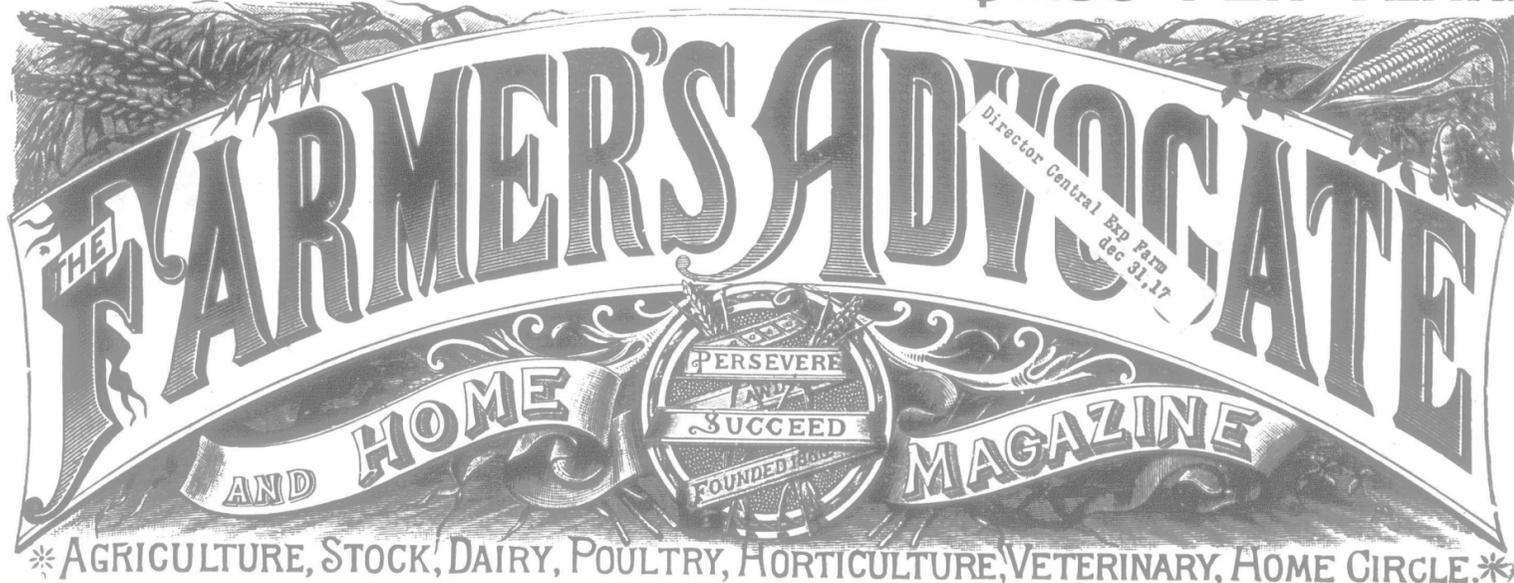


PUBLISHED EVERY WEEK. \$1.50 PER YEAR.



* AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE.*

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VOL. LII.

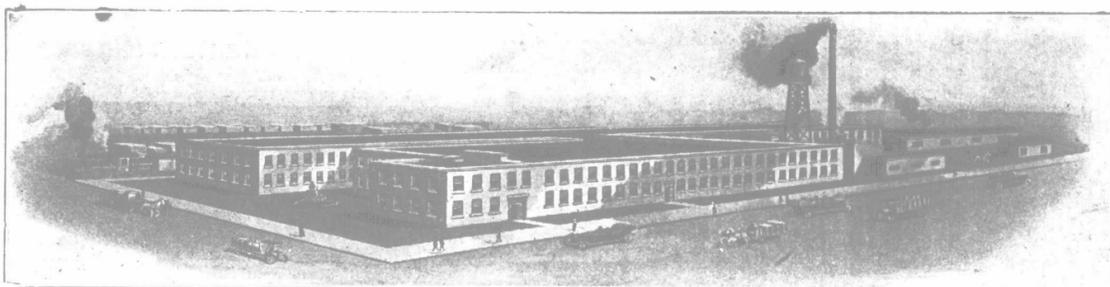
LONDON, ONTARIO, MARCH 1, 1917.

No. 1275

SHERLOCK-MANNING 20th Century PIANO

"Canada's Biggest Piano Value"

View of the Sherlock-Manning Piano Factory



The Home of "Canada's Biggest Piano Value"

YOU do not buy a piano for a day or a month, but for years. Excellence in a musical instrument means not only quality to-day, but quality ten years from to-day. Before a piano leaves our factory, it must pass the most rigid inspection. No instrument is given our 10-year guarantee unless it is worthy of the guarantee—and good value at the price.

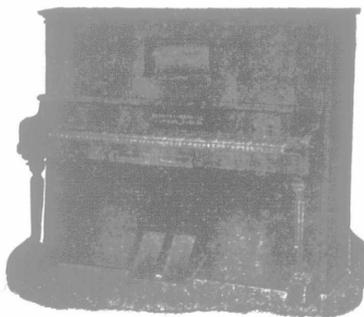
You will be just like many other readers of this paper if you once place a Sherlock-Manning Piano in your home—you wouldn't part with it for a hundred dollars more than you paid for it, if you couldn't get another one like it.

A Sherlock-Manning Piano in your home will make your sons and daughters happier—it will turn the parlor into a social center—and it will make your home the "homiest" home on earth. No similar amount of money expended in any other direction can possibly bring you as much pleasure and lasting enjoyment.

Anyone Can Play The Sherlock-Manning Player Piano

No skilled musician is needed to operate this instrument with artistic effect. A person without any musical training, or even a child, can produce music with this player that cannot be distinguished from the hand-playing of a great artist. It will do anything that any other player will do, and do it better—musically and mechanically.

The Sherlock-Manning Player has the Aluminum Valve Action and all other latest and best improvements, among which is the **Solodant**. This permits the operator to



Player Piano—Style 120

omit the melody and play only the accompaniment, or to correctly accent the melody in any portion of the composition.

The **Tempo-Aid** is another feature not found on many player pianos. This enables the operator to introduce his or her own time and expression, or, in other words, it means that the music and volume of tone are under perfect control at all times.

This player can be used as a complete automatic instrument, or played by the fingers alone, as a regular piano.

Regular Pianos—Many Styles to Select From

No matter who you are—or what you have to spend—we have the right piano at the right price. Every instrument is thoroughly dependable and carries an ironclad, unconditional guarantee for ten years.

Write Dept. 4 to-day for our handsome Art Catalogue "L," which shows illustrations and gives descriptions of the complete line of Sherlock-Manning Pianos. We mail it FREE.

The Sherlock-Manning Piano Co.

London, Canada



Colonial—Style 70



Louis XV—Style 80

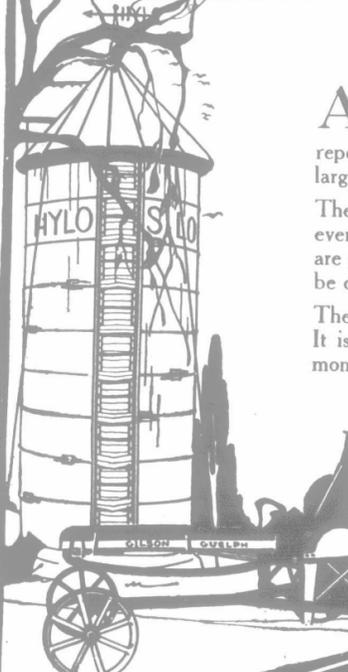
You need this Hylo Silo

A LARGE percentage of our 1916 sales was made to farmers who were already using HYLO SILOS. Many of these repeat orders came from owners of the finest farms in Canada—from the largest and most successful farmers everywhere.

These men could have bought any silo at any price—they buy the best of everything—that's why they continue to buy the HYLO SILO. If you are going to buy a silo, this satisfactory service rendered everywhere should be of special interest to you.

The HYLO SILO has set a new standard of quality in silos in Canada. It is the cheapest silo you can buy, because it will make you the most money.

Our free silo book describing the many exclusive HYLO features—special material, design and construction—is now ready. Send for your copy to-day.



GILSON MFG. CO. LTD
339A York St. Guelph Can.



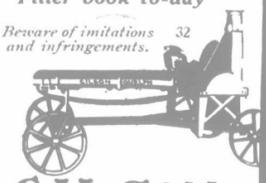
33A

EVERYBODY

wants a Gilson Silo Filler. **WHY?** It will cut and elevate more corn with the same power than any other Blower Cutter made.

Write for free Silo Filler book to-day

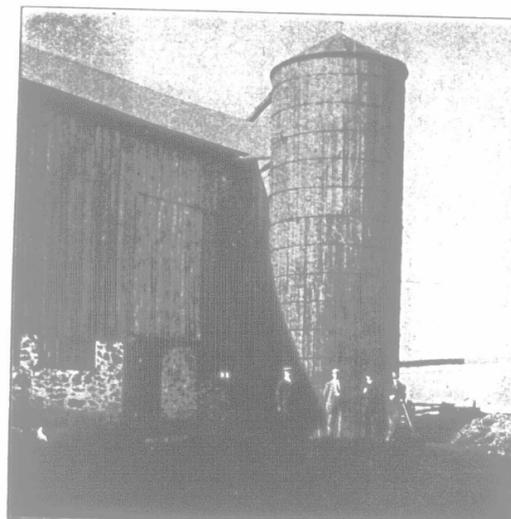
Beware of imitations and infringements.



GILSON
GILSON MFG. CO. LTD. 329 YORK ST. GUELPH CAN.

"BULL DOG" LONDON CONCRETE MIXER
Capacity, 50 cu. yards per day. Price \$325, complete with gasoline engine. Pays for itself in 20 days' use. Built to last a lifetime. Send for catalogue No. 1 B.

LONDON CONCRETE MACHINERY CO.,
Dept. B,
London, Ontario
World's Largest Mfrs. of Concrete Machinery.



PUT UP A
Lister Silo

Made of Canadian Spruce

Hundreds erected all over Ontario.

Write for the Lister Silo Book and photos of Lister Silo-Filling Outfits in operation.

NEW FEATURES FOR 1917

Lister British-Made Engines, Milkers, Grinders, Threshers, Melotte Separators
VERY TRACTORS 5-10, 8-16, 12-25, 18-36, 40-80
R. A. Lister & Co., Limited, TORONTO DEPT. G.

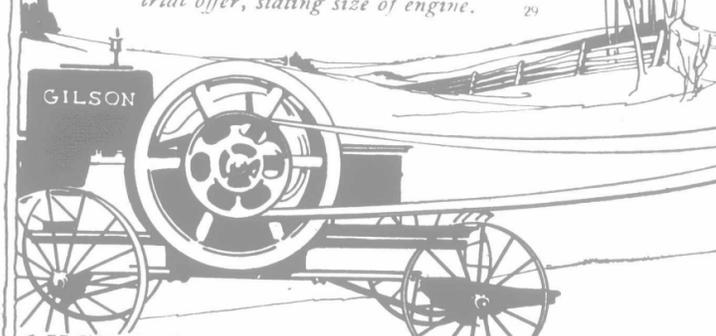
GILSON Engines

We want to demonstrate on your farm

WE will send you a Gilson Engine any size f.o.b. factory without charge, to try out thoroughly on your own farm at your own work.

Gilson Engines,—large surplus over rating,—all latest improvements,—no cranking necessary in starting,—strong, simple and reliable,—made entirely at Guelph, and used by the better class of Canadian Farmers, who know that quality, in material workmanship and design, combined with the greatest value in relation to price, insures the fullest measure of success in the years to come.

Write for our 1917 Special free trial offer, stating size of engine.



GILSON MFG. CO. LTD. 299 YORK ST. GUELPH CAN.

Our recent fire shut down our plant for about a week, but we are in full swing once more. Fortunately our stock of completed engines escaped harm and we are ready to serve our customers promptly with

Chapman FARM ENGINES

as well as with our complete line of CHAPMAN Grinders, Cutters, Saw Frames and Stable Fittings.

We are still putting out
NEW 7 H.-P. CHAPMAN ENGINES AT \$250
and our other sizes at corresponding prices. Let us submit you a proposal.

Chapman Engine and Mfg. Co., Limited
Dundas, Ontario

Now! is the time to ship RAW FURS

If you want HIGHEST PRICES

Ship all your Raw Furs to us, as we pay highest prices, charge no commissions, pay express charges, repay parcel post charges and remit promptly.

RAW FUR PRICE LIST, TRAPPERS GUIDE (in English or French) and TRAPPERS SUPPLY CATALOG sent free on request.

JOHN HALLAM, Ltd.
212 HALLAM BLDG., TORONTO
The largest in our line in Canada

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**Can you do it?
Every day?**

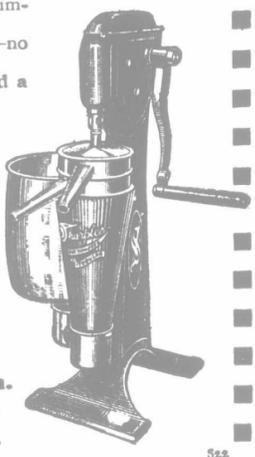
No!—and if you have a Sharples Suction-feed Separator you don't have to, for it skims equally clean *whatever* speed you turn. But with every other separator you must turn the crank at just *exactly* the speed stamped on it, or you will lose cream—every time! The wonderful Sharples Suction-feed varies the milk feed in *direct proportion to the separating force*—never more milk in the bowl than it can *perfectly* separate.

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

SHARPLES SUCTION-FEED CREAM SEPARATOR

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

Sharples is positive insurance against carelessness and its consequent cream waste. We realized that it was far from sufficient that a separator *could* skim clean when properly handled. It was vitally necessary that it *would* skim clean—even when improperly handled. If any of the old-style fixed-feed separators would adopt a device for the purpose of notifying the operator when he is turning too slow, it would be an acknowledgement of the *vast superiority* of Sharples, which automatically *prevents* losses from irregular turning instead of simply announcing them. Write today for catalog to Dept. 78.



Sharples Separator Co., Toronto, Can.
The Buckeye Machine Co. Calgary, Alta.
Distributors for British Columbia, Alberta & Saskatchewan
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FREE COUPON
Beatty Bros., Limited, Dept. L 306, Fergus, Ont.
Send me your barn book, without charge. I have answered the questions below.

Are you building or re-modelling?

When will you start?

How many cows will you keep?

Your name

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Prov.

Build Your Barn Right

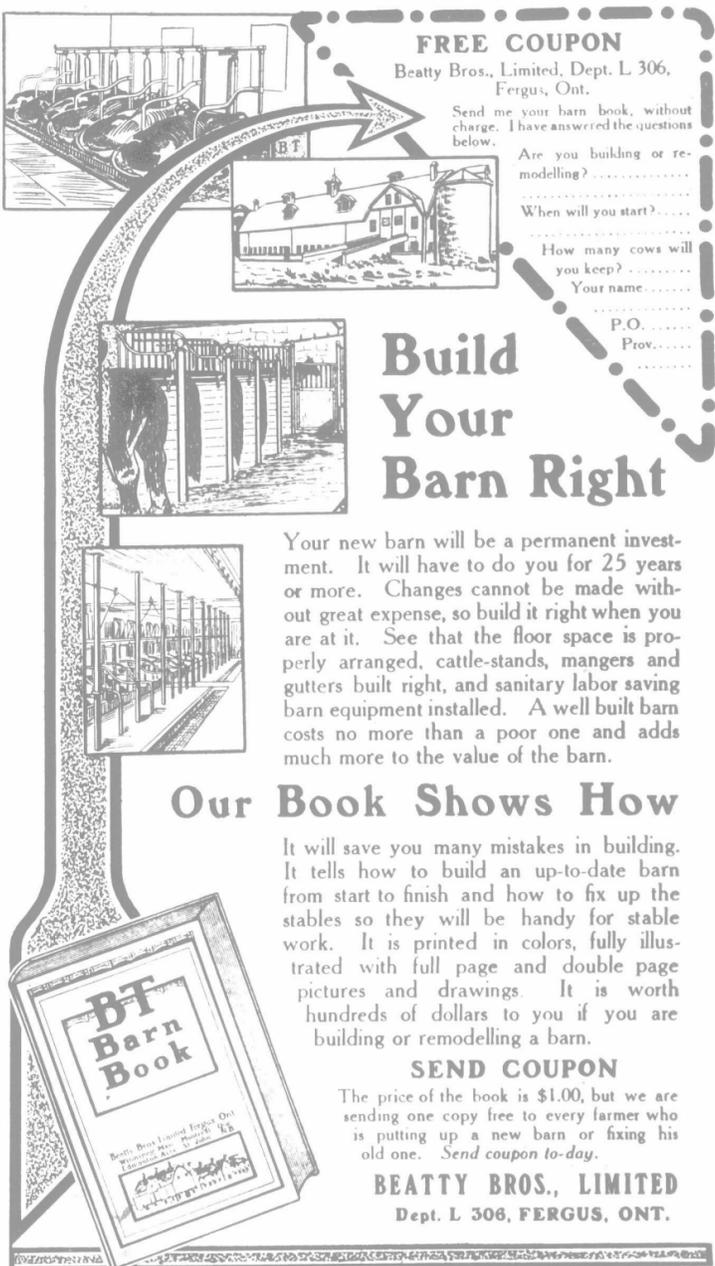
Your new barn will be a permanent investment. It will have to do you for 25 years or more. Changes cannot be made without great expense, so build it right when you are at it. See that the floor space is properly arranged, cattle-stands, mangers and gutters built right, and sanitary labor saving barn equipment installed. A well built barn costs no more than a poor one and adds much more to the value of the barn.

Our Book Shows How

It will save you many mistakes in building. It tells how to build an up-to-date barn from start to finish and how to fix up the stables so they will be handy for stable work. It is printed in colors, fully illustrated with full page and double page pictures and drawings. It is worth hundreds of dollars to you if you are building or remodelling a barn.

SEND COUPON
The price of the book is \$1.00, but we are sending one copy free to every farmer who is putting up a new barn or fixing his old one. *Send coupon to-day.*

BEATTY BROS., LIMITED
Dept. L 306, FERGUS, ONT.



Mr. Farmer!

Get your bricks in now during sleighing. We have a large stock of the famous Milton Red Pressed Brick on hand and can give you immediate delivery.

Owing to the coal situation, later deliveries will doubtless be advanced in price, so secure yours at once.

MILTON BRICK

For 25 years Milton Brick has been the standard of quality and durability—and still leads. Write to-day for samples and prices.

MILTON PRESSED BRICK CO., LIMITED., MILTON, ONT.

BE SURE AND ASK FOR THE

Maxwell

Line of WASHERS, CHURNS, BUTTERWORKERS, FOOD CUTTERS, GAS ENGINES, etc. Write for Catalogue.

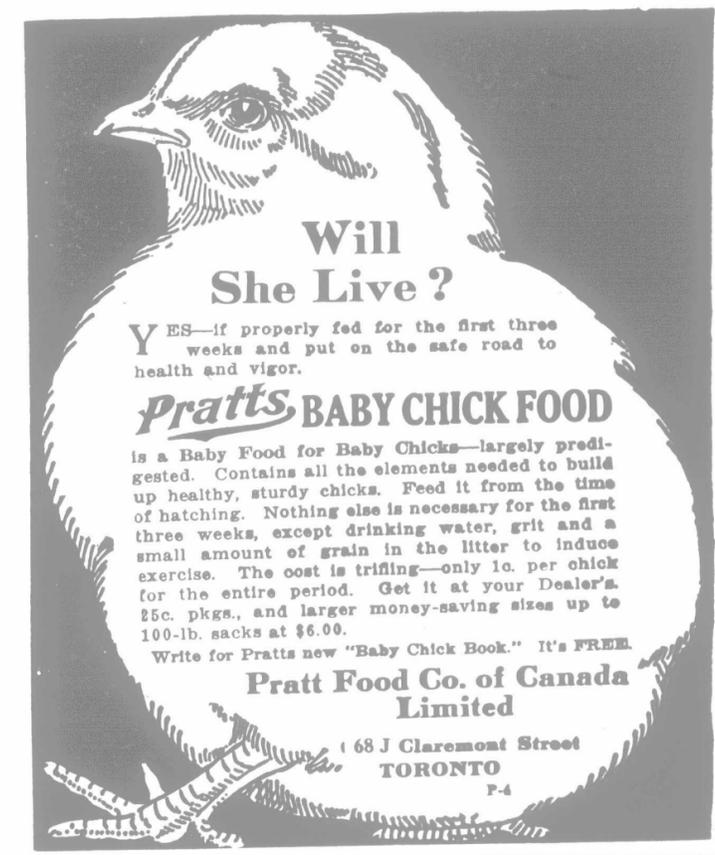
MAXWELLS LIMITED, St. Mary's, Ont.

Louden Barn Equipments

SAVE TIME—Save Labor—Save Expense

Our new catalogue describes every kind of device for money-making and labor-saving on farms. Write to:

LOUDEN MACHINERY CO.,
Dept. 1 Guelph, Ont.



Will She Live?

YES—if properly fed for the first three weeks and put on the safe road to health and vigor.

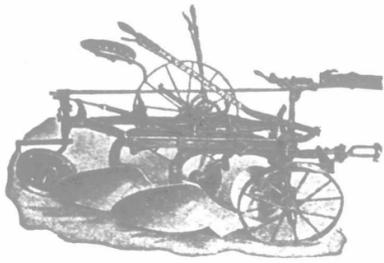
Pratts BABY CHICK FOOD

is a Baby Food for Baby Chicks—largely pre-digested. Contains all the elements needed to build up healthy, sturdy chicks. Feed it from the time of hatching. Nothing else is necessary for the first three weeks, except drinking water, grit and a small amount of grain in the litter to induce exercise. The cost is trifling—only 1c. per chick for the entire period. Get it at your Dealer's. 25c. pkgs., and larger money-saving sizes up to 100-lb. sacks at \$6.00.

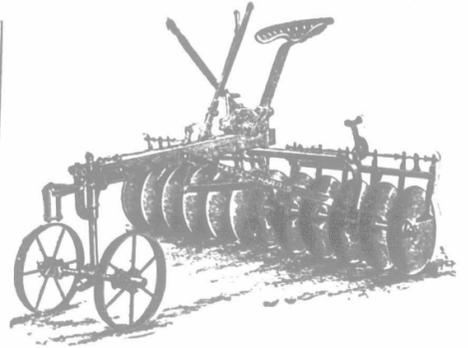
Write for Pratts new "Baby Chick Book." It's FREE!

Pratt Food Co. of Canada Limited
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Massey-Harris High-Grade Farm Implements



Farmer's Friend Gang Plow

Strong and rigid Main Frame—strong where others are weak; Adjustable, Easy-Acting Foot Lift; handy Landing Lever; Improved Rear Wheel Control; ample clearance under the Beams; substantial Steel Wheels with extra long dust-proof Hubs; "Neverslip" Rear Axle Bracket.

Unequalled for Good Work, Strength, Durability, Light Draft and Ease of Management.

Also made with Single Bottom.

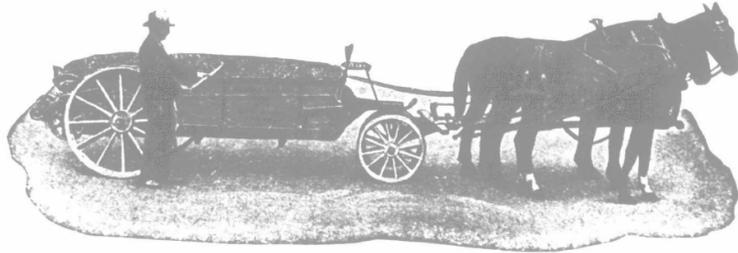
Massey-Harris Disc Harrows

Being equipped with Pressure Springs, the Gangs are held to their work on rough and uneven ground, on ridges and in furrows, so that the entire surface is cultivated.

Should one Gang strike an obstruction, it may rise and pass over it without disturbing the other Gang, or without danger of injury to the machine.

Angle of Gangs is readily controlled by a single, easily-operated Lever.

Bearings have oil-soaked Maple Bushings and Spring Oil Caps. The Low Hitch takes all the weight from the horses' necks.



LOW
DOWN

Massey-Harris Spreader

WIDE
SPREAD

Here is a Spreader that is low down, but not too low—plenty of clearance under the Frame.

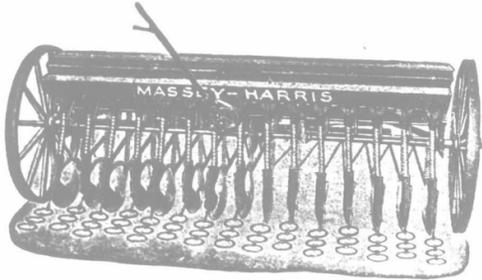
It is a Wide-Spread Machine—spreading full seven feet wide, although the Box measures only 3½ feet.

Ample strength is secured by making the Frame of Steel—heavy 4-inch Channel Side Sills with Steel Cross Sills, forming the strongest Frame ever put on a Spreader.

The Simple Chain Drive does away with all Cogs, Clutches and Springs, and when out of gear no parts of the machine are running to cause wear.

The Upper Beater is in two sections, set at an angle to spread the load out beyond the Wheels.

The Simple, Direct Drive—the Divided Beater and small size of same—the taper shape of the Bed—the Broad-Faced Wheels—the careful fitting of all parts—these combine to secure light draft.

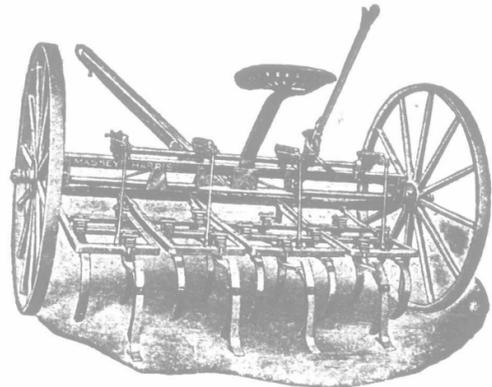


A Disc Drill with Steel Boots

The Steel Boots are an Exclusive
MASSEY-HARRIS FEATURE.

They are light enough to make shallow seeding possible in light soils, yet by means of the Pressure Springs they can be made to enter hard soil to any required depth.

In strength they are superior to the usual Cast-Iron Boot, the lower part is separate from the balance, and if worn from use in sand or gritty soil, can be easily and cheaply replaced.



Reliable Spring-Tooth Cultivator

This Cultivator is a great weed killer, and thoroughly pulverizes the soil, making it an easy matter for the hair-like roots of the growing plants to get through and increasing the amount of surface on which the plant can feed, at the same time giving the soil a greater capacity for holding moisture and reducing the loss by evaporation.

Massey-Harris Co., Limited

Head Office: TORONTO, CANADA

CANADIAN BRANCHES AT: Montreal, Moncton, Winnipeg, Regina, Saskatoon, Swift Current, Yorkton, Calgary, Edmonton.

AGENCIES
EVERYWHERE

You Should Worry

About the **HIGH PRICE OF LEATHER**
When We Can Supply You With



SCANDINAVIA WEB TRACES

After five years of successful service these traces have passed the experimental stage. We place them on the market with the assurance of giving the public an article that has stood the test of time and come through with flying colors.

Wherever they have been tried, they have been accepted, and never yet have they made an enemy of their purchaser. Many contracting and lumber concerns have equipped their entire outfit with SCANDINAVIA WEB TRACES. As they are chemically treated to add strength, and at the same time

flexibility, they are the most desirable Trace to use, and they are immune to climatic conditions, such as heat, wind, rain, snow, ice or frost.

The breaking strain of the web has been placed at 5,010 lbs. We have designed and are making on our own premises a clip that has increased the pulling-out strain to 3,000 lbs. to each end, or the equivalent of 6 tons to a set of traces.

As 2 tons is considered a good load, this new clip leaves a reserve of 4 tons of pulling strength to each set of traces.

BEWARE OF IMITATIONS

OUR GUARANTEE

Each set of traces carries our guarantee of at least two years' service at the above pulling strain, and we guarantee to refund the purchase price or supply a new set of traces free if any defect is found.

These traces are made in 2 ply, 1 3/4 and 2 inches wide, and are made in Heel Chain end or Pinery Hook end styles. Double strength of leather. One-third cheaper in price.

Read what Mr. James Ludgate says of these traces:
"Having used the Scandinavia Traces in our lumber camps for the past three years, we have no hesitancy in highly recommending them. We have upward of fifty teams doing very heavy work, and have them all equipped with these traces. Our Foreman will use nothing else."

(Sgd.) JAMES LUDGATE, Manager
Schroeder Mills and Timber Co., Parry Sound.

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Manufactured by **THE ADAMS BROS.' HARNESS MANUFACTURING CO., Limited**

(FROM COAST TO COAST)

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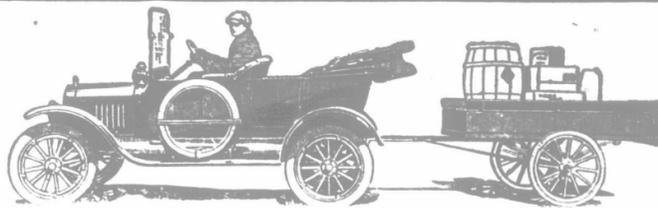
SYDNEY BASIC SLAG

Costs \$20 per Ton

COMPARE this with what you have been paying for fertilizers hitherto. Don't you want to get the best value for your money? Of course you do, and we ask you to buy one ton of SYDNEY BASIC SLAG this season and try it pound for pound against one ton of what you have previously been using. You are not making any experiment. We can give you the names of hundreds of the best farmers in Ontario who are now using BASIC SLAG, and who will tell you that it is the greatest value in fertilizer they ever got. It would be worth your while to call up one of these farmers on the telephone and get his opinion at first hand.

The Cross Fertilizer Co., Limited
Sydney, Nova Scotia

Haul With Gasoline



Cheaper than the Horses With the

YOU WANT to keep your hauling charges *down*—therefore you need the FOX TRAILER for economy in your business.



Motor car service for farmers, contractors, storekeepers or anybody who has light trucking or hauling to do is not complete without it.

Think of the big advantage it will give—the FOX TRAILER enables you to pull big loads, of from 1,500 to 1,800 lbs., quicker, cheaper and easier than you can do it with the horses.

And the cost of gasoline is only trifling compared with expensive horse-feed and stabling.

The FOX TRAILER hitched to your car does the work economically, because the *reserve* power which goes to waste in ordinary pleasure driving is utilized to pull the load.

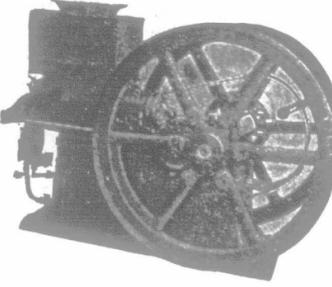
This TRAILER is superior to all others on the market to-day, because it is built for permanent use—with all-steel chassis, solid cushion rubber tires, guaranteed for 10,000 miles, and automobile wheels, interchangeable with Ford wheels.

The direct draw from TRAILER axle prevents all bumping or jarring, and gives the smooth, even pull found only with the FOX TRAILER.

Made in two sizes, with rack or closed body, as desired. *The prices are low.*

Ask your local automobile or implement dealer, or write for catalogue and full information at once to:

FOX BROTHERS & CO., LIMITED
WINDSOR, ONTARIO



This Willing Worker Solves the Help Problem

Let this hard-working engine do your pumping, sawing, grinding, fanning, cutting, cream separating, etc.

You can "multiply yourself" by turning over the bulk of your hard work to a

MONARCH FARM ENGINE

Made by specialists. Can be run at different speeds for different purposes. Simple in build—you will have no trouble in understanding it; no fuss or bother running it.

The "MONARCH" is a perfect, willing worker in winter or summer: saving with fuel; strong in every part; easy to move; starts at a touch; will give you longer, better service than any engine on the market. Hundreds of testimonials from pleased buyers. Sold cash or on terms. Write for free illustrated folder.

Canadian Engines Limited
Dunnville, Ontario

Columbia Batteries

From bells to blasting, and toys to tractors—the battery of day-in and day-out, all-the-time service is Columbia.

Canadian National Carbon Co., Limited
Toronto, Ontario

Fahnestock spring-clip binding posts, no extra charge.



No. 6 COLUMBIA IGNITOR DRY CELL

FOR GENERAL IGNITION CANADIAN NATIONAL CARBON CO.



IRON AGE GARDEN TOOLS

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

IRON AGE Combined Hill and Drill Seeder

solves the garden labor problem. Takes the place of many tools—stored in small space. Sows, covers, cultivates, weeds, ridges, etc., better than old-time tools. A woman, boy or girl can push it and do a day's hand-work in 60 minutes. 38 combinations. \$3.25 to \$15.00. Write for booklet.

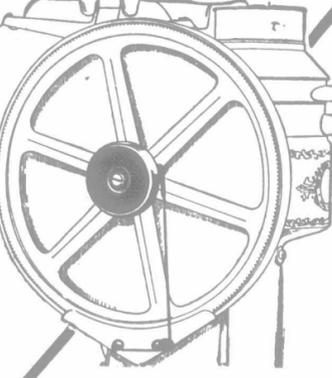
THE BATEMAN-WILKINSON CO., Ltd.
41 Symington Avenue, Toronto, Canada.



CHURCH BELLS CHIMES AND PEALS

MEMORIAL BELLS A SPECIALTY FULLY WARRANTED

McSHANE BELL FOUNDRY CO.
BALTIMORE, Md., U. S. A.
Chicago Office: 154 W. Randolph St.
Established 1854

This "Warning Signal"

Insures proper speed on every NEW De Laval Cream Separator

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

Other tests made by the highest authorities have shown conclusively that there is a big cream loss when the cream separator is not turned fast enough.

You will avoid such a possible cream loss if you buy the New De Laval. The Bell Speed Indicator on the New De Laval is a "warning signal" that insures proper speed at all times. No matter who runs your De Laval, this "warning signal" will tell you when the speed is not right. You hear it, and do not need to see it. This one feature alone may easily save you the cost of a cream separator in the next few months.

But that is only one of the big advantages of the New De Laval. Other advantages are greater capacity, closer skimming and easier turning, simpler bowl construction, and easier washing.

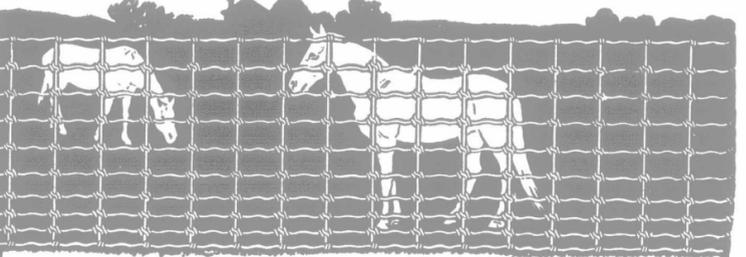
If you haven't the spare cash right now, that need not stand in the way of your getting a New De Laval right away. We have an arrangement with De Laval agents which makes it possible for any reputable farmer to secure a De Laval on the partial payment plan—a small payment at the time of purchase and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

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

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. Catalogues of any of our lines mailed upon request.

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



Fencing? Yes, but what kind?

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.

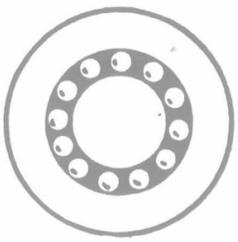
The heavy-weight among fences is the "Ideal"

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
Walkerville, Ontario, Canada. 22

MICA AXLE GREASE

Makes your wagon run as if it had ball bearings. It is the Mica that does it. Mica makes a smoother bearing surface and a longer wearing grease. Dealers everywhere.

THE IMPERIAL OIL COMPANY Limited.
BRANCHES THROUGHOUT CANADA

Make Money This Year From Your "Sugar Bush"

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

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

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

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

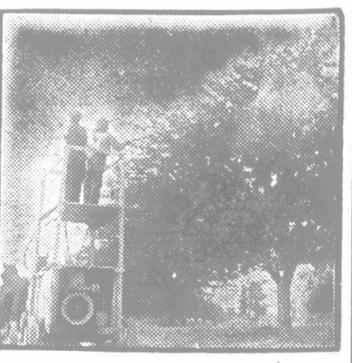
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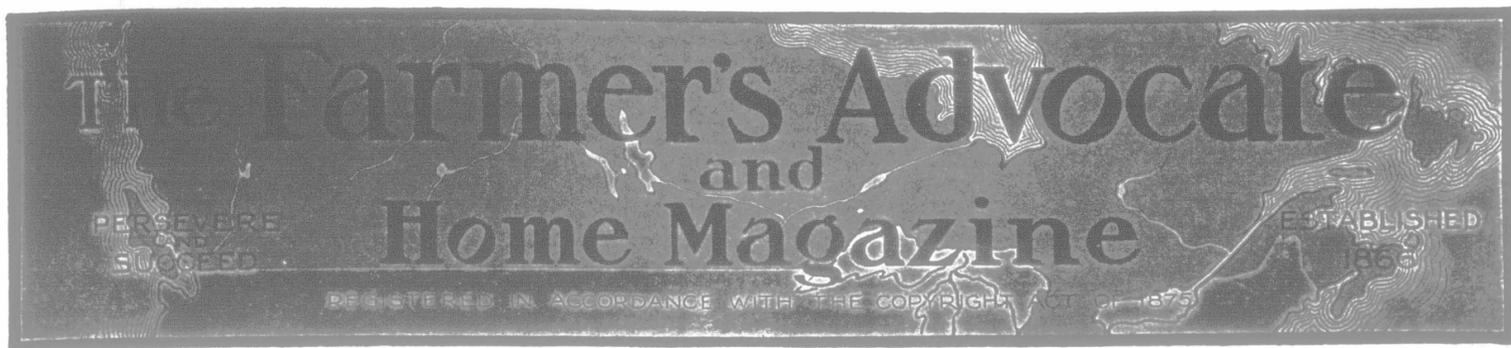
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EDITORIAL.

Harmony is essential to successful co-operation.

Secure the right foundation and then breed better stock.

Put the finishing touches on the horses being fitted for sale.

Good crops grow from the best of seed of the right varieties.

Summer workers, not summer boarders, is what the farmer will want this year.

The man who co-operates likes to see the business done on a straight business basis.

Most of those who can't fight can pay and they are doing admirably when called upon.

The Ontario Department of Agriculture will soon have a whole battalion of new officials.

What re-organization is necessary in an Empire solid and united as the British Empire is?

A big problem facing a great part of Canada is that of ensuring a permanent and satisfactory fuel supply.

The Provincial Government in Ontario is evidently working on the assumption that agriculture needs more hired help.

