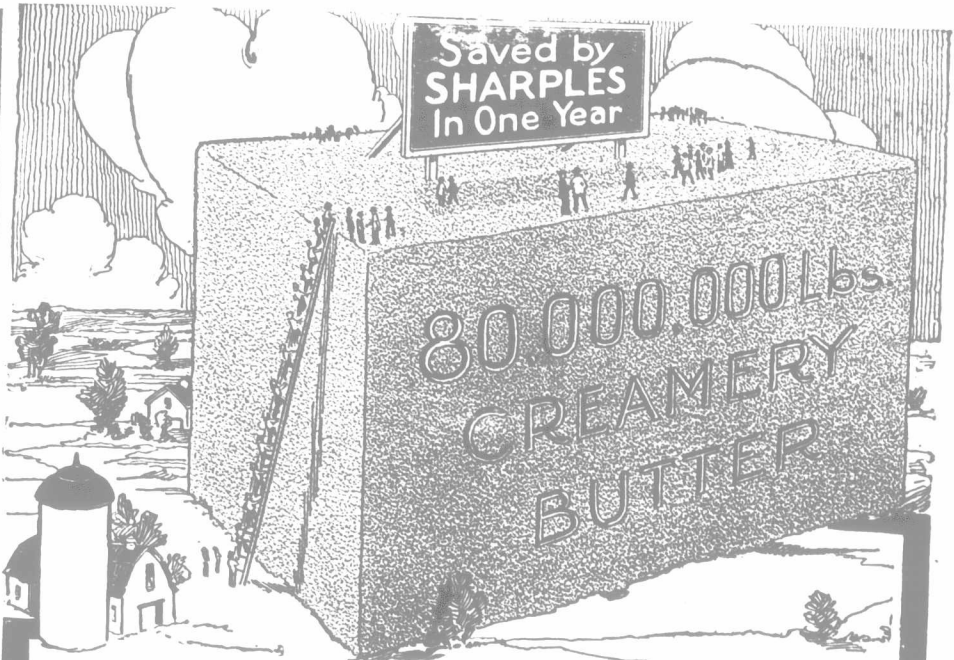
3. Horse weighing 1,500 lbs. is given a mixture of one-quarter oat sheaf and three-quarters mixed hay. Suggest a mixture of the grains previously mentioned to mix with the oat sheaf to fatten him.

H. W. C.

Ans.—1. We would suggest one pound of a mixture of oats, corn and bran to every four pounds of milk produced, and a little oil cake per day to each cow. If clover or alfalfa hay are being fed the oil cake could be dispensed with. For feeding steers start light on the grain. Six to eight pounds per day is good feeding by the time they are about finished. Oats and corn are satisfactory grains.

2. It will depend a good deal on her persistency as a milker. If she will give around 25 pounds a day for six or seven months, and then only drop off slightly until the end of the lactation period, she will produce a fair amount of milk in a year. However, we usually like to see them give a few pounds more than this at the start. A heifer should be milked for ten or eleven months the first lactation, and given two months' rest before freshening again.

3. Oats is the principal grain for horses, but a little bran or oil cake might profitably be added to put the horse in condition. Boiled oats might be fed occasionally, and care must be taken not to overfeed on hay.



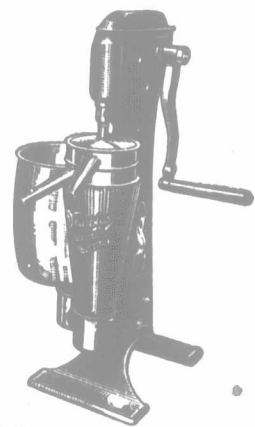
The height of this print of 80,000,000 lbs. of butter is 90 feet—its length 130 feet. An average loss of 10 lbs. of butter per cow by all separators except Sharples causes this appalling yearly cream loss in the United States alone. If all separators were Sharples this immense pile would be saved annually. For this reason: Sharples is the only separator that skims clean regardless of speed. Look back over your past experience with separators. Many a day you determined to turn at top speed and not lose cream. But unconsciously, little by little, you slackened and lost cream. That separator was not a

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—Headed by Fairvue Milkman, a son of Canada's Champion Ayrshire cow, for milk and butter-fat, Milkmaid 7th. Some choice young bulls from Record of Performance dams for sale, and a few females.