An author has said that "money is condensed pleasure, a dollar is fun seed". There is more than seed grain scarce in some parts of the country.

The Farmer's Advocate advised the early purchase or preparation of seed. Those who required potatoes and bought early are congratulating themselves.

Germany has decided that it is impossible to win the war by Zeppelin raids. The same disappointment will come to the Huns in their submarine campaign.

Good resolutions, the buying and planting of the seed will not ensure a good backyard garden. Some hoeing and weeding will be necessary next June and July.

Do not select occupations for the boys. Let them choose the work they like whether or not there is money in it, rather than make them do something they abhor even if there is wealth to be had from it.

When you pay out good money always make sure you get a good receipt. Several farmers in Western Ontario recently received worthless receipts for money which they paid to a man describing himself as representing this paper. Fortunately, the man was apprehended and these men will get their papers.

Everyone hopes for a big crop in 1917, but no one should blame the farmer if it is not as large as desired. Labor is scarce. Fall plowing, particularly in the West, was not all done. Good seed grain is scarce and high in price. Conditions are not the most favorable, but the farmer faces them with a determination to make the land produce abundantly.

The Reconstruction of The Ontario Department of Agriculture.

The great war has placed agriculture in a new light in the eyes of many Canadians. People are beginning to realize that there is some truth in the politicians' hackneyed phrases about the farmer being the "backbone" of the country and agriculture its "basic" industry. Governments are lining up to do greater things for the farmer and in their zeal they sometimes do things the wisdom of which is not plain to the man for whose benefit they are said to be intended. The Ontario Department of Agriculture is a case in point. Farmers said little when the late Hon. James Duff appointed a Deputy Minister and an Assistant Deputy Minister to succeed the late Dr. C. C. James as Deputy, because they realized that it was a difficult task to select one man who could handle satisfactorily all the work which Dr. James did so efficiently; but now that the Hon. Mr. Duff has passed and Ontario has a lawyer Minister of Agriculture, a Commissioner of Agriculture, an Assistant Commissioner of Agriculture, and two Deputy Ministers of Agriculture with equal rank, and with rumors of appointments of Superintendents of District Representatives, Corn Experts and various others, farmers are beginning to wonder which is in the most need of men, practical agriculture or official agriculture. It is very fine to be able to make the statement that the Prime Minister is Minister of Agriculture. If he were a practical farmer it would sound much better. Few would complain as it is if an outstanding man were appointed Deputy Minister and took over the work, but with two Deputies and two Commissioners, it looks to the average man as if someone had little confidence in someone else and the Minister was going to have two separate sets of advisors. If the Government, in its wisdom, has decided that in Ontario the Deputy Minister and Assistant Deputy should be called Commissioner of Agriculture and Assistant Commissioner well and good, but somehow people are wondering why it should be necessary to have three or four, or more, men to do the work formerly done by one man. Further, if there is work for a Commissioner then that should be his sole occupation. The President of the Ontario Agricultural College is an able man, an admirable head of a great Institution. He would, we believe, make a first-class Commissioner or Deputy Minister of Agriculture, whichever nomenclature sounds the better, but his task at Guelph is a big one and his task at Toronto should be, if it is not, of considerable magnitude. It is not fair to the College, to the Government, to agriculture or to Dr. Creelman to ask him to do two big jobs at once, and if the Commissionership is a big job requiring an assistant we fail to see where the two Deputies come in.

There are rumors that Agriculture is to get larger appropriations. Everyone hopes so, but few believe that it will require so many extra men to spend the money.

It is argued that the District Representative System requires a larger portion of the efforts of one of these men and we have heard that a Superintendent of Representatives is to be appointed in addition. We have only one answer—Too much central control has already injured the work. The right class of Representatives will do the right kind of work without too many strings attached from Toronto.

If Premier Hearst thinks it wise to retain the portfolio of Agriculture few would raise objection provided he would appoint Dr. Creelman as a permanent Commissioner, (practically Minister or Chief Advisor and Deputy). He surely would not need more than one assistant, if any. The present reorganization is the talk of Agricultural Ontario and the talk is not by any means all favorable. People are not complaining about the men appointed, but they are talking freely about their

numbers and are looking upon the whole thing as an indication of weakness on the part of some of the officials, when it requires four men to do one man's or at most two men's work. A little house-cleaning might be in order in 1917, and with it a little rearrangement of the expensive furniture of the front parlor of the Agricultural Department at Toronto.

You Owe Your Wife a Garden.

There will be more gardens in Canada in 1917 than for many years. Some of them will be good gardens, clean and profitable. Others will be failures, which will yours be? Every farmer should have a garden and a good garden. It cannot be made to yield as it should unless it is kept clean, and time should be allotted for this purpose. In many cases most of the vegetables for the table can be easily and successfully grown in the root field where they get the same horse cultivation as the field roots. Such a plan saves labor, and where the root field is not too far from the house is to be recommended especially in a year of great labor scarcity. A properly arranged and cultivated garden will yield more food and greater satisfaction than any other similar patch of land on the farm. Put on plenty of manure. Work in well. Plant virile seed. Cultivate frequently. Enjoy fresh vegetables. Live better and longer. Increase production. You are more entitled to a garden than is the city man. You owe your wife a garden.

Seed it Better.

If we mistake not a smaller acreage than usual will be put in to cereal grains and hoed crop in Canada this present year. Seed of first-class quality is scarce and the price is very high in some cases. Fall preparation, while well advanced in some parts of Ontario was held back in Western Canada and in parts of the Eastern Provinces. Labor will not be plentiful in any district. What does this mean? Just this—Every sower of seed should make that seed as pure and free from weed seeds as possible. It should be screened until nothing but plump, well-matured seed remains for sowing and it should be sown in well-prepared land and as early as that land is ready to work. Seed can be prepared now. Implements can be placed in order. Get the cultivator and harrow teeth sharpened. Put new shares on the gang plow. Repair the drill and disc ready for the field. Plan to do the work well and to use the best seed rather than to rush over a larger acreage with poor seed and worse cultivation.

Handclasp or Handcuff?

BY PETER MCARTHUR.

It is probably safe to say that the majority of the plain people are of the opinion that it will be time enough to discuss the re-organization of the Empire when the war has been won. To begin with, very few have given the subject a moment's thought or are aware that the Empire needs to be re-organized. The responses that the various Dominions have made to war needs are so far beyond what anyone—even the most ardent Imperialist—would have thought possible three years ago that we cannot be blamed if we think that the Empire is going on very well. Acting freely and spontaneously the Dominions overseas have already made tremendous sacrifices of blood and treasure and are willing to do still more if their own governments make the demand. Apparently this is not enough to satisfy our most eager loyalists. A manifesto issued by the Round Table clubs calls for an Imperial Conference of the political leaders of Great Britain and the Dominions to discuss plans for strengthening the bonds of Empire

The Farmer's Advocate AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN THE
DOMINION.

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and for future defence. As one enthusiast phrased it, "The silken cord that has bound us together must now give place to bonds of steel." Although the time does not seem opportune for raising this question it has been forced upon us by the men who desire the change and a public discussion is made necessary. Among the signers of the manifesto are men high in the councils of both political parties—even men whose party services have won them titles—so the question may be regarded as entirely non-partisan.

The purpose of the movement is to give Canada and the other Dominions a voice in the councils of the Empire. This sounds reasonable but it will not bear examination. It means that we shall have a voice in some central parliament or council and that in return we shall submit to its rulings and demands. Up to the present, matters affecting war and defence have been decided by the British Parliament and the Dominions have given voluntary support. At no time has this support been lacking and there is no reason to suppose that it would be lacking in the future. This arrangement has permitted the Dominions to develop as free nations within the Empire and as free nations they are now doing their part. If they were treated as subject nations and commanded to provide men and money it is doubtful if the Imperial fabric would have borne the strain. The present loose organization seems to be the one that best suits the genius of British people. We all have a spark of Hotspur's fire in us and you know what he said when doing some of the Imperial bargaining of his time.

"I'll give thrice so much land
To any well deserving friend;
But in the way of bargain, mark ye me,
I'll cavil on the ninth part of a hair."

What we have done in this war we have done in the way of love and duty and though it may not be as much as some would command us to do I am inclined to think that it is more than could have been secured from us by commands, even though backed by disciplinary force. If an attempt is made to reorganize the Empire we will weigh what we are giving and what we are getting and possibly we will cavil on the ninth part of a hair. Those who wish to reorganize the Empire seem to be making the same mistake that was made by the Kaiser. Because there was no comprehensive central authority with imperial machinery of government he thought that the Dominions would fall away in a time of danger. The opposite proved true. Natural affection and a sense of the responsibilities of a free people proved stronger and more compelling than any authority that could be devised by statesmen or rulers. The silken cord proved very strong. As a matter of

fact we have not even a silken cord. The true symbol is clasped hands—hands clasped in fealty and friendship across the seven seas. I fear it will be a sad day for the Empire if anyone manages to put bonds of steel on those clasped hands. We must not exchange the handclasp for the handcuffs. It is because I fervently wish to see the Empire continue to be united that I am alarmed at any suggestion of trying to bind it together. British people do not take kindly to bonds of any kind.

It is the proper and just desire of every true Canadian to develop a British nation in this new world. For fully seventy years we have been wisely permitted to work out our own problems. In the words of Edmund Burke we have been treated with "a wise and salutary neglect." During that time we have learned that we can produce all the authority we need for home consumption. We have no desire to import it and we have no desire to export it. In the present time of peril we have shown that we can produce men and money to an extent that would never have been dreamed of, or, if suggested, would never have been agreed to, had the proposed council been called before the outbreak of the war. Even those who favor universal service would have been too wise to arouse overwhelming opposition by suggesting that in any circumstances we would send so many men overseas or spend so much money on any war that might involve the Empire. And it is not certain that even the enthusiasm that now fires the people would induce them to pledge themselves to make equal sacrifices in future wars. They will deal with such problems as they arise. I am aware that some people assert that we are not doing our full share in defence of the Empire while others are willing to argue the matter. Nothing will be gained by debating this point. The real question is how to get the largest possible support in defence of the Empire and the lesson of the war has been that the daughter nations will do their best when left to act for themselves. Australia has already declined conscription and, if put to the test, Canada would do the same. The logical inference is that if you cannot conscript individual citizens you cannot conscript the nations of which they are a part. In any case the members of the Round Table are making a mistake in their method of approaching the subject. They should present to the people of Canada a completely formulated scheme for re-organizing the Empire—and it would need to be more convincing than the schemes proposed by Mr. Lionel Curtis and Mr. Zebulun Lash. If they managed to get it endorsed by the people of Canada it would then be time enough to present it for the endorsement of the rest of the Empire. The democracies that make up the British Empire will not be likely to leave so comprehensive a plan as must be devised to their politicians or statesmen. The people as a whole must have their say about it. Although the gentlemen who have issued the manifesto are mostly men of good repute and known public spirit it will take much to convince the plain people that they will get a square deal from a Round Table.

Nature's Diary.

BY A. B. KLUGH, M. A.

In considering the instincts of birds, one of the most interesting phases is that of the songs of the various species. Many interesting experiments have been carried out on young birds to show the types of song and call-notes which they exhibit when reared in isolation from adults of their own species, and to show the effects of the song and call-notes of a given species upon the young of another species. Until recent years it was supposed that the characteristic songs of birds were instinctive, and were inherited and not learned. Recent work, particularly that of Scott and Conradi, shows that birds inherit a tendency to sing, but that no characteristic song develops without training.

Scott isolated young Baltimore Orioles before they had heard the song of their species. He observed them for a number of years, and found that they developed the call-note, and that they became good and incessant singers. Of the song which these Orioles sang Scott says, "It was a loud clear series of notes of great brilliancy, poured forth in such rapid succession as to be like the song of the House Wren. Except for the rattle, which was now and then part of the repertoire, this song had nothing in it that reminded one of the song of the Baltimore Oriole." In this case we see that the birds reared in isolation developed a song of their own. He next put a brood of Baltimore Orioles six days of age to live with two adult birds which had been brought up in isolation. These young birds began to sing at the proper age, but sang the song of their two adult associates. This same author found very great modification in the songs of various species of birds when some fifteen species were brought up together. The Robin developed a different song from that of its species. The Wood Thrushes song varied much from the normal. One of the Red-winged Blackbirds learned to crow in imitation of a bantam rooster. All the Catbirds showed a tendency to mimic the songs of other birds.

Conradi reared a young House Sparrow in the same room with canaries. The regular sparrow chirp developed at the proper time, but soon changed to a peep similar to that of the young canaries. When this bird was about three and a half months old he chimed in constantly with the canaries in his own fashion, giving a low note followed by a few high notes, with now and then some slurring notes from a high to a low note, similar to the notes canaries have in their overtures. He joined the canaries freely for a few days, when he became ill and was silent for a week. On recovering he again joined

the canary chorus. In general the sparrow's efforts resembled the confusion of notes which occurred when all three of the adult canaries were singing at their best. These experiments were repeated upon other sparrows, in some cases with even more marked success. The sparrows so trained by the canaries were then removed to a place where they would be away from the canaries and under the influence of a group of house sparrows which frequented that part of the building. They rapidly lost their canary notes and readopted a considerable portion of the sparrow chirp. Nevertheless, their voices remained more musical than those of the untrained sparrows, and when they were once again placed with the canaries they rapidly regained what they had lost.

Another very interesting instinct exhibited by birds is the chipping of the shell by the young bird at the time of emergence from the egg. This is of course purely an instinctive act, since it is performed but once in the life of the individual, and no form of training comes into play. The manner in which this act is performed is as follows. The young bird chips the shell a little at a time with its bill, and as it does so turns around inside the egg shell, the axis of its rotation being exactly that of the long axis of the egg. The consequence of this turning is that the tip of the bill, chipping the shell as it goes, describes a very exact circle around the end of the egg, and thus the large end of the egg is cut off. The time which it takes to finish the cutting is very variable. When the opening has been extended nearly or quite around the egg the young bird pushes and separates the two sections of the shell, tearing in two any shreds of membrane which may have been holding them together.

Eating and drinking, in the case of young birds, are partially instinctive. The fact of pecking, which leads to the accomplishment of these actions is instinctive, though even the calling forth of the pecking instinct is hastened by a stimulus, such as the pecking of the mother, or the imitation of this action by the human finger. The food particles and water are found at first accidentally by random pecking.

There are many interesting phases of bird psychology, aside from these with which I have dealt some of which have been worked out, and many of which remain to be investigated. It has been found, for instance, that there is a great difference in the intelligence of different species. Certain species we know adapt themselves readily to the changed conditions which the coming of man brings about, while others, less adaptive, vanish from cultivated areas.

(To be Continued.)

THE HORSE.

The Blue Blood of the Shire

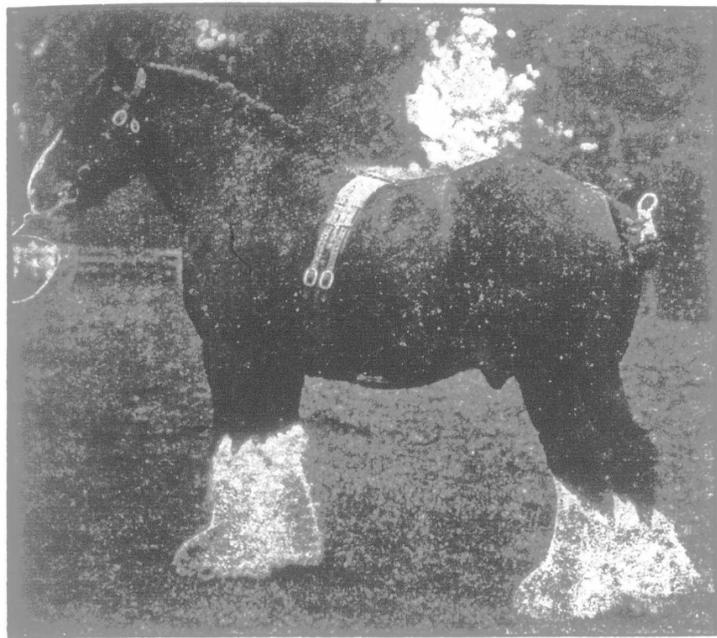
As Evidenced by The London Shire Show.

Five hundred entries were secured for the London Shire Show which was held at the end of February. This speaks highly of the vitality of Britain's heavy horse; the breed which has enabled the small farmer to climb to higher things. The Shire horse, as he is called to-day, was the Cart Horse of the early "Eighties", and he had no Society to govern him until the late Sir Walter Gilbey took up the formation of a Stud Book. The first show of the Cart Horse Society was held in the Agricultural Hall in March of 1880, and, according to an article G. M. Sexton of Ipswich wrote, the inauguration of that show marked an important era in the history of the old Shire-bred English cart horse, for contemporaneously with it was published the first volume of the Stud Book. Previous to this time, except in a few special localities and among a limited number of men, the English cart horse was considered to be a nondescript animal, having not the least claim to purity of lineage, but one that might be obtained from the mixture of any kind of blood.

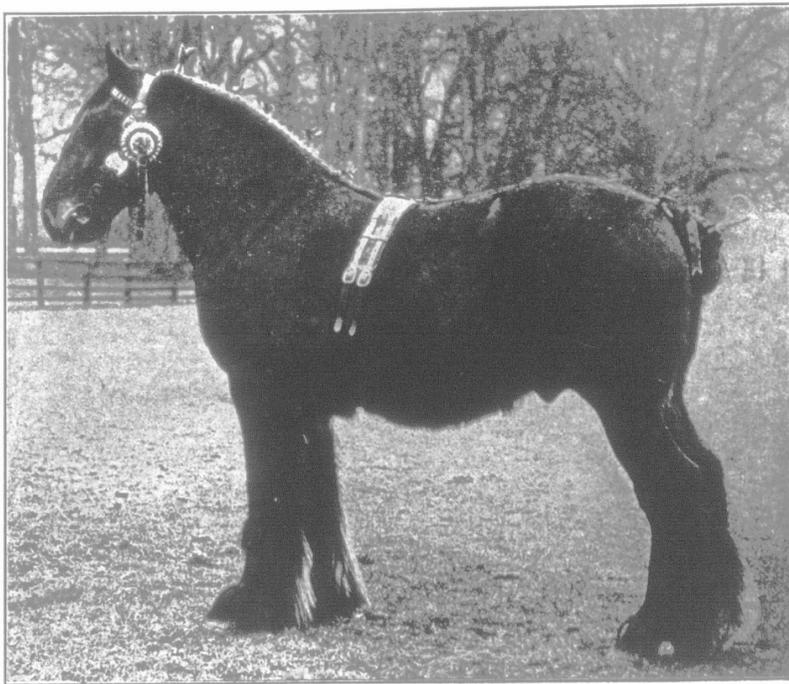
The holding of that show and the issue of the initial volume of the Stud Book combined, however, in giving the Shire-bred horses a real foundation. Yet the first exhibition was a kind of speculation, for Mr. Raffety, who held a long lease upon the Agricultural Hall, undertook the event as a speculation in providing funds to constitute a prize list of £455 15s., including a fifty-guinea cup for the best stallion and a twenty-five guinea cup for the best mare in the show. Although the show was a success, the receipts did not recompense Mr. Raffety, who was a decided loser over this first venture.

In Senior Stallions the £40 first prize fell to the Stand Stud Company's Champion, a chestnut, bred in Rutlandshire, and a big winner at the Royal and other county shows. Up to this he had won £1,300 in prizes, and Mr. Sexton, in his criticism of him, called him a real shaft horse, a tower of strength, with activity and a marvellous constitution. The second horse, Lord Hasting's Samson II, (a purchase from the Earl of Ellesmere), was a long, low horse, with bone and hair, of the Isle-of-Ely type. His trotting action was "something extraordinary." In four-year-old stallions the first prize and the champion cup fell to the Earl of Ellesmere's Admiral, a son of Honest Tom, bred by J. Milner, in Kirkham. Of good outline, limbs, and feather, he stood, perhaps, a little too high from the ground. W. H. Wright's Rutland Champion won in three-year-old stallions, perhaps a little too high and narrow, to quote Mr. Sexton. The Earl of Ellesmere's Worsley Wonder won in the two-year-old stallions, and Honest Tom's blood was noticeable here on the dam's side. In yearling stallions Charles Marster's Coming Wonder was at the head of affairs. A well-grown colt,

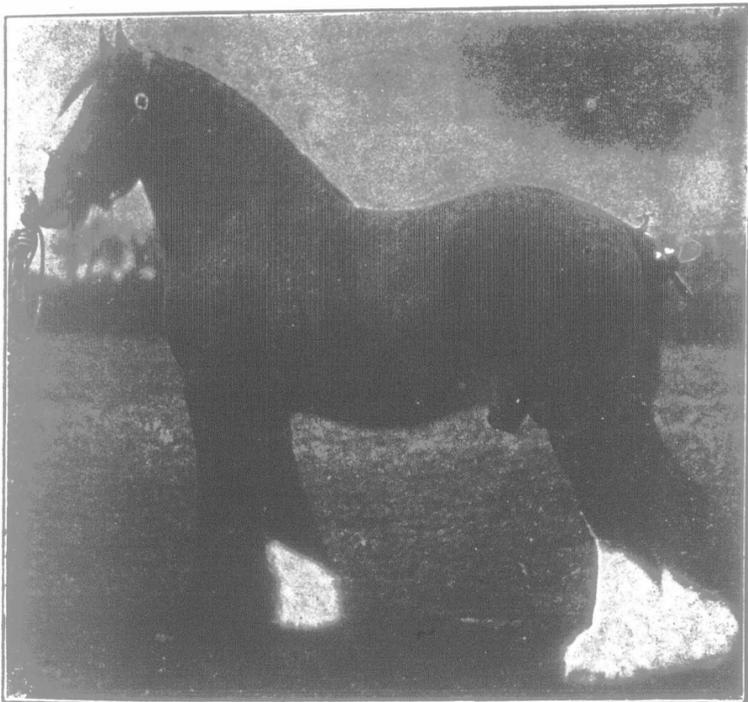
Some of the Blue Blood of the Shire Breed.



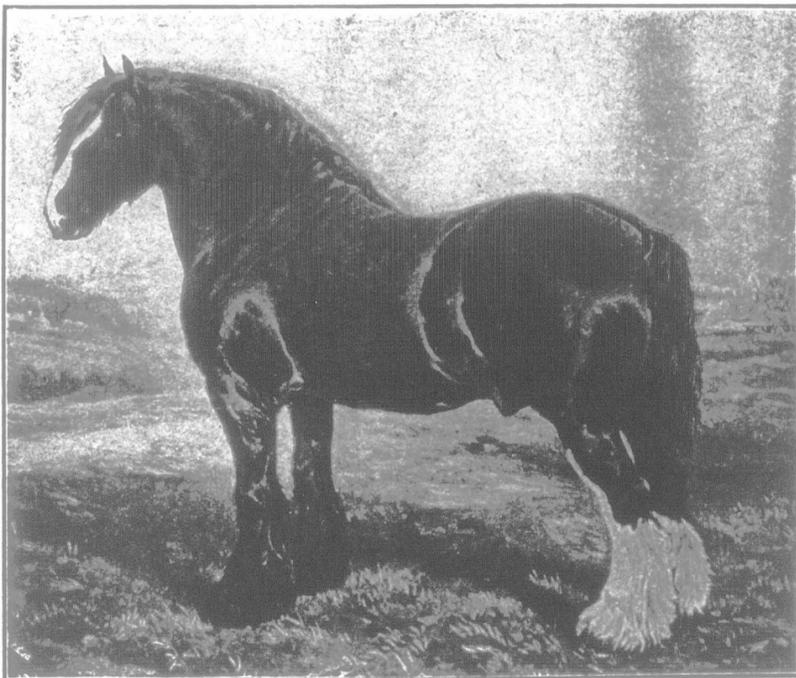
Longforth King Cole.



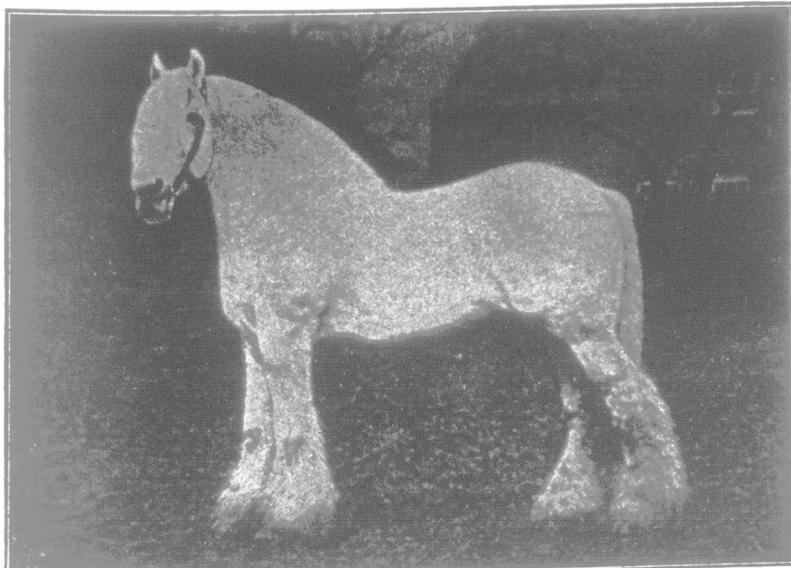
Champion's Goalkeeper.



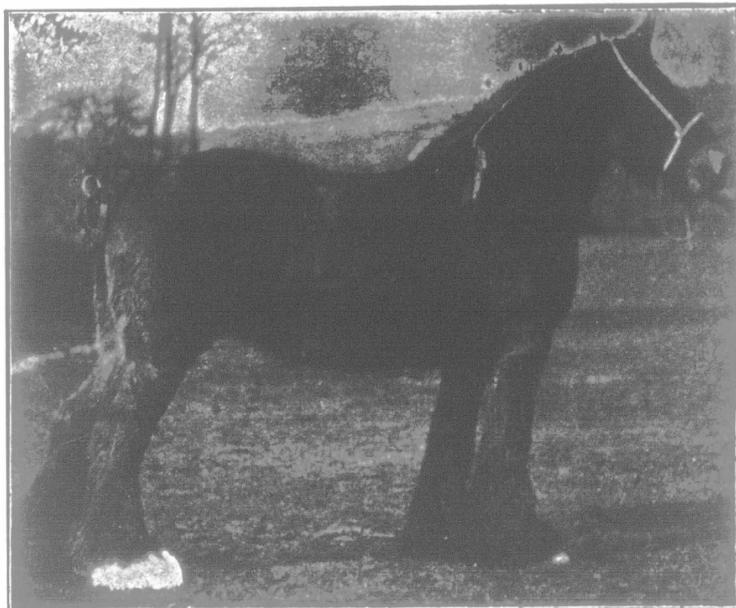
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Harold (3703).



Lincolnshire Lad II. (1365).



Lorna Doone.

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wn colt,

with an abundance of feather, he was bred at the Moors, Welshpool.

The champion mare was a black six-year-old, Topsy, exhibited by L. Drew, of Hamilton, Scotland, but bred in Derbyshire. Capital feet, pasterns, and legs were her most noticeable points. The show was a triumph for Honest Tom, who was represented by eight sons and daughters, was the sire of the champion stallion, also two second prize winners, one third, and one reserve, while his daughters' progeny received one second prize, two thirds, and a reserve. Other stallions whose stock got into the money were England's Wonder, Crown Prince, Champion, Samson, William the Conqueror, Robin Hood, British Wonder, and Hydraulic.

At the second Cart Horse Show, in 1881, there were thirty-six more entries than in 1880, and again the present King and Queen honored the exhibition with their presence. Mr. Frederick Street's Beauchief, bred in Hants, won the senior stallion class on this occasion, and H. R. Hart's Samson IV, bred by the Earl of Ellesmere, that for four-year-olds. The champion cup went to Wm. Richford's own-bred three-year-old black, Spark, which Sir Walter Gilbey bought on the last day of the show, at Mr. Sexton's auction for 800 gs. With immense substance, he had the best of joints and feet, and was noticeable for his bone and feather. Yearling stallions were topped by Eclipse, a brown, bred by W. H. Potter in Leicester, a fine mover, by the late Mr. James Forshaw's What's Wanted. The champion cup in mares went to Black Diamond, a black exhibited by Lord Ellesmere, but bred in Bucks. This mare was as near perfection as possible, an extraordinary mover, with a grand top, and possessing excellent feet and feather.

Next year (1882) the leading senior stallion was Jas. Forshaw's Bar None. Sir William Wallace's Emperor II won in the class for stallions under 16h. 2in., and he is described as "once a Clydesdale and twice a Shire-bred horse." Sir Walter Gilbey's Spark won in four-year-olds, and Lord Ellesmere's Eclipse in two-year-olds, signs certain that their owners were justified in buying them a year previously.

In 1883 Sir Walter Gilbey's Spark, who cost him 800 guineas, won the supreme stallion championship, and this horse became one of the real foundation stones of the Stud Book. His services were in great request, and as many as seventeen mares visited him some days. The champion mare was the Hon. Edward Coke's Chance, who was only three years old at the time. Mr. Coke again won the mare championship with Czarina in 1884 and she too was a three-year-old. The best stallion that year was the Cannock Agricultural Company's Enterprise of Cannock. Chance was again the champion mare in 1885, and so Mr. Coke won the mare title three years in succession, a record that was held by him until 1916, when Lorna Doone won the title for the third time running for Messrs. W. and H. Whitley, the Devonshire breeders.

In 1885, however, the champion stallion was the two-year-old Prince William, exhibited by John Rowell and that was the youngest stallion up to then to take the London title. Sir Walter Gilbey won the honor again in 1886 with Staunton Hero.

The mighty Harold, the real "father" of the Shire breed won the stallion honor in 1887 for A. C. Duncombe, who had paid 550 gs. for him as a youngster, and a real bargain he proved. All the best Shires of to-day go back to the Harold line, just as all the leading race-horses in Britain go back to the unbeaten Eclipse.

In 1888 another great sire topped the list, and this was Lord Wantage's Prince William, but the mares winning around this period were not great shakes. In 1890, however, two fine animals were best of their sexes, in the late Lord Redesdale's Hitchin Conqueror and R. N. Sutton-Nelthorpe's Starlight.

It was now about that the Shire began to make history, and high prices became the rule. In these days the older stallions were taken first, and class 1 furnished the champion in Hitchin Conqueror, sire of two colts which averaged £1,000 each during the same year, viz., Mars Victor, 1,500 gs., and Coeur de Lion, 500 gs.

In 1891 Lord Ellesmere's Vulcan, champion stallion of 1889, was again present, and repeated his victory, while Starlight was champion mare. In 1890 her exhibitor was R. N. Sutton-Nelthorpe, but in January, 1891, she was sold at the great Scawby sale for 925 gs. to the late Mr. Crisp. A rising young horse, Bury Victor Chief, not only won his class prize (two-year-olds), but also the junior cup, and it is worth mentioning that three of the four cup winners at the show were black, the true color of the old English cart horse. It was during the year of 1891 that Joseph Wainwright gave John Rowell 2,500 gs. for the two-year-old Bury Victor Chief; therefore at the 1892 show great things were expected of him, and he won the Elsenham Challenge Cup for championship quite easily. Mars Victor, the high-priced son of Hitchin Conqueror and Lockington Beauty, headed the four-year-old class, his runner-up being one of the low-grown massive order, Carbonite by Carbon, which E. Green sold to the late Lord Rothschild for 1,100 gs. at the show, and from thence his lordship became a highly successful exhibitor of Shires at the London shows.

The year of 1893 was a memorable one, for the reason that a yearling, Lord Belper's Rokeby Harold by Harold, won the championship. His massive limbs, masculine character, and gay carriage at that age struck such judges as the late G. M. Sexton as being above anything hitherto seen. The champion mare was the late John Parnell's grey Rokeby Fuchsia. At the 1894 show two former champions were in evidence, viz., Bury Victor Chief and Rokeby Harold, and the former was awarded highest honors for the second time, while

Fuchsia repeated her victory of 1893. The next year, 1895, saw Rokeby Harold again to the front with the twelve-year-old Vulcan as reserve champion. This year the mare championship went to Lord Redesdale's own bred and beautiful Minnehaha (by Laughing Stock), who died shortly after she got home again. At this show gelding classes were reintroduced after having been omitted for some time, it being recognized that the breeding of weighty town geldings was "the backbone" of the Shire-breeding industry, and it is true to this day that a useful gelding is much more salable and profitable altogether than a common stallion.

At the 1896 gathering, Rokeby Harold made a capital show and won the champion cup for Lord Belper for the third time, his age being now four years. The mare championship this year was a surprise, the honor going to Catthorpe Naxos, a four-year-old exhibited by the late J. P. Cross.

At the eighteenth show (1897) Sir Alexander Henderson took the coveted cup for stallions with Markeaton Royal Harold, now four years old, he having won first as a two-year-old and third as a three-year-old in London. Mr. Grandage's champion mare, Queen of the Shire, was by Harold, so that he had the honor of siring both champions. The stallion had a son present, Buscot Harold, which stood fourth in the yearling class, and at the 1898 show he had developed in such a manner that he won the male championship (as a two-year-old), his reserve being his sire, Markeaton Royal Harold, who took the older stallion cup, while his dam, Aurea, won the challenge cup for mares, at the same show, this being a record performance for one family, and they were all owned by Sir Alexander Henderson. This was not all, as he also secured the filly cup with Lockinge Lioret, a Prince William filly of the late Lord Wantage's breeding. This series of triumphs stamped the 1898 show as a note-worthy one, and proved the truth of the remark that "like begets like", and this year the classes commenced with yearling stallions, and this order is still maintained, which is less confusing than the practice of putting aged stallions and mares before young animals in the catalogue.

In 1899 London show, Buscot Harold again came off victorious, the mare championship going to the late Sir J. Blundell Maple's Dunsmore Gloaming, also by Harold. This mare has the unique distinction of having been twice sold by auction at Dunsmore, the first time for 1,010 gs. and the second for 780 gs. Among the stallions, Buscot Harold encountered Blaisdon Conqueror, a strong candidate, while Rolleston Fuchsia was the cup-winning filly at a very good show for all-round merit. The next year (1900) the champions of the previous year, Buscot Harold and Dunsmore Gloaming, simply repeated their performances.

At the 1901 show, some tenant-farmer exhibitors, Messrs. J. and M. Walwyn, made their first entry at a London show. This was an own-bred and very smart two-year-old colt, Bearwardcote Blaze by Calwich Blaze, and he did what many exhibitors cannot do in a lifetime, viz., secured champion honors at a show where 667 entries were made. He was sold there to go to the famous Worsley stud of Lord Ellesmere.

Forshaw & Sons won the male championship in 1902 and 1903 with Stroxtan Tom, and Lord Rothschild got his first foot in in the male titles with successive wins scored by Birdshall Menestrel and Girton Charmer. Hereabouts, the Rothschild stable had a big run in championships, securing full honors with Tatton Dray King, Halstead Royal Duke, and Blaisdon Jupiter (in stallions) and with Solace, Princess Beryl, Belle Cole and Chiltern Maid (in mares). Sir Walpole Greenwell, with his 4,100-guinea purchase, Champion's Goalkeeper, and his fine young mare Dunsmore Chessie, also secured four championships for the one stable, and victories by Gaer Conqueror and Lorna Doone just about fill the years of history that intervene since 1901, when the tenant-farmers sprang that surprise upon London with their unknown colt and won.

It is the tenant farmers who breed the promising young stock and sell them to the rich man. It is the latter who wins the supreme titles with them in London. The Rothschilds never gave less than 500 dollars to any farmer who offered them back a colt by one of their stallions. The show this year will have a full display of colts and fillies bred on the small farm by the "little" farmer. These will be sold and passed on to the big studs, and so is money circulated and interest in the breed well sustained.

ALBION.

LIVE STOCK.

An English Hereford Cattle Publicity Campaign.

EDITOR "THE FARMER'S ADVOCATE":

The result of the visit of W. G. C. Britten, Secretary of the English Hereford Cattle Society, to the United States and the outcome of what he saw over there is a publicity campaign in the native Shire of the Hereford. Captain R. T. Hinckes, a noted present-day breeder of the "White Face" has been the first to initiate a pleasant little heart-to-heart talk among farmers in his home district. He called together all the farmers of the locality, entertained them to a little dinner at "The Feathers," and asked them to listen to what Mr. Britten had to say of his travels in U. S. A.

The Secretary of the Society urged the present-time breeders of Herefords to put new life into their business, and display more keenness and enthusiasm as he was convinced that there was going to be a great demand for the breed from all parts of the world. Un-

fortunately, of late years a number of old and important breeders have given up the game, and it was imperative that new men should come along to take their places. He dwelt on the enterprise of the American breeders; the majority of whom he said went wholeheartedly into cattle raising for beef qualities, and were not contented unless they were producing something better than had been seen before. Americans, by a methodical system of line breeding, had certainly brought their herds to an extraordinary pitch of perfection, uniformity and true-to-type stamp. The lack of these points was the chief complaint that he had to make about English herds to-day, for Britishers have commenced to treat breeding as of secondary importance instead of primary importance.

At a council meeting of the Hereford Herd Book Society, Mr. Britten repeated many of these statements and indeed he went further and accused British breeders of haphazard breeding, with the result that the type of cattle was not fixed, and consequently it became something of a gamble what stock a bull would produce. Under the American system it was almost a certainty that if a man bought a good stock bull, the animal would produce at least seventy or eighty per cent. cattle of a similar type to himself. He was struck with the amount of natural flesh carried by the breeding cows in U. S. The Secretary's words astonished his hearers, but the Society will rise to the occasion. It has just invested £4,300 in the new War Loan; this will bring in £215 a year income, and that should provide prize money for the small shows where Mr. Britten advised the Society to spend some money in encouraging the smaller breeders.

ALBION.

Age as a Factor in Swine Breeding.

Before the Missouri Swine Breeders on January 6, Dean F. B. Mumford of Missouri College of Agriculture, gave a paper on age as a factor in the breeding of swine. This is of interest to any farmer whether he be engaged extensively or only modestly in the raising of hogs at this time. The address is reproduced in the following paragraphs:

The breeding powers of domestic animals are but imperfectly developed at birth. As the animal grows and the various organs increase in size, the several functions of the body become more clearly differentiated. At a certain stage in this process of development and growth, the domestic animal arrives at the period of puberty, which marks the beginning of the time when the young animal is capable of producing young. In practice, animals are seldom used for breeding purposes at the beginning of the period of puberty.

Very young animals are not bred, even though capable of producing young, because the breeders of live stock know that under certain conditions bad results are almost sure to follow. Breeders quite generally believe that the practice of mating very young females results in checking the growth of the mother, and in some cases the effect may be so marked as to permanently reduce the size of the mature animal. It is also believed by some breeders that the offspring of very young parents are less thrifty, smaller, and in general less valuable for breeding purposes than the offspring of more mature parents. But the most serious result claimed has been that the continued breeding of very young parents will ultimately result in decreasing the size of the breed. This result could not follow unless the hereditary qualities of the breeding animals themselves are influenced by this practice. It must be admitted that if any of these results do follow the mating of immature animals the question becomes immediately a matter of great practical importance.

At the Missouri Experiment Station for the past six years an experiment has been conducted for the purpose of determining the results of breeding very young females for several generations. To determine just what temporary or permanent effects, if any, follow this practice, the Experiment Station has bred one group of sows and their offspring, at the first appearance of heat, and this practice has been continued through many generations. Another group of sows has been bred, first, when half mature, and still another group at full maturity.

The most significant effect that can be measured is the dwarfing effect which early pregnancy and lactation has upon the mother herself. The young sow that is bred to farrow at eight or nine months of age stops growing for a time. If she is well fed, and bred only once a year thereafter, she may practically recover from the dwarfing effects of early gestation. If the sow is not generously fed, or if she is bred twice a year, even with the best of feeding, she is permanently affected and will be smaller at maturity than other sows bred at an age when the body is better developed. This result on the mother is not a serious matter if she is well fed throughout her life.

It is a popular opinion that gestation is a serious drain on the physiological system of the pregnant mother. It has been generally taught that a sow in pig must not only maintain her bodily functions and provide for normal growth, but must furnish the nutritive material essential for the development of the unborn young in the uterus.

The investigations at the Missouri Station indicate that pregnancy is not an exhaustive period. The young pregnant mother will grow normally without great additional increase in the food supply. Indeed, there is a suggestion in the results so far obtained that pregnancy may actually increase the nutritive efficiency of the mother during gestation to such an extent that growth actually proceeds more rapidly.

How does it happen, then, that breeding immature

GESTATION TABLE.

DIRECTIONS FOR USE OF TABLES.—Find the date of service in the first column; then, on the same horizontal line, and under the heading of "mare," "cow," "sow," or "ewe," whichever it may be, write the name or number of the animal. The date next to this is the date of the expected birth.

JAN.					MAY					SEPT.				
MARE	MARE	COW	SOW	EWE	MARE	MARE	COW	SOW	EWE	MARE	MARE	COW	SOW	EWE
Dec.	Jan.	Oct.	April	May	April	May	Feb.	Aug.	Sept.	Aug.	Sept.	June	Dec.	Jan.
1	2	8	22	27	1	2	6	21	25	1	3	9	22	26
2	3	9	23	28	2	3	7	22	26	2	4	10	23	27
3	4	10	24	29	3	4	8	23	27	3	5	11	24	28
4	5	11	25	30	4	5	9	24	28	4	6	12	25	29
5	6	12	26	31	5	6	10	25	29	5	7	13	26	30
6	7	13	27	June 1	6	7	11	26	30	6	8	14	27	31
7	8	14	28	June 2	7	8	12	27	Oct. 1	7	9	15	28	Feb. 1
8	9	15	29	3	8	9	13	28	2	8	10	16	29	2
9	10	16	30	4	9	10	14	29	3	9	11	17	30	3
10	11	17	May 1	5	10	11	15	30	4	10	12	18	31	4
11	12	18	2	6	11	12	16	31	5	11	13	19	Jan. 1	5
12	13	19	3	7	12	13	17	Sept. 1	6	12	14	20	2	6
13	14	20	4	8	13	14	18	2	7	13	15	21	3	7
14	15	21	5	9	14	15	19	3	8	14	16	22	4	8
15	16	22	6	10	15	16	20	4	9	15	17	23	5	9
16	17	23	7	11	16	17	21	5	10	16	18	24	6	10
17	18	24	8	12	17	18	22	6	11	17	19	25	7	11
18	19	25	9	13	18	19	23	7	12	18	20	26	8	12
19	20	26	10	14	19	20	24	8	13	19	21	27	9	13
20	21	27	11	15	20	21	25	9	14	20	22	28	10	14
21	22	28	12	16	21	22	26	10	15	21	23	29	11	15
22	23	29	13	17	22	23	27	11	16	22	24	30	12	16
23	24	30	14	18	23	24	28	12	17	23	25	July 1	13	17
24	25	31	15	19	24	25	Mar. 1	13	18	24	26	2	14	18
25	26	Nov. 1	16	20	25	26	2	14	19	25	27	3	15	19
26	27	2	17	21	26	27	3	15	20	26	28	4	16	20
27	28	3	18	22	27	28	4	16	21	27	29	5	17	21
28	29	4	19	23	28	29	5	17	22	28	30	6	18	22
29	30	5	20	24	29	30	6	18	23	29	31	7	19	23
30	31	6	21	25	30	May 1	7	19	24	30	Sept. 1	8	20	24
31	Jan. 1	7	22	26	31	2	8	20	25					

FEB.					JUNE					OCT.				
MARE	MARE	COW	SOW	EWE	MARE	MARE	COW	SOW	EWE	MARE	MARE	COW	SOW	EWE
Jan.	Feb.	Nov.	May	June	May	June	March	Sept.	Oct.	Sept.	Oct.	July	Jan.	Feb.
1	2	8	23	27	1	3	9	21	26	1	2	9	21	25
2	3	9	24	28	2	4	10	22	27	2	3	10	22	26
3	4	10	25	29	3	5	11	23	28	3	4	11	23	27
4	5	11	26	30	4	6	12	24	29	4	5	12	24	28
5	6	12	27	July 1	5	7	13	25	30	5	6	13	25	29
6	7	13	28	2	6	8	14	26	31	6	7	14	26	30
7	8	14	29	3	7	9	15	27	Nov. 1	7	8	15	27	31
8	9	15	30	4	8	10	16	28	2	8	9	16	28	4
9	10	16	31	5	9	11	17	29	3	9	10	17	29	5
10	11	17	June 1	6	10	12	18	30	4	10	11	18	30	6
11	12	18	2	7	11	13	19	Oct. 1	5	11	12	19	31	7
12	13	19	3	8	12	14	20	2	6	12	13	20	Feb. 1	8
13	14	20	4	9	13	15	21	3	7	13	14	21	3	9
14	15	21	5	10	14	16	22	4	8	14	15	22	4	10
15	16	22	6	11	15	17	23	5	9	15	16	23	5	11
16	17	23	7	12	16	18	24	6	10	16	17	24	6	12
17	18	24	8	13	17	19	25	7	11	17	18	25	7	13
18	19	25	9	14	18	20	26	8	12	18	19	26	8	14
19	20	26	10	15	19	21	27	9	13	19	20	27	9	15
20	21	27	11	16	20	22	28	10	14	20	21	28	10	16
21	22	28	12	17	21	23	29	11	15	21	22	29	11	17
22	23	29	13	18	22	24	30	12	16	22	23	30	12	18
23	24	30	14	19	23	25	31	13	17	23	24	Aug. 1	13	19
24	25	Dec. 1	15	20	24	26	April 1	14	18	24	25	2	14	20
25	26	2	16	21	25	27	2	15	19	25	26	3	15	21
26	27	3	17	22	26	28	3	16	20	26	27	4	16	22
27	28	4	18	23	27	29	4	17	21	27	28	5	17	23
28	29	5	19	24	28	30	5	18	22	28	29	6	18	24
29	30	6	20	25	29	31	6	19	23	29	30	7	19	25
30	31	7	21	26	30	June 1	7	20	24	30	Oct. 1	8	20	26
31		8	22	27						31	2			27

MAR.					JULY					NOV.				
MARE	MARE	COW	SOW	EWE	MARE	MARE	COW	SOW	EWE	MARE	MARE	COW	SOW	EWE
Jan.	Feb.	Dec.	June	July	June	July	April	Oct.	Nov.	Oct.	Nov.	Aug.	Feb.	March
1	31	7	21	26	1	2	8	21	25	1	3	9	21	28
2	Feb. 1	8	22	27	2	3	9	22	26	2	4	10	22	29
3	2	9	23	28	3	4	10	23	27	3	5	11	23	30
4	3	10	24	29	4	5	11	24	28	4	6	12	24	31
5	4	11	25	30	5	6	12	25	29	5	7	13	25	April 1
6	5	12	26	31	6	7	13	26	30	6	8	14	26	2
7	6	13	27	Aug. 1	7	8	14	27	Dec. 1	7	9	15	27	3
8	7	14	28	2	8	9	15	28	2	8	10	16	28	4
9	8	15	29	3	9	10	16	29	3	9	11	17	29	5
10	9	16	30	4	10	11	17	30	4	10	12	18	30	6
11	10	17	July 1	5	11	12	18	31	5	11	13	19	31	7
12	11	18	2	6	12	13	19	Nov. 1	6	12	14	20	2	8
13	12	19	3	7	13	14	20	2	7	13	15	21	3	9
14	13	20	4	8	14	15	21	3	8	14	16	22	4	10
15	14	21	5	9	15	16	22	4	9	15	17	23	5	11
16	15	22	6	10	16	17	23	5	10	16	18	24	6	12
17	16	23	7	11	17	18	24	6	11	17	19	25	7	13
18	17	24	8	12	18	19	25	7	12	18	20	26	8	14
19	18	25	9	13	19	20	26	8	13	19	21	27	9	15
20	19	26	10	14	20	21	27	9	14	20	22	28	10	16
21	20	27	11	15	21	22	28	10	15	21	23	29	11	17
22	21	28	12	16	22	23	29	11	16	22	24	30	12	18
23	22	29	13	17	23	24	30	12	17	23	25	31	13	19
24	23	30	14	18	24	25	May 1	13	18	24	26	2	14	20
25	24	31	15	19	25	26	2	14	19	25	27	3	15	21
26	25	Jan. 1	16	20	26	27	3	15	20	26	28	4	16	22
27	26	2	17	21	27	28	4	16	21	27	29	5	17	23
28	27	3	18	22	28	29	5	17	22	28	30	6	18	24
29	28	4	19	23	29	30	6	18	23	29	31	7	19	25
30	Mar. 1	5	20	24	30	July 1	7	19	24	30	Nov. 1	8	20	26
31	2	6	21	25	31	2	8	20	25					

APRIL					AUG.					DEC.				
MARE	MARE	COW	SOW	EWE	MARE	MARE	COW	SOW	EWE	MARE	MARE	COW	SOW	EWE
March	April	Jan.	July	Aug.	July	Aug.	May	Nov.	Dec.	Nov.	Dec.	Sept.	March	April
1	3	7	22	26	1	3	9	21	26	1	3	9	21	27
2	4	8	23	27	2	4	10	22	27	2	4	10	22	28
3	5	9	24	28	3	5	11	23	28	3	5	11	23	29
4	6	10	25	29	4	6	12	24	29	4	6	12	24	30
5	7	11	26	30	5	7	13	25	30	5	7	13	25	31
6	8	12	27	31	6	8	14	26	Jan. 1	6	8	14	26	2
7	9	13	28	Sept. 1	7	9	15	27	2	7	9	15	27	3
8	10	14	29	2	8	10	16	28	3	8	10	16	28	4
9	11	15	30	3	9	11	17	29	4	9	11	17	29	5
10	12	16	31	4	10	12	18	30	5	10	12	18	30</	

animals results in checking the growth and decreasing the mature size of the mother? The exhaustive factor is lactation. In all of the cases studied, it was found that while the growth of the immature mother proceeded without interruption during pregnancy, after the birth of the pigs and all during the period of lactation, the growth was apparently stopped. No apparent growth takes place while the mother is suckling young. After weaning the pigs the immature mother begins to grow. During this period she may even grow more rapidly than other sows of the same age which have not passed through the periods of pregnancy and lactation. We must conclude, therefore, that the great cause of the dwarfing of the young mother is the strain of lactation and not pregnancy.

The offspring of very young or immature mothers show every evidence that they are as thrifty and as valuable for every purpose of practical animal husbandry as the offspring of the more mature mothers. It must be remembered, however, that the immature mother is not able to supply as much milk for the nourishment of a litter, and consequently special care must be exercised in providing an abundant supply of nutritious food; otherwise the offspring of the immature mother will be smaller and weaker. This result, however, if it occurs, is due solely to a deficiency in the food supply and not to any hereditary effect.

It must also be said that no evidence of any sort has been obtained which would indicate that the long-continued practice of breeding immature females will result in decreasing the size of the breed. The capacity to develop to a certain size at maturity is hereditary. The breeding of young females does not affect the fundamental constitution of the germ plasma in which are to be found the inherited qualities that determine the final character of the breed.

What, then, is the best age to begin breeding young sows? The answer must be that this will be determined by the purpose of the breeder, but primarily by the development of the young sow. A well-fed sow that shows good development may be safely bred younger than sows kept under ordinary farm conditions. It is certain that sows bred to farrow when one year old will be checked in growth, but this is not necessarily a permanent effect.

It is clearly shown, also, that young sows and their litters must be more generously fed than older sows, otherwise the sow may not reach the normal size of the breed at maturity. Breeders of registered hogs whose object is to produce the highest developed and most perfect types of their particular breed at every age will find it better to delay breeding to a somewhat later time and thus avoid the check to development which is sure to follow lactation.

From an economic point of view, the sows which are mated young are generally more profitable than those which are allowed to remain open too long. The exercise of the breeding functions at a younger age is also generally favorable in developing in the young female all those physiological qualities which we include under the term "the breeding powers of the animal." Probably the best general rule for commercial hograisers is to breed young sows at about eight months of age.

Profitable Beef Production.

EDITOR "THE FARMER'S ADVOCATE":

At the Experimental Farm at Nappan, N. S., a number of tests have been carried on in feeding and finishing steers for the market. During the last three years tests have been carried on in feeding good butchers, heavy fed, versus good butchers, light fed; good stockers, heavy fed, versus good stockers, light fed; good butchers, heavy fed, versus good stockers, heavy fed; good butchers light fed, versus good stockers, light fed; good butchers and good stockers, light fed; and good butchers and good stockers, heavy fed, receiving two pounds molasses in addition to their regular meal ration, versus good butchers and good stockers, heavy fed, no molasses; and good butchers and good stockers, light fed, receiving two pounds molasses in addition to their regular meal ration versus good butchers and good stockers, light fed, no molasses.

The results of the first test, that is, good butchers, heavy fed, versus good butchers, light fed, are as follows: Eight steers were selected in such a condition that they could be classed as good butchers. These were dehorned and fed a preparatory ration to get them accustomed to their feed and surroundings; then divided into two lots of four each. The four heavy fed received 50 per cent. more roots and meal than did the light fed; number of days fed, 93. Total live weight at beginning for lot 1, heavy fed, 4,478 pounds. At finish 5,355, an increase of 877 pounds. For lot 2, light fed, 4,418 pounds was the live weight at beginning; at finish 5,135, an increase of 717 pounds. The original purchase price was 6 1/4 cents per pound, live weight. The selling price was 8.1 cents per pound, live weight. The gross profit for lot 1 was \$155.88; for lot 2, \$139.81. The total cost of feed for period was, for lot 1, \$99.16; for lot 2, \$75.29, leaving a net profit in the first instance of \$54.72, or a profit per steer of \$13.68. In the second, \$64.52, or a profit per steer of \$16.13. The average profit per steer, for three years, over and above the actual cost of feed at market prices was for lot 1, \$18.38; for lot 2, \$22.39. The cost to produce 1 pound gain was 10.33 cents for lot 1, and 8.64 cents per pound for lot 2. The ration fed to lot 1 at the beginning was 60 pounds roots, 6 pounds meal, and 1 pound molasses; at the finish 45 pounds roots, 16.5 pounds meal and 2 pounds molasses. Lot 2 received, at the beginning, 40 pounds roots, 4 pounds meal and 1 pound molasses; at the finish 30 pounds roots, 11 pounds meal and 2 pounds molasses.

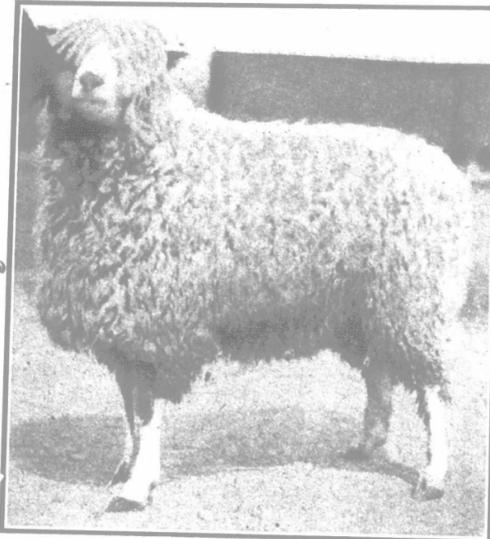
From the foregoing results it will be noted that a

profitable limit can be reached in the amount of feed fed to good butchers and that in all our feeding work we should be guided accordingly. That is to say, feed liberally and well, but not to excess, and good profits can be made by producing the right kind of beef.

EXPERIMENTAL FARMS NOTE.

Pigs Crippling Badly This Season.

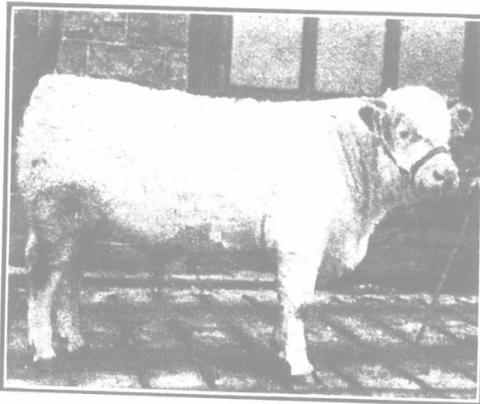
The constant cold weather of the past months has been the means of keeping many pigs closely housed, and this has resulted in a great many cases of crippling amongst the swine herds of this country. While certain precautions can be taken to prevent attacks, we do not know which particular precaution wards off the trouble, for the cause of crippling is not definitely known. Veterinarians attribute it to high feeding, lack of ventilation and too little exercise, yet some pigs may undergo these adverse conditions with immunity, while others, sub-



A Cotswold Ewe.

Champion female of the breed at the Canadian National Exhibition, 1916, for John Miller, Claremont, Ont.

jected to a lesser degree of the same unfavorable circumstances, succumb to severe attacks. Cement floors have been blamed in many instances, but the cases where pigs have not crippled on concrete are sufficient to vindicate them from entire blame. They may contribute to the ailment, but cement floors are certainly not the only cause. Poor rations and lack of mineral matter possibly exert a detrimental influence on the health of pigs, in as much as the digestive organs cannot function properly, and some parts of the system breaks down in consequence. When all these unfavorable conditions exist, a case of crippling should not come as a surprise. Two or three of them may combine to produce untoward results in this regard, yet we often see pigs, ostensibly thrifty, living under adverse conditions in many respects. Until some experimental institution determines



Shenley Marquis.

First prize junior bull calf at the Guelph Winter Fair, 1916, for J. A. Watt, Elora, Ont.

the actual cause of crippling it is an idle waste of time conjecturing on this theme, and it is almost as useless and unprofitable to attempt to treat a bad case of the ailment, for a pig once badly crippled seldom possesses any value as a breeder or as an economical producer of pork.

While the opening sentence of this article might imply that confinement has been the cause of much trouble this season, it should not be so construed. Housing has simply allowed other conditions to exist, and a combination of circumstances has resulted in stiffened pigs. We are inclined to believe that bad ventilation, or, more properly speaking, the lack of ventilation, is a very influential factor. Just recently a case came under our observation where a herd of pure-bred

swine were housed in a piggery above the average for comfort and conveniences, as we look upon piggeries at this time. The same are fed, we know, as well as the average herd is fed. The floor is concrete, and in the corners of all the pens, sleeping quarters made of wood are elevated slightly above the floor. These have been kept well bedded and throughout the cold weather were partly covered in with thick paper, which made what appeared like very comfortable apartments. The house is not well ventilated. Many of the pigs in this herd have become crippled, and we are led to believe that improper ventilation in the house itself, and worse in the sleeping quarters, has had a very bad influence indeed. Other factors might have militated against the health of the herd, but existing conditions suggested that a lack of ventilation has brought about bad results.

Until we know more about the cause of crippling in pigs, we can only resort to a number of preventive measures which, taken together, will forestall trouble. In the first place, devise ways and means whereby the pigs can take exercise, and force them to do so if they neglect it themselves. Get them outdoors and allow them to rustle around the straw stack, or anywhere in the yard. Provide dry sleeping quarters, free from drafts but well ventilated. The snout on the end of a hog's face was made for a purpose, namely, with which to root in the ground or into anything else that presents itself. If we deprive the hog of his pristine privileges, we must provide a substitute. Domesticated and confined swine require a supply of mineral matter in some form or other. This may be taken in bone meal, wood ashes, sulphur, charcoal, common salt, Glauber's salts, etc. While it has been proven by experiments that hogs thrive better where they can take what they require of these different ingredients, placed in separate boxes, for all practical purposes a mixture of wood ashes, sulphur, charcoal, bone meal and salt, is quite satisfactory. This combination is inexpensive, easily obtained, and there is no excuse for not having it before the hogs at all times. In connection with this, feed a ration consisting of two or three different kinds of grain, or millfeeds, to add variety, and some roots or steamed-clover hay, on which a good percentage of the leaves have remained. It is the bulky, laxative feeds that keep swine thrifty. If these precautions with regard to exercise, housing, ventilation and feeding be put into effect crippling should be rare in the herd thus managed, but if farmers are careless through the month of March in the care of their pigs, we can look for the ailment to be very common indeed.

It might be well to remark in conclusion that if pigs become crippled or show symptoms of going lame, give each pig a purgative of three to four ounces Epsom salts and follow up with six grains nux vomica three times daily. Feed on milk, shorts and raw roots, with very little grain and force them to exercise as much as possible. These doses are for pigs from three and one-half to four months old. The dose for larger and smaller pigs should be regulated according to the size of the patients.

THE FARM.

Keeping Farm Accounts.

EDITOR "THE FARMER'S ADVOCATE":

In your issue of February 15, a number of reports are given regarding farm returns which are interesting; with the exception of "Reader" and "Dairyman," all others show poor principle or method in their calculations.

There are four separate and distinct accounts which should be kept in connection with farm bookkeeping, viz.: *Farm or capital account, building account, equipment account, and stock account.* With a little study every farmer will understand just why these four accounts should be, and will treat them accordingly.

Farm or capital account should include the farm value, either at cost price or based on a price comparatively in the neighborhood. This account will not vary much. Fences should be included, and with a certain amount of new fence added each year and old ones kept in proper repair will keep the farm to a normal value in this respect. Any system of underdraining, clearing of land, drilling of wells, should be charged at the cost price and added to the value of the farm, in as much as the farm is improved to that extent.

Building account would include all buildings, value of which should be determined, any new buildings or any permanent repairs or improvements should be added; this account should have 7 1/2 per cent. written off each year, as the buildings will depreciate to this extent.

Equipment account will include all machinery, tools, horses, harness, wagons, windmills, etc.; the value of each of these should be determined, these and all other equipment necessary for the proper working of a farm should be placed in this account, any new articles bought should be placed in this account. It will be necessary to write off at least 7 1/2 per cent. each year from this account for wear and tear and obsolescence. This would allow for throwing away the machine in about 18 or 20 years, and when the interest on the investment is taken into account it will readily be seen that 7 1/2 per cent. is little enough.

Stock account—All cattle, hogs, poultry, etc. All feeds, such as hay, straw, silage, oats, etc., should be inventoried at a certain date each year. In some cases these could be taken at a fixed price each year, or use the average price for the past year which would allow for all market fluctuations, but let it be a fixed or regular system. As our capital account, our building account, and our equipment account are determined, then comparing our stock account with our inventory of the year previous will determine our exact returns.

There is then the *Expense account* such as all labor, with allowance for the proprietor and all the family's assistance, seeds, taxes, insurance, threshing, fertilizers, binder twine, and many other little expenses, contributions, etc.

Cash account—A record of all cash received for produce and stock sold, also all eggs, butter, milk and vegetables, beef, pork and fowl used by the family should be taken into consideration and credit given for such.

With a very little care of each of these accounts, and by treating each one properly it will be readily seen how easy it will be to determine the net profit from each year's operations. "Reader," and also "Dairyman," has evidently followed the above method to a certain extent. We note, however, that "Reader" takes into consideration an item of \$251.70 spent on tile drainage—evidently in determining his profits or returns. This should be charged to capital account, as it is intended for soil improvement. "Dairyman" shows a very large return, receipts of \$2,286.41 with expenses of only \$1,000. He also shows a difference in his stock account of \$948.00 this would show a profit for the year of \$2,234.41 which is very high for the small acreage. We are inclined to

think that "Dairyman," with his family's help, has done all the labor. We also note a very large difference in the inventoried price or value of his cattle per head comparing one year with the other. It is possible that he is taking the present market price for his calculations. We also note that no allowance is made for interest on investment in connection with any of the accounts given by "Agricola," of Haldimand Co.; "Agri.," of Wellington Co., and W. E. Noyes, of Middlesex Co. The returns from these three vary very much, but as apparently no inventory has been taken it will be readily understood how the returns may vary, and with "Agri," for instance, only showing a profit of \$288. A proper inventory might show a much larger return. It must be concluded at once that such summaries as these are of no comparative value whatever, and are probably very misleading.

In my youth, I worked on my father's farm down near Montreal, Que. Those were the days of the cradle, scythe and hand rake, hard but healthy work. Later I took up manufacturing and to-day am managing a concern with an output of a quarter of a million dollars per annum. A few years ago, to satisfy a long desire, I

bought a farm. In connection with this I have adopted a system of bookkeeping as is necessary with all joint-stock companies, so that at the end of each year I know exactly what profit I have made and where each account stands from year to year. I find it very interesting. I love the farm life very much, and I am looking forward, fondly, to the day when I will retire to the farm, away from the awful cares, worries and troubles of the manufacturing life, to enjoy that freedom and independence of farm life.

I will not now give your readers a detailed statement of my farm operations as I feel that I have already taken up much valuable space in your journal, in some future issue I will do so, and may touch on some other questions in connection with farm management.

Grey Co., Ont.

FARMER.

[Note.—Our correspondent loves the farm, but, like many another, seeks to make his money at some other occupation that he may be an "independent" farmer in his declining days. Yes, the farm is interesting, but how profitable?—Editor.]

Canada's Young Farmers and Future Leaders.

A Plan Worth Trying.

EDITOR "THE FARMER'S ADVOCATE":

How I would manage a farm is a topic capable of many and varied replies. I would select and manage mine—making allowances for the exigency of circumstances—as nearly as possible on the following plan:

I would choose a farm of about 75 acres in area, preferably a well-drained, clay soil, located within reasonable distance of railroad facilities in fairly close proximity to a lake or stream, and containing a wood lot.

My reasons for the above decisions are, briefly, these: I believe that a small acreage, properly and personally worked, is a simpler proposition, involving a lesser expenditure of energy and outlay, and productive of larger net returns, than is a bigger area not as carefully worked and necessitating the introduction of outside help. A well-drained, medium-heavy clay soil is a splendid "general-purpose" soil, lending itself readily to the production of grain, is eminently suited for bumper crops of clover and alfalfa, and can be plowed in the fall without the loss of plant food, so often attendant upon the fall plowing of sandy soils.

To be located far from railroad conveniences is a great drawback, making the marketing of products a difficult task, time being spent upon the road that could be more profitably utilized upon the farm.

Ice is an almost indispensable article in the successful production of perishable foodstuffs, milk, butter, etc., hence I would seriously consider the possibilities of readily obtaining an annual supply.

The advantages of a wood lot are potent to any observing person: cheap, satisfactory, and easily obtained fuel, shelter for the cattle during hot weather, and an undoubted improvement to the appearance of the surrounding country.

Having obtained a farm approximating the above requirements, and there are many such, I would gradually build up a small herd of good grade dairy Shorthorn cattle, using at all times a pure-bred sire. I choose the Shorthorn because it is a dual-purpose breed, and I reject the pure-bred, registered beast, because I am not yet convinced that the returns from such animals are commensurate with the capital invested.

The milk obtained I would separate; the cream thus obtained would be manufactured into butter *at home*—printed and wrapped with a view to a pleasing and attractive appearance, bear the name and address of the producer, and be sold, if possible, direct to the consumer. The by-products resulting from this system—skim-milk and buttermilk—would be used in the raising of hogs, the principal branch of farming in which I would engage. The whole operation of the farm would be directed towards the successful and economical production of pork. The hog, for the feed consumed, makes the greatest return of any meat-producing animal; involves a smaller outlay than is necessary in many branches of dairying, and quicker returns are forthcoming.

I would rely considerably for the cheap production of pork upon the use of pasture, clover and alfalfa principally. The one great opportunity for the profitable raising of hogs lies in the judicious introduction of green feed into the ration. For the finishing-off process, corn is a splendid grain, and if fed in conjunction with other feeds of high protein content, peas for example, makes a balanced ration from which the greatest gains can be expected. The major portion of these foodstuffs can be successfully grown upon most Canadian farms, and the same feeds in varying proportions would make satisfactory rations for the cattle. The stock would replace in the soil practically all that was removed in the process of crop production, thereby eliminating the risk of exhausting fertility.

With reference to the influence of community, roads and market upon my decisions, such a system of farming as I have briefly outlined could be successfully conducted in almost any community; the existence of a thriving town in the near vicinity, although not indispensable, would materially assist in the disposal of butter, and although one would not be so much dependent upon road conditions as a farmer engaged directly in the sale of milk; nevertheless, good roads would still be of immense benefit.

Both butter and hogs are productions that can be easily and safely shipped a considerable distance, hence it would appear that the proximity of the market and the characteristic employment of the community neither greatly enhance nor retard this system of farming; the principal influential factors concerned are fairly good roads, and proper shipping facilities. I could enlarge considerably upon this subject; many other details would have to be perfected to ensure the success of this business venture, but space forbids in an article of this nature; possibly an opportunity will present itself at a later date.

I shall read with pleasure the replies of others to this question, probably receiving ideas that may influence me in the perfection of my own plan.

New Ontario.

ONE WHO IS GOING TO TRY IT.

Would Not Have a Silo.

EDITOR "THE FARMER'S ADVOCATE":

It seems to be easier to think of a plan on which to manage a farm than it is to put it in words or practice. The best way to manage a farm is the way you can get the best out of it the easiest. The question is what and which is the easiest way. This will depend largely on the size of the farm and the help available.

I would choose a farm of about 100 acres of clay or clay loam. Except in rare cases, I do not think any other lines of farming than dairying or beef raising are carried on to the best advantage on a farm of this size. I would want to be in a community where the class of stock that I wanted to keep were kept by most farmers. The market for that class of stock would be there. Any breed of cattle would be all right if rightly looked after and in the right community. My choice would be Holsteins.

I think a definite and set crop rotation not only the best policy, but absolutely necessary if the best is to be obtained. My rotation on 100 acres would be as follows: 20 acres of sod fall plowed, not more than four or four and one-half inches deep. This would be manured during the fall, winter and spring, up till seeding time. The manure from what stock could be kept on a 100-acre farm should be spread thin enough to cover the 20 acres. In this field I would put about two acres of roots, mostly mangels, whatever corn I could feed in the fall and early winter, and potatoes enough for home use. The rest of the field I would put in oats, barley and some peas, mixed together, to be cut green. This would be cut early and would give a good chance for fall cultivation. If I had horses enough to handle a stiff-tooth cultivator, I would cultivate this about two or three inches deeper than it had been plowed before, starting shallow as soon as the oats were off and gradually getting deeper till it froze up or got too wet. If I did not have enough horses for this, I would plow it about five inches deep as soon as the oats were off, and then cultivate it as deeply as possible. This would be seeded down the next spring with about five pounds of timothy and six or seven pounds of mixed clover, mostly red, to the acre sown with a nurse crop of oats and barley mixed, or perhaps some of the other common grains, to thresh. I would mow this one year and pasture it two years, then break it up and start over again.

I am not in favor of a silo because: 1, I do not think, with the help usually available, that raising corn is the easiest way to get the best out of a farm; 2, when the cost of planting, looking after, harvesting and getting corn into a silo is put beside the cost of the green oats in the mow, I would not be very particular which I had; 3, I think a field well cultivated after the oats are cut is in better condition to seed down than one cultivated with the corn on; 4, silo filling takes a man away from home too much at chore time, leaving the women or woman, as the case may be, too many chores to do; 5, if a field is in better condition to seed down after the oats, I think, taken one year with another, the land would yield not as many tons but nearly as much feed with the oats as with corn.

I am not in favor of summer-fallowing, because I

think if the land is properly worked, especially after the green oats, it will not need it.

Leeds Co., Ont.

"HIRED MAN."

[Note.—We thought so much of our silo at Weldwood that a second was built last year, and we think silage is cheap and satisfactory feed.—Editor.]

Figures on Good Returns.

EDITOR "THE FARMER'S ADVOCATE":

In managing a farm, I would select a place of 75 acres, in a good, mixed-farming district. I would divide it into eight fields of nine acres each, allowing three acres for yard and buildings. Mark you, I figure on 75 acres of working land. My crop rotation would be as follows: pasture, 18 acres; hay, 9 acres; corn, 18 acres; oats, 9 acres; mixed grain, 18 acres. I would seed two fields, or 18 acres, each year and break up 18 acres. I would have two silos; one 12 by 40 feet and one 13 by 40 feet, the larger for winter feeding and the smaller for summer. I figure my investment would be: Farm, \$7,500; 12 cows at \$90 each, \$1,080; 12 calves at \$25 each, \$300; bull, \$75; implements, \$1,000; 2 sows at \$25 each, \$50; 6 ewes at \$15 each, \$90; 3 horses at \$150 each, \$450; total, \$10,545. Expenses: Interest on investment, \$10,545 at 5 per cent., \$527.25; taxes, \$75; twine, \$19.50; horse shoeing, 9 sets, \$1.50 each, \$13.50; 3, \$40.50; silo filling, \$20; threshing, \$17.50; fence wear and breakage, \$200; total expense, \$899.75.

First I will describe method of handling stock. I would have 12 Shorthorn cows. I would let the 12 calves suck six cows and milk the other six and send the milk to the cheese factory. I would let calves suck for six months and milk the cows for a couple of months in the fall, after weaning the calves.

My income would be: Milk checks, \$450; 12 yearlings, 900 lbs. at \$8 per cwt., \$864; 16 hogs, 3,200 lbs. at 11 cents, \$352; 9 lambs, \$10 each, \$90; 42 lbs. of wool at 40 cents, \$16.80. Total income, \$1,772.80; total expense, \$899.75; net profit, \$873.05.

I have made no mention of hens, which are no small consideration; \$150 might easily be added to the profit by them. Also, you will notice I figured on sixteen hogs from two sows. I would only keep the spring litters as I would not have feed to keep the fall litters, and I am figuring on only what the farm will produce. You will also notice I allow only 18 acres pasture for 12 cows and 12 yearlings. Now, there would be plenty of grass even for that many till the middle of July, and after that I would count on feeding silage to all the cattle. The yearlings would be tied in early in October and fed grain and have them ready for the block about the New Year, depending, of course, on the market at that time. These, if of the proper type, should weigh close to 900 lbs. at that time, and you will notice this year such cattle are worth 9 cents per pound, instead of 8 cents as I figured them. By this method of farming one man should handle the farm alone, with probably the exception of a few days in harvest and silo filling, and even then by changing with his neighbors he could manage alone.

Oxford Co., Ont.

REX.

[Note.—This reads well. We hope it works out in practice.—Editor.]

How He Would Manage.

EDITOR "THE FARMER'S ADVOCATE":

It seems to be the impression, in the minds of most city people, that the farm is about the last place to go, after other forms of employment have failed. They think that they can manage a farm, but they are very much mistaken, for it takes a man with brains and managing ability to make a farm pay a fair dividend. I think that a farm should be nothing under 100 acres, and up to 150 acres, for it will keep a hired man and the employer busy the year round. Also I think that dairying, along with other side lines, will be a good combination. For shipping milk no producer should be any more than three miles from the station. For a farm of 150 acres, at least 15 cows should be kept milking the year round. For dairying the farm should be well sup-

plied with running water and shade in the summer time, as this is an important factor in dairying, for a farmer cannot expect his cows to milk heavily with lack of water. I have seen cows out in the field with not a bit of shade, and no man could expect his cows to milk heavily under such conditions.

It is quite a problem to secure such feeds as are necessary for heavy milking cows. Some years there will be a failure in certain crops and which must be made up with other feeds.

I favor the four-year rotation of crops, which is as follows: First year, manure and sow to corn and roots; second year, sow to oats and seed it to red clover and alfalfa, and to timothy if red clover is sown; the third year to clover hay, and the fourth year to timothy hay. This will make a good rotation. I favor corn silage for any kind of cattle, whether beef cattle or dairy cows. There should be two silos on a farm of 150 acres; one 14 by 35 feet and one 12 by 30 feet, for it pays well to have silage for summer feeding when the grass is dry. Also, there should be plenty of good hay, either red

clover or alfalfa, alfalfa preferred, as I think that hay contains all the essentials for either horses or cattle.

I consider it a good plan to sow fall rye or some similar grain and sell it and buy millfeeds. In this way there is nothing taken off the farm that is not put back on it again. Linseed, oil-cake meal, or cottonseed meal is my choice of feeds, as I have fed them with excellent results. Distillers' dried grains and bran are good feeds for dairy cattle. As we all know that feed of all kinds is very expensive this winter, it is my opinion that unless cattle and hogs are very high in the spring it is going to be hard on the fat-stock man, but it is quite probable that cattle and hogs will be the highest ever known in Canada.

Another important factor in the management of a farm is the class of stock fed. Pure-bred cattle can be raised and fed just as cheaply as common grades, and any good stockman will take more pride in the care of good stock, and, if properly handled, it is a very profitable side line and works well with dairying.

Another branch of farming that is very profitable is a good-sized orchard, well pruned and sprayed every year.

Beekeeping is another side line that I think will work very well along with the fruit side line, but there are not very many farmers who will take up such work along with the regular farming. However, it is often profitable to take up other branches of work, so that if one fails there is another one to fall back on. Also, I think to make a farm go well, labor-saving machinery should be used, for it is just as important as other things. Hired men do not stay very long on a farm where there are no labor-saving implements and conveniences to make work lighter. A litter carrier in the stable is a great labor saver, and on the dairy farm a milking machine, if kept sanitary and properly handled, saves hired help. Hired men do not like to go out in the morning and do ten hours' work on the land and come in at night and have to milk five or six cows, besides tend to horses. It is rather too much to ask of any man.