Laurie Bros., Agincourt, Ont.

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—Record of Performance blood in everything. Our females run from 4.15 to 5.02% fat, with a herd average of 4.65. Bull calves and bulls fit for service. Stock for sale of either sex. Prices according to merits.

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For the next fortnight we are making a special offering on young bulls, bred from the highest producing families ever introduced into Canada. Brampton Jerseys and their descendants hold all Jersey R.O.P. records save one. Females, all ages, also for sale.

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THE WOODVIEW FARM JERSEYS

Canada's Most Beautiful Jersey Herd Present Offering—Some high-class bull calves ready for service, from Record of Performance dams, including grand champion bull at last Western Fair and his full brother; also cows and heifers. State distinctly what is wanted, if writing Jno. Pringle, Prop. We work our show cows and show our work cows.

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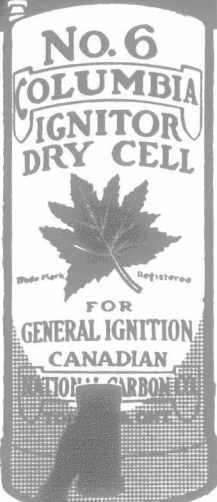
in Canada. Look up our show record. It will give you an idea of the kind of Oxfords we have for sale

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Patent spring-clip binding posts, no extra charge.



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—by removing the cause—and cured to stay cured. If 3 boxes of **Fleming's Tonic Heave Remedy** fail to effect a cure of any case, old or new, we will refund the full amount paid.

Per Box, \$1.00; 3 for \$2.50. Mailed on receipt of Price.

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Gentlemen—I gave a course of your Tonic Powders, which has put a horse and his mate in fine shape, and a touch of scratches has quite disappeared. Geo. A. Miles, Oxville, Alta.

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Large number of choice males and females. All ages.

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Duroc Jersey Swine. I have been importing and breeding Duroc Jerseys for twenty-five years. Present offering some choice sows, bred; a few sows six months old and a number of pigs two months old.

Charles Farough R. R. 1, Maldstone, Ont.

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Young sows bred for April and May farrow, and a nice lot of young boars for sale. Write:

JOHN W. TODD, R. R. No. 1, Corinth, Ont.

Cloverdale Berkshires and Shropshires—In Berkshires I can furnish boars or sows, all ages, pairs not akin. All breeding stock imp. or from imp. stock. In Shropshires can furnish rams or ewes, any age, from imp. stock. Prices reasonable.

C. J. LANG, R. R. No. 3, BURKETON, ONT.

Morrison Tamworths and Shorthorns. Bred from the prizewinning herds of England. Tamworths, both sexes, 140 to choose from; Shorthorns, 5 bulls, from 5 to 10 months old, reds and roans, dandies. Females of the best milking strains.

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Yorkshires Sows bred and younger; boars 2 and 3 months, sire, Our Champion, winner of 12 firsts and 5 championships in 2 years' showing at Toronto and Ottawa.

Bronze turkeys from prizewinning stock.
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Meadow Brook Yorkshires—Am offering sows ready to breed and a few choice boars fit for service; also several litters ready to wean Dec 1st. All bred from prizewinning stock. Prices reasonable.

G. W. MINERS, R. R. 3, EXETER, ONT.

Champion Berkshires—When buying, buy the best; our present offering are sons and daughters of the two great champions, Lucky Lad and Baron Compton, and out of winners, including champions. Both sexes.

W. W. Brownridge, Georgetown, Ont., R. R. 3

Berkshire Pigs Registered stock, choicely bred young boars, and sows in pig, all ages. Can supply pairs not akin.

CREDIT GRANGE FARM,
J. B. PEARSON, Mgr., Meadowvale, Ontario

Swine for Sale Am offering choice stock in Poland-China and Chester White swine of either sex; most any age. First-prize Poland-China herd, London and Toronto, 1915. By express.