Ontario Co., Ont.

A FARMER TO BE.

Automobiles, Farm Machinery and Farm Motors.

Odds and Ends in Cardom.

The extremely cold weather has had a tendency to popularize the use of quilted hood covers, consequently a hint or two, regarding their possibilities, cannot fail to be in order. We noticed the other day that two drivers using this type of accessory stopped at the same corner for the purpose of making calls. One of them faced his car into the wind but did not lower the curtain over the radiator. The second lowered the front curtain but faced his car with the wind. Both made mistakes. If the weather is at all cold and you wish to keep your engine as warm as possible in order that it will start again with the least exertion to you, saving your battery and the gasoline, you should not only lower the curtain over the radiator, securely fastening it, but also face the car into the wind. In all machines the pan under the crank shaft and forward running gear, is open at the back, and so this vent should be protected from the cold breezes as much as possible.

Bearings of all kinds are now being made with such skill and accuracy that they give but little trouble. It can be safely stated that very few owners and drivers ever pay any attention to them. In a great majority of cases, only a minimum amount of care and attention is required. We would suggest, however, that about once every running season you inspect these bearings, as it is just possible that some of them may become chipped or flattened through use or abuse. The imperfect balls or rollers should be replaced without delay, and the housing in which they are held, treated with graphite grease.

A number of men interested in autos, were in conversation not long ago when one of them asked this question. "What systems make up a complete power plant and by working successfully, propel a car?" Many

answers were submitted and most of them omitted an important detail. Before reading any further, we would ask you to run this question over in your own mind and see how close you will come to the correct answer, which is as follows: The motor, the lubricating system, the fuel system, the ignition system, the cooling system, the exhaust system, the starting system, the clutch, the transmission, the universal joint. When all these factors are properly co-ordinated, you have a perfect mechanism for propelling your machine.

We spoke in a previous paragraph, of the inattention which is accorded ball bearings. There is another feature of the car that does not come in for its proper measure of studious inspection, and that is the brake. The only service required, under ordinary running conditions, is a drop of oil on the joints of the rods and levers, but sometimes the linings become worn, and in such an event, should be renewed without delay in order that maximum safety may be maintained at all times. Never allow any oil or grease to get on the brake bands, but should you find that this occurs, a little Fuller's earth will take up the oil by absorption and give the linings their old-time power.

We have been asked for, and we give herewith, an explanation of what is known as the automatic lubricating system. You are all familiar with the fact that oil is carried in a reservoir in the lower half of the crank case. This lubricant is generally drawn through a strainer to a gear pump at the end of the reservoir. The pump drives it to the oil sight glass on the dash or instrument board in front of the driver, and so the circulation can constantly be watched by the owner or mechanic in charge of the machine. From this oil sight feed the lubricator passes through a distributor pipe to the troughs built into the lower half of the crank case. Through these troughs pieces of projecting metal, attached to the connecting rods, keep constantly

dipping. The result of this action is that the oil is splashed all over the interior of the crank case and far up into the lower parts of pistons and cylinders, and upon falling back the lubricant is caught in ducts and sent to all bearings of the motor, the overplus running into the reservoir to be utilized in the same manner over and over again. Oil becomes dirty and inferior through constant use, and so we cannot too strongly urge that the crank case should be drained out every three months and new oil put in. Foreign matter in oil greatly deteriorates the quality of the lubricant and does not add a particle to the economic operation of the motor.

If your battery is kept constantly filled with distilled water, you will have very little trouble with it during the summer season. The battery troubles that are most aggravating, generally develop in the winter when an owner fails to renew the supply of distilled water. We strongly urge the purchase of a hydrometer syringe. The cost is insignificant. By using this accessory you can constantly determine the condition of every battery cell. Your reading should always be above 1275 on the hydrometer. Any extra care given to a battery in the winter, will be justified by results, for it is in the cold season that the drain on the cells is greatest.

If your automobile has been properly laid away for the winter, you have, no doubt, either removed the tires or at least jacked up the car so that they can be examined with ease. We would recommend that you look over the casings very carefully, and if there are any cuts, have them sealed up securely. Even a small cut may very rapidly develop into a large one, and in any event, an ounce of prevention is always worth a pound of cure, especially where rubber is concerned.

AUTO.

THE DAIRY.

Keeping Cheese Factory Books Under the Dairy Standards Act.

I do not quite understand how to make up factory books under the system of paying by test, or by fat plus 2 method. I would like the following problem solved in order to find out how it is worked, and to show the difference in the amount of money received under the different systems. A sends 200 lbs. of milk, testing 3.3 per cent. fat; B, 200 lbs., testing 3.5 per cent., and C the same quantity testing 3.7 per cent. Out of the 600 lbs. of milk we get 53 lbs. of cheese, or on an average of 11.32 lbs. of milk to make each pound of cheese. Paying by the pooling system 100 lbs. of milk would be worth a fraction over \$1.76 per 100 lbs., with cheese selling at 20 cents a pound. How much money would A, B and C get for their 200 lbs. of milk if paid by butter-fat test and fat plus 2?

Glengarry Co.

J. A. McD.

When figuring up the amount of money patrons are to receive under the pooling system the amount of milk is divided into the net returns from the cheese, in order to secure the value of each pound or 100 lbs. of milk. The weight of milk sent by each patron is then multiplied by the value of 100 lbs. Under the system of paying by test, it is figured out very much the same way. The total number of pounds of butter-fat received at the factory would be divided into the net value of the cheese in order to determine how much a pound of butter-fat was worth. It will possibly require a trifle more figuring than the other system as it will be necessary to find out how much butter-fat each patron sends to the factory, but it is an easy matter to determine how much his check should be. For instance, taking the value of the 53 lbs. of cheese at 20 cents per pound, at \$10.60, and dividing the total number of pounds of fat given in the problem into it, it is found that butter-fat is worth 50.5 cents per pound. Figuring out the amount of money A should receive for his 200 lbs. of 3.3 per cent. milk, it would be worked as follows:

$$\frac{200 \times 3.3 \times 50.5}{100} = \$3.33.$$

B's and C's checks would be made out the same way. When it comes to paying by the fat plus 2 method the figure 2 must be added to the percentage fat and the problem worked in the manner outlined. The casein in the milk largely enters into the composition of cheese, and the figure 2 is supposed to represent the quantity. Consequently milk testing 3.3 per cent. would be figured out as 3.3 plus 2, equals 5.3. In the problem given there are 33 lbs. of fat and casein. This amount divided into the value of the cheese makes the value of one pound 32.12 cents. Taking the 200 lbs. of A's milk again, the problem would be worked out as follows:

$$\frac{200 \times 5.3 \times 32.12}{100} = \$3.41.$$

It will be noticed that there is a difference of 7 cents in the value of the milk under the two systems. When working on the factory books, the total amount of milk could be arrived at and the average of all tests secured. The total amount of milk multiplied by the average test will give the total number of pounds of fat. This must be divided into the net returns in order to secure the price per pound of fat. Each man's check could be figured out on a similar basis to A's. The following table shows the value of the milk, under the different systems of paying:

	Lbs. milk	Per cent fat	Paid by wgt.	Paid by per cent. fat	Paid by fat plus 2
A.....	200	3.3	\$3.53½	\$3.33	3.41
B.....	200	3.5	3.53½	3.53	3.53
C.....	200	3.7	3.53½	3.74	3.66

The average test was 3.5 per cent., consequently B received the same amount of money for his milk under all three systems. A receives more than his milk is worth under the pooling system, and the method of fat plus 2 gives him 7 cents more for his 200 lbs. of milk than he would have received by the test alone. C did not receive the full value of his milk under the pooling system. With his quality of milk it would be an advantage to him if he were paid on the fat basis. This table shows up three systems and the man with

the average quality milk cannot complain no matter which system is adopted. He receives the same amount of money under all three. It is plainly shown why the dairyman who has been building up a high-testing herd should advocate paying for milk for cheese-factory purposes on a fat basis, and it shows just as clearly why the man with a low-testing herd prefers to sell his milk by weight. Either the fat basis, or fat plus 2, pays the dairyman more nearly what the milk is worth for cheese making purposes than does the pooling system, and should tend to encourage dairymen to increase the butter-fat content of their milk as well as the yield.

Grading of Dairy and Other Farm Products.

Speaking at the initial Banquet of the Canadian Creamerymen's Association at Toronto on the 13th inst., W. B. Roadhouse, Deputy Minister of Agriculture, advocated the grading of farm products. In part he said:

"Let me first express gratification at the references which have been made to-night to the subject of grading as it applies to the creamery industry. For a great many years this matter has been under discussion in a more or less general way. One year ago when The Dairy Standards Act was drawn up it was thought advisable to include clauses which dealt with the creamery side of the dairy business as well as the other aspect. In this regard it was not possible at that time to adopt anything very definite, but it was hoped that a basis would be arrived at for concrete consideration. This was followed by systematic work, on the part of Mr. Scott, in experimental butter grading during the past few months. It also received a great deal of attention on the part of Mr. Hens, who has been a leader in the movement. The result of all this has been to bring the subject very prominently to the front and to create a sentiment among the producers, makers and buyers which is now taking form in a definite proposition. This proposition looking to the grading of butter products of the Province is now before the Department, and having arrived at this stage we are justified in feeling that real progress has been made.

"It may be of interest to outline a few of the points involved in this proposition. It is proposed that grading

centres should be established at convenient points, say Toronto and London. To these centres the creamerymen would be given the opportunity of forwarding a sample box of 14 lbs. from a churning. This would be purchased outright by the Government, and on the basis of the test made by competent graders, certificates would be issued. On the basis of these certificates the sales would be made to the trade. There are many other details of course involved but it is not suggested that the Department should go no farther at the present time than offer the opportunity to the creamerymen to voluntarily send in samples for grading purposes. The buyers in Toronto have intimated their willingness to purchase on a basis of the certificates and to pay a higher price for the higher grade article. This would of course mean that to secure the higher price the makers would have to secure the best quality of cream and the benefit in this way would accrue to the producer as well. Such then is the proposition which has been placed before the Government, but a way remains to be found to finance the undertaking. I am not prepared to say what the action of the Government may be on this matter, but I anticipate a definite decision in the course of a short time from the Prime Minister and Minister of Agriculture. Let me say this, however, if and when grading is undertaken by the Department it will be an expression of the confidence of the Department in the producers and makers of dairy products and will be a challenge to these men to see to it that Ontario maintains a place of leadership in the matter of dairy products.

"Let me note further however, that butter is not the only subject under discussion from the grading standpoint. A short time ago the produce men held a meeting in Montreal and one of the dominant notes of that meeting was a discussion of the grading of eggs and poultry products. The fruit men met recently in their Association and the grading of apples was a subject of uppermost importance. The Sheep Breeders' Associations met and steps were taken with a view to securing systematic grading in the marketing of wool. The Swine Breeders' considered the matter of the bacon hog and planned for methods of grading for the export market. There has been a great deal of discussion in regard to the paying for milk on a quality basis, and I am rather of the opinion that the grading of cheese itself would be in the best interests of the industry in this Province. But the point I wish to emphasize is that in all these lines grading is the dominant note of the present time, and I think must be regarded as among the most significant and hopeful signs of the times. Grading is at once a declaration and a demand, a declaration of the merits of the article produced and a demand that those who produce and handle shall receive returns based upon that merit. I look forward to the time when not provincial standards only but national standards will be adopted for all these lines of farm products, and if that time comes there will still be a great field for the Provincial Department by its educational propaganda to help the producers to attain the highest standard and thereby secure the greatest returns for themselves and attain the highest reputation for this Province in the markets of the world as well as the local markets.

"Then let me say one other thing. It seems clear that the next two years will be two of the most vital years in the establishment and maintenance of trade channels. It is unnecessary for me to review present conditions, which are familiar to all. These conditions are war conditions. War conditions have obliterated both treaties and traditions which have had a considerable influence in the past. Some of these treaties may come back, but others never will. In the meantime new channels have been formed and new traditions are being built up, and the imperative duty before this Province at the present time is to so shape the course, in so far as such a course can be shaped by organization or individual effort that the trade secured in the British market under war conditions may be maintained and further developed under peace conditions. I am aware that there are many handi-

caps of geography, of transportation, of labor and other factors to be overcome. Without being too optimistic as to the date of the conclusion of the war, it seems safe to say that the next two years will have a big influence in settling these matters, and the next two years therefore should have a big influence on many of the years which will follow. I therefore submit these few thoughts to this new organization that it may direct its energies along these lines in the matter of the particular industry which it represents."

POULTRY.

Cost of Raising Leghorn Pullets.

In order to find out the cost of raising Leghorn pullets, taking into consideration the number of eggs required to hatch the pullets, percentage of pullets in the flock, possible income from cockerels, with their influence on the cost of the pullets, cost of feed, fuel and labor, and length of time necessary to grow a pullet, A. G. Phillips, of Purdue University Agricultural Experiment Station, conducted experiments in 1912-15 with Leghorns. The results were published in pamphlet form and a summary is herewith given: The chicks were reared in 8 by 8 foot, A-shaped colony brooder houses, which were heated for the young birds but served as their home during the entire experiment. These colony houses were placed in a yard covered with blue grass and clover until the heat was removed, when they were drawn to an orchard with corn planted between the rows. The rations for the experiments the four years were practically the same, and consisted of 2 pounds sifted cracked corn, 2 pounds sifted cracked wheat, 2 pounds steel-cut oats for the young chicks, but when the birds reached about one-half pound in weight this was supplemented by cracked corn and whole wheat. A mash consisted of 2 pounds bran, 2 pounds shorts, 2 pounds cornmeal, .15 pounds charcoal, 1 pound meat scrap and .8 pounds ground, dry bone. An abundance of green feed, grit and skim-milk were also fed. The wheat was purchased from farmers at threshing time, but the other feeds were bought at the local stores.

The chicks were placed in the brooders when about twenty-four hours old, but they were not fed until they were sixty hours of age. The floors of the brooders were covered with one inch of sand and a thin layer of finely chopped straw. At the first the temperature was kept at 100 degrees, but as the chicks grew larger the heat was reduced. The first feed was of mixed grains, fed on paper plates five times daily. The chicks were allowed what they would consume in twenty or thirty minutes. Milk was kept before them right from the start, but the chicks were several weeks old before they were given water. When three or four days old the chicks would scratch for grain in a litter. As soon as they commenced this, the plates were discontinued and the grain scattered in the litter in order to compel the birds to take exercise. About the seventh day the mash was included in the ration. It was only fed twice a day at first and given in limited quantities, but at the end of three weeks the hopper containing the mash was left before the chicks all the time. Grit and bone was available at all times, and either sprouted oats or chunks of sod were used as green feed. When the chicks reached about .7 pound in weight the grain and mash was put into a large, outdoor hopper. Little waste was noticed and the birds did not overeat. The hoppers were of sufficient size that they only required filling once every two or three weeks. Water was placed in a barrel fitted with a faucet, allowing it to drip into a pan. This was kept in the shade and filled twice a week. This furnished the birds with water at all times. Every effort was made to give the chicks what they needed, and sanitation was observed in the strictest sense. When the cockerels weighed about 1.25 pounds they were removed to a fattening pen and finished for the market. A summary of results obtained is as follows: Based on four seasons' work and several thousand chicks hatched,

it required 1.83 eggs set for every Leghorn chick hatched. The cost of hatching these eggs was \$.021 per chick, which, when added to the cost of eggs, increased the total cost of a chick when hatched to \$.057. Considering the first twelve weeks of life, it took 5.69 pounds of grain and mash and 5.07 pounds of milk, costing \$.1434 to feed a chick. During the same time it required 3.59 pounds of grain and mash and 3.41 pounds of milk, costing \$.084 to produce one pound of gain. When figuring in the cost of feed, fuel, labor and litter, the whole cost of one pound of gain was \$.154. When the average Leghorn pullet was twenty-four weeks old and ready to lay it weighed 2.75 pounds, and the experiment showed that feed was by far the most expensive item in the cost of rearing chicks. Figuring on a basis of 100 chicks hatched and a 17 per cent. mortality, the per cent. pullets and the per cent. cockerels were 40.1 and 42.9 respectively. The time of hatching was found to greatly influence the rate of growth, price of broilers, net cost of growing, and weight of pullet at laying age. The early-hatched chicks paid the best. The early-hatched cockerels were sold at a profit, but May-hatched broilers sold at a loss. The gross average cost of a pullet was \$.434; this less profits in cockerels made the net cost \$.381. The average mortality of 999 chicks was 17 per cent., and for every pullet reared it required the setting of 4.57 eggs. These figures were the result of carefully conducted experiments carried on over a period of four years, with a very large number of birds. Consequently they give some idea of what it costs to raise a bird of the breed mentioned to the producing stage.

HORTICULTURE.

The Soft Fruit Season in the Okanagan Valley.

EDITOR "THE FARMER'S ADVOCATE":

When people without previous agricultural training make a venture in farming they are bound to make some very bad breaks and especially is this the case where the venture has been in the line of fruit growing. Many of the orchards in the Okanagan Valley, B. C., were set out by those who knew but little of the business, and it is with the products of these orchards that the Okanagan United Growers have been working in the past few years. The solving of the peach growing problem has been by way of the axe, and in some cases it would be the best solution for the marketing of some of the varieties of apples. The nurserymen certainly had a lovely time in the early days, and took advantage of the only opportunity to get rid of a lot of trees they had carried over as experiments. However, we are getting these down by degrees and our marketing of soft fruits, while it is still quite a problem in some lines, is showing marked improvement, and prices as a whole were much higher than in 1915. Last year we had quite a problem estimating the crop owing to the results of winter injury which were very erratic. Among plums and soft fruits generally, trees in some parts of an orchard would be badly hit while in other parts of the same orchard there would be a full crop. There is a large planting of Ponds Seedling, and this crop comes on with a rush, so that it is advisable to have a pretty good estimate of the crop if success is to be attained, for straight cars should be placed in advance if there is even an average crop. According to the first estimate of the locals the O. U. G. Central found they would have six straight cars in excess of the amount required for their mixed-car trade. On this estimate five cars were placed at a good figure. A week later the Central was advised that the crop was falling below the estimate and the orders had to be cancelled. Later it was found that there were six straight cars to be placed, and, as a result, some of these had to go out on consignment with the result that we dropped \$900 because of the poor estimate. In prunes the same conditions prevailed exactly, only that there was an opportunity to save the situation and we did not ask the purchasers to cancel their orders but purchased enough to fill them, and as a result we were able to steady the market and still sell our own at a very good price.

Readers of "The Farmer's Advocate" will remember my statement, a year or so ago, regarding the feelings of the peach growers at the treatment of the railways toward the soft fruits which was so disheartening all over the West as to make the growers pull out their trees, and to such an extent did this practice obtain that I predicted a shortage of peaches. Here is what the Manager had to say to the growers at the end of the season of 1916: "Results with peaches have been much better than in 1915. While the Manager does not wish to advise peach growers what to do, he wishes to state that the mixed-car feature of this business will insure fair prices hereafter. The organization requires peaches for these mixed cars and any serious cutting down of crop by pulling up trees will affect other lines of fruit that go largely in mixed cars. Triumphs, Early Crawford, Elbertas, if they yield properly, should be retained." This statement from the Manager speaks for itself.

Apricots are fast becoming a big and popular crop. The fruit is becoming better known and very favorably received by the consumers. This year we had only about 40 per cent. of our usual crop. The market will take many more than the orchards now set can produce under best of conditions. So this year prices were high.

We generally class pears as a soft fruit crop, and this year we had a pretty good crop. The Western States had a big loss from frost, so our growers had the pleasure



Waiting for the Train.

A familiar scene at railway stations where cream and milk are shipped.

of revelling in high prices, and the crop moved easily all season.

Cherries have, for some time, been offering quite a problem in some varieties. Here is where the advice from inexperienced agents has hurt the Okanagan. Royal Ann cherries have been set heavily and they are a drug on the market so that they will likely have to be processed or sent to canneries, but Bings and Lamberts are bringing high prices.

The annual meetings of the locals are being held at the present time and there does not seem to be any radical changes proposed by any of them, so that it is hoped another year may be the means of putting this organization beyond the experimental stage.

British Columbia.

WALTER M. WRIGHT.

The Control of Apple Scab.

BY L. CAESAR, PROVINCIAL ENTOMOLOGIST.

I suppose that all fruit growers will agree that there is scarcely any more important matter in apple growing to-day than the control of apple scab. Many are doubtless discouraged by the results they have obtained from spraying the last two years, but we must not forget that these two years have been in a very special sense abnormal.

Two years ago the trouble was due to the excessive amount of rain in the latter part of the summer and in autumn, and last year to the continuous wet weather throughout May and June. There is, however, some benefit from bad seasons: they always teach us something more about the disease, and thus help us to know better how to improve our methods of control.

In dealing with apple scab, moisture is the most important factor, for without continuous moisture for two or three days at a time, apple scab cannot get a start on our fruit or foliage. Misty or foggy weather must be included under the heading of moisture, for this is just as favorable as continuous wet or rainy days.

Another matter of great importance that we must remember is that once an apple scab spore has germinated and has penetrated through the skin of the fruit or leaf, we cannot prevent its forming a spot there. Nothing can cure it in that particular place. We must therefore prevent the scab from germinating and in this way alone keep our fruit from becoming infested.

It is true that apple scab spots sometimes die out, but this is not due to any treatment that man can give it, but merely to excessively dry, fine weather, and never do all the scabs nor nearly all on all the fruits die.

The Danger Season.

Remembering the importance of moisture and of guarding our fruit during such atmospheric conditions, we must ask ourselves at what time of the year moisture is most prevalent. The answer will clearly be during May and June in an ordinary season, and even in extraordinary seasons these months are still a danger period. Hence, if we can keep our fruit clean during these two months, we shall, in about nine cases out of every ten, have it clean at picking time. Now that we know that May and June are the months in which we must be most on our guard against scab, the question is when shall we spray during these months to obtain the best protection against the disease getting a start? In this connection I should like to urge everyone to obtain one of our new Spray Calendars, which may be secured from Mr. P. W. Hodgetts, Director Fruit Branch, Toronto. These give in as concise a way as I could possibly put it, the best times to spray apple trees.

I am advocating this year a slight change in the date of the first application or so-called dormant spray. This change is entirely with the thought of protecting our trees from scab. I believe it will pay us to postpone this first spray until the buds are bursting, or if the orchards are small and we can cover them quickly, until the little leaflets are about the size of a five-cent piece, so that the spraying will all be over before they are larger than about a ten-cent piece or before the leaves are more than $\frac{1}{2}$ inch in length. There is practically no danger of any serious burning even if the mixture at this date be used at the regular strength recommended for the dormant spray; but if a grower feels sure that there is no San Jose scale in his orchard and very little oyster-shell scale, he may weaken this first application to the strength of 1.020 sp. gr., that is 1 gal. of commercial lime-sulphur diluted to about 15 gals. with water. This is only about half the strength that we have ordinarily been recommending.

This spraying coming on the leaflets after they are out, is intended to ward the scab off these young leaves until the time of the second application, which should be just before the blossoms open. The nearer one can get this second application to this stage of the trees the better will be the results.

The next application in an ordinary year will be just after the blossoms have fallen or after most of them have fallen. This is the regular codling-moth spray. Of these three sprays, usually the second and third are the most important, and often if either of these two is omitted it is quite impossible to secure clean fruit.

There are some years, and they have occurred at least twice since 1911, when there is a very long period between the date when the blossoms begin to burst and that at which they fall. Sometimes the length of this period is three or even four weeks. In such a case it stands to reason that it is demanding too much of the second blossom spray to expect it to keep the foliage and bases of the blossoms protected against scab until the codling-moth spray can be given. So that I should urge everyone to watch the weather and his trees, and if he finds that at the end of twelve days or two weeks after

he has applied the spray just before the blossoms, the weather is still cold and wet and very little progress is being made in the development of the blossoms, to put on an intermediate spray at once, omitting, of course, the poison. This will decrease the cost and also will prevent any danger of killing bees. The same thing is true of course of the dust if one is using the dusting method—omit the arsenate of lead. Some years the latter part of June is quite moist and in such a case one has to judge for himself whether he will apply a spray about two weeks after the blossoms have fallen. My advice would be to watch the weather, and if at the end of say twelve days there is still much moisture, to put on an application either with or without the poison. Poison is not necessary unless there are troublesome biting insects present. The strength for this and for the other mixtures is given in the Spray Calendar. There is no benefit at all in spraying during the dry weather of July or August, because scab does not develop in these months. They are the months of least moisture; the days are longer and the nights are shorter, and even heavy rains quickly dry off, so that spraying done is merely money thrown away.

To prevent an attack of scab late in the season in September or of sooty fungus, the only method is a fine mist application towards the end of August; but if the work has been done very thoroughly in the early part of the season it will, except in very wet seasons, be found that in the case of all varieties except those especially subject to scab, such as McIntosh and Snow, the early sprayings will keep the fruit clean, even up to the time of picking. It takes a long time for scab to work up and become prevalent if the orchard is once clean.

The date of any application will have to be determined by the time of picking the fruit. In some cases it remains on and stains if applied later than the 15th of August. Occasionally it may have to be a little earlier than this. There is no need of poison in any late spray, and the lime-sulphur should not be stronger than 1.007 or 1.008, that is about 1 gal. in about 40 of water.

Pruning as an Aid.

On large trees that have not been pruned, it is very difficult to secure clean fruit, because the large number of branches and the great amount of foliage make such a dense covering that the moisture does not dry off these trees quickly, but remains and gives an opportunity for the development of the scab. Therefore I should urge every man to pay much attention to the question of pruning his trees, so as to let in plenty of sunlight and a good circulation of air.

Good Equipment.

Without good equipment it is impossible to do rapid and efficient spraying. One should have good discharge nozzles set at a proper angle to each other. The hose should be good,—at least 30 feet long for the man on the ground, the fittings all close so that there is no leaking, the pump should be well packed so that it will give good pressure, spray rods should be of the proper length, usually a 10-foot pole for the man on the wagon or on the tower and a 6-foot or 8-foot pole for the man on the ground. All these things will help out more than one would think. Gasoline outfits of course are more rapid and convenient than hand pumps, though the latter often do real good work.

Thoroughness.

Only a small percentage of our growers are doing anything like thorough spraying, hence this is one of the great causes of failure to obtain good results. A large apple tree that has good promise of fruit on it should receive at least six gallons for the spray before the blossoms, and for the spray after the blossoms at least eight, and often more. Care must be taken to cover every side of the young forming fruit, or in other words, of the base of the flower which will develop into that young forming fruit, because if a scab gets started on the base of these, it is sure to lead to a spot in about ten days. I find it wise to send the man on the ground underneath the tree and let him work back slowly until he comes towards the wagon. This enables him to shoot the spray up and to strike the parts that are facing the centre of the tree. If you will examine the young fruit on the trees before it is an inch in diameter, you will find that nearly all the scab is on the side that faces the centre of the tree, because that is the dark side where the moisture remains longest. Later when the fruit grows larger it will bend over and the scab will thus show up on the outer side. This fact suggests therefore that we should try to see to it in the early stages that the parts facing towards the centre of the tree are well done, and I have been unable to secure this without sending the man in underneath the tree and letting him shoot the spray upwards towards the top. A strong wind will help to drive the spray right through, but intervening branches will often prevent this.

It is well to remember that one thorough application is of very great importance in making it easier for the next application to keep the scab off. I consider one thorough application as good as three or four poor applications.

Conclusion.

There is no cause for fruit growers to lose their faith in spraying, and I know that most of them have not. I trust that next year will be a normal year and that better attention to the things that I have spoken of, especially to promptness and thoroughness and watching the weather to see if intermediate applications are necessary will result in a very large percentage of beautiful clean fruit and thus great encouragement to careful growers. If it does, and if our growers

have learned to be thorough sprayers, we shall look back upon these two bad years of apple scab as a boon to the future of our apple industry.

[Note.—This is the paper delivered by Prof. Caesar at the recent Fruit Growers' Convention in Toronto.

FARM BULLETIN.

It's Hard to Beat the Habit.

EDITOR "THE FARMER'S ADVOCATE":

As I wis sittin' by the fire the ither night, smokin' ma pipe an' wonderin' gin there wad be sic a thing as tobacco in the next world, the auld wumman a' at once looks up frae her knittin' an' says she, "Sandy, did ye never think how muckle money ye micht hae had in the bank by noo gin ye had never started usin' tobacco?" "Na," I replied, "how muckle does yer ain deposit amount tae by this time, wi' interest an' a'?" "Seein' that ye have never acquired the tobacco habit ye will na doot hae saved up quite a wee sum."

This settled her for a meenute, but I could see there wis somethin' on her mind, an' aifter a while she starts in again. "I hae been readin'," she says, "what it costs this country for tobacco in a single year, an' ye'd no' believe it I suppose, but I hae the figures frae a guid authority an' ye can hae them proved any time ye like. Between oor ain country here an' the land tae the south o' us we spend one billion, twa hundred million dollars ilka twelve months for a weed that does mair harm than thistles or mustard, or any of the plants that ye're tryin' sae hard tae get rid o' a' the time. Of coorse, this sum includes pipes an' matches an' a' the ither things that gae wi' the habit." "Weel," says I, "it's easier tae believe yer figures than tae try tae prove them. Tobacco maun be a grand thing when the country is willin' tae spend sic an amount on it. Or maybe the people are like a chap I wis talkin' tae once. He said tobacco wis na guid, an' he wis gaein' tae burn as muckle o' it as he could lay hands on. He didna' tell me at the time that he wis gaein' tae burn it in his pipe, but I found oot later that that wis what he meant. It's no joke Jean, let me tell ye," says I, "tryin' tae gie up the habit once ye've got richtly started."

"That's the vera reason," says Jean, "that ye should mak' an extra effort. Onything that mak's a slave o' ye is worth fightin'. But ye didna' let me feenish what I wis gaein' tae tell ye. There's ither kinds o' waste in connection wi' tobacco besides juist what ye pay for it. What about a' the fires that are started through smokers throwin' awa' half-burned matches an' cigars, an' cigarettes? They say that fires that had been started in this way cost the people o' North America mair than one hundred million dollars ilka year. An' besides this there's a' oor forest fires. It's hard tae tell how mony o' them are started by smokers, but it's na mair than fair tae blame them wi' a guid share o' them. An' then there's the lives that hae been lost in these fires. Ye canna' pit a money value on them, but one life is worth mair than a hale lot o' tobacco onyway. In one fire in New York, that wis started by a cigarette stub, they say, there wis mair than one hundred an' forty girls burned tae death."

"Then there's anither waste besides what comes by fires. Did ye ever think o' a' the land that it takes tae grow this tobacco? I hae the figures for that too. There's about a million an' a quarter acres in this country an' the States that is used for naething but raisin' tobacco. Think o' a' the coos ye could keep on a farm o' that size, Sandy. Dae ye no' think ye could help bring doon the high cost o' livin'? There's a waste whatever way ye look at the tobacco question," says Jean, gettin' a wee bit excited.

"There's somethin' else I hae juist thought about," she went on, as I wis ower busy fillin' ma pipe for anither smoke tae interrupt her, "an' it's this," says she: "what about the cost o' keepin' the world clean in spite o' the tobacco users? There's not a hoose-keeper in the country but kens how muckle o' her time it takes tae keep a place clean o' ashes an' burnt matches an' the smell o' tobacco gin there's a smoker about the ranch. An' it's the same in oor city hotels, an' oor railways an' ilka place where men get together, I'm sure. Did ye ever think what it must cost the railroad companies drawin' smokin' cars back an' forth over the country a' the time. An' they get naething for it, for the mon who smokes can claim twa seats, one wi' the respectable people in the main pairt o' the car an' the ither in the smoker, an' at the same time him only payin' for one seat like the rest o' them. It's no fair, tae say the least, tae mak' a privileged character oot o' the individual that mak's the maist trouble for the company. Of coorse, the company dinna' lose onything. They tak' the extra expense oot o' the rest o' the travellin' public. An' finally," says Jean, "gin the time o' the mon who smokes is worth onything, he's rinnin' up a big bill against himself for that alone. Ye should juist watch yersel' for a while an' see hoo lang it tak's ye tae get yer pipe ready for action, an' tae hunt up matches an' tae finally get yersel' started smokin' oot the family. You're no' as bad as some, Sandy," says Jean, "I've seen men that never seemed easy unless they were smokin' or gettin' ready tae smoke, an' they didna' accomplish muckle o' onything else. An' for the guid reason that they juist didna' hae the time."

"That's a richt, Jean," says I, knockin' the ashes oot o' ma pipe, "I'm no' denyin' muckle o' what ye say. But as I said before, it's anither story when ye hae the habit an' try tae quit. I've seen it tried an' tried it masel', an' it's no 'rolling-aff-a-log' business. It isn't lang since I wis talkin' tae a young chap that had got

married a while back an' gone tae housekeepin', an' he wis tellin' me about his experience. He said he got tae figurin' on the cost o' livin' one nicht, an' he found oot he wis pittin' mair intae tobacco than he wis payin' oot for bread. Sae he thoct he'd juist cut oot the smokin' an' lay by what it had been costin' him. But, as it happened, juist at that time their young baby wis gettin' some new teeth, an' as they didna' suit him he kept up conseederable o' a row aboot it, baith day and nicht. Sae it cam' aboot that the child's feyther had tae spend the nicht walkin' the floor wi' him, an' naturally he got tae thinkin' aboot his tobacco. It isna' hard tae guess what happened. He stood it for twa nichts, but on the thrid he had tae gie it up. He hunted up his auld pipe an' some tobacco, an' in a couple o' meenutes he wis at peace wi' the world, including the baby. He tauld me that the tobacco smoke seemed to hae a guid effect on the child as well, for it went tae sleep in aboot five meenutes, aifter he got the pipe goin'. But he thinks he wad hae hung oot gin circumstances hadna' been againt him."

"An' then dae ye mind auld Dougal Forbes, the time he quit the pipe. No one seemed tae ken why he took the notion, but he said he'd show them he could say good-bye tae tobacco before the time cam' for him tae sae good-bye tae everything else as weel. I saw him a few days aifterwards. 'Noo Dougal,' says I, 'don't ye think ye'll be back tae the auld pipe in a week or twa mair? Ye're lookin' kind o' worried richt noo'. 'Never, Sandy,' says he, as loud as though he meant it, an' maybe he did. 'I'm gaein' tae see this thing oot or dee in the attempt.' But he didna' last ony longer than the rest o' them, an' I heard them say that he kept on smokin' till he could na longer hauld the pipe between his teeth. I heard o' one chap that got over the habit though. An' before he died, too," I said.

"Wha wis that?" inquires Jean. "Gin one mon did it anither can, I'm sure," says she. "Yes sir, he quit it," says I. "Dae ye mind John Archie Duncan McMillan West in Kenyon, that got the lockjaw. It wis him," says I. SANDY FRASER.

Underdrainage Increases Crop Yields.

The Western Ontario Clay Workers' Association held their annual convention in London, on February 20, 21 and 22. Questions pertaining to the manufacture of tile and brick were thoroughly discussed by different speakers. Belting, machinery troubles, value of underdrainage, and the keeping of accounts all received due consideration. The demand for tile for farm drainage was claimed to be the greatest at the present time in the history of the Association. The experiences of the last two years in particular have led many farmers to invest money in tile, in order to remove surplus water from their farms. Tile drains not only make the land drier in a wet season, but permit it to hold moisture in a dry season, and if the land needs drainage at all it is usually considered to be a wise investment to spend a few hundred dollars in under-drains. There are instances on record where the cost has been repaid in one, and, at most, two years.

Tile makers very often hear complaints made about their larger-sized tile, and the delegates present at the meeting considered that where the tile fell down it was due largely to lack of uniformity in the quality of clay. The clay must be well prepared in order to make the best quality tile. Considerable discussion took place relative to the depth at which tile may be buried. Some claimed that if they were too deep in the earth that the downward pressure would cause them to collapse. However, the consensus of opinion was that the breaking of tile, which were buried deeply, was due to causes other than the pressure. As was explained, the tile being round, pressure is equal on all sides. Poor tile and frost getting underneath them were reasons given for the tile breaking after they were buried in the drain. When large tile are laid, as is sometimes the case with culverts, it was claimed that the bottom of the trench should be shaped to fit the tile, in order to give them the greatest strength.

Belting problems were discussed by S. R. Walsh, who claimed that cattle raisers were in many cases responsible for weaknesses in leather belts. The larvae of the warble fly, barbed-wire scratches, and carelessness in removing the hides, causing holes or weak places, all tended to make inferior leather. "Users of belts often had difficulty in keeping their belts in repair because of overloading," claimed the speaker. "There is no use trying to get along with a light belt at a heavy job." Leather belting proves satisfactory in many places, but is easily affected by heat and oil. Overloading has a tendency to produce uneven stretching which causes the belt to run sideways. It is claimed to be difficult to get the same quality belting twice in succession. The extent of the rubber industry and the increased use of rubber belting was pointed out, and reasons given why rubber belting to-day would not stand the strain or wear of that made years ago. It was claimed that the wild rubber tree gave a superior and more uniform quality rubber than is secured from plantation rubber, which produced fifty or sixty grades and naturally results in lack of uniformity. A few years ago it was customary to tap the rubber tree once in seven years, but the present increased demand for the product has resulted in the trees being tapped once in four years. Rubber belting is water-proof and will stand a heavy draft. In certain places it is much more satisfactory than other kinds of belting.

The advantage of canvas belting is that it stands chemical action. While it may not look as well as other kinds, yet it is serviceable and belting should be con-

sidered in terms of serviceability, length of life, uniformity, and condition under which it must be used. After the first week's use the speaker claimed that canvas belts do not stretch. They are particularly serviceable for big drives, and for hot, dry atmospheres. A mixture of raw and boiled linseed oil was mentioned as a good dressing for belting.

The value of farm drainage was discussed by J. R. Spry, O. A. C., Guelph, and his opening remarks were to the effect that tile manufactures can justly claim some credit for the increased national wealth derived from larger crops, due to soil improvement. From 1854 up to the present time tile manufacturing plants have been turning out an ever-increasing number of tile, and yet in Ontario to-day there is more land needing drainage than all that has been drained to date. There are many advantages derived from under-drainage. Influence on soil conditions, causing increased crop yields, and the value of drainage as a factor in farm improvement, were some of the advantages mentioned. Good drainage makes thorough tillage possible, and it is only through a system of thorough tillage that the most profitable crops can be produced. A soil that is too dry breaks into clods, and a soil that is too wet, if worked, puddles and bakes into hard masses. Underdrainage tends to offset both these conditions. The speaker claimed that cultivation when the soil was either too wet or too dry will as effectively lock up the plant food present as if it were actually removed from the soil. Not only is the plant food unavailable to the plant, but the germination of the seed is poor and the early growth of the plant is hindered. An intelligently planned drainage system will remove excessive moisture from the low land, so that the entire field will be uniformly dry and cultivation can be proceeded with under much more favorable conditions than on an undrained field. Experiments have proven that the seed must be sown early in the spring, or as early as conditions will allow, and every day's delay means a considerable loss per acre. Drainage, more than anything else, prepares the soil for early seeding. In normal years it is estimated that seeding may be advanced from one to three weeks, and in a spring like 1916 drainage and drainage alone made seeding possible on a large area of splendid agricultural land.