GEO. G. GOULD, R. R. 4, ESSEX, ONT.

Questions and Answers. Miscellaneous.

Nitro-culture—Diagnosing Contagious Abortion.

1. Will nitro-culture which was prepared in 1916 be satisfactory to use in 1917?
2. Can a veterinarian, by examining a herd of cows, tell whether or not they are affected with contagious abortion?
3. Hog buyers in this district charge one-half of one per cent. for government inspection. When did this tax come into force, and who was responsible for it?

A. B.

Ans.—1. The culture should be made fresh each spring to be most effective.
2. Not by physical examination.
3. Thix tax is levied by the Stock Yards Company to cover the loss of animals condemned by government inspection of dressed carcasses. It came into force several years ago at the instigation of the stock yards' men.

Unhealthy Birds.

We have about thirty hens and two turkeys. A number of the hens appear dumpy for a few days and then die. The feathers were all off their heads, as if they had been picked. We have lost five already and several of the others are ailing. They are given plenty of fresh water and are fed well on mixed feeds. The birds that died were very poor.

G. D.

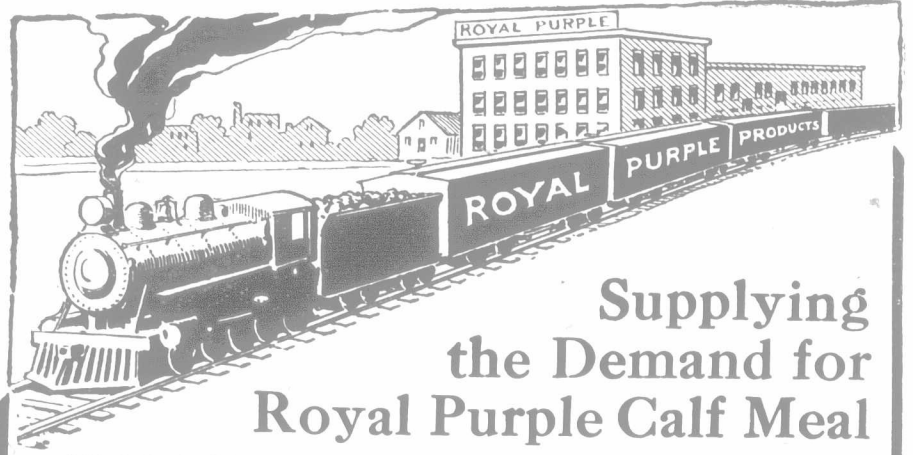
Ans.—It is rather difficult to diagnose the case from the description of the birds given, but we are rather inclined to think that the birds were affected with vermin. Examine the healthy birds and note whether there is any vermin on the head or under the wings; if so, rub a little grease on the head and dust the body thoroughly with some insect powder. It will be necessary to thoroughly clean the pen and spray it with kerosene to which has been added about 5 per cent. carbolic acid. The birds may be suffering from some other complaint, as a very thin condition indicates tuberculosis, but other symptoms of this disease would be lameness and white tubercles on the liver. If this disease is in the flock it would be advisable to have a general clean-up, and treatment is not effective.

Silos—Ration for Cows.

1. We purpose building a silo in the spring. Which would you advise, wood or concrete silos, taking into consideration the quality of the feed and the life of the silo?
2. If we build a concrete silo, do you advise plastering on both inside and outside, or just whitewashing it with cement a couple of times?
3. What is the best means of ventilating a hog pen? We purpose building one about 40 by 20 feet.
4. We milk several cows but they do not produce as satisfactorily as we would like. We are feeding one-half gallon of bran, one-half gallon shorts, one-half gallon of oat and buckwheat chop, and a couple of handfuls of oil cake, besides clover hay, bean straw and sorghum. What else could I feed to give a balanced ration?

A. E.

Ans.—1. Both concrete and wooden silos give very satisfactory results. Some prefer one kind; some another, and silage appears to keep equally well in both. Concrete is generally looked upon as more permanent, but a good wooden silo will last many years.
2. Whitewashing the silo with cement is more easily done than plastering and proves very satisfactory.
3. A couple of flues might be put in extending from the ceiling to the roof, to carry away the foul odor. Fresh air may be brought in through the windows. We have known a number of pens to be ventilated in this way which were entirely satisfactory. A number of the windows may be entirely removed and cotton tacked over. This allows fresh air to penetrate without causing a draft.
4. If the cows are not milking very well you are feeding rather heavily on concentrates. If you had succulent feed to go with the roughage, that part of the ration could not be improved very much, and in regard to concentrates one pound of a mixture of bran, shorts, oats and buckwheat to four pounds of milk would be considered sufficient. If the cows receive plenty of clover hay and silage or roots, it does not pay to feed too much concentrates unless they pay for it in milk. A little oil cake aids in increasing the protein.



Supplying the Demand for Royal Purple Calf Meal

This baby food for young animals is partially pre-digested, and can be fed to the youngest animals with perfect safety. It WILL NOT cause stomach or bowel trouble, which are serious ailments in young animals. Royal Purple is a sure preventive for scouring.

Calves Gain Rapidly Without Milk

When the calves are 3 or 4 days old they can be fed Royal Purple Calf Meal and raised just as well without one drop of milk. What prominent breeders remark: Mr. Geo. W. Collins, Plainfield, Ont., writes: "Gentlemen,—In regard to your Calf Meal, I think you have the best on the market, as people who have bought it give it great praise. Some have taken their calves off sweet milk, and feed them nothing but your Calf Meal and water, and say they are doing as well on it as they did on the whole milk."

To Whom It May Concern: This is to certify that I have secured your "Royal Purple" Calf Meal from our druggist, Mr. T. C. Nicholls, of Uxbridge, and can speak of this meal in the highest terms. I have used other calf meals, but this one is the best I ever tried. I never saw a calf gain more rapidly and thrive better than mine did while using your "Royal Purple" Calf Meal. I can cheerfully recommend it to all our stockmen who wish to raise large, healthy calves.—Stanley W. Croxall.

Note—The above Mr. Croxall keeps a large herd of pure-bred Holstein cattle, and is an excellent authority on Calf Foods.

Royal Purple Calf Meal is equally good for young colts, lambs and young pigs. Put up in 25-lb., 50-lb. and 100-lb. bags. Secure it from our dealer in your town.

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are sold at A REASONABLE PRICE. There are other plows—NOT SO GOOD—sold at a little less price. In the case of MOST other things, PRICE is a measure of the real value. So in plows. Famous Fleury Plows LEAD ALL OTHER Walking Plows in LIGHTNESS of DRAUGHT, EASE of HOLDING—in QUALITY of WORK in the field. SCORES of THOUSANDS of Famous Fleury Plows have been sold and bought and used; many men have followed a Famous Fleury Plow for 30 or 40 years, and declare "THERE ARE NO PLOWS LIKE FLEURY'S." Special Plow Folder on request.

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From our recent importation of sows, together with the stock boar, Suddon Torredor, we can supply select breeding stock, all ages. Satisfaction and safe delivery guaranteed.

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Young sow due to farrow within a month. Young pigs, both sexes, all descendants of Imp. and Silver Medal Stock. Ten young heifers and cows, grand milking strain, in calf to Broadlands No. 87903

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FOR SALE—Young stock of both sexes, bred from imported animals, high-class in type and quality. Also we are now offering for sale highly bred imported stock boar and sows. Write for particulars

F. WALLACE COCKSHUTT, BRANTFORD, ONT.
Lynnore Stock Farm—English Dairy Shorthorns & Berkshire Pigs.

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We are in a position to supply boars and sows of different ages. We have an established type of Yorkshires that have been produced through many years of careful breeding and selection.

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In Duroc Jerseys we have either sex of any desired age, bred from winners and champions for generations back. In Jerseys, we have young cows in calf and young bulls, high in quality and high in producing blood.

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S.-C. W. Leghorns, White Rocks, Bronze Turkeys, Toulouse Geese and Pekin Ducks. This herd has won about 90 per cent. of the prizes offered in the last ten years at the Canadian National, Toronto, Ottawa, London, and Guelph Winter Fairs.