Heat is a factor which combined with other things promotes growth. A wet soil is extremely hard to heat, as rapid evaporation absorbs the sun's heat, instead of permitting it to warm up the soil. The drains remove the excessive water, lessen the amount of evaporation, and permit the soil particles to warm up. Air is also a factor which aids in the growth of the plant. A water-logged soil contains practically no air, consequently the plant does not thrive, and chemical and bacterial processes which aid in the preparation of plant food are at a standstill without the presence of air. It is frequently noticed that crops growing on low land become sickly and yellow, while normal growth continues and the rich, green color is prevalent on the higher land. This difference in color is claimed to be caused by the lack of nitrogen, due to weak bacterial action, but, bacteria requires food, air and warmth, the same as other organisms to develop. Drainage relieves the situation and permits the rapid elaboration of plant food early in the season. If the water table is near the surface early in the season, the roots of the plants are prevented from penetrating the soil, consequently their feeding area is limited. It is found that on well-drained soil plants develop a more extensive root system than on wet soil, and are able to withstand a drought more effectively.

Mr. Spry submitted figures to show the results of drainage work on demonstration plots which he had charge of during the past year. The plots all had fair surface drainage and the soil was a loam. In Wentworth County the difference between drained and undrained land with fall wheat was 10.4 bushels in favor of the former. On the plot in Haldimand County there was an increase of 12 bushels of fall wheat; in Frontenac the results showed an increase of 20.9 bushels of oats on drained over undrained land. In Hastings County drainage was responsible for an increase of 13.8 bushels of barley, and in Peterboro there was an increase of 1.45 tons of hay per acre as a result of drainage. At the average price of these products, the increase in yield per acre would go a long way towards putting in a system of drainage. The average increase meant \$12.44 per acre, which, after paying the yearly installment of interest and principal covering the cost of the drainage scheme, there was a clear profit of \$9.77 per acre. Experiments were also conducted on clay soils, and the increase due to drainage in Renfrew County was 3.94 bushels with spring wheat; in Welland County, fall wheat showed an increase of 2.9 bushels; in Haldimand County there was an increase of 10.3 bushels of oats, and 8.8 bushels of an increase with oats in Halton County. This shows a considerable difference in the increase on loam and clay soils, however, the speaker claimed that the value of drainage will increase on the clay soils with each successive season as the drains have opportunity to improve the soil conditions. Besides the increase in grain there was an increase in straw, and the soil was left in better physical condition for the next season's crop.

As a factor in farm improvement, drainage is effective in making waste land productive, in removing unsightly spots, and in improving roads. During 1915 many acres of splendid crops were not harvested due to the excessive rainfall during harvest, while on drained soil harvest was proceeded with. In 1916 a large acreage was never seeded, due to excessive wet, which might have been seeded and produced a good yield had the soil been previously underdrained.

The visiting delegates to the convention were tendered a banquet by the London Brick Manufacturers. An excellent program was rendered, and the occasion

was enjoyed by all present. The officers for 1917 are as follows: Pres., W. Clark, Corunna; 1st Vice-Pres., J. W. Cawrse, London; 2nd Vice-Pres., C. S. Parker, London; 3rd Vice-Pres., J. Holmes, Alvinston, Sec'y., A. Wehlann, Cairo.

He Better Get Work on a Farm.

EDITOR "THE FARMER'S ADVOCATE":

Thank you very much for your criticism of A. A. Ayer's speech before the Eastern Ontario Dairymen's Convention, which you gave in Jan. 25th issue. I read his speech first in another farm paper, and parts of it were printed in one of our local daily papers, and I found it impossible to swallow down.

Now, "The Farmer's Advocate," which is always the farmer's champion, comes to my rescue and I put Mr. Ayer's simple tirade away, considering where it came from, like the fellow did who was kicked by a mule.

He says farmers are buying automobiles with profits derived from war prices. If he could audit a few farmer's account books he would find that not many can save enough in two years to buy even a \$500 car.

He says that a lot of hogs are coming on the market around 100 and 110 lbs., which the farmers ought to feed up to 175 and 200 lbs., even if they have to do so at a loss, so that there would be more meat for the Allies. We should be willing to lose that little to increase production. I expect this week that Mr. Ayer will be taking the butter out of cold storage which he bought last July and August for 28 and 30 cents, and selling it to Britain and her Allies for 25 cents to save them expense in feeding the boys at the front.

Mr. Ayer says farmers are too stingy to hire sufficient help to work their farms. It shows what he knows about the hired help problem. If he isn't busy all the time in his comfortable office from 9.30 a.m. to 5 p.m. or has any time to spare from conventions, I would advise his helping to increase production by working on a farm for the coming season.

Brome Co., Que.

A. T. WOODLEY.

Dairy Standards Act to be Amended.

A report comes from Toronto that Sir William Hearst introduced a Bill in the Legislature on Friday to amend The Dairy Standards Act by providing that it shall come into effect on Proclamation of the Lieutenant Governor-in-Council instead of at the beginning of the next season. The Minister was unable to say when it would come into effect, but not before a year or two at least.

In so doing he recalled the fact that the late Minister of Agriculture, in introducing the Bill a year ago had referred to the necessity for considerable educational work before a measure of this kind was put into operation and promised that if the year allowed proved inadequate, application for further extension would receive every consideration. As is well known, many requests have been made for an extension of the time, particularly from the eastern section of the Province. The Prime Minister pointed out that the principle of the Act was sound and was admitted to be sound by practically every person but, as to its working out, further educational measures would have to be carried on. The support of public opinion and the co-operation of those immediately concerned were essential to making a success of such a change. While the test in itself had been before the dairy industry for a great number of years, it had only been up for discussion as a compulsory measure for a few months. Those opposed to the measure he thought should study it further, and if they did so no doubt their views would be changed, while those who were in favor should realize the necessity of having general support lest the objects in view should be defeated by an inadequate test of the legislation.

Land Tenture and Tenantry.

EDITOR "THE FARMER'S ADVOCATE":

The general question of farm tenantry is one which has not received, in Canada, the attention and discussion which it justly merits. Two aspects of the question are of importance: First, what is the importance of the average *time* during which leases run, and, secondly, what is the significance of any change in the proportion of tenants to owners?

1. When we compare Canada with England we are impressed by the fact that we follow a system of short-term leases, whereas in the Old Country they follow a system of long-term leases. In so far as this difference indicates that our farm tenants expect, in a few years, to become farm owners, and therefore do not like to bind themselves to any property for a long term of years, it may be that our system is to be preferred. In all other respects, however, it is inferior. Many of our farm tenants are permanently tenants. They drift from one farm to another bleeding each to the maximum extent during the three or five years of their lease, and carrying their noxious methods with them in their frequent migrations. They have neither the time nor the desire to assist in community improvement. They are rolling stones, getting few benefits and conferring few. They are an impediment to good agriculture, and to the development of rural social life. All of us know farms which have been constantly occupied by tenants for perhaps a generation, with changes every few years; and we have seen these farms steadily deteriorate. Nothing could be much worse for any rural community than to have a large pro-

portion of such farms and such tenants. The state should be vitally interested in this matter, and should give it the necessary attention, first as to investigating the facts by survey work, and secondly as to devising remedies for any evils which exist.

Closely connected with the above question is that of permanency of ownership. I have seen some startling statements as to the frequency with which farms change owners; in some cases 40 years will witness an entire change of population in certain neighborhoods. That farms do not remain in the same family from one generation to another is a fact demanding most careful consideration.

2. Is tenantry in Ontario on the increase or vice versa? Here is a fruitful field of investigation for some of our farm experts or O. A. C. students. We should be able to get at some of the facts at least, from the municipal returns, and I shall hope to see my question answered by someone who has easier access to the available facts than I have. In the United States, I believe, tenantry is on the increase. Should such prove to be the case here, Ontario, it is something of profound significance.

Further, there is the allied question as to the re-

lation between tenantry and land values. What effect has the increasing of land values had upon the proportion of tenants? There is, in the popular mind, considerable confusion on this subject. It is too often taken for granted that an increase in the value of lands is a good sign. To the man who permanently occupies and farms his land no advantage comes from any increase in its value; on the contrary a larger deduction of interest on investment must be made from annual earnings. It is only when a man wants to sell that prospective advantage appears; and then what the seller gains, the buyer loses. Socially the increase in land values is injurious rather than advantageous, and further, in so far as such increases in farm values may tend to encourage tenantry and discourage farm ownership, the disadvantages are much more conspicuous. Moreover, any rapid increase in land values inevitably leads to speculation, under our present system of taxation, and nothing can well be more corrupting or more damaging to farm production. When the individual neither loses nor gains by changes in land values, then will these values be determined by the rewards of labor upon the land, and sudden changes, due to fraud and speculation, will be no more. I should like to see this whole question of land tenure

and tenantry taken up by the department of economics at the O. A. C.

Brant Co., Ont.

W. C. Good.

Buy Butter by Grade.

The Supplementary Estimates tabled in the Legislature one day last week provide \$75,000 to inaugurate a system of butter grading. It is understood that a central station, probably with cold storage, will be operated by the Provincial Government. Creameries will send samples of each day's make to this station to be graded. Grading will not be compulsory at first, but creamery and produce men are in favor of it and it should soon become general in this province.

Guelph to be Wool Market.

A central wool market for the Province of Ontario is to be established in the Winter Fair Building at Guelph. It is the intention to have the wool shipped from all parts of Ontario to this place to be graded by experts. Upon delivery 50 per cent. of the estimated value of the wool is to be paid the producer and the remainder when the wool is sold. This systematic grading should ensure a higher price for Ontario wool.

Toronto, Montreal, Buffalo, and Other Leading Markets.

Toronto.

Receipts of live stock at the Union Stock Yards, West Toronto, Monday, Feb. 26, consisted of 131 cars, 1,849 cattle, 193 calves, 2,602 hogs, 153 sheep. Strong market at last week's prices except medium butchers which were ten to twenty cents higher. Cows, bulls, stockers, feeders, milkers and springers strong; prices steady with last week. Choice veal calves steady, others fifty to seventy-five cents lower. Sheep, lambs and hogs without change.

The week's live-stock market opened with a very small run, only 1,226 cattle of all grades being on sale. Good to choice heavy steers and good to choice butcher steers and heifers were strong and twenty-five cents higher than last week's close. The highest price paid was for three steers, average weight 1,300 lbs., at \$11.75. There were 60 steers, average weight 1,000 lbs. each, that sold at \$11 per cwt., and about 100 steers and heifers weighing from 1,050 lbs. to 1,100 lbs. each that sold at from \$10.20 to \$10.85 per cwt. Common and medium butcher cattle were slow of sale, but prices held fairly steady with the previous week's close. Tuesday's market was a repetition of Monday, but on Wednesday cattle of all kinds were from 15c. to 25c. higher; one load of 19 steers, average weight 1,243 lbs. each, sold at \$11.25, which was the best price of the week for a straight load of cattle. For the balance of the week butcher cattle were steady at prices as quoted below. Just here let us remark that there are far too many green, half-fat cattle arriving on the market, packers do not want this class unless at a very low price. Bulls were decidedly firm throughout the week, and realized very high prices. Good to choice selling at from \$8.75 to \$10.25, and a very few extra choice at \$10.15 to \$10.40 per cwt. Cows were also strong and in demand at new, high prices; choice selling at \$8.75 to \$9.25; a few extra fine animals selling at from \$9.25 to \$9.50. Canners and cutters were steady at from \$5 to \$5.50. Trade in stockers and feeders was active at prices a shade higher than the previous week's close, and sold as follows: feeders, 800 to 950 lbs., at \$8.50 to \$9; stockers, 700 to 800 lbs., at \$7.75 to \$8.50; common steers and heifers, 500 to 600 lbs., at \$7 to \$7.75. Milkers and springers on Monday were strong at \$9 to \$11.00 each for choice, but for the balance of the week were slow at prices \$10 to \$15 lower. Sheep and lambs were steady to strong throughout the week at prices as quoted below: Veal calves at the first of the week were slow and fifty to sixty-five cents lower but closed very firm, choice selling at 14c. to 14½c. per lb. Hogs steadily advanced in price, and the market closed with fed and watered selling at \$15, and weighed off cars at \$15.25 per cwt., which is the highest price ever paid on the Toronto market.

Live Stock Quotations.—Heavy steers, choice, \$10.75 to \$11.25; good, \$10.25 to \$10.50. Butcher steers and heifers, choice, \$10.50 to \$11; good, \$9.75 to \$10; medium, \$9.25 to \$9.50; common, \$7.50 to \$8.50. Cows, choice, \$8.75 to \$9.25; good, \$8 to \$8.50; medium, \$7.25 to \$7.50; common, \$6 to \$6.50. Canners and cutters, \$5 to \$5.50. Bulls, choice, \$9.50 to \$10; good, \$8.75 to \$9.25; medium, \$8 to \$8.50; common, \$6.50 to \$7.50. Stockers

and feeders, best, \$8.50 to \$9; medium, \$7.50 to \$8.25; common, \$6.50 to \$7.50. Milkers and springers, best, \$85 to \$100; medium, \$55 to \$75. Lambs, choice, 14c. to 15½c. per lb.; culls, 9c. to 12c. per lb. Sheep, light, 10c. to 10½c. per lb.; heavy, 8½c. to 9½c. per lb. Calves, choice, 14c. to 14½c. per lb.; medium, 10c. to 12½c. per lb.; heavy fat, 7c. to 9c. per lb.; grass and common, 6c. to 8½c. per lb. Hogs, fed and watered, \$15; weighed off cars, \$15.25.

Less \$2.50 off sows, \$4 to \$5 off stags, \$1 to \$2 off light hogs, and one-half of one per cent. government condemnation loss. Hogs weighing 150 lbs. and under are called light.

Breadstuffs.

Wheat.—Ontario, No. 2, winter, new, per car lot, \$1.75 to \$1.77; No. 3 winter, per car lot, \$1.73 to \$1.75, (according to freights outside). Manitoba, track, bay ports—No. 1 northern, new, \$1.96½; No. 2 northern, new, \$1.93½; No. 3 northern, new, \$1.88; No. 4 wheat, new, \$1.79.

Oats.—Ontario, No. 2 white, 63c. to 65c., nominal; No. 3 white, 62c. to 64c., nominal. Manitoba oats, (track, bay ports)—No. 2 C. W., 71½c. to 73c.; No. 3, C. W., 62c. to 64c.; extra No. 1 feed, 70½c. to 72c.; No. 1 feed, 69½c. to 71c.

Barley.—Malting barley, according to freights outside, \$1.20 to \$1.22.

Peas.—According to freights outside; No. 2, \$2.45.

Buckwheat.—According to freights outside, \$1.28.

Corn.—American (track, Toronto) No. 3 yellow, \$1.15, subject to embargo.

Rye.—No. 2, \$1.40 to \$1.42.

Flour.—Manitoba first patents, in jute bags, \$9.50; second patents, in jute bags, \$9; strong bakers', in jute bags, \$8.60. Ontario, winter, according to sample, in bags, \$7.25 to \$7.35, track, Toronto; \$7 bulk, seaboard, export trade.

Hay and Millfeed.

Hay.—Track, Toronto, extra No. 2, per ton, \$12; mixed, per ton, \$9 to \$11.

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

Bran.—Per ton, \$37.

Shorts.—Per ton, \$42.

Good feed flour, per bag, \$2.70 to \$2.80.

Hides and Skins.

City hides, flat 20c.; country hides, cured, 20c.; country hides, part cured, 18c.; country hides, green, 17½c.; calf skins, per lb., 25c.; kip skins, per lb., 20c.; 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., 42c.; 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. per lb. Tallow, No. 1 cake, 9c. to 10c. per lb.; tallow, solids, 8c. to 9c. per lb.

Country Produce.

Butter.—Butter of all classes kept quite firm in price last week, selling as follows: wholesale, Creamery, fresh-made pound squares, 44c. to 46c. per lb.; creamery solids, 42c. to 43c. per lb.; dairy, 35c. to 40c. per lb.; separator dairy, practically none being offered.

Eggs.—Eggs also remained high priced, as offerings were not quite so heavy. Price, wholesale: new-laid eggs, in cartons,

58c. per dozen; new-laid, case lots, 55c. per dozen. Practically no cold storage being offered.

Cheese.—June, 27½c. per lb.; new, 27c. per lb.; new twins, 27½c. to 28c. per lb.

Honey remained stationary in price with an active demand. Sixty-lb. tins selling at 12c. per lb.; one-lb. sections, \$2.40 to \$3 per dozen.

Poultry.—Receipts continued to be quite light, and prices firmed somewhat. They now bring the following live-weight prices: spring chickens, per lb., 20c.; spring ducks, per lb., 18c.; fowl, 4 lbs. and over, per lb., 21c.; fowl under 4 lbs., per lb., 17c.; squabs, per dozen, dressed, \$3.50 to \$4.

Wholesale Fruits and Vegetables.

The potato market has been continually soaring during the past week. New Brunswick Delawares now selling at \$4.50 per bag, with the probability of still higher prices, as brokers are now asking \$4.85 per bag.

Onions, too, have now reached a very high price; they have been off the market for some time, but some Spanish came in on Thursday last, which were offered at \$11 per large case and \$5.50 per half case.

Vegetables of all descriptions firmed in price. Carrots selling at \$2 to \$2.25 per bag, parsnips at \$2 to \$2.25 per bag, turnips at 85c. per bag.

New cabbage from both Florida and California arrived during the week. The California selling at \$7.50 to \$8 per case containing about 125 pounds.

California cauliflower also came in, selling at \$4 to \$4.25 per case.

Hot-house tomatoes have been off the market for some time; a small shipment received Thursday selling at 30c. per lb. for No. 1's, and 22c. per lb. for No. 2's.

Fruits of all descriptions are advancing. The California Navel oranges selling at \$3.50 and \$3.75 per case. Some asking \$4. Floridas at \$3.50 to \$4.

Florida strawberries continue to come in in small lots, selling at 55c. and 60c. per box.

Florida grapefruit is quite firm at \$4 to \$4.50 per case; the Cubans selling at \$3 to \$3.25 per case, and Porto Ricos at \$3 to \$3.75 per case.

Lemons have advanced; the Messinas selling at \$3.50 to \$4 per case, and new stock Californias at \$4.25 per case.

It is almost impossible to get good barreled apples at the present time; the boxed varieties selling at \$2.40 to \$2.75 per box.

Montreal.

The advent of Lent is the dominating feature in the local market for live stock. During this period, demand for meats of all kinds always shows a very large falling off in the city of Montreal, and as a general thing prices show a some what lower tendency. This is offset to some extent by the recognition on the part of shippers of the situation and by the smaller shipments of stocks entering the city. Sales of good steers were made this week at 10½c. to 10¾c. per lb. Fair quality continued to range from about 9c. to 10c. per lb., while lower grades ranged down to 8c. per lb. Butchers' cows sold at 7½c. to 8½c. per lb., and bulls at 8½c. to 9½c. per

lb. to cover all qualities of butchers' stock. Packers were free buyers of canned stock, and the price of this held steady at 6½c. to 6¾c. per lb. for bulls and 5½c. to 5¾c. for cows. Offerings of springers and milk cows were heavier and prices \$10 to \$20 lower each, making milkers \$65 to \$130 each and springers \$65 to \$90 each. Calves were not in large supply and good to choice milk-fed stock sold at \$10 to \$12 each, while lower grades brought \$6 to \$8 per 100 lbs. There was a good demand for sheep and lambs, the latter selling at 13½c. to 14½c. per lb. and the former at 9c. to 9½c. There was slight division of opinion in the matter of hogs, some claiming that the big run had resulted in a decline to 14½c. for selects, while others quoted as high as 15½c., weighed off cars.

Horses.—Demand for horses was moderately active last week and it is understood that quite a number of animals changed hands. Prices showed no change however, and were: heavy draft, weighing 1,500 to 1,700 lbs., \$200 to \$250 each; light draft, weighing 1,400 to 1,500 lbs., \$150 to \$200 each; small horses, \$100 to \$125 each; culls, \$50 to \$75 each and choice saddle and carriage, \$200 to \$275 each.

Poultry.—There was no particular interest in this market and trading was not very active. Prices held about steady at 26c. to 30c. per lb. to cover all qualities of choicest turkeys. Chickens ranged from 22c. to 25c. per lb. for choicest and down to 16c. per lb. for ordinary. Fowl were 15c. to 20c. per lb., geese 18c. to 20c. per lb., and ducks, 19c. to 23c. per lb.

Dressed Hogs.—Dressed hogs continued about steady, but demand for these as well as for smoked and cured meats naturally was lighter owing to the Lenten period. Fresh killed, abattoir-stock was quoted at 21½c. per lb., while light weight country hogs were 20½c. per lb., and heavies 19c. to 20 per lb.

Potatoes.—The market for potatoes continued to advance. The stormy weather held back deliveries and there were enough cars available even if the supply of potatoes was available in the producing markets. This week Green Mountains were quoted at \$3.50 per bag of 80 lbs., ex-store, while Quebec potatoes were \$3 to \$3.25, in a wholesale way.

Honey and Maple Syrup.—The maple syrup period is now only about a month away and stocks of old syrup are light. Prices were steady at 95c. to \$1 for 8-lb. tins; \$1.05 to \$1.10 for 10-lb. tins; \$1.25 to \$1.50 for 13-lb. tins. Sugar was 15c. per lb. White clover comb was unchanged at about 15c. per lb., white extracted 12c. per lb., brown clover comb 12c. per lb., and extracted 11c. per lb. Buckwheat honey was 9c. to 11c. per lb.

Eggs.—Although some quoted the market slightly lower, not much change took place. Canadian fresh were quoted at 58c. and American 55c. No. 1 selects were 48c.; No. 1 candled, 45c., and No. 2 38c. to 40c. per dozen.

Butter.—Generally speaking, the market for creamery shows considerable firmness during Lent. Up to the present no change has taken place in price. Finest fall makes were 42½c. to 43c. per lb., fine quality being 1c. under these figures. Winter makes were 40½c.

THE ROYAL BANK OF CANADA

Capital Authorized - - \$ 25,000,000
 Capital Paid Up - - - 12,900,000
 Reserve Funds - - - 14,300,000
 Total Assets - - - - 270,000,000

HEAD OFFICE: MONTREAL

Branches throughout every Province of the Dominion of Canada

Accounts of Farmers Invited
 Sale Notes Collected

Savings Department at all Branches

to 41c. per lb. for finest and under-grades were about 1c. less. Dairies ranged from 36c. to 38c. per lb., according to quality.

Cheese.—The tone of the market showed practically no change and quotations were about steady. Winter made, Quebec cheese has sold at 24½c. per lb. and the price ranges down to 22c. per lb. Finest Westerns are 26c. to 26½c. per lb.

Grain.—The turnover has not been very active here lately, but car loads of No. 2 Canadian Western oats sold at 75c. to 76c. per bushel, while No. 3 were 73c. to 74c. per bushel. Extra No. 1 feed sold at 73c. to 74c. per bushel, and No. 2 feed 71c. to 72c. per bushel, ex-store.

Flour.—The market continued absolutely unchanged. Manitoba spring wheat first patents were \$9.60 per barrel, in bags; seconds \$9.10, and strong bakers', \$8.90. Ontarios still sold at \$8.50 to \$8.80 per barrel, for 90 per cent. patents, and \$4.10 to \$4.25 per bag.

Mill Feed.—This market was very strong and sales of bran were quoted as high as \$35 per ton, in mixed car lots, in bags. Shorts were \$38 per ton; middlings, \$40 to \$42 per ton; mixed mouille, \$45 and pure grain mouille, \$48 to \$50 per ton.

Baled Hay.—This was one of the agricultural products which continued steady and at a low price, being \$13 per ton, for No. 2, \$11.50, for No. 3, and \$10.50 for clover mixed, car lots, ex-track.

Hides.—The market was unchanged. Beef hides were 25c., 24c. and 23c. per lb. for No's. 1, 2 and 3, respectively. Calf skins were 38c. and 36c. for No's. 1 and 2, respectively per lb. Lamb skins were \$3.90 each and horse hides \$7.50 each. Tallow was 3c. to 5c. per lb. for rough and 8c. to 9c. per lb. for rendered.

Buffalo.

Cattle.—With receipts more liberal last week than for many weeks past, the beginning of the Lent holidays, together with the fact that in the East consumers are rioting by reason of the high price of foodstuff, had the effect of lowering prices here from a half dollar to seventy-five cents per hundred. There were around twenty loads of shipping steers offered, including some Canadians. Best shipping steers ranged from \$11 to \$11.25, with the best Canadian steers \$10.90. Best handy steers generally ranged from \$10 to \$10.50, with best heifers in large lots from \$8.00 to \$9.00. Best fat cows sold generally from \$7.50 to \$8. Very few stockers and feeders were offered and these sold at lower prices, best here ranging from \$7.25 to \$7.85. Bulls sold at about steady prices, while best milk cows and springers brought firm prices; medium and common kinds that went for slaughter, were lower. Receipts for the week totaled 4,675 head, as against 2,750 for last week and 4,825 head for the corresponding week last year.

Quotations:
 Shipping Steers.—Choice to prime natives, \$11.25 to \$11.75; fair to good, \$10.60 to \$11; plain, \$10 to \$10.50; very coarse and common, \$9.50 to \$9.75; best heavy Canadians, \$10.75 to \$11; fair to good, \$9.75 to \$10.50; common and plain, \$9 to \$9.50.

Butchering Steers.—Choice heavy \$10.75 to \$11.50; fair to good, \$9.75 to \$10.50; best handy, \$10.25 to \$10.60; fair to good, \$9.50 to \$10; light and com-

mon, \$8 to \$9; yearlings, prime, \$11 to \$11.50; fair to good, \$10 to \$10.75.

Cows and Heifers.—Best heavy heifers, \$9 to \$9.75; best butchering heifers \$8.50 to \$9; fair butchering heifers \$7.75 to \$8.25; light and common, \$6.50 to \$7.50; best heavy fat cows, \$7.50 to \$8.50; good butchering cows, \$6.75 to \$7.25; medium to fair, \$5.75 to \$6.50; cutters, \$5.25 to \$5.50; canners, \$4.50 to \$5.00.

Bulls.—Best heavy, \$8.50 to \$9.25 good butchering, \$7.75 to \$8.25.

Stockers and Feeders.—Best feeders \$7.50 to \$8; common to fair, \$6.25 to \$7; best stockers, \$7 to \$7.50; common to good, \$6 to \$7.

Milchers and springers.—Good to best in small lots, \$90.00 to \$100.00; in car loads, \$75.00 to \$85.00.

Hogs.—Last week started with good hogs selling below the \$13.00 mark, Monday's range in prices on better weight grades being from \$12.75 to \$12.90, and \$11 caught the bulk of the pigs. Tuesday prices advanced, top being \$13.10 with other sales ranging from \$12.80 to \$13.05 and pigs generally \$11. Wednesday values on better weight grades jumped up to \$13.35 and pigs went from \$11.25 down, skips going as low as \$9.50, Thursday the price list remained the same as Wednesday, and Friday, under a light supply, the market showed a fifteen to twenty-five cent advance, bulk selling at \$13.50, with lights and pigs ranging from \$11.25 to \$13.00 as to weights. Roughs during the high time of the week brought up around \$12.50 and stags \$10.75 down. For the past week receipts totaled 21,200 head, as against 27,786 head for the week before and 27,800 head for the same week a year ago.

Sheep and lambs.—Prices held to a high level on the opening day, last week, lambs selling up to \$15.65, yearlings made \$14.50, wether sheep scored a \$12.50 top and ewes went from \$12 down. After Monday the lamb trade ruled lower, and Thursday, which was the low day of the week, buyers got the most desirable lambs from \$14.75 to \$15. Friday the market reacted, tops selling up to \$15.15. Supply of sheep after Monday was light and trade on these was steady. Receipts last week were 14,600 head, being against 15,145 head for the week previous and 16,100 head for the same week a year ago.

Calves.—Prices last week struck the lowest level of the year. Monday top veals sold generally at \$15, Tuesday bulk moved at \$14.75, Wednesday the majority again went at \$14.75 and Thursday and Friday tops dropped to \$14.50. Cull grades the fore part of the week sold up to \$12 and on the low days they went from \$11 down. Offerings the past week aggregated 2,900 head, as compared with 2,126 head for the week before and 2,000 head for the same week a year ago.

Chicago.

Cattle.—Beeves, \$7.85 to \$11.90; stockers and feeders, \$6.25 to \$9.10; cows and heifers, \$5.15 to \$10.20; calves, \$9 to \$12.75.

Hogs.—Ten cents higher; light, \$12 to \$12.90; mixed, \$12.60 to \$13; heavy, \$12.50 to \$13; rough, \$12.50 to \$12.65; pigs, \$9.75 to \$11.35.

Sheep.—Lambs, native, \$12.25 to \$14.60.

Cheese Markets.

New York, specials 26½c.; fancy, 25½c. to 26c.; Montreal, finest westerns, 26c. to 26½c.; finest easterns, 25c. to 25½c.

Two Good Bulls.

James Douglas, the well-known Shorthorn breeder of Caledonia, Ont., writes that he is selling at the Provincial Bull sale to be held at Guelph, March 7, two young bulls of the choicest breeding, a Boyne Lady and a Jilt, both by the great imported Butterfly bull, Roan Chief. The Boyne Lady bull is a thick one and dark red, and the Jilt bull is a massive fellow. Look these over.

F. W. Ewing, Elora, Ont., writes "The Farmer's Advocate" thus regarding his offering of Shorthorns. "In order to make room for the crop of calves coming on, attractive prices are being made on the offering of bulls ready for the trade. They are of extra quality and choice breeding by that great sire, Escana Ringleader, by Right Sort Imp. Few bulls their equal are to be had."

We draw attention to the advertisement in this issue of the Menie District Ayrshire Club sale to be held at Campbellford, March 14. This is a fine chance to get good Ayrshires. See notes next week and get a catalogue.

A Big Sale of Holsteins.

The estate of John W. Lee, as advertised in this issue, will sell his entire herd of Holstein cattle at "Helbon Farm", Simcoe, Ontario, March 7. This is an attractive offering of twenty-one females and four males. The herd has been bred up from the best that money could buy. One of Canada's first 30-lb cows originated in this herd. The herd sire is a grandson of Pontiac Korndyke. There will also be sold twenty pure-bred Oxford ewes, some horses and the farm implements. See the advertisement and write immediately for catalogue.

Clement Guay of Lacolle, Que, had a patch of rough land on his farm on which he set out something like one-hundred hard rock maples about thirty-five years ago, and the trunks of these trees have now attained an average diameter of fifteen inches. These trees being planted about twenty-five or thirty feet apart, have developed very large crowns, and should be big sap producers. Mr. Guay is intending tapping these trees this year for the first time. This record would go to show that planted maple trees could safely be tapped after twenty-five years growth. It would be very interesting if the Government would plant on untillable land in sections maple trees which would be yearly revenue producers for at least a century.

The Scotch Clydesdale Sale.

This is the last chance to draw attention to the advertisement of the big Clydesdale sale in the Old Land to be held March 6. Horsemen have read with great interest the advertisements and comments in this paper. Fifty of the best Clydesdales of the breed, from the stud of Wm. Dunlop will be sold by James Craig Ltd., Ayr, Scotland. Cabled bids will receive the best attention. It is unfortunate that the supply of catalogues which was forwarded to this office for distribution never reached us, so our many enquirers were disappointed. However, several of the choice animals are described in the ad. or in past write-ups. Cable your bids.

Sale Dates.

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

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

March 7.—Estate of John W. Lee, Simcoe, Ont., Dispersion Sale, Holsteins.

March 9.—W. J. Abernethy, Beton, Ont.; Shorthorns, Oxford Down sheep.

March 13.—L. Summerfeldt & Son, Unionville, Ont.; Holsteins.

March 14.—W. B. Poole, R. R., Ingersoll, Ont.; Holsteins.

March 14.—Menie District Ayrshire Breeders' Club, Campbellford, Ont.; Ayrshires.

March 14.—Hugh Mackay, Lot 35, Con. 7, West Nissouri; Shorthorns.

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

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

March 23.—Oxford District Holstein Breeders' Club, Woodstock, Ont.; Holsteins.

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

April 4.—Belleville District Holstein Breeders' Club, Belleville; Holsteins.

Questions and Answers.

Miscellaneous.

Drainage Queries.

A has an open ditch running through his farm. It starts along the roadside where the tile from a number of farms empties. One farm has a large tile empty directly into the open ditch across A's land. We understand that A has kept the ditch open for a number of years at his own expense. The ditch across A's farm requires cleaning at the present time. Can A collect anything from us, farmers above him, who empty our tile on the roadside, which runs or starts the open ditch through A's

farm, for his work in the past re cleaning out ditch, etc.

2. Can we above A, who send our water that way, compel A to put in tile at his own expense where the open ditch is now located to do away with the cleaning out of the ditch? We understand A is satisfied with the ditch in its present state, or is willing to pay his share re cleaning or tiling the same without aid of engineer?

3. If we above, who want a better outlet free of cost to us, call on the engineer, can we make A pay the engineer's cost?

4. If the Council cleans out about six rods of the open ditch at their expense, does that make them responsible for their share of the outlet, as there is a quantity of water comes off the road?

5. Give a rough estimate of the cost of the following: Engineer's charges, 90 rods of fifteen-inch tile, 120 rods of eight-inch tile, digging ditch, laying tile, filling in the same, drawing tile nine miles, men and teams to board themselves during the operations. S. B.

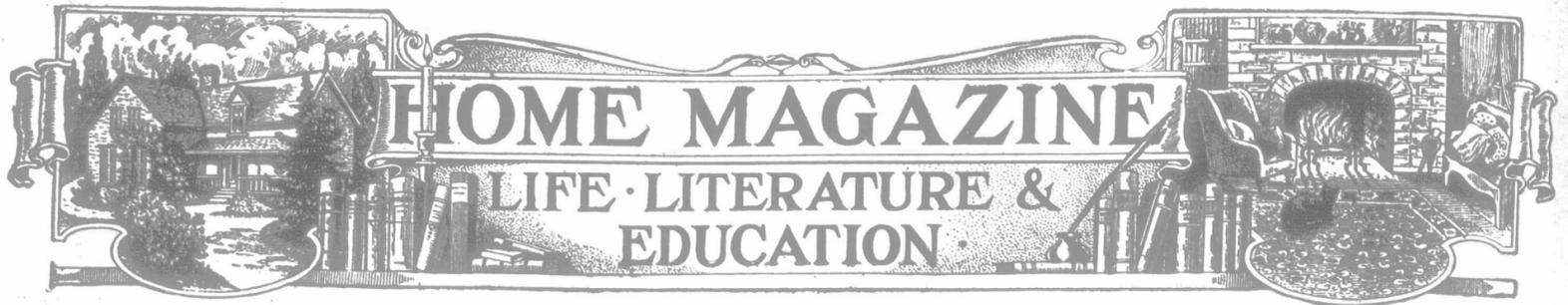
Ans.—1. No. Provided it was an award ditch, the owner of each lot or portion of lot benefited by the ditch should have been notified when the ditch required cleaning, and if they did not do their share at the time "the Municipal Drainage Act" provides that after due notification the work be let by tender and the amount charged to each party concerned, according to the amount of land drained. If it is a private ditch A cannot collect for past work, but can, under "the Municipal Drainage Act", hold the parties whose water drains into the ditch responsible for their portion of the expense of cleaning or repairing the ditch now.

2. A cannot be compelled to put in tile or clean the ditch at his own expense. Section II of the "Drainage Act" is to the effect that where the engineer or surveyor reports in favor of covering the whole or any part of a drainage work constructed under this Act, he shall determine and state in his report the size and capacity thereof and the material to be used in construction. In no case shall a natural water course be made into a covered drainage work, unless it provides capacity for all the surface water of lands and roads draining naturally towards or into it, as well as for all water from all the lands assessed for the drainage work. The cost of cleaning ditch or putting in tile would be proportioned by the engineer according to the area of land drained. Some men have agreed among themselves regarding the amount of work or expense each should bear in cleaning a ditch for outlet, and have so saved the cost of an engineer.

3. The engineer's cost would be divided among the parties concerned.

4. The council is responsible for a portion of the outlet if any water drains into it off the road. It might happen that the six rods would constitute their share; it all depends on the amount of water which flows from the road.

5. A number of factors will influence the cost. There is considerable difference in the price of tile, and ditchers can be secured in some localities cheaper than in others. The engineer charges so much per day, besides his expenses. Section 4 sub-section 2, of the Ditches and Water Courses Act, states that the council of every municipality shall by by-law fix the charges to be made by the engineer of the municipality for services performed by him under this Act. Eight-inch tile will average in the neighborhood of \$60, which would bring the cost of the 8-inch tile to about \$120. Fifteen-inch tile are very expensive, only a few tile manufacturers make this size, and quotations vary from \$200 to \$225 per thousand, which would bring the cost of the 90 rods somewhere around \$300. The cost of digging would depend a good deal on the nature of the soil. An average price for an open ditch is about 25 cents per cubic yard of earth removed and for digging an average tile drain the cost is around 40 cents per rod, when digging three feet deep. Laying the tile and filling in does not come very high, as the work can be done quite rapidly. The teaming of tile also varies, depending largely on the number of tile drawn per load. A man and team can be hired at some seasons of the year for around \$4.50 or \$5.00 per day, but only a few of the large sized tile could be drawn at a load.



Books and a Garden.

Books and a garden,
Stars and the sea,
What greater gladness,
Life, can there be?

Birds and a window,
Wind at the door,
What, in the summer,
Can I wish more?

Friends and a comrade;
Lips that can smile—
Who can be doubting
Life is worth while?

MARY CAROLYN DAVIES.

The Gentle Art of Ordering Seeds.