D. DOUGLAS & SONS, R. R. No. 4, MITCHELL, ONT.

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THOSE WHO, FROM TIME TO TIME, HAVE FUNDS REQUIRING INVESTMENT MAY PURCHASE AT PAR

DOMINION OF CANADA DEBENTURE STOCK

IN SUMS OF \$500, OR ANY MULTIPLE THEREOF

Principal repayable 1st October, 1919.

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Proceeds of this stock are for war purposes only.

A commission of one-quarter of one per cent will be allowed to recognized bond and stock brokers on allotments made in respect of applications for this stock which bear their stamp.

For application forms apply to the Deputy Minister of Finance, Ottawa.

DEPARTMENT OF FINANCE, OTTAWA
OCTOBER 7th, 1916.

THE MINISTER OF FINANCE

REQUESTS

THE PEOPLE OF CANADA TO

BEGIN NOW

TO SAVE MONEY FOR THE
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JAN. 6, 1917

DEPARTMENT OF FINANCE
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NEW BRUNSWICK SEED POTATOES

I have some of the very best for spring delivery, and will be glad to have your name for my price list when same is ready.

C. FRED FAWCETT

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If you want prices on brick, lumber, cement, or other building materials, furnaces, barn equipment, etc., catalogues from reliable firms, giving current prices, will be mailed free on receipt of your name, address, and particulars of the building you intend erecting.

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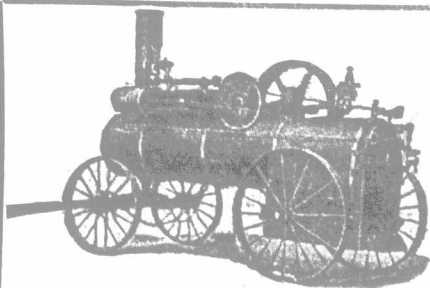
Owing to the coal situation, later deliveries will doubtless be advanced in price, so secure yours at once.

MILTON BRICK

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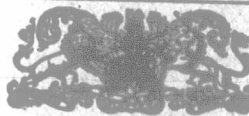
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Return Limit, May 31, 1917
Liberal Stop-Overs Allowed

For full information write to
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D.P.A., Union Station,
Toronto, Ont.



MAIL CONTRACT

SEALED TENDERS, addressed to the Postmaster General, will be received at Ottawa until noon, on Friday, the 2nd day of March, 1917, for the conveyance of His Majesty's Mails, on a proposed Contract for four years, six times per week over Belmont No. 1 Rural Route, from the 1st of April 1917.

Printed notices containing further information as to conditions of proposed Contract may be seen, and blank forms of Tender may be obtained at the Post Offices of Belmont, Glanworth and Harrietsville, and at the office of the Post Office Inspector, G. C. ANDERSON, Superintendent.

Post Office Department, Canada, Mail Service Branch, Ottawa, 19th January, 1917.

\$200,000

To lend on farms, first and second mortgages. Old mortgages paid off. Low interest.

E. R. REYNOLDS
171 Yonge St. Toronto

Eureka Potato Planter

Raise Potatoes This Year

Increase your profits by using our potato planter. Opens furrow, drops seed any distance or depth, covers, marks for next row—all automatically. Puts on fertilizer if desired. One man operates and sees seed drop. Made of steel and malleable iron, assuring long service and few repairs.