"The Gentle Art of Ordering Seeds"—This heading appeared the other day over an article in an American magazine, and so appealing was it that we have taken it, borrowed it, purloined it, stolen it if you will, for the caption under which you will read what appears in these columns. It was so appealing, so irresistibly appealing, so savoury of old-time gardens and "gentleness". And, truly, are not gardens, like Shakespeare, "of all time." They are our best link with the past. Our very book of faith begins with an account of a garden. "God", it has been said, "the first garden made: the first city, Cain." But to our seeds,—since seed and soil are the two first requisites of a garden, and the soil being covered three feet with snow, the seeds are, for the present, the only portion of the garden obvious.

Already the seed catalogues have begun to come in, and therein lie both opportunities and a snare. Given free start with them one may not only lay up the full promise of a fruitful summer, but one may wax inordinately extravagant, ordering wildly and badly. They are most attractive. The temptation is great to lose one's head over them. On the other hand, too much penuriousness in ordering seeds means a penurious garden.

In the vegetable section it is, perhaps, wisest to keep to known necessities, venturing on but one or two novelties for the sake of the interest. In the flower section one's craving for something new may be given freer rein.

Among the necessities—since variety in food is an essential to health—may be mentioned beets, carrots, corn, parsnips, celery, peas, beans, squash, onions, cabbage, cucumbers, salsify, tomatoes, radishes and lettuce. Extras that may be added are vegetable marrow, melons, sage, parsley, spinach, asparagus, and sweet peppers and egg-plant (if one can start the seed early or buy the plants). In the country, however, there will likely be plenty of wild spinach (lamb's quarters), and pigweed to take the place of spinach, while the young sprouts of milkweed are said to form an excellent substitute for asparagus, which requires a few years to get in good growing shape. Vegetable marrow and egg-plant both make splendid supper dishes when sliced and fried.

Among novelties recommended by French in his Book of Vegetables is Swiss Chard. "It deserves to be better known," he says, "on account of its productiveness, quick growth, and simple culture, as well as for its capacity to yield a double crop in two senses: It bears a thick, broad leaf upon a fleshy stalk; when picked the leaves may be served as spinach, the stalks or midribs of the leaves as chards. The plants can be stripped of all but their small leaves and will bear again, or the large leaves may be picked through an extended season."—By "chards" he means that the

leaves may be blanched. "Chards can be made preferably from old plants by cutting back leaves and all after the first picking, and when the large leaves have well started again, tying them by their tips in a sheaf and covering all but the tips with straw or hay, which is held in place by tying, and with a little earth. The leaves will be properly blanched in about a month. Eat the midribs."

When ordering there may be a tendency to overlook the exact quantities that will be needed, and so lose balance. For instance one will need a considerable quantity of corn, beans and peas, which are large, bulky seed. Better order these by the pint or pound. Of most other things a package or two will be sufficient. A goodly quantity of radish seed may be ordered for successive plantings during the summer.

In a northern country such as Canada early tomatoes are the best.

Kale is only good after frost, and may be left standing in the garden after snow-fall. Brussels sprouts is another hardy late vegetable that does not mind a touch of frost. The most satisfactory celery for the farm, perhaps, is the self-blanching variety.

On many farms comparatively little time can be found for the flower-garden, but everyone should be able to find time for a few free-growing, long-blooming varieties, such as nasturtiums, asters morning glories, phlox drummondii, gaillardia and sweet peas. Of course the true flower-lover will add many to this list.

Always buy seed from a reliable firm, and be sure to order early; the first week in March is not too soon.

To have a few early things, start some seeds in boxes in the house, transplanting to a cold-frame later, and finally to the garden. A hot-bed, if you have it, will do away with the necessity of this. Plants started in the house should have plenty of light, plenty of air (not draught), and should not be kept too warm, which will make them grow spindly.

If the garden needs manure, and it has not been already spread, it should be applied at once to give time for the mellowing influence of "wind and weather." Nothing can be worse for either flowers or vegetables than fresh raw manure applied when the garden is made.

Through the Eyes of a Canadian Woman in England

Folkestone, January.

Since last writing the days are still colder, and it is dark and dreary. In spite of that the ivy climbing over the stone wall is still green, reminding one of the British Nation—hardy, courageous, and determined to flourish in the face of everything.

As I sit at my desk clad in my warmest clothing with a blanket coat added, and my feet enveloped in thick shoes and spats, I am chilled to the bone. O these chill English houses! Very few of them have modern heating, and the tiny grate fires, which are quite inadequate are always "Extras". I should never call the English people a luxury-loving nation. I fear many Canadians are having rather an uncomfortable winter here—but we must not complain but turn our thoughts instead to those who are worse off in the damp, cold trenches, trying to snatch a few hours sleep out of the twenty-four, in a dugout or a shell hole.

My Canadian chum brought her tall young son, who is home on leave, to see me last night. He had just arrived a few hours before, and she had been waiting here six months to see him. But her shining eyes told me as soon as she entered the door that she felt herself

repaid. Fate has been kind to him, for he has been in many tight places and escaped without a scratch, looking fine and fit, though bronzed and older. He has only eight days, then there will be long months of waiting and praying again. It means so much for the boys to have someone waiting for them here. Two handsome New Brunswick lads called upon me last night. They had been spending their leave in London, that Mecca of all Canadians, and I said, "I am sure you enjoyed it,—there are so many interesting things to see there." "Yes," one of them said, and he lacked enthusiasm, "but it is not like this, sitting around a fire and chatting to someone from home." The word Home never meant so much to the dear boys before. I am convinced that our men, when this dreadful war is over, will find their homes a heaven of rest, and will be cured of the wanderlust forever. An easy-chair, a fire, and some laughter and song must make a pleasing contrast to the days spent in cramped attitudes in cold muddy trenches in the midst of awful sights and sounds. One boy said to his mother when she spoke of souvenirs, "Don't speak of souvenirs, mother, I could have picked up many of them, but I felt that I never again wanted to see anything that would remind me of the dreadful hours we passed and the sights we witnessed," and he told how his friend, while standing beside him giving him a light for his cigarette was shot dead.

Folkestone abounds in antique shops, dingy places where one may pick up fine, old engravings, warming-pans, chestnut-roasters and other brasses, furniture that would be the envy of all our friends at home, and bric-a-brac and china ornaments valuable and ugly. Except for one shop, which is the pink of cleanliness, kept by an old dame, they are all under the proprietorship of ancient men, who look like dusty antiques themselves (or illustrations from a Dickens novel), and who also have the manners and customs of antiquity. Just now there are many rare bargains, as people are disposing of furnishings they can do without. These shops are a great temptation to me, and I rarely pass one without going in to look around (the "American fashion of looking around") as a newspaper referred to it yesterday. They are the only kind of shops here that one is permitted to linger in without being attended closely and asked repeatedly, "Is there anything I can get for you madame?" And you are made so uncomfortable that you usually make a purchase without giving it sufficient consideration in order to escape feeling that if clerks are suspicious of your honesty, they might at least have the politeness to observe you furtively. Another habit in English shops is that of demanding what price you wish to pay when you ask for an article. A French woman, whom this angers greatly, tells me that when you visit a shop in Paris and ask to see blouses—for instance, they place you in a comfortable chair, then bring a large selection of the desired articles for your inspection and hold them up before you, or display them on a manikin, until they discover your taste and requirements. Then when you see one that takes your fancy, they tell you the cost of it, and whether you purchase or not you are treated with the greatest politeness and bowed out. Verily, shop keeping is a fine art in Paris. We are all longing to go there, and it seems rather hard lines to be denied when the run across the channel is only two hours, and we can see the coast beckoning to us on a fine day. Of course several boats crossed every day in peace time, but now to get to France—even if you are the wife of a general—is an impossibility. Of course if husbands or sons are seriously wounded you are cabled to that effect, and you

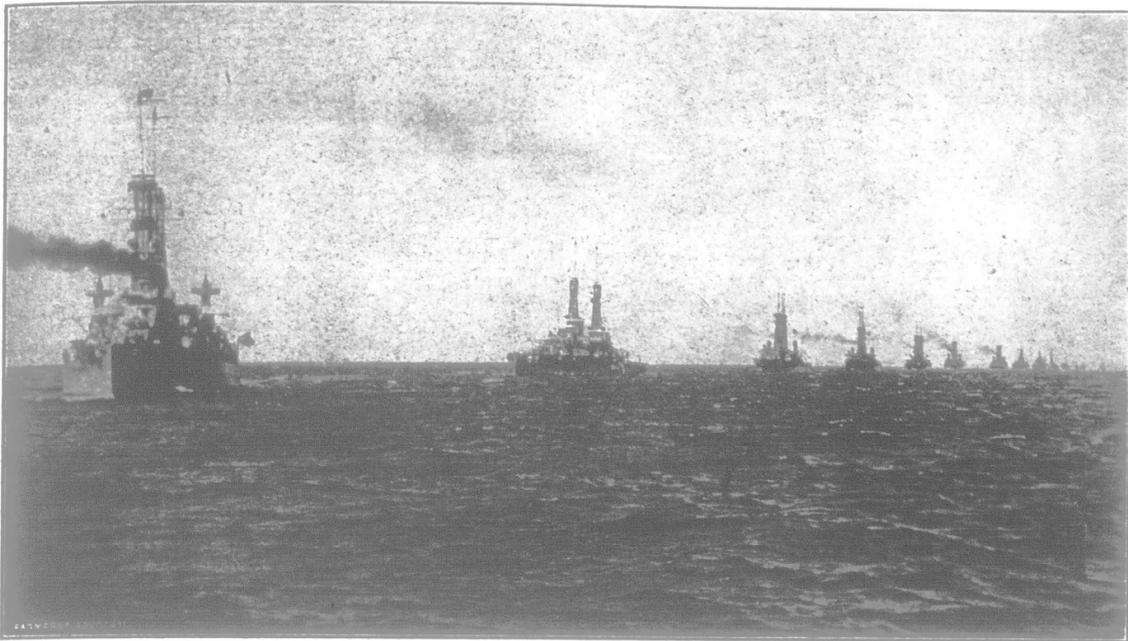
message is sufficient passport—but we all pray that when we go to France it will be on a happier mission than that.

We have had no Zeppelin raids lately, but the nights are dark again now and every precaution is being taken. While we do not hear much about them the navy are keeping silent and continuous watch by day and night and are guarding us well; by and by when the time comes to speak, there will be many interesting tales to relate. We see numbers of naval men here as Dover is not far away, and their handsome weather-beaten faces remind one of a Sphinx. I have made a very delightful acquaintance with a naval commander who spends his few leisure hours in Folkestone. Two weeks ago he said good-bye as he expected to be absent a week on some dangerous mission, and added that he might never return. But he turned up when we expected him, and being chuffed over his doleful farewell of a week ago, said, "Well, I almost did not come back. Out of the seven men who accompanied me, only four of us are left." Of course, it would be infra dig to ask any questions, though we were burning with curiosity. We hear many stories as to what takes place on land, but never anything from the navy—for they are as silent as the grave. We have our suspicions that the commander and his brave men were taking their turn at laying mines in the sea to catch the Huns.

We are saying good-bye very often of late to men who are going across to fill the places of others, for the casualties have been heavy this month. What the feminine mind cannot understand is their delight that their turn has come to do their bit. Nothing seems to daunt our Canadians. I have yet to see one who shows the least trace of unwillingness. They usually receive orders a few days in advance, and if possible, go at once to London for their outfits. Everything that the human mind can conceive of is waiting there for them. Many useful and ingenious articles for their comfort and safety, from rain-proof sleeping-bags to pieces of armor for almost every part of the body. The "tin hat" has proven itself of great use. One boy told me it had saved his life three times, and it bears that many corresponding dents to prove his words. There are different kinds of identity discs to hang on the neck (by a leather lace) or wear as a bracelet, made of silver, with their name and number engraved thereon. A visit to one of the outfitters shops in London—such as the army and navy stores—is an educator, and emphasizes the old saying that "necessity is the mother of invention." How would some of our "Mother's Pets", as Sir Sam called them, enjoy shaving with strong tea instead of water? It is quite common in the army, where it is often much easier to procure hot tea in the trenches than some clean water. In telling one of it an officer said "I am quite used to it, of course it makes your face feel rather funny, but what's the difference." Our greatest Beau Brummels seem to have become indifferent to everything but the great cause.

Yesterday I went to visit Westcliff Hospital where the eyes, ears and throats of the wounded are treated. There were five soldiers in room 49, one with shrapnel still in his head though several pieces had been removed. He seemed more fit than the others and was moving about doing kind offices for them. One was an American who happened to attend a recruiting meeting in Canada, and felt impelled to come. He spent eight months in France to be sent back with shell-shock and a wound in the throat. In the next bed was a cheerful dark-eyed French boy from Quebec with what was left of his nose bound up; another from Ontario with throat trouble and doing

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Underwood & Underwood.

Latest Photograph of the U. S. Fleet.

Hope's Quiet Hour

The Inviting Christ.

They said unto Him, Rabbi, (which is to say, being interpreted, Master,) where dwellest Thou? He said unto them, Come and see. They came and saw where He dwelt, and abode with Him that day: for it was about the tenth hour.—St. John I : 38, 39.

"Have you and I to-day
 Stood silent as with Christ, apart from
 joy or fray
 Of life, to see by faith His face;
 To look, if but a moment, at its grace,
 And grow, by brief companionship, more
 true,
 More nerved to lead, to dare to do
 For Him at any cost? Have we to-day
 Found time, in thought, our hand to lay
 In His, and thus compare
 His will with ours, and wear
 The impress of His wish? Be sure
 Such contact will endure
 Throughout the day; will help us walk
 erect
 Through storm and flood; detect
 Within the hidden life, sin's dross, its
 stain;
 Revive a thought of love for Him again;
 Steady the steps which waver; help us see
 The footpath meant for you and me."

Yesterday I heard the question asked: "What is the money value of an hour with Christ?" That is a question which makes one stop to think. Before the war—that time which now seems so far distant—the money value of time seemed far more im-

portant than it does now. The majority of people acted as if they thought that time was money. It must be changed into dollars and cents or it was considered "wasted." Even those who were eager to help their fellows desired to change their time into money, in order to give it to the poor. One of the most trying things a person of scanty means had to endure was the fact that the opportunity to "give" was lacking.

In these days of marvellous self-sacrifice our admiration for the money-makers is at a low ebb. When men make much ado over interference with commerce we are amazed. The life of even one little child is not to be weighed in the balance against millions of money. Can any quantity of money pay for a human life?

It is the opportunity of "service"—not the power of wealth—that men and women hunger for in these days. When I think of a young nurse, who waved a glad "good-bye" to me from the train platform a few weeks ago, I feel inclined to envy her. She was so delighted to be "on active service."

Beside me is a little book, called "In a French Hospital." One chapter—"Our Orderlies"—shows us a "little Greek" from Constantinople, who considers it a great honor to wait on the invalids by night and by day, refusing pay for his willing service. Another little orderly, about sixty years old, has consecrated his life "to God in the service of the poor wounded." He has a smile on his lips as he joyously washes the patients' dishes, or hurries from bed to bed waiting on the soldiers. A third orderly is an Italian nobleman, who offered his services to the hospital, saying he wanted "to perform the humblest duties."

Which is the highest motive—the passion for money-getting or the eagerness to serve? Which is the most human and natural? Which rouses our desire to go and do likewise?

These questions scarcely require an answer. We may be joggling along selfishly, trying to grasp earth's prizes, but at least we have the grace to feel ashamed of ourselves. We can't delude ourselves by the old idea that "it is the way of the world"—not NOW!

The truth is, we are not made for selfishness. Even when prosperity forces a man to pull down his barns and build bigger ones, he feels uncomfortable and dissatisfied. Is that all life means—to eat, drink, and be comfortable, and then die? We all want something more worth while than such a vegetable existence. The craving for the highest is part of our nature.

One day two disciples of John the Baptist left their master and followed Jesus. He turned, looked into their eyes and into their hearts, and asked the solemn question: "What seek ye?"

Were they drawn by idle curiosity only, or did they seek a Leader Who could command their whole-hearted allegiance, and whom they could follow to the death? Doubtfully they asked this unknown questioner: "Master, where dwellest Thou?" He at once invited them to be His guests, saying courteously: "Come and see." Perhaps His temporary home, on Jordan's bank, was only a booth made of branches. What did it matter whether He dwelt in a tent or in a palace? They said: "Where dwellest Thou?" but it was not His dwelling, but Himself, they cared about. They "abode with Him that day, for it was about the tenth hour," says St. John. Writing in old age he vividly remembered that eventful hour when his young heart found its Master. Ask that "disciple, whom Jesus loved," what is the money-value of an hour with Christ, and what answer will he give you? That "tenth hour" still stands out in his memory like the bright and morning star. We don't know what wonderful words they heard, in answer to their eager questioning, but we do know that their restlessness was calmed. They found their Master that day, and He satisfied their heart-hunger. One of the two men hurried off to tell the good news to his brother: "We have found the Christ." But St. John keeps locked in his own heart the story of that interview with Christ. Sometimes we say least about the things we care for most.

Not long ago I received a letter from a troubled soul who asked me how one could know whether the "unpardonable sin" had been unwittingly committed. If you study our Lord's words about this sin against the Holy Ghost (St. Matt. 12:22-32) you will see that He was sternly warning men against a sin which could not be unwittingly committed. They saw His goodness and ascribed it to the prince of the devils. They desired no forgiveness and despised the mercy of God. One who is troubled about his sins and longs to be freed from the heavy burden of guilt, need have no hesitation in accepting the Royal Invitation of Him Who came amongst us to save "sinners." He came not to call the righteous, but

nicely, but impatient to get back at the Hun. And the fifth, an English lad—it pains me most to speak of him—sitting on the edge of the bed blind, both eyes being bound up—a dear boy who had enlisted in Canada at the first call. He had just been brought here and his infirmity was so new to him, that he could not yet feel his way about very well. He was so smiling and polite, though in pain, that he read a lesson to the others. I led him to an easy-chair, put a cigarette between his lips, lit it and then put the rest of the box in his pocket. I talked away and read to him for two hours. They were a little shy at first but when one began to talk, all the others soon chimed in and before long I knew all about their families at home, and had written some letters for them to "God's own land", as they referred to Canada—but not a word of their hard times at the front—they never want to speak of that.

We are all having our troubles with English money. Pounds and shillings are easy, but when it comes to the florin, which is a heavy piece of silver, worth two shillings, and a piece a trifle larger worth two shillings and sixpence, we get rather mixed, and halfpennies and farthings are a delusion and a snare to us still. There are now no guineas in circulation, as all gold is safely locked up in the treasury, but the term is still used by hotel-keepers and professional men because there is a shilling more in a guinea than in a pound, and it is to their advantage to retain the use of the word. As a rule only "drapers" use the farthing in their prices. Feeling sure of ourselves we sally forth to make a purchase and the clerk says, "It will be half a crown, madam"—and the mental arithmetic has to be done all over again, for in the present instance we are shopping in crowns. The funny little pound notes, printed in black have come into use since the war began, in place of the handsome and cumbersome gold coins, which they are hoping will be recalled later on—for English people are not fond of innovations even if they spell convenience.

Since last writing Christmas has come and gone. There were many empty chairs at the Christmas tables this year, but Canada remembered her army over here, and so many goodies arrived that they are not all distributed yet. England has never known such a congestion of mail matter. The boys at the camps near here had a good dinner too—though they may have had to do without the cranberry sauce. I went to see a home lad in a hospital in London who proudly spoke of his wounds and said "I got this on Christmas day, you know we made some big raids that day." When asked by me what it felt like to be raiding the Germans in their trenches, he said with a grin, "just like shooting partridges in P. E. Island."

May next Christmas see them at home in their accustomed places, and at peace with the whole world. These are dark days for us all but let us sing with the boys "Pack all our troubles in an old kit-bag, and smile, smile, smile."
 SIBYL.



Survivors.

A remarkable news picture, showing survivors of the "Ivernia," torpedoed in the Mediterranean, waiting to be picked up. The man to leave the ship was the skipper, Capt. Turner, who commanded the "Lusitania" when she too was torpedoed.

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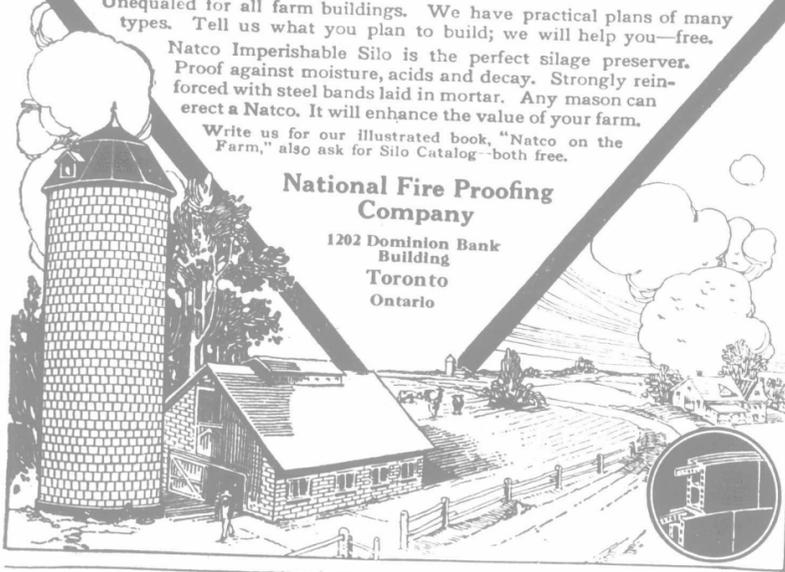
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Gain over previous year	\$420,793.
Income	\$5,613,273.
Gain over previous year	\$640,491.
Assets	\$29,361,963.
Gain over previous year	\$2,420,246.
Surplus	\$4,595,151.
Gain over previous year	\$341,907.
New Assurances	\$15,376,377.
Gain over previous year	\$1,618,390.
Assurance in Force	\$109,645,581.
Gain over previous year	\$8,553,551.

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

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"sinners" to repentance. "While we were yet sinners, Christ died for us."

The King has invited us to visit Him and to eat at His table. If we are refusing that wonderful invitation, offering as an excuse that time-worn statement that we "are not good enough," let us make sure that He will be willing to accept the excuse; lest it may prove in the end that we have daringly refused the invitation of our Lord and Master.

Hear with what "comfortable words" He encourages the humble and penitent soul:

"Come unto Me, all ye that labor and are heavy laden, and I will give you rest."

The Shepherd did not shrink from agony or death when He tirelessly sought His own lost sheep. How, then, can He possibly refuse to listen to the appeal of one who is seeking Him?

Francis Thompson, in his "Hound of Heaven," tells how he tried to escape from the following Love of God. In pleasure, in work, in earthly love, he sought content and happiness; but found no rest for his soul. A Voice said: "Lo! naught contents thee, who content'st not Me."

At last, with all his defensive armor hewn from him piece by piece, he waited in trembling fear love's uplifted stroke. He was afraid that to accept the Love of God would mean the surrender of everything dearest to him. Then the Divine Voice was like a bursting sea around him, and he was told that only One was eager to offer love to the ignoble.

That Voice is speaking to us, too. Listen!

"Whom wilt thou find to love ignoble thee, Save Me, save only Me?"

All which I took from thee I did but take, Not for thy harms, But just that thou might'st seek it in My arms.

All which thy child's mistake Fancies as lost, I have stored for thee at home:

Rise, clasp My hand and come!"

Let us fling away our fears, give up our doubtful indecision, and accept the invitation of the Master of the world. Francis Thompson says wonderingly:

"Halts by me that footfall: Is my gloom, after all, Shade of His hand, outstretched caressingly?"

Listen again to the Voice!

"Ah, fondest, blindest, weakest, I am He Whom thou seekest! Thou drawest love from thee, who drawest Me."

DORA FARNCOMB.

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.]

Aphis on House Plants.

Dear Junia,—We have taken "The Farmer's Advocate" for a number of years and could not do without it now. We have got many helpful hints from the "Ingle Nook," and also good advice from "Hope's Quiet Hour."

We have quite a number of house plants this winter, but are bothered a lot with green aphis, especially on Jerusalem cherries and a green vine of which I do not know the name. We have tried smoking them by putting a paper sack over the plant, filling it with smoke and then tying a cord around the pot, drawing it tight around the pot so as to keep the smoke in. Have tried it several times but the aphis is as thick as ever. Some of the plants have died on account of these insects. Could you tell me of any way to get rid of them? Thanking you for past help and hoping I may call again when in trouble. I remain,

Lambton Co., Ont. G. A. C.

P.S.—We had an Easter-lily given to us last Easter with two flowers. I planted the same bulb last fall. It took quite a while to come up, but it is about four or five inches high now. It is kept in a sunny place and near a good fire, also given lots of water. Do you think it will flower this Easter? We have been told it will

not flower but just thought we would try it.

G. A. C. I am very sorry you did not send your name and a stamp for reply so that I could have replied to your question at once. I am afraid your poor plants will be sucked to death by now. Make a tea of tobacco leaves or sulpho-tobacco solution, sold for the purpose, and dip the plants in it, just the stems and foliage, inverting the pot and holding the soil back with the hand. If you have a spray pump and can put the solution on that way it will do as well.

In very rare cases Bermuda lilies will bloom the second winter, but very few are successful with them. Keep your lily growing; you may be one of the fortunate.

Warm Luncheon in a Country School.

A suggestive article in Journal of Education advises rural school teachers to let children who have to carry their luncheon in winter cook part of it in the school-room. It is suggested that, if the teacher also has to carry her luncheon, the affair may be made pleasant and also a valuable lesson in domestic science. Only simple dishes should be prepared, and preference given to those that are nutritious, e.g., potatoes, macaroni, bean puree, rice, etc. If practicable the children can all bring potatoes or rice, or whatever may be chosen on the same day, and the one cooking may be made to do for all. In a very small school the idea seems worth considering.

Seasonable Cookery.

Date Cake.—One large cup sugar, small half cup butter, 1 cup sour milk, 1 teaspoon soda, 2 cups flour sifted with 1 teaspoon baking powder, 1 box dates stoned and floured and stirred in last. Bake in a slow oven for one hour and cover with boiled icing.—Sent by Mrs. J. Knister, Essex Co., Ont.

Molasses Cookies.—Take 1 cup molasses, ½ cup sugar, two-thirds cup shortening, 1 egg, 1 tablespoon ginger, 1 teaspoon soda (large), 1 tablespoon vinegar, 2 tablespoons cold water, 4½ cups flour. Cream the shortening, add sugar, molasses, soda dissolved in water, vinegar, egg, 2 cups flour sifted with spices. Mix in as much more flour as you can with a spoon, and knead in the rest with your hands. Roll out, cut and bake in a moderate oven.

Scalloped Potatoes.—Butter a baking-dish, and put into it raw potatoes sliced thin with enough salt, pepper and bits of butter to flavor nicely. Fill the dish with milk, and sprinkle over the top cracker or buttered breadcrumbs, and a little grated cheese if you like it.

Stuffed Baked Potatoes.—Choose nice, smooth, rather large potatoes, and scrub them well with a little brush, then bake them and set away to cool slightly so they can be handled. Cut off a small piece and scoop out the inside. Mash fine with butter, salt and a little cream or good milk, also some chopped parsley if liked. Refill the potato shells with this mixture and put back in the oven until the part in the open space is baked brown. Serve at once.

Irish Stew.—Use either beef or mutton. Cut into pieces about an inch square and cover with cold water. To each pound of meat allow 1 onion, 4 good-sized potatoes, salt and pepper to taste. Cover and cook very slowly for 2 hours. Thicken the gravy with flour blended with a little water or butter, and serve hot.

Chocolate Pie.—Line a deep dish with crust, prick all over, bake; one even tablespoon cornstarch, one cup sugar, yolks two eggs, one-half square chocolate, two cups milk, cook until thick. Let cool a few minutes, then pour into crusts and frost with the whites. Brown in oven.

Delicious Orange Pie.—Beat three-quarters cup white sugar and two tablespoons butter together, then add yolks of three eggs, salt and juice and grated rind of one orange and one-half lemon. Bake in one crust; cover with meringue.

Prune Whip.—Cook prunes with sugar until done, remove stones, put through a sieve and add beaten whites of three eggs to one pound of prunes. Bake twenty minutes or eat as it is.

Graham Gems.—Mix and sift one cupful Graham flour, one cupful pastry flour, one-fourth cupful of sugar, four teaspoonfuls baking powder and one teaspoonful of

salt. Add one cupful milk gradually, while stirring constantly, then add one egg well beaten and two tablespoonfuls melted butter. Fill buttered gem pans two-thirds full of mixture and bake in a hot oven twenty-five minutes.

Luncheon Caraway Bread.—Work one-fourth cupful butter until creamy and add three-fourths cupful sugar gradually, while beating constantly; then add one egg well beaten. Mix and sift one and two-thirds cupfuls flour, one teaspoonful baking powder and one-fourth teaspoon salt, and add alternately with three-fourths cupful milk to first mixture. Beat thoroughly and add one tablespoonful caraway seeds and three-fourths of a teaspoonful vanilla. Turn into a buttered and floured cake pan, sprinkle with sugar, and bake thirty-five minutes in moderate oven. Remove from pan, cut in squares and serve hot. Accompany with squares of cheese.

A Date Charlotte.—Half a pound of good dates, one cupful and a half of water, three tablespoonfuls of honey, the strained juice of one orange, a few drops of red coloring, one heaping tablespoonful of gelatin and two cupfuls of whipped cream. Take the stones out of the dates. Put the water, honey and gelatin into a saucepan, then add the dates cut in halves, the orange juice and the red coloring. Cook slowly until the dates are soft. Pour into a wet ring mold and set away in a cool place. Turn out when set and serve with the whipped cream in the centre.

Carrot Marmalade.—Wash and scrape carrots, dice. To one-half part water add one part, by weight, of carrots. Boil until carrots are soft, then put through vegetable press or grinder.

Wash lemons and slice fine. To one part by weight of lemon add one part water. Boil gently from 30 to 45 minutes. Allow this to cool. Combine carrots and lemon, and to one part, by weight, add one part of sugar. Boil until jelly test is obtained.

Oatmeal Cookies.—Two cups fine oatmeal, 1 tablespoon lard, 1/2 teaspoon soda, 1 cup hot water, pinch of salt. Mix oatmeal, salt and lard very thoroughly with the finger-tips; add the soda dissolved in warm water, and enough sifted flour to roll out. Roll out on a floured board and cut in cookies. Serve buttered.

Angel Gingerbread.—One-quarter cup molasses, 1/2 cup sugar, 1/4 cup butter, 1 1/2 cup flour, 1 level teaspoon soda, 1/2 cup boiling water, 1/4 teaspoon cinnamon. Cream butter and sugar, add molasses, the flour sifted with the soda and cinnamon. Mix well and add the boiling water last. Bake in a moderate oven. May be served hot with whipped cream as a dessert, if liked.

Entire Wheat Raisin Bread.—One cup scalded milk, 1 cup boiling water, 1 cup raisins, 1/4 cup molasses, 1 yeast cake dissolved in 1/4 cup tepid water, 1 teaspoon salt, entire wheat flour. Add the salt and molasses to the water and milk. Cool until tepid, then add the yeast and beat in flour to make a stiff batter. Add raisins and flour to knead, let rise until double in bulk, cut down, shape into loaves, place in pans and let rise again. Bake for 50 minutes in a moderate oven.

The Scrap Bag.

A Hint for Fruit Cake.

A writer in an American magazine says: I had my fruit cake ready to put in the oven when I was called hurriedly to see a sick sister. I set the unbaked cake in the refrigerator until I could attend to it. The next day I baked the cake, and a more delicious fruit cake was never made. The fruit had swelled and flavored the dough, which was also lighter from having stood overnight. Try this method.

Bed Bootees.

After cutting out a pair of flannel pajamas, the remaining pieces may be used to make a pair of bed bootees. Use a stocking-foot for a pattern, but cutting the bootee considerably larger. About two inches from the top, stitch on a piece of the material on the under side about an inch in width through which run a drawstring, so that the bootees may be fastened tightly about the ankle.

Corners of Rugs.

With the use of the hard-wood floor comes the perplexing difficulty of keeping the rugs from turning up at the corners and becoming a menace to all who enter the room. One woman has devised a clever method. She uses for each rug four pieces



"The Best Marmalade I Ever Made"

Select fresh, clean-skinned Seville oranges for their wholesome bitter zest, and spicy sweet oranges for their fragrance and flavor. Tell the grocer to send with them a bag or carton of

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MARMALADE without weighing

Slice six bitter oranges and seven sweet oranges and add three cups of cold water for each cup of the fruit pulp. Let stand for 24 hours in a glass or porcelain vessel, then bring slightly to the boiling point and boil for 15 minutes. Set aside for another 24 hours. Then measure five kitchen cups full of the fruit into a preserving kettle and boil briskly for about an hour. Add a 2-lb. carton of Lantic Sugar, which will need no weighing as it has been accurately weighed when it was packed.

Note: This quantity makes nearly 5 pounds of marmalade. It is better not to cook more than this at one time as the long cooking tends to darken it.

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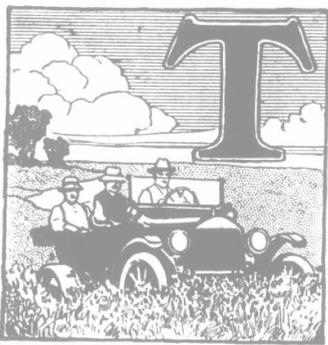
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FORD - - ONTARIO

32

of stout carpet binding, each of them about four inches in length. She then folds one end of each piece into a point so that it will fit its particular corner and sews it very securely to the underside of the rug. The other end of the binding she draws tightly toward the centre of the rug and sews it firmly. A patented device which can be used for the same purpose, and will also keep the rugs from slipping, can be purchased in almost any hardware store. It consists of a hook to be fastened to the underside of the rug, and a large-headed tack, similar to a thumb-tack in its non-destructive qualities, to be placed under each corner of the rug, over which the hook slips into place.

Care of Floor Rugs.

The up-to-date housekeeper who has hard-wood floors and rugs that need frequent attention to keep them in order, should be careful always to brush or sweep with the nap of the rug, never against it. Even a carpet sweeper or vacuum cleaner should be run over a rug with the nap—and the same holds true of carpets.

Fine dust may be easily removed by sprinkling dampened sawdust over the rug or carpet, and brushing this up before the sweeping.

Beating is injurious to a fine rug; frequent shaking in the open air is sufficient, provided it is sent at least once a year—oftener, if necessary, from hard wear—to a dependable establishment for a thorough cleaning.

Drink Water.

Recent experiments by noted European chemists and physicians go to prove that a pure, soft, drinking water, taken in right quantities, at the right time and temperature, increases health and vigor as follows: It purifies the blood, tones stomach, aids digestion, promotes assimilation, improves appetite, clears and freshens the skin, balances the action of the heart, steadies the nerves, relieves the kidneys, stimulates the liver, lubricates the colon, wards off disease, clarifies the brain, mildly and healthfully stimulates the entire organism.—The Independent.

Care of Sewing Machine.

Not long ago my machine began giving me trouble. The stitch was uneven and the needle seemed to catch as it passed up and down the plate. I tried all my arts to remedy it, without success, and at last called upon a repair man. When he came he found the trouble so simple that every woman should know about it, and thus be able to save herself the expense of repairs and the annoyance of having to submit to poor work when the repair man can not be had at once.

The man I called said, the moment he sat down to the machine, "I believe the trouble is under the needle plate." He took off the plate, and found quite an accumulation of lint, which, he explained, would cause the needle to catch as it passed through. When he had removed the lint and replaced the plate, the machine worked satisfactorily, except that it ran a little hard. To remove this difficulty he advised me to give it a kerosene-oil bath, as follows: Take out the thread, fill all the oil-holes with kerosene, and run the machine hard for a few minutes. Then leave it for few hours, until the kerosene will have evaporated and the dirt have been cut out by the oil. Then use good machine oil. He advised doing this every once in a while. These two suggestions may save many needless expenses and annoyances.—Sel.

Economy in Old Clothes.

Never pack old soiled dresses away or hang them in the attic. If they cannot be used again, take off the buttons and put them in the button-bag, also take off any lace or ribbon that can be used again, clean it, and put it away. Next rip or cut out any parts of the material that can be used again and put it away, leaving only the waste material to be burned. Less room will be needed for storage, and time will be saved later by systematically doing this with all old clothes.

Pat—Sure and I'd give a thousand dollars, Moike, if I knew th' place where I was goin' t' die.

Mike—Faith, Pat, and phwat good would that do yez?

Pat—Begorra, I'd niver go near th' place at all, at all.—Type Tattle.

The

One of the... to loosen... in Japan... introduced... institutes... Buddha... with hymn...

The rur... General F... in the Un... man Prof... of North... in Mississ... College, a... languages... Paris, Fra... She has do... southwest... she succee... the Texas... that any r... the state... attendance... Special tr... insisted up...

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The year... campaign r... Island Stat... compliments... our trees, s... not in vain.

I wond...

The Windrow

One of the effects of the war has been to loosen the hold of western theology in Japan. The Japanese, however, have introduced western methods, and have instituted Sunday Schools in which Buddhism and Shintoism are taught, with hymns set to Christian tunes.

The rural schools committee of the General Federation of Women's Clubs in the United States, has for its chairman Professor (Mrs) Maggie W. Barry of North Texas College. She was born in Mississippi, educated at Tuscaloosa College, and, later, studied literature, languages and dramatic expression in Paris, France, and Dresden, Germany. She has done much for the schools in the southwest, one of the measures which she succeeded in putting through being the Texas rural school law, which provides that any rural district can get \$500 from the state by furnishing fit buildings, attendance, and a local tax for education. Special training for rural teachers is insisted upon.

The following letter to the Journal of Education, explains itself, and also suggests a step in Nature Study that may have been overlooked by Canadian rural school teachers:

A few years ago one of the most unpleasant sights along our country roads in the springtime was the dozens of cherry trees stripped of almost every leaf they bore, and covered with caterpillar nests and caterpillars. You could hardly find a wild cherry that had not been attacked by these insects, and when they had stripped the wild cherry trees, they proceeded to devour the leaves of the cultivated fruit trees near.

I wondered, as no doubt many other people did, how we could check the ravages of this pest, and when Mrs. Charles Withington of Boston, one of our summer residents, wrote me a letter telling me that she would give a prize to the pupil in our school collecting the greatest number of the tent caterpillar masses, I gladly told the children of the contest, and how they might find the egg masses.

They are small, dark-colored masses, each containing several hundred eggs, and the whole covered with a shiny substance resembling varnish.

Winter is the best time to get them, when the trees are bare, and so our contest was carried on at that season of the year. The children took up the work with enthusiasm and began to bring me the egg masses in great numbers.