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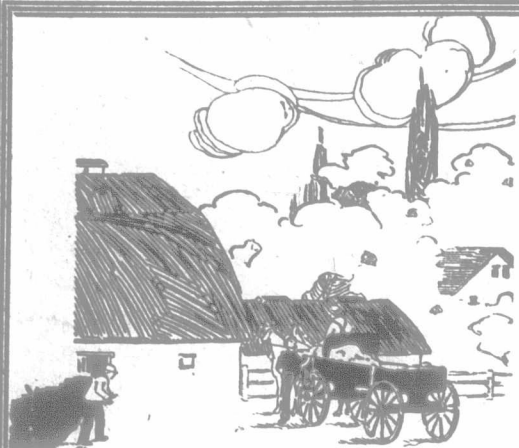
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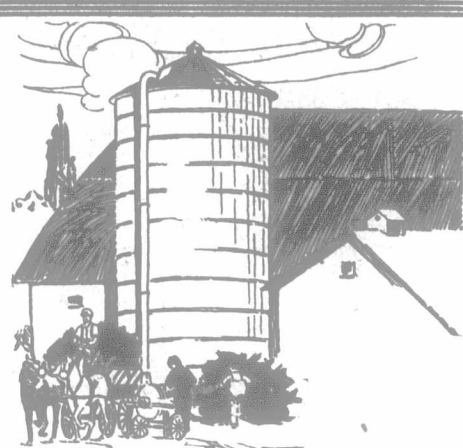
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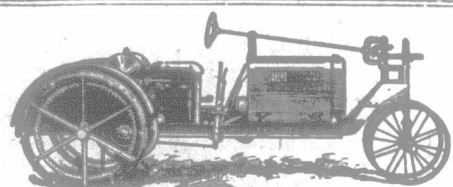
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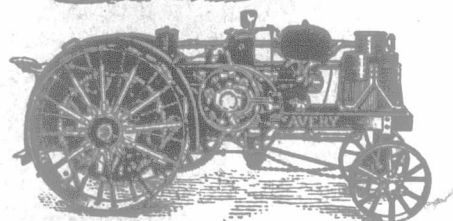
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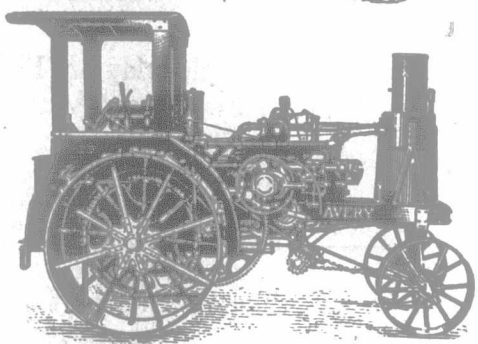
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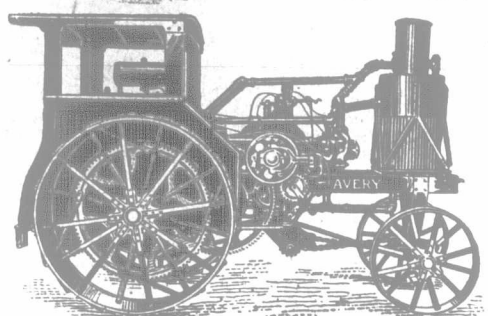
Avery Farm Tractors



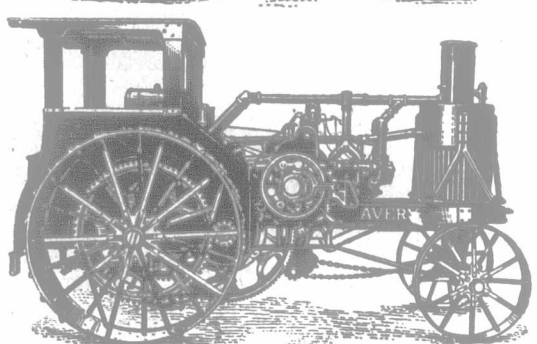
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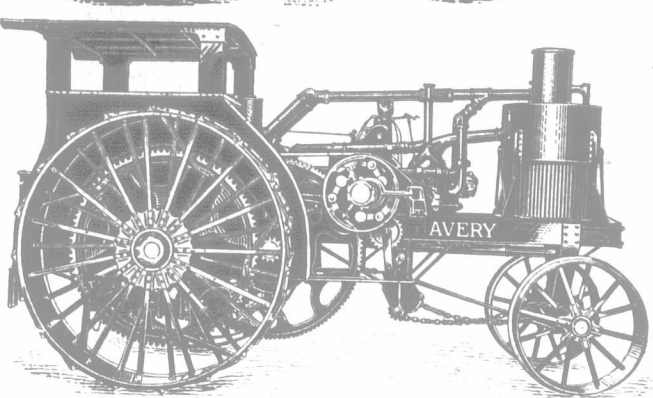


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