They were carefully counted and then burned, and I kept a record of the number each contestant brought. One little second grader brought over five hundred egg masses, and three of the older boys did particularly well. They collected them at noon and recess, on their way to and from school and week ends. As one boy lived about two miles from the school-house you can see that the work covered quite a large area.

I emphasized the fact that each egg mass destroyed meant so many hundred less caterpillars to carry on their work of destruction when spring came.

One boy in our school collected over 3,000 masses, another one over 2,000, and another almost 2,000.

As they all did so well I sent their names together with the number of masses collected to Mrs. Withington, and she not only sent a prize to the boy who got the most, but to the other two boys as well, rewarding them each with a fine storybook.

Mrs. Withington offered prizes to other schools in town also, and the only reason I have told so particularly of our own school is because I know most about that. I am sure equally good work was done in others of our schools.

When spring came the decrease in the number of tent caterpillars was marked, and the children saw the fruits of their work.

There was another contest this year, and Mr. Frank Jackson of Woonsocket, another summer resident, offered prizes of money to the pupil getting the largest number of egg masses in town.

The year when we carried on the first campaign mentioned, 1915, the Rhode Island State Agricultural Department complimented us on the condition of our trees, so we feel that our work was not in vain.

I wonder if we people of Little

Compton were not the first to undertake this work. We should be interested to know if this is not the case.

Most respectfully yours,
FLORENCE L. JEWELL,
Little Compton, R. 1.
(Teacher of School No. 7.)

The New York Times gives the known expenses, appropriations voted and loans made for the war up to December 31st as follows:

United Kingdom.....	\$14,374,000,000
Canada.....	400,000,000
Other Colonies.....	600,000,000
Total, Great Britain.....	\$15,374,000,000
France.....	\$12,200,000,000
Russia.....	8,500,000,000
Italy.....	4,000,000,000
Belgium.....	490,000,000
Serbia.....	330,000,000
Roumania.....	250,000,000
Total Entente Allies.....	\$41,144,000,000
Germany.....	\$14,600,000,000
Austria.....	5,000,000,000
Turkey.....	650,000,000
Bulgaria.....	375,000,000

Total Central Allies..... \$20,625,000,000

The Grand Total therefore is \$61,769,000,000 or a cost of \$105,000,000 per day. The aggregate direct cost of the twenty greatest wars in the century and a quarter preceding the outbreak of the present struggle was not in excess of \$22,000,000,000.

Dr. Vogt., Toronto, has resigned as conductor of the famous Mendelssohn Choir.

Sir Hugh Graham of Montreal, created a Baron, is the first native resident Canadian to be made a member of the British House of Lords, and the first overseas journalist to receive a peerage. He is editor of The Montreal Star.

Britain's new quick-climbing aeroplanes are said to be the best defence so far against German zeppelins.

A woman, Miss A. J. Cannon, of the United States, is the greatest living expert in stellar photography.

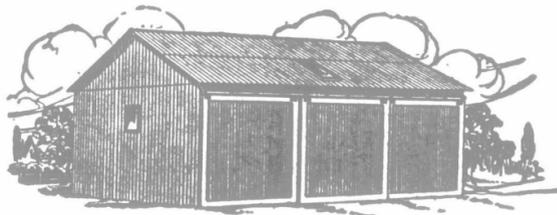
The peanut crop for last year in the United States amounted to \$56,000,000. Texas alone has 200,000 acres in this plant, which, being a member of the bean family leaves the land richer for its growing. Large quantities of the peanuts are crushed to make the oil used in butterine and other lard substitutes.

Dogs used in the French army for messenger and ambulance work are now equipped with gas masks.

Some years ago readers of The Farmer's Advocate and Home Magazine were interested in some letters from Rupert Mar, an actor who had once been a member of Sir Henry Irving's Company but had taken to farming in Eastern Ontario. Mr. Mar, who is incapacitated from going to the front, is now engaged in military duties at Cranboro, Sussex, England, and in addition, by his recitals, is earning money for the Red Cross, having already secured \$2,000 in this way. In a recent letter to Canada he says: "I had a letter yesterday from Lady Drummond asking me if I could not find time to come and look at the work my earnings had done in the new Canadian hospital building. She tells me that every four pounds I send completely equips a room for a broken soldier just back from the trenches, and that I should get immense pleasure if I came and saw actually the effect of my efforts for the cause. I tell her, as I tell you, that my work is almost selfish instead of self-sacrificing, as they all say. The mere fact of my being able to earn ten pounds of an evening is of itself an overwhelming reward, involving little or no sacrifice on my part."

The French transport Athos, carrying Senegalese troops, was torpedoed and sunk in the Mediterranean on Feb. 23rd, 1,450 of those on board being saved. Among the drowned was an American Presbyterian Missionary, R. A. Haden, stationed at Foo Chow.

PRESTON Implement SHED



LOW COST quickly erected fire-proof buildings

Here is the protection for those valuable machines. Any farmer can erect one of these everlasting sheds without trouble or costly labor. The hard work is done at the factory. It takes less time to put up one of these fireproof buildings than to cut the 2x4's for an ordinary building. They are shipped flat. Every piece cut to fit and marked. The wired-glass windows mounted in big sections ready to nail in place. The metal-covered doors fitted with track and hardware ready to hang.

Any size or style of implement shed can be sent out promptly. You can have two doors, with a clear driveway, or three doors on one side running on separate tracks, or an end door. Windows can be supplied as desired. Every farmer should have our catalogue of ready-made Preston Implement Sheds. Factory production places these buildings on your farm at very low cost. Write today for full information.

THE METAL SHINGLE AND SIDING COMPANY, LIMITED
Preston, Ont., Montreal, P. O.
Makers of Preston Barns, Storage Buildings,
Garages and Implement Sheds
Associated with A. B. Ormsby Co., Limited, Toronto

"Helbon Farm," Simcoe, Ont.

Dispersion Sale by Auction

OF THE OLDEST HERD OF PURE-BRED

Holstein-Friesian Cattle

in Canada. Property of the estate of the late JOHN W. LEE, on

Wednesday, March 7th, 1917

At 1 p.m.

Twenty-one females, four males (all registered).

Also 20 Pure-bred Oxford Ewes in Lamb.

TERMS :

ON HORSES, SHEEP, IMPLEMENTS, Etc.—Sums of ten dollars or under, cash. Over that amount seven months' credit on furnishing approved joint notes. Six per cent. discount off for cash on amounts entitled to credit.

ON PURE-BRED CATTLE—Seven months' credit will be given on furnishing approved joint notes, bearing 6 per cent. per annum.

This herd of cattle were all bred from imported stock, as good as money could buy. You will find a big, strong, useful lot of cows, weighing from twelve to seventeen hundred pounds.

Helbon De Kol, one of Canada's first 30-pound cows, originated in this herd. The present sire is a grandson of the world-renowned bull, Pontiac Korndyke, and the young stock in the sale show fashionable breeding.

The farm is just one mile north of the Wabash and Grand Trunk Railway Station, Simcoe, Ontario. The L. E. & N. Electric Railway runs through the farm. Arrangements will be made for the car to stop at the farm that day.

W. H. LEE

Administrator

MOORE & DEAN

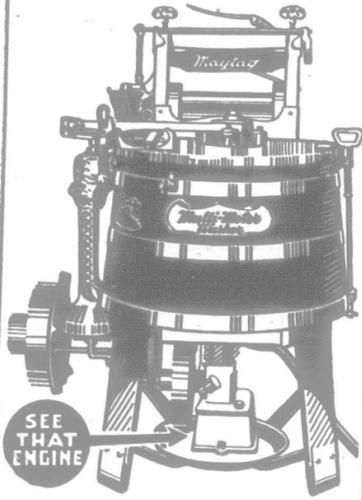
Auctioneers

For catalogue, send post-card to W. H. LEE, R.R. 4, Simcoe, Ont.

When writing advertisers will you please mention The Farmer's Advocate.

Here It Is At Last!

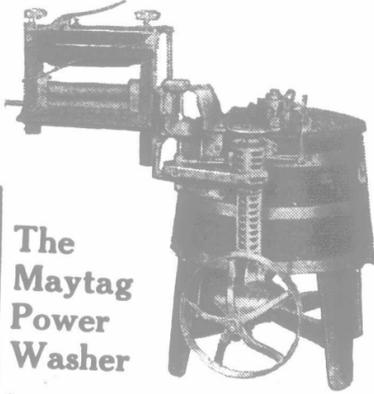
Maytag
Multi-Motor
Washer



SEE THAT ENGINE

What the Maytag Multi-Motor Washer Will Do :

It operates the washer and wringer. It will operate the sewing machine, churn, cream separator, or any other small machine that does not require more than 1/2 h.p. Wash-Day, and that is Work-Day, changed into Play-Day. Good-bye headache, nerve wreck! No woman need bend over the wash tub, as her grandmother did, nor turn the old-style washer, as her mother did, if she has a Maytag Multi-Motor.



The Maytag Power Washer

In general construction is the same as the Multi-Motor. It has a pulley so it can be driven by a separate engine.

The above "cut" shows the wringer in a position to be used when the second batch is being washed. Wringing and washing being done at the same time.

There is a Maytag Washer of every type—Hand, Power-Driven, Electric—all built to the enviable Maytag standard.

We furnish an Electric Motor on the Maytag Electric Washer, so that it runs perfectly when a "Direct Current" is used, such as the Delco, or other similar outfits.

Drop us a card, and we will mail you a copy of The Maytag Laundry Manual (48 pages). Even if you do not buy a washer, it will be a great help to you, as it contains many valuable formulas and recipes that can be used to advantage in any home. It is Free.

More Than 500

Dealers in Western Canada sell our Washers. If the store you trade at does not, write us. Address:

The Maytag Company
Limited

WINNIPEG, MAN.

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 Feb. 15th to Feb. 23rd: "Reader", R. 5, Lachute, Que., \$1.50; John Nesbitt, Nestleton Sta., Ont., \$3.00; Geo. T. Wilson, R. 1, Myrtle Sta., \$1.00; "A Reader", Mt. Brydges, Ont., \$5.00; G. J. Church, Chelsea, Que., \$5.00; "Friend", Langdon, Ont., \$2.00; "A Friend", Ferguson, Ont., \$2.00; "Toronto", \$2.00; Mrs. Wm. Johnson, R. 5, Perth, \$5.00; Mrs. Thos. Wright, Banks, Ont., \$2.00; "Liberty", Holstein, Ont., \$3.00; F. H. Ellis, Fenelon Falls, Ont., \$5.00; Mrs. J. M. Miller, Milford, Ont., \$2.00; Fanny Palmer, Sutherland, Ont., \$15.00; Compton Mutual Telephone Association, Compton, Que., \$17.00.

For Byron Military Hospital.—H. A. Wartman, Portsmouth, 50 cents; "Liberty", Holstein, Ont., 50 cents; Viola Garrison, Iberville, Que., \$2.00. Mr. E. F. Watson's contribution of \$3.00 (Scotch Bay, Man.) should have been applied to Byron Military Hospital fund. The change has been made.

Amount previously acknowledged. \$3,850.75

Total to Feb. 23rd. \$3,924.25

The total amount received as yet for Byron Military Hospital for Canadian tubercular soldiers is \$78.00.

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

Current Events.

Premier Borden and Messrs. Hazen and Rogers are in London, where they will attend the Imperial Conference.

Hamilton (Ont.) jail now has not enough prisoners to do the necessary work. The police attribute the improvement to the temperance Act.

The mayor of Walkerville, Ont., has sent circulars to all householders, asking that they use every plot of available land to grow potatoes and vegetables.

Four thousand British patrol vessels are now ranging the sea about Great Britain in search of U-boats.

Food riots have taken place in the poorer section of New York where potatoes have gone up to \$9, a sack of 165 lbs.

A big Japanese firm has decided to arm all its ships.

A recent despatch says that the Allies in Greece have succeeded in cutting postal communication between Athens and the Central Powers. Communication has been established between the French and Italian troops, and strong reinforcements are being sent from Italy to Salonika.

On Feb. 23rd, in a notable speech to the House of Commons, Premier, Lloyd-George stated emphatically that the ultimate success of the allied cause now depends on solving the tonnage difficulties to allow for better transportation of troops and necessary supplies. Sixteen pages of the Official Gazette have been required to list the articles now prohibited from importation into Great Britain or greatly restricted. Among the things prohibited are tea, coffee and cocoa, of which there is a considerable supply in the country, raw fruits except lemons and oranges, books, and boots and shoes. The manufacture of spirituous liquors is reduced to 10,000,000 barrels annually. A minimum price for wheat, oats and potatoes has also been fixed and is guaranteed to the farmers for all they can raise while the wages for farm labor are now placed at a little over \$6.00 a week instead of the \$2.50 paid before the war. Practically all of the farm labor in England is now being done by women, and men who are physically unfit.

The word was received on Feb. 26th that Kut-el-Amara has been taken by the British, the Turks being in full retreat.

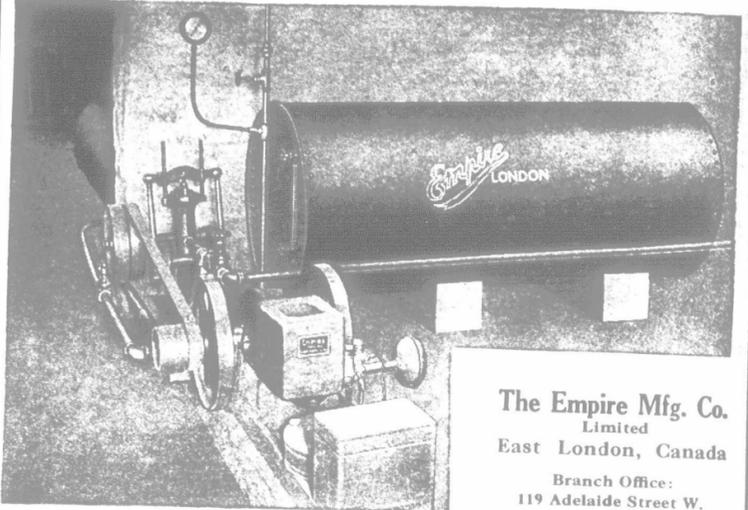
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Put This Water System In Your Home

Empire Water Supply Systems are simple in design, compact, powerful, and give maximum service at minimum operating cost. They do all your water-carrying about the house and for the stock in the barn.

You simply open a tap, and you have water instantly—anywhere, everywhere. Water in your bathroom—kitchen and cellar; water under pressure for fire protection. The "Empire" brings you city conveniences, safety and comfort at little expense. Gasoline, electric and hand outfits.

Send to-day for Information Blank—fill it in, mail it, and we will select an Empire System suited to your needs and estimate its cost Free of Charge.



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The Brown Mouse.

CHAPTER XXII.

AN EMBASSY FROM DIXIE.

Superintendent Jennie sat at her desk in no very satisfactory frame of mind. In the first place court was to convene on the following Monday, and both grand jury and petit juries would be in session, so that her one-room office was not to be hers for a few days. Her desk was even now ready to be moved into the hall by the janitor. To Wilbur Smythe, who did her the honor of calling occasionally as the exigencies of his law practise took him past the office of the pretty country girl on whose shapely shoulders rested the burden of the welfare of the schools, she remarked that if they didn't soon build the new court-house so as to give her such accommodations as her office really needed, "they might take their old office—so there!"

"Fair woman," said Wilbur, as he creased his Prince Albert in a parting bow, "should adorn the home!"

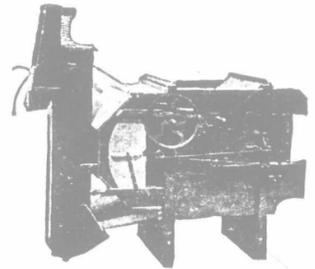
"Bosh!" sneered Jennie, rather pleased, all the same, "suppose she isn't fair, and hasn't any home!"

This question of adorning a home was no nearer settlement with Jennie than it had ever been, though increasingly a matter of speculation.

There were two or three men—rather good catches, too—who, if they were encouraged—but what was there to any of them? Take Wilbur Smythe, now; he would by sheer force of persistent assurance and fair abilities eventually get a good practise for a country lawyer—three or four thousand a year—serve in the legislature or the state senate, and finally become a bank director with a goodly standing as a safe business man; but what was there to him? This is what Jennie asked her paperweight as she placed it on a pile of unfinished examination papers. And the paper-weight echoed, "Not a thing out of the ordinary!" And then said Jennie, "Well, you little simpleton, who and what are you so out of the ordinary that you should sneer at Wilbur Smythe and Beckman Fifield and such men?" And echo answered, "What?"—and then the mail-carrier came in.

Down near the bottom of the pile she found this letter, signed by a southern state superintendent of schools, but dated at Kirksville, Missouri:

"I am a member of a party of southern educators—state superintendents in the main," the letter ran, "en tour of the country to see what we can find of an instructive nature in rural school work. I assure you that we are being richly repaid for the time and expense. There are things going on in the schools here in north-eastern Missouri, for instance, which merit much study. We have met Pro-



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

The Elms Stock Farm

Entire Herd of

Pure-Bred Registered HOLSTEINS

will be sold by Public Auction, at Unionville, on

March 13, 1917

The herd traces back to such sires as Count DeKol Pieterje Paul, Sir Pieterje Posch De Boer, Cornelius Posch. Several of the cows have calves at foot. Also at same time, Reg. Clyde Mares and implements. Farm is rented.

Unionville is on Mid. Div. G.T.R., 20 miles from Toronto. Morning trains will be met. Catalogues on application.

L. SUMMERFELDT & SON, PROPS.
J. H. PRINTISS, Auctioneer

The Lankford
HUMANE HORSE COLLAR

cures your horse while he works

Galls and sore shoulders reduce the efficiency of your horse—sap his strength—down his spirit. Cure him without the use of medicine—while he does his heaviest work, with the Lankford Collar.

We guarantee a cure when properly fitted. Be careful and get the genuine Lankford Collar—made of best white sail duck, trimmed in extra heavy leather and stuffed with clean and downy curled cotton, medicated, which will not pack or harden. Also comes in special brown waterproof duck.

The Lankford fits any shape neck—easily put on or removed—always soft and pliable. Will not groove. Name straps attached. Prices \$1.75 and up. See your dealer.

Over 12,000,000 sold Lankford Collars prevent galls and sore shoulders, as well as cure them. Get one today—one for each horse, but be sure it's a Lankford.

Buy a Lankford Send postal for copy and of our literature on Lankford Horse Collars.

Powers Mfg. Co.
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The Deacon
SHIRT

Cut roomy, yet trim—of flannels, drills, tweeds and serges that are soft, yet substantial—made with turned, felled and double-stitched seams, collars in all the popular styles, and half or full-length sleeves. DEACON Shirts look well, feel good, and wear better.

Every shirt guaranteed—your money back for any defect in material or workmanship. At good stores.

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Belleville - Canada 9




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.

POSITION AS FOREMAN ON FARM—Understands stock; references; state wages. Box L, Farmer's Advocate, London, Ont.

WANTED—TWO MARRIED MEN FOR farm work—good milkers, yearly engagement, house room, fuel and garden. A few miles from Toronto. Send particulars. Box P, Farmer's Advocate, London, Ont.

WANTED—TWO MARRIED MEN FOR stock farm. Yearly engagement. Free house and garden. State wages, age and nationality with references. Gordon Smith, Woodslee, Ont.

WANTED—AN EXPERIENCED FARM foreman, married, used to handling horses. Apply in writing to 54 Chelsea Ave., Toronto.

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

PATENTS, Trade Marks and Designs procured in all countries. Special attention given to Patent Litigation. Pamphlet sent free on application.

RIDOUT & MAYBEE, Crown Life Bldg., Toronto, 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. Send for free booklet.

Harab-Davies
Fertilizers

Yield Big Results

Write for booklet.

THE ONTARIO FERTILIZERS, LTD.
WEST TORONTO

Bad weather has retarded war operations in Western Europe. The British report taking a few trenches near Armentieres and Gueudecourt.

Professor Withers, of Ames, who suggests that we visit your schools, and especially the rural school taught by a young man named Irwin, and I wonder if you will be free on next Monday morning, if we come to your office, to direct us to the place? If you could accompany us on the trip, and perhaps show us some of your other excellent schools, we should be honored and pleased. The South is recreating her rural schools, and we are coming to believe that we shall be better workmen if we create a new kind, rather than an improvement of the old kind."

There was more of this courteous and deferential letter, all giving Jennie a sense of being saluted by a fine gentleman in satin and ruffles, and with a plume on his hat. And then came the shock—a party of state officials were coming into the county to study Jim Irwin's school! They would never come to study Wilbur Smythe's law practise—never in the world—or her work as county superintendent—never!—and Jim was getting seventy-five dollars a month, and had a to mother support. Moreover, he was getting more than he had asked when the colonel had told him to "hold the district up!" But there could be no doubt that there was something to Jim—the man was out of the ordinary. And wasn't that just what she had been looking for in her mind?

Jennie wired to her southerner for the number of his party, and secured automobiles for the trip. She sent a note to Jim Irwin telling of the prospective visitation. She would show all concerned that she could do some things, anyhow, and she would send these people on with a good impression of her county.

She was glad of the automobiles the next Monday morning, when at nine-thirty the train discharged upon her a dozen very alert, very up-to-date, very inquisitive southerners, male and female, most of whom seemed to have left their "r's" in the gulf region. It was eleven when the party parked their machines before the schoolhouse door.

"There are visitors here before us," said Jennie.

"Seems rather like an educational shrine," said Doctor Brathwayt, of Mississippi. "How does he accommodate so many visitors in that small edifice?"

"I am not aware," said Jennie, "that he has been in the habit of receiving so very many from outside the district. Well, shall we go in?"

Once inside, Jennie felt a queer return of her old aversion to Jim's methods—the aversion which had caused her to criticize him so sharply on the occasion of her first visit. The reason for the return of the feeling lay in the fact that the work going on was of the same sort, but of a more intense character. It was so utterly unlike a school as Jennie understood the word, that she glanced back at the group of educators with a little blush. The school was in a sort of uproar. Not that uproar of boredom and mischief of which most of us have familiar memories, but a sort of eager uproar, in which every child was intensely interested in the same thing; and did little rustling things because of this interest; something like the hum at a football game or a dog-fight.

On one side of the desk stood Jim Irwin, and facing him was a smooth stranger of the old-fashioned lightning-rod-agent type—the shallower and laxer sort of salesman of the kind whose sole business is to get signatures on the dotted line, and let some else do the rest. In short, he was a "closer."

Standing back of him in evident distress was Mr. Cornelius Bonner, and grouped about were Columbus Brown, B. B. Hamm, Ezra Bronson, A. B. Talcott and two or three others from outside the Woodruff District. With envelopes in their hands and the light of battle in their eyes stood Newton Bronson, Raymond Simms, Bettina Hansen, Mary Smith and Angie Talcott, the boys filled with delight, the girls rather frightened at being engaged in something like a debate with the salesman.

As the latest-coming visitors moved forward, they heard the schoolmaster finishing his passage at arms with the salesman.

"You should not feel exasperated at us, Mr. Carmichael," said he in tones of the most complete respect, "for what our figures show. You are unfortunate in the business proposition you offer this community. That is all. Even these children have the facts to prove that the creamery outfit you offer is not worth within two thousand dollars of what you

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Cracked Corn (re-cleaned), Alfalfa Meal, Moss Litter, Ground Bone (fine or coarse), Charcoal (fine), Beef Scrap (fine), Oyster Shell, (fine or coarse), Grit (fine or coarse).

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The pupils took their seats, straightened their books and papers, and were at attention. Doctor Brathway nodded approvingly as if at the answer to some question in his mind.

"Children," said Mr. Irwin, "you may or may not be interested in what these gentlemen are about to do—but I hope you are. Those who wish may be members of Mr. Bronson's meeting. Those who do not prefer to do so may take up their regular work."

"Gentlemen," said Mr. Bronson to the remains of Mr. Carmichael's creamery party, "we've been cutting bait in this neighborhood about long enough. I'm in favor of fishing, now. It would have been the biggest disgrace ever put on this district to have been swindled by that sharper, when the man that could have set us right on the subject was right here working for us, and we never let him have a chance. And yet that's what we pretty near did. How many here favor building a co-operative creamery if we can get the farmers in with cows enough to make it profitable, and the equipment at the right price?"

Each man held up a hand. "Here's one of our best farmers not voting," said Mr. Bronson, indicating Raymond Simms.

"How about you, Raymond?" "Ah reckon paw'll come in," said Raymond blushing.

"He will if you say so," said Mr. Bronson.

Raymond's hand went up amid a ripple of applause from the pupils, who seemed glad to have a voter in their ranks.

"Unanimous!" said Mr. Bronson. "It is a vote! Now I'd like to hear a motion to perfect a permanent organization to build a creamery."

"I think we ought to have a secretary first," said Mr. Talcott, "and I nominate Mr. James E. Irwin for the post."

"Quite correct," said Mr. Bronson, "thankee, A. B. I was about to forgit the secretary. Any other nominations? No objections, Mr. Irwin will be declared unanimously elected. Mr. Irwin's elected Mr. Irwin, will you please assume the duties?"

Jim sat down at the desk and began making notes.

"I think we ought to call this the Anti-Carmichael Protective Association," said Columbus Brown, but Mr. Bronson interrupted him, rather frowningly.

"All in good time, Clumb," said he,

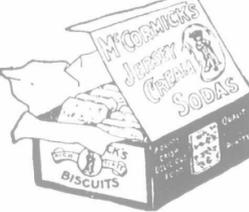
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JERSEY CREAM

"but this is serious work." So admonished, the meeting appointed committees, fixed upon a time for a future meeting, threw a collection of half-dollars on the desk to start a petty cash fund, made the usual joke about putting the secretary under bond, adjourned and dispersed.

"It's a go this time!" said Newton to Jim.

"I think so," said Jim, "with those men interested. Well, our study of creameries has given a great deal of language work, a good deal of arithmetic, some geography, and finally saved the people from a swindle. Rather good work, Raymond!"

"My mother has a delayed luncheon ready for the party," said Jennie to Jim. "Please come with us—please!"

But Jim demurred. Getting off at this time of day was really out of the question if he was to be ready to show the real work of the school in the afternoon session.

"This has been rather extraordinary," said Jim, "but I am very glad you were here. It shows the utility of the right sort of work in letter-writing, language, geography and arithmetic—in learning things about farming."

"It certainly does," said Doctor Brathway. "I wouldn't have missed it under any consideration; but I'm certainly sorry for that creamery shark and his accomplice—to be routed by the Fifth Reader grade in farming!"

The luncheon was rather a wonderful affair—and its success was unqualified after everybody discovered that the majority of those in attendance felt much more at home when calling it dinner. Colonel Woodruff had fought against the regiment of the father of Professor Gray, of Georgia, in at least one engagement, and tentative plans were laid for the meeting of the two old veterans "some winter in the future."

"What d'ye think of our school?" asked the colonel.

"Well," said Professor Gray, "it's not fair to judge, Colonel, on what must have been rather an extraordinary moment in the school's history. I take it that you don't put on a representation of 'The Knave Unmasked' every morning."

"It was more like a caucus than I've ever seen it, daddy," said Jennie, "and less like a school."

"Don't you think," said Doctor Brathway, "that it was less like a school because it was more like life? It was life."

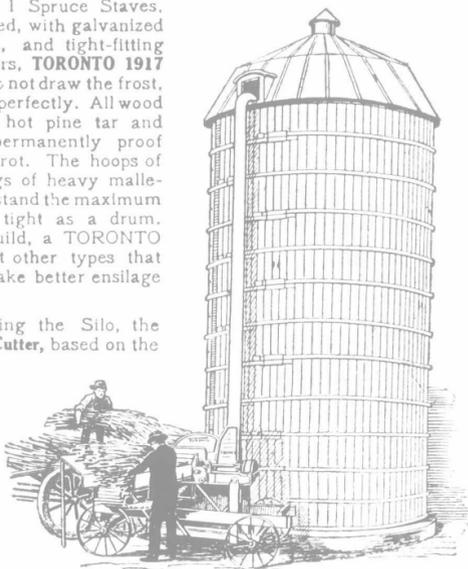
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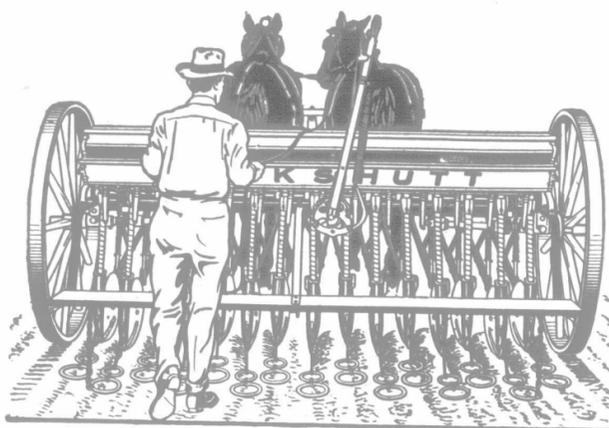
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We know that seeding is the most important thing you do, so we have used our best brains to give you the finest, most durable Drill that can be built—the

COCKSHUTT DRILL

That the Cockshutt Drill is RIGHT is best shown by the increasing sales—getting bigger every year. Due to merit only, and the fact that we have long foreseen the fact that perfect seeding must be made almost absolutely mechanical so that it can be done by "green" hands, in any soil and under varying weather conditions.

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An immensely strong, yet light steel frame, and splendid dust-proof bearings give the famous Cockshutt light draft, and, with the strong "I-beam" support used, absolute alignment is guaranteed. The feed is a wonder of

exactness—and you can vary it at will, at a second's notice—simply by turning a thumb-screw and moving the pointer.

Pressure levers, to vary the depth of seeding, are convenient to operate and easily handled. You set your drill to suit your own familiar conditions. You'll find it most adaptable—ready at all time to give you 100 per cent. efficiency.

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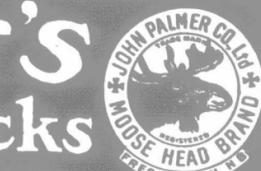
Palmer's Summer Packs

GIVE real foot comfort to tired, aching feet. They are made from oil-tanned Skowhegan water-proof leather. These summer packs or plow shoes are light, strong, durable—made with water-proofed leather sole and heel and solid leather insoles are laced, have large eyelets and bellows tongues. The ideal shoe for working on the land.

They are also specially suitable for ranchers, trackmen, laborers, sportsmen and all others requiring extra strong yet comfortable footwear.

The style shown—No. 109, is nine inches high. Ask your dealer for Palmer's famous "Moose Head Brand" footwear—many styles and sizes to choose from.

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If I am not mistaken, history for this community was making in that school-room as we entered."

"You're perfectly right, Doctor," said the colonel. "Columbus Brown and about a dozen others living outside the district are calling Wilbur Smythe in counsel to perfect plans for an election to consolidate a few of these little independent districts, for the express purpose of giving Jim Irwin a plant that he can do something with. Jim's got too big for the district, and so we're going to enlarge the district, and the schoolhouse, and the teaching force, and the means of educational grace generally. That's as sure as can be—after what took place this morning."

"He's rather a wonderful person, to be found in such a position," said Professor Gray, "or would be in any region I have visited."

"He's a native product," said the colonel, "but a wonder all the same. He's a Brown Mouse, you know."

"A—a—?" Doctor Brathwayt was plainly astonished. And so the colonel was allowed to tell again the story of the Darbshire brown mice, and why he called Jim Irwin one. Doctor Brathwayt said it was an interesting Mendelian explanation of the appearance of such a character as Jim. "And if you are right, Colonel you'll lose him one of these days. You can't expect to retain a Caesar, a Napoleon, or a Lincoln in a rural school, can you?"

"I don't know about that," said the colonel, "the great opportunity for such a Brown Mouse may be in this very school, right now. He'd have as big an army right here as Socrates ever had. The Brown Mouse is the only judge of his own proper place."

"I think," said Mrs. Brathwayt, as they motored back to the school, "that your country schoolmaster is rather terrible. The way he crushed that Mr. Carmichael was positively merciless. Did he know how cruel he was?"

"I think not," said Jennie. "It was the truth that crushed Mr. Carmichael. "But that vote of thanks," said Mrs. Brathwayt. Surely that was the bitterest irony."

"I wonder if it was," said Jennie. "No, I am sure it wasn't. He wanted to leave the children thinking as well as possible of their victim, and especially of Mr. Bonner; and there was really something in Mr. Carmichael's talk which could be praised. I have known Jim Irwin since we were both children, and I feel sure that if he had any idea that his treatment of this man had been unnecessarily cruel, it would have given him a lot of pain."

"My dear," said Mrs. Brathwayt, "I think you are to be congratulated for having known for a long time a genius." "Thank you," said Jennie. And Mrs. Brathwayt gave her a glance which brought to her cheek another blush; but of a different sort from the one provoked by the uproar in the Woodruff school.

There could be no doubt now that Jim was thoroughly wonderful—nor that she, the county superintendent, was quite as thoroughly a little fool. She to be put in authority over him! It was too absurd for laughter. Fortunately, she hadn't hindered him much—but who was to be thanked for that? Was it owing to any wisdom of hers? Well, she had decided in his favor, in those first proceedings to revoke his certificate. Perhaps that was as good a thing to remember as was to be found in the record.

To be continued.

Annual Shorthorn Sale at Guelph.

Fifty-five head of Shorthorns are to be sold at the annual sale in the Winter Fair Buildings in Guelph on March 7. Some excellent animals of fashionable Scotch breeding are in the offering. A beautiful pair of young bulls, sired by imported Roan Chief (one of them a brother to Cupbearer that topped the Toronto sale last year), are included. A good son of Imp. Right Sort, that has proven a splendid sire, is worth looking over. A young Stamford bull by a son of Right Sort is another attraction. Mention really should be made of many of the entries to do them justice, as they are without doubt the most uniform lot ever sold at this sale. Some very desirable young females are also listed. As usual the Ontario Department of Agriculture will refund freight on single shipments to any point in Ontario. For catalogues apply to J. M. Duff, Secretary, Guelph.

Seeds AND Seed Grain

	Per Bush.
Red Clover, Special No. 1	
Extra nice	\$14.00
Red Clover No. 1	13.50
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These prices are cash. Bags extra, at 30c. each.

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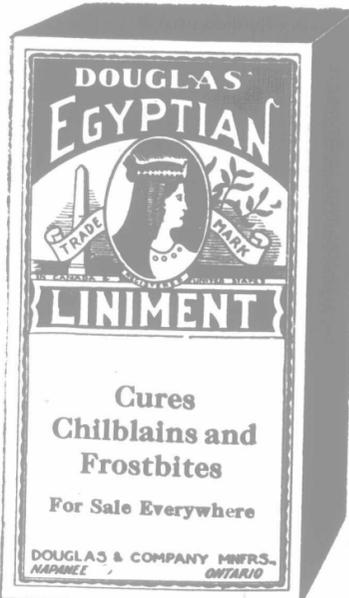
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New Century	\$ 1.25
Banner	1.25
Early Empire (ripens with barley)	1.10
O. A. C. 72	1.25
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Terms cash, ex-warehouse. Bags at 30c. each.

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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.

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Get Your Stumps Out and Help the Boys in the Trenches

Send for full particulars of the Kirstin Stump Puller. A. J. KIRSTIN CANADIAN CO., 5190 Dennis St., Saulte St. Marie, Ont.

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PINE TREE BRAND TIMOTHY SEED

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PURITY NO. 1 AND EXTRA NO. 1

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ROBT. W. KNISTER, Comber, Ontario

Cedar Posts 1 Carload, seasoned and peeled. Six to eight inches at small end, a few of them just under 6 inches. Price 15c. each. F. O. B. here at Sunderland, Ont., G.T.R. **W. A. BARRETT, SUNDERLAND, ONTARIO**

Gossip.

Snyder Sale of Holsteins.

Holstein breeders in need of something choice in the way of females should keep in mind the dispersion sale of Holsteins advertised elsewhere in this issue by Elias Snyder, of Burgessville, Ont. The sale will be held at the farm on Thursday, March 15, and will consist of the entire herd as Mr. Snyder, owing to his sad bereavement early last fall, is forced to give up dairying which he has carried on in a small but intensive way for the past ten years. As stated in the advertisement the herd consists of 20 head only, but from these Mr. Snyder has always been able to pick a show herd that has crowded well up into the money at Toronto almost annually. Many, too, have excellent records in both seven and thirty-day official work, and a number of others were making very creditable records for this year at the time of our visit. Olive Abbeckerk Posch 3rd with 28.07 lbs. for 7 days is the highest record cow at present, and has also been one of the strongest show cows in the herd. A son of this cow, which Mr. Snyder considered good enough to breed on the heifers of his former herd bull, Pontiac Hengerveld Calamity Paul, will also be in the sale. He is a straight, well-made youngster, and his sire was Prince Colanthus Abbeckerk, a bull that has been a very successful sire and has a 31.95-lb. dam. Other good record cows are Rosalind Calamity Abbeckerk, 24 lbs.; she also has 17.11 lbs. at 2 years, and is a sister to Madam Posch Pauline, 34.5 lbs. Miss Netherland by Brookbank Butter Baron has 26.94 lbs. while her daughter, Netherland Francys, has just made 24.52 lbs. in 7 days. These are only a few of the more mature, breeding cows, but there are 9 heifers from these cows and the former herd sire, Pontiac Hengerveld Calamity Paul, mentioned above. He was bred by Jno. Arfman, and his sire was Pledge Spofford Calamity Paul whose dam was a 32.40-lb. cow. His dam was a 25.9-lb. daughter of that great transmitting sire Hengerveld De Kol, the sire of 58 A. R. O. daughters and 30 proven sons. The 9 heifers from this sire should command fast bidding, as three of these already have records around 18-lbs. and all average 4 per cent.; another sister starting in the R. O. P. at one year 11 months of age has over 18,800 lbs. of milk for the year. There is a good 12-months bull from one of these heifers that stood second in a strong class at Guelph. He will go to some good herd. It is not fair to Mr. Snyder to count the animals in this sale by numbers.

Shorthorns and Clydesdales Sell March 9.

The small herd of Shorthorns that W. J. Abernethy will sell by public auction at his farm near Beeton on Friday, March 9, is one of the best little herds that will come into the sale-ring this year. The herd sire Lavender Premier 96352, by Lavender Lad, dam by the good breeding bull, Uppermill Omega, is one of the best two-year-old bulls we have seen for some time. He is the sire of most of the 1915 and all of the 1916 calves, and a good lot they are. A number of these are bulls; several are of serviceable age, and any one of these has a combination of quality and scale that will warrant his use in the best of herds. The two and three-year-old breeding females are all daughters of the former herd sire Scottish Crown. He was by the noted sire Ben Lomond, and his dam was that good breeding cow, Scottish Susie (imp.), the dam of Pleasant Valley Jilt which brought \$2,500 in a Toronto public sale-ring. The more mature cows and the dams of the heifers just mentioned are made up of some of the best families of the breed, including a large number of Missies as well as several Roan Ladys, Waterloo Daisys, etc. The Missies are all descended from the famous old cow Collynie Mistletoe (imp.), and it is further evident to-day, by the high standard the herd has attained, that Mr. Abernethy's latter two herd sires were not the only ones that were well chosen.

The Clydesdales offered include one 7-year-old mare by Celtic Baron (imp.), probably one of the best sires this country has seen, and his 3-year-old filly by Duke of Montravel (imp.). Also a 2 year-old filly by Touchstone, and a year-old filly by Celtic Baron. The latter colt is one of the most promising youngsters we have

"Eastlake" Metallic Shingles

Fire, Lightning, Rain and Storm Proof. Easily laid, and make a good-appearing, permanent roof. A post card will bring you particulars. **Metallic Roofing Co., Limited, Manufacturers, Toronto**

No More Sore Shoulders

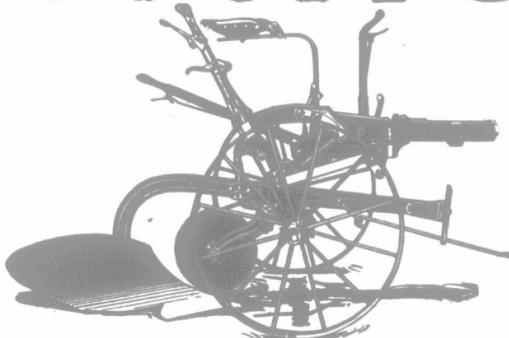
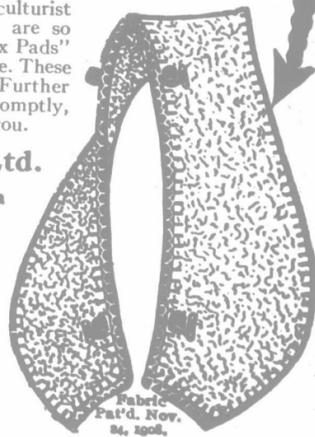


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VENTIPLEX PADS

prevent sore shoulders, and as every agriculturist knows, horses when being hard worked, are so troubled. Horses equipped with "Ventiplex Pads" are always on the job, and give 100% service. These pads cure gall sores by removing their cause. Further information in booklet form gladly mailed promptly, at your request. Your dealer will supply you.

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IT takes a real plow to make good with the plowing experts of Eastern Canada. Therefore, we take pride in the fact that the **Hamilton No. 126** sulky meets with their approval. Partly because it is adjustable to all conditions, partly because it is easy to operate, but mostly because it is built to do first-class plowing for many years, this sulky has made good.

Note the handy pole shift. With it you can instantly change the landing of the beam, straighten crooked furrows, adapt the plow to side hill plowing and to the turning of short corners.

The **Hamilton 126** is a two-wheel sulky with a horse lift—a simple type that is remarkably easy to operate. The horses do practically all the work, yet the draft of the plow is so light that they do a full day's work with it.

The **Hamilton** line also includes walking gangs, two-way plows, and a choice assortment of walking plows. All are made with the thoroughness you will find in the 126 sulky. Note the new spring beams and long handles of the walking plows. Write us for **Hamilton** plow folders.

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Clover Seeds

High-grade Government Standard Seeds

	Per bus.
No. 1 Mammoth Red Clover	\$14.00
No. 1 Red Clover	13.50
No. 2 Red Clover	12.50
No. 1 Alsike	13.50
No. 2 Alsike	12.50
No. 2 Timothy (this seed grades No. 1 for purity and germination)	4.25
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

SEED GRAINS

Now is the time to place your order for Seed Oats, Barley, Peas, Corn, Buckwheat etc. We have some good, clean seed and can quote reasonable prices.
We can also supply Cotton Seed Meal, Oil Cake Meal, Gluten Meal, Distillers Grains, Tankage, Bran, Shorts, etc.
We are buyers of Hay, Straw, Beans and Coarse Grains.
Write for prices.

Crampsey & Kelly, Toronto, Ont.

Carter's Tested Seeds Inc.

(Branch of Jas. Carter & Co., London, Eng.)
Beg to announce that their
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Our New Stocks Have Already Arrived.
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Some of the best corn in Essex County, second to none in germination. Satisfaction guaranteed or your money refunded. In sacks or crates. Flints and Dents on the cob.
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A limited quantity of Yellow Blossom and also White Blossom seed for sale. Price \$11 and \$14 per bushel, F.O.B.
J. O. SLACK, R. R. 4, Hagersville, 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.
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O.A.C. No. 72 and Daubeney. No noxious weed seeds. For samples and prices, write
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Splendid yielders, good sample, no noxious weed seeds. Price, \$1.75 per bush. Orders of 5 bush. or over, \$1.50 per bush, f.o.b., G.T.R. or C. N. R. Cash with order. Bags free.
S. P. FOOTE, Bethesda, Ont., York Co.

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First generation, registered and sealed, price \$1.75 per bush. Also improved seed at \$1.40 per bush., sacks included. J. Stanley Hilborn, Sec., Dumfries and Wilmot Oat Seed Centre, New Dundee, Ontario.

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Home-grown, and tests 50 lbs. per bushel. Price \$1.50 per bush.
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No. 1 Ontario Variegated Alfalfa Seed

Fields have stood 10 years of severe testing. Price \$25.00 per bushel. Bags included.
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SEED GRAIN—O. A. C. No. 72 Oats, O. A. C. No. 3, Early Oats, No. 21 Seed Barley

The O. A. C. No. 3 Oats are just the thing to sow with barley for mixed feed as they ripen together. The first in your locality to grow some of this seed. Write for samples and prices. W. R. Dougall, Hensall, Ont.

seen in any stable for some time. Twenty-two carefully selected, pure-bred Oxford Down breeding ewes and the stock ram, a number of work horses, grade cattle, twenty-five pigs and the hay and grain will all be included in the sale, as Mr. Abernethy is giving up farming and everything must be sold. Write now for catalogue giving full particulars regarding breeding, terms of sale, etc., and also see advertisement elsewhere in this issue.

Gossip.

Holstein Breeders Meet at Belleville.

The annual meeting of the Belleville District Holstein Breeders' Club was held in the city of Belleville, Ont., on Tuesday, Feb. 13. The majority of the more extensive breeders from all the surrounding counties were present, and the meeting needed only the Secretary-Treasurer's report to show that they had had a successful year. Besides the election of officers for the ensuing year, the only important business that came before the meeting was the arrangements for the 1917 Annual Club Sale, which will, as usual, be held in the city of Belleville. The date will be Wednesday, April 4, and the number of animals consigned will be in the neighborhood of 90 head. Ninety per cent. of these will be females, and in so far as possible cows that will be freshening around sale time will be asked for by the sales manager.

The following officers were elected: President, R. Parks, Napanee; Vice-Pres., Milton Mabee, Trenton; 2nd Vice-Pres., S. J. Foster, Bloomfield; Sec.-Treas., F. R. Mallory, Frankford; Sales Manager, Jas. Caskey, Madoc. In the future the annual meeting of the Club will be held on the last Wednesday in January of each year.

Poole's Sale of Holsteins.

The entire dispersal by public auction of several prominent Holstein herds in Oxford County are now advertised in these columns to take place within the next few weeks. One of the largest and most noted of these will be the herd of W. B. Poole, which will be sold at the farm near Ingersoll on Wednesday, March 14. Nearly all the females of breeding age in this sale have good official records, and the herd sire, Colantha Fayne Butter Baron, which will also be in the offering, is recognized as one of the greatest young individual sires in Canada to-day. He has been a prominent winner at Toronto every year since showing as a calf in 1914, and ended up with championship honors at Ottawa last fall. In breeding, too, he has everything in his favor. His dam, Queen Butter Baroness, was the one-time champion 7-day butter cow for Canada, while his two full sisters, Colantha Butter Girl and Queen Butter Baron Fayne, both hold Canadian records. For 30-day performances the former has 104.07 lbs. of butter at 3 years, while the latter has 2,006 lbs. of milk at 2 years. The average test of them both as well as the average of the record of this dam is over 4 per cent. On the sire's side the young sire is also up at the top, being a son of Grace Fayne 2nd Sir Colantha which is a sister to Grace Fayne 2nd Homestead, the ex-world's champion and the dam of King Fayne Segis, the sire of the new world's champion 50-lb. cow, Segis Fayne Johanna. There will be a half dozen young bulls by this sire in the sale all around six and seven months of age, and all from the good tested dams that will also be in the sale. His heifer calves are the only things that will be retained on the farm. They will not be in the sale. There are, however, twelve daughters of Francy King Ormsby, the former herd sire, which is a son of the famous old cow, Jennie Bonerges, 29.10, and the dam of Jennie Bonerges Ormsby, which has produced over 30 lbs. of butter for 5 consecutive years. The oldest of these heifers are coming 3 years and the only six as yet to freshen average over 15 lbs. of butter in 7 days. As mentioned previously, in referring to the dam of the young bull, all the mature females have good official records, many in fact have run for the year and they are too numerous to take up individually. Their records run all the way from twelve and thirteen thousand up to over twenty thousand for the year. Any breeder interested in this kind of breeding should write for a catalogue of sale at once and mention this paper.

RENNIE'S NEW HIGH GRADE SEEDS

Asterum, the new big Comet Aster, pink, white or mixed. Pkg. 15c.
Mammoth Cosmos, crimson, white, pink or mixed. Pkg. 10c, 3 for 25c.
New Red Sunflower, beautiful and showy. Pkg. 25c.
Scarlet Runners, popular climber. Pkg. 10c, 4 oz. 15c, lb. 50c.
Spencer Sweet Peas, good mixed colors. Pkg. 10c, oz. 25c, 4 cz. 80c, lb. \$2.40.
XXX Imperial Japanese Morning Glory, all colors. Pkg. 10c, oz. 35c.
Triple Curled Parsley, dwarf dark green. Pkg. 5c, oz. 20c, 4 oz. 50c.
Ninety-Day Tomato, smooth and firm. Pkg. 10c, 1/2 oz. 30c, oz. 50c.
Rennie's Mammoth Green Squash, 403-lb. specimen. Pkg. 25c.
Crimson Giant Radish, early crisp. Pkg. 5c, oz. 15c, 4 oz. 40c, lb. \$1.20.
Senator Peas, large, luscious Dwarf. 4 ozs. 15c, lb. 40c, 5 lbs. \$1.75.
Yellow Globe Danvers Onion (black seed). Pkg. 5c, oz. 25c, lb. \$2.10.
Rennie's Prize Swede Turnips, best for table or stock. 4 ozs. 20c, lb. 65c.
Nonpareil Lettuce, Canada's best for open air. Pkg. 5c, oz. 20c, 4 ozs. 60c.
XXX Guernsey Parsnip, smooth high grade. Pkg. 10c, oz. 25c, 4 ozs. 75c.
Stringless Refugee Wax Beans. 4 ozs. 15c, lb. 50c, 5 lbs. \$2.25.
Rennie's Fireball Beets. Pkg. 10c, oz. 20c, 4 ozs. 50c, lb. \$1.60.
All-Head Early Cabbage (solid heads). Pkg. 5c, oz. 30c, 1/4 lb. 90c.
Golden Bantam Sugar Corn (for table). Pkg. 15c, lb. 40c, 5 lbs. \$1.90.
XXX Table Cucumber (for slicing). Pkg. 10c, oz. 25c, 4 ozs. 60c.
Yellow Dutch Onion Sets. Lb. 35c, 5 lbs. \$1.70.
Sudan Grass, new annual hay crop or feed green. Lb. 40c.
Delivered Free in Canada. Rennie's Seed Annual Free to All.
ORDER THROUGH YOUR LOCAL DEALER OR DIRECT FROM
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From Spring to Fall you'll hear this expression used over and over again, with ever-increasing satisfaction, by gardeners who have planted Ewing's Seeds.
The splendid promise of the first few weeks, marked by good germination and lusty growth, is more than fulfilled as the season advances—for

EWING'S SEEDS

are "thoroughbreds." They come from choice selected plants, and reproduce the same.
Don't take chances—get Ewing's Seeds—the kind that for nearly half a century have been producing bumper crops. Write for our new Illustrated Catalogue, and if your Dealer hasn't Ewing's Seeds, order from us direct.
The William Ewing Co., Limited
Seed Merchants, McGill St., Montreal.

Ewing's superb blend of mixed Giant Spencer Sweet Peas
Composed exclusively of Giant Waved Spencer varieties, blended in proper proportions of bright colors and including several new hybrids of exquisite shades, many of which, when sufficiently tried up will be introduced as new named varieties. Pkt. 10c; oz. 35c; 1/2 lb. \$1.00; 1 lb. \$3.35. Se. 1 postage paid—Cash w/ order. 54

Buy Your Seed Oats Now—Now is the time to make sure of getting good Ontario-grown seed. I have a limited amount of good, clean seed oats left, which I will sell reasonably. Samples and prices sent on request. Apply soon.
BENJ. J. WAECHTER, Gold Medal Farm, R. R. No. 3, Walkerton, Ontario

Seed Grain—Still have a good supply of O.A.C. 72 Oats and 21 Barley left. We supply the best varieties to grow in Ontario. Supply is pure and true to name, and of good quality. Priced so you can buy.
JOHN ELDER & SONS, (Special Seed Growers) Hensall, Ont.

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UNION MADE
GLOVES and OVERALLS

The Best
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Farmer



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IF SO—

The farmer must consider two points now—price and haulage.

Bricks are increasing in price, owing to the cost of fuel, and the weather controls haulage.

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Free samples sent on request.

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Farm, Garden and Orchard Tools
Answer the farmers' big questions.
How can I grow crops with less
expense? How can I save in plant-
ing potatoes? How make high
priced seed go farther? The
IRON AGE Potato Planter
solves the labor problem and makes
the best use of high priced seed.
Means \$5 to \$50 extra profit per acre.
Every seed piece in its place
and only one. Saves 1 to 2
bushels seed per acre. Uni-
form depth; even
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No Misses
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and minor wounds on horses and cattle
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Ask for—get—the genuine. See "Work-
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Guaranteed Genuine
Everlasting
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Produces plants with large branching roots which
resist winter conditions. Leafier, outyields other
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sample free. Will also send testimonials from
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A. B. LYMAN, Grimm Alfalfa Introducer,
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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, other-
wise 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.

Applying Fertilizer to Corn.

1. Do you advise the use of com-
mercial fertilizer with corn?

2. If so, how would you apply it if you
had no fertilizer drill?

3. Have you ever heard of anyone
mixing the fertilizer with the corn and
allowing the drill to sow more freely?

4. Would the fertilizer coming in
direct contact with the seed and then the
young plant, injure either in any way?

J. A. S.

Ans.—1. It depends on the fertility of
the land. Commercial fertilizers have
given excellent results with corn in some
cases. However, the same kind of fertil-
izer on the next farm failed to give pro-
nounced results.

2. Certain kinds of fertilizers have
been sown with the ordinary grain drill,
but it is hard on the drill. In the absence
of a fertilizing drill some have sown small
areas by hand.

3. We understand there are fertilizer
attachments for corn planters, so that the
corn and fertilizer may be sown at the
same time. Fertilizers have been mixed
with the corn and sown, but the practice
is not to be recommended.

4. Certain kinds of fertilizer would, no
doubt, injure the young plants. For that
reason it is best to have the fertilizer
mixed with the soil, rather than in direct
contact with the seed. With the at-
tachment on the corn planter the fertil-
izer does not come in direct contact with
the seed. The root system of plants
spreads out, which is an argument for
spreading the fertilizer over the land
rather than having it dropped in one place.
When placed near the seed there may be a
tendency for the plant to start more
rapidly.

Gossip.

A Strong Showing of Bulls at Spruce
Glen.

Jas. McPherson & Sons, proprietors of
the Spruce Glen herd of Shorthorns, are
already well known to most Advocate
readers who are at all interested in this
famous Scotch breed of cattle. Many of
the better herds throughout Ontario now
have a McPherson-bred bull doing service
as the chief sire, and from the lot of good
young bulls that were seen by our repre-
sentative, on a short visit to the farm re-
cently, it is safe to assume that many others
will soon be using bulls of this firm's breed-
ing. Most of these young bulls referred
to are around a year old, and are from the
big, deep Mina, Emily, Florence and
Bruce Fame cows that make up the foun-
dation stock at Spruce Glen. There are,
of course, many descendants of these
older cows among the breeding females,
and they are by such good breeding bulls
as Royal Archer (imp.); the Crimson
Flower bull, Bromwell by Premier Earl
(imp.); the noted breeding bull Lord
Roseberry (imp.); the Dairymaid bull,
Lord William; the Cecilia-bred Lord Cecil
and others, all of which have, at one time
or other, done service in the herd. At
present the senior sire in use, which is the
sire of the majority of the young bulls
offered, is Royal Red Blood, a son of the
noted bull, Blood Royal, and out of Red
Rose (imp.). The get of Royal Red
Blood are an exceptionally thick, evenly-
fleshed lot, and with one exception are all
nice reds and roans. Next in service is
Earl Derby 2nd, a choice, big, well-made
fellow got by Earl Derby, and he again is
by the famous imported Bessie-bred sire
Derby. There are several young bulls
also of this breeding and not yet of
serviceable age, and to those who can
wait for a few months these may be
bought for considerably less money,
although we understand that all will be
quoted at prices that should clear them
out quickly. They are also pricing Earl
Derby, which we could recommend to
Derby, which we could recommend to
those who can use a heavy sire. Let
them know your wants by writing and
mentioning "The Farmer's Advocate."



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NEPONSET Paroid Roofing has achieved a repu-
tation during the last 19 years that is the admi-
ration of all competitors, and this warning is for your
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Paroid makes the one roof
which cannot crack, rot, rust,
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The largest manufacturers of Roofing,
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"PRODUCTION AND THRIFT"

TWO REASONS FOR USING

"Best-by-Test" FERTILIZERS

If the soil lacks one of the ingredients necessary for plant growth, it is a serious
drawback. No plant can fully develop without the presence of all the re-
quired elements. It is because "Best-by-Test" Fertilizers possess the full
amount of chemical plant food, in such readily assimilated form, that farmers give them the preference. Made
in Canada. Made scientifically and honestly. Full weight and full strength. Write for prices.

Reliable Local Agents Wanted.

Canadian Fertilizer Co., Limited

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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.

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Gordon H. Manhard, Superintendent

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GREAT ANNUAL COMBINATION Breeder's Sale

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**Clydesdale
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STALLIONS and MARES
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Thursday, March 15th
at 10 o'clock a.m.

INCLUDING MANY
PRIZE WINNERS

Special attention is called to the consignments
of Mr. Wm. Pears and Mr. J. B. Hogate. The
former enters, without reserve, the celebrated
imported Percheron mare, "Julia" (Registered),
foaled April, 1909, winner of

SWEETSTAKES,
SILVER MEDAL CHAMPIONSHIP
and 10 first prizes at the
CANADIAN NATIONAL EXHIBITION

Two First and Championship at Dominion
Exhibition, Ottawa, and First at Guelph,
"LADY GREY", Registered Percheron Mare,
foaled 1911, winner of 9 First Prizes, 3 Gold
Medals and Diploma at Canadian National
Exhibition and Dominion Exhibition.

Also eight other Prize-winning Mares and
Fillies, and many other consignments of equal
merit.

This great sale will afford an unusual
opportunity to select from over one hundred
head of high-class Mares and Stallions, includ-
ing some of the best blood and quality ever
brought together under one roof in Canada,
and for absolutely unreserved sale.

Write For Catalogue To-Day

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Correct Your Soil With BEACHVILLE WHITE LIME

IF YOUR SOIL is not as fully
productive as it should be, it
may be over-acid, and an applica-
tion of Beachville White Lime will
produce wonderfully beneficial re-
sults in your crops.

Our Lime-stone is the highest
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should have.

**Beachville White Lime Co.,
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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

Questions and Answers.

Miscellaneous.

Sweet Clover.

What is your experience with sweet
clover? Is there anyone growing it for
seed? Is it a profitable crop? Is it as
good as alfalfa? Does it winter-kill as
badly as alfalfa? How much can be pro-
duced on one acre? Does it make good
pasture? Will it kill out in pasture?
How much do you sow per acre? Where
can you get the seed? What does the
seed cost per bushel? Will it grow on
poor land, or on low, black land if it is
drained? What kind of land does it do
best on?
J. N.

Ans.—Sweet clover as a forage crop is
gradually gaining in favor. Many con-
sider it as a weed, but it has considerable
agricultural value, both as a hay and
pasture crop. It compares favorably in
composition with the other legumes which
are extensively used, and all domestic ani-
mals thrive well on it once they have ac-
quired a taste for it. A large number of
farmers are growing sweet clover to-day
for seed, hay, pasture, and for plowing
under as a green manure. The general
impression is that sweet clover will not
winter kill as readily as alfalfa, and does
not kill out by being pastured. It is a
biennial, therefore, it only stays in the
ground two years unless it is reseeded.
If cut at the proper stage, very good hay
can be made from this plant. The yield
varies with the nature of the soil and the
season; anywhere from one and one-half
to six tons have been gathered per acre in
one season. To be used successfully for
pasture, it should be pastured sufficiently
heavy and close to keep it from getting too
far in advance, and to keep fresh, tender
growth coming on all the time. If it gets
ahead of the stock it becomes coarse and
fibrous. However, we have seen stock
pasturing on sweet clover that was three
and four feet high. They were browsing
off the ends of the sweet clover branches.
There had been about two head to the
acre all season and they were ready for the
block on no other feed except the sweet
clover. The proper stage to cut it for hay
is when the first blossom is ready to ap-
pear. Care must be exercised not to cut
too low; the cutting bar of the mower
should be raised so that some of the lower
branches will be left uncut. Otherwise the
second crop will be either destroyed or
greatly interfered with. A number of
farmers harvest sweet clover seed. The
first crop of the second year is usually cut
for hay and the second crop allowed to
mature. It is cut when three-quarters of
the seed pods become dark. A yield of
from two to eight bushels of seed per
acre has been obtained. It is claimed that
excellent silage can be made from this
crop, and it has considerable value as a
green manure. When plowed under it
adds a large amount of humus-forming ma-
terial to the soil. It aids in loosening up
heavy clay soils, and in increasing the
water-holding power of light, sandy soil.
Sweet clover appears to have no particular
choice of soil, and is found growing on
heavy clay, sharp, clear sand, and on all
soils intermediate between these. Sour
soil will prevent it from growing properly.
It gives very good satisfaction on light,
sandy soils, where other crops often prove
a failure. The plant appears to reach
greatest perfection where lime is plentiful
in the soil. The price of the seed varies,
but runs somewhere about the same as red
clover seed. A supply can likely be
secured from individuals or seed firms
advertising in these columns.

Advertise Seed Oats.

A large number of inquiries are being
received from Ontario and Quebec farmers
asking where they can purchase seed oats.
There was a good oat crop last year in
some districts, particularly on tile-drained
land. Farmers having seed oats for sale
should advertise them in at least one farm
paper. Some have reported the kinds,
quantities and prices of seeds for sale
direct to the Seed Branch, and this in-
formation is being supplied in answer to
the inquiries received.

SEED BRANCH, OTTAWA.

Look up the advertisement in this issue
of the sale of Shorthorns to be held by
Hugh McKay, near St. Mary's, Ont., on
March 14. Thirteen females and three
bulls will be sold.

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.

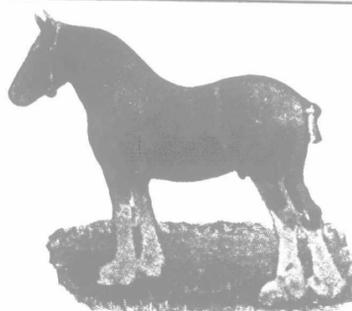
2 Geldings.

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 in-
terest 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 Clydes-
dale wonder, "Baron o' Buchlyvie," auctioned a few years ago for £9,500.
"Dunure Footprint" was bred, and is owned, by Mr. Dunlop, and is univer-
sally 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 ren-
dered 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



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.

PRICES RIGHT
TERMS TO SUIT

T. H. HASSARD, MARKHAM, ONT.

Percheron Stallions

Lots of them. All imported direct from France. None second. All guaranteed
foal getters. Prices and terms on application. Write for illustrated Catalogue.

Hodgkinson & Tisdale,

Beaverton, Ontario

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
in foal at the present time. Here is an exceptional opportunity to get good foundation stock at a
reasonable price. For full particulars, write or visit

Stoneycroft Stock Farm,

H. M. MORGAN, Owner

St. Anne de Bellevue,
Quebec.

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

Questions and Answers.
Miscellaneous.

Trapping.

Can I stop trappers from trapping in the river marsh, which fronts my land? If so, what steps should I take? W. W.

Ans.—Section 9, sub-section 2, of the Ontario Game and Fishery Laws states that no person shall hunt or trap furbearing animals except under the authority of a license, but this shall not apply to farmers or farmers' sons trapping on their own land. Section 23, subsection 3, states that an owner or occupant of land may give notice verbally or in writing, or by sign-boards forbidding hunting on certain ground. If the river marsh land belongs to you, you have it within your power to forbid hunting. Write A. Sheriff, Deputy Minister of Public Works and Highways, Parliament Buildings, Toronto, for advice on the matter. The Game and Fishery Laws are under that Department.

Raising Geese.

Advise on the care and treatment of geese. I have never had any experience but have bought seven geese and two ganders, mostly young fowl. I am desirous of going into geese as a side-line, but am absolutely ignorant of their breeding and care. Kindly let me have all information of same. W. P. McC.

Ans.—Geese thrive best where ponds or streams are provided. Fields which prove unsuitable for cultivation, owing to streams or springs running through them, make good pastures for geese. They thrive best in small flocks, and after the goslings are a week or two old they require little attention if a good range provided with water is available. Grass, insects and low forms of animal life are readily eaten by geese. Bran, middlings and cornmeal mixed with cooked vegetables make a satisfactory ration along with grass for young goslings. Breeding geese should have free range, and they will pick most of their feed. When fattening time comes they should be penned up to prevent them taking too much exercise. The flock should be kept quiet, and cornmeal may form a large portion of the ration. Expensive houses are not necessary. A structure to afford shelter is all that is required the greater portion of the year. Geese are long-lived and retain their breeding qualities through life. They are good sitters and are careful mothers. Anywhere from 8 to 24 eggs are laid, especially if eggs are removed from the nest. The first eggs may be set under hens. Eggs are covered so that it is sometimes difficult to find them. A bunch of straw in the corner of a building will often be selected for a nest. The period of incubation is about 28 days. Young ganders should be used and it sometimes happens that the birds pair off, although ordinarily one gander will mate with three or four geese.

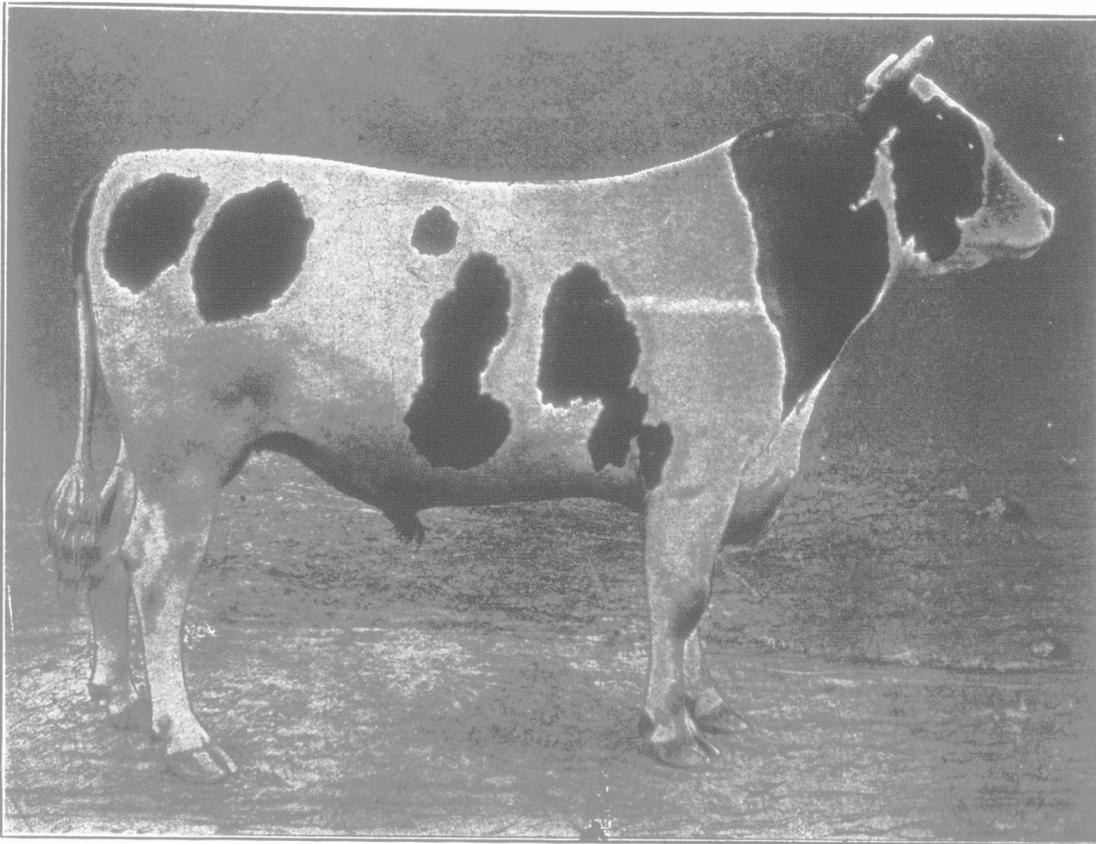
Feed Oat Grades Unfit for Seed.

Flour and feed dealers who offer the Feed grades of Western oats should be very careful to warn farmer purchasers against using them for seed. The Feed grades contain oats which are frozen or otherwise unsound and not suitable for milling purposes. They usually give a very low percentage of germination which results in serious crop failure. The sowing of these frozen oats in past years has given the general impression that all Western oats will not do well in Eastern Canada the first year. Home grown seed oats of good quality are so scarce this year that farmers should be specially warned against using the Feed grades for seed.

Eastern Canada farmers are advised to procure local grown oats of the best quality and clean them to thirty pounds per bushel or better if possible. Thus far not more than 100,000 bushels of No. 1 Canada Western seed oats free from wild oats are available in storage. It may be found necessary to make a grade for No. 2 seed oats containing not more than eight wild oats to the pound. This would be very much superior to the Milling or Feed grades which are foul with noxious and other weed seeds.

KING SEGIS ALCARTRA SPOFFORD

ONE OF CANADA'S GREATEST YOUNG SIRES



This is by way of announcement to "Farmer's Advocate" readers that this noted young sire, King Segis Alcartra Spofford, will in the future head the great "Roycroft" herd at Newmarket, as well as the Purteile & Leavens' herd at Bloomfield, where he has done such excellent service during the past two years. The selection of this sire was made by the management at "Roycroft," only after searching through the majority of the more noted herds in all of the Eastern States, where they were unable to find such great individuality and breeding so closely combined in any other one sire. They have, without question, in King Segis Pontiac Alcartra Spofford many things to be proud of. He is a son of the \$50,000 bull,

King Segis Pontiac Alcartra, while his dam is the 32.42-lb. four-year-old cow, Fairmont Netherland Posch, who at one time held the world's three-year-old, 7-day record. With such record breeding and his great individuality combined he has every right to be one of Canada's highest-priced sires, and now that his sons and daughters are winning the highest honors wherever shown, it is but little wonder that his services have been sought in more outside herds than those of any other sire in the Dominion. Many of Ontario's highest record cows are now safe in calf to him, others are coming in. If you have one that you would like to breed and think it will meet with the approval of the owners, you should get your order in early, as only a very limited number can be accepted.

King will remain at "Roycroft" until May 1st, when he will return to again take up his duties in the great-producing herds of Purteile & Leavens, at Bloomfield. Full particulars may be had from:

PURTELLE & LEAVENS

Bloomfield, Ont.
Prince Edward County

Joint Owners

W. L. SHAW, Roycroft Farm

Newmarket, Ont.
Gordon S. Manhard, Supt.

Hillsdale Clydesdales
Highest Quality
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 **LARKIN FARMS**, QUEENSTON, ONTARIO. Twenty minutes' trolley ride from Niagara Falls

ELM PARK ABERDEEN-ANGUS BULLS
OUR SPECIAL OFFERING (Three of our prize bulls). At Toronto and London 1916 shows, out of a possible five champion prizes and a possible ten first prizes, our bulls won all the championships and nine of the ten first prizes. The bulls we are offering are all proved breeders. **JAMES BOWMAN, ELM PARK, GUELPH, ONT**

WOODLANDS BROWN SWISS AND PONIES
We have no Clydes. left for sale. Our special offering is Brown Swiss bulls, out of high-testing and big producing dams. Strictly high-class. Also Shetland and Welsh ponies. **GUELPH, ONTARIO**
R. BALLAGH & SON,

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.

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

Every Truck Farmer
needs a tillage tool that does fast thorough work with one mule or horse. Experienced growers like the "Acme" Pulverizing Harrow because "the coulters do the work." They cut, slice, pulverize, and turn the soil twice in one operation. Leave the soil level as a floor and "mellow as fresh ashes." There's an "Acme" to fit your farm—1 horse to 4 horse. Send today for new free book, *The "Acme" Way to Crops That Pay.*
Bateman-Wilkinson Co., Ltd.
501 Symington Avenue Toronto Ontario
No. 23 61-2 ft. Wide
Size "H," 1-horse cultivator. Cuts 4 ft. 4 in. wide.

When writing mention "Advocate"

Warranted to Give Satisfaction.
Gombault's
Caustic Balsam



Has Imitators But No Competitors.
A Safe, Speedy and Positive Cure for
 Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.
 As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is warranted to give satis action. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. If send for descriptive circulars, testimonials, etc. Address
 The Lawrence-Williams Co., Toronto, Ont.

THICK, SWOLLEN GLANDS
 that make a horse Wheeze, Roar, have Thick Wind or Choke-down, can be reduced with

ABSORBINE
 also any Bunch or Swelling. No blister, no hair gone, and horse kept at work. Concentrated—only a few drops required at an application. \$2 per bottle delivered.

Book 3 K free.
ABSORBINE, JR., antiseptic liniment for mankind, reduces Cysts, Wens, Painful, Knotted Varicose Veins, Ulcers. \$1 and \$2 a bottle at dealers or delivered. Book "Evidence" free. W. F. YOUNG, P.D.F. 258 Lyman Bldg., Montreal, Can.

STAMMERING
 or stuttering overcome positively. Our natural methods permanently restore natural speech. Graduate pupils everywhere. Free advice and literature.
THE ARNOTT INSTITUTE
 KITCHENER, CANADA

H. Fraleigh, Forest

LINSEED MEAL
 FLAX SEED
 OIL CAKE
 COTTON SEED MEAL
 Write for Prices.

Alloway Lodge Stock Farm
 Angus—Southdowns—Collies
 SPECIAL this month:

CHOICE BULLS
 ROBT. McEWEN, R.R.4, London, Ont.

MESSRS. A. J. HICKMAN & CO., (late Hickman & Scruby), Court Lodge, Egerton, Kent, England, exporters of
PEDIGREED LIVE STOCK
 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.

Clydesdale Stallion for Sale, Laboremde (15157), inspected and enrolled, Form 1, (dark bay), foaled June 22nd, 1911; weight, 1,850; a beautiful horse, and in the pink of condition. Reason for selling, I am in automobile business. Correspondence solicited. WM. McCALLUM, Glencoe, Ont.

HEREFORD BULLS, 10 months to 2 yrs. old; young cows, calves at foot; a few choice heifers coming 2 yrs. Inspection invited.
ARTHUR F. O'NEILL & SONS,
 Denfield, Ont. R. No. 2.

Beaver Hill Aberdeen-Angus bulls, from 15 to 24 months; cows, with calves at foot, and bred again; females all ages. Rose-comb Rhode Island Red cockerels from good winter laying strains, \$2.50 each. Write ALEX. McKINNEY, R.R. No. 1, Erin, Ont. L.-D. phone.

Please mention Farmer's Advocate

Questions and Answers.
 Miscellaneous.

Books on Poultry.

1. Where can I obtain needles for the Rockdale sewing machine?

2. Where can I obtain the best book on Poultry Raising, especially the raising of hens?
 H. M. O.

Ans.—1. Any of our subscribers knowing where the Rockdale sewing machine needles can be secured would confer a favor by letting our subscriber know through this paper.

2. "Principles and Practice of Poultry Culture," may be secured through this office for \$3.00, postpaid. "How to Keep Hens for Profit," by C. S. Valentine, also "Beginner in Poultry," by the same author, for \$1.65 each. "Productive Poultry Husbandry," by H. R. Lewis, is \$2.10.

Skim milk for Hogs and Calves.

1. What is the value of separated milk for pigs or calves?

2. With good grade Shorthorn cows, which will pay best when labor is scarce to milk the cows and feed the calves separated milk, or let the calves run with the cows?

3. Is it advisable to allow the calves to run with the cows or to keep them in the stable and turn them with the cows twice a day?

4. Is one calf enough for an ordinary grade cow to feed, or will she raise two?
 J. H.

Ans.—1. The value of milk for feeding depends largely on the price of other feeds. For instance, with grain selling for a high price, milk has a higher value than when grain is low in price. It is generally conceded that on the average, skim-milk is worth around twenty cents a hundred for calves and pigs, but some feeders who keep account of the material fed their stock find that skim-milk has a value in some instances two and three times as high as the figure given. It has a greater value for calves and pigs up to three months of age than for those which are over.

2. It depends a good deal on the yield of milk which the cows give and on the value of the calves. Well-bred calves which by forcing can be sold as baby beef may pay for whole milk. With the ordinary cow, giving say 6,000 lbs. of milk, testing 3.5 per cent., the revenue from sale of cream at 30 cents a pound butter-fat would be \$63. If the cow raised the calf this would be the cost for the milk alone. On the other hand, \$63 could be received for the cream, and the skim-milk along with a little roughage and a few concentrates would raise a good, thrifty calf, which would make a good bullock by the time it was two years old. There is really more money out of selling the cream and feeding the skim-milk to the calves with ordinary stock.

3. We would prefer keeping the calves separate from the cows, except for a short time night and morning.

4. It all depends on how much milk the cow gives. One giving 6,000 lbs. of milk would possibly raise two fairly good calves, provided some grain is fed.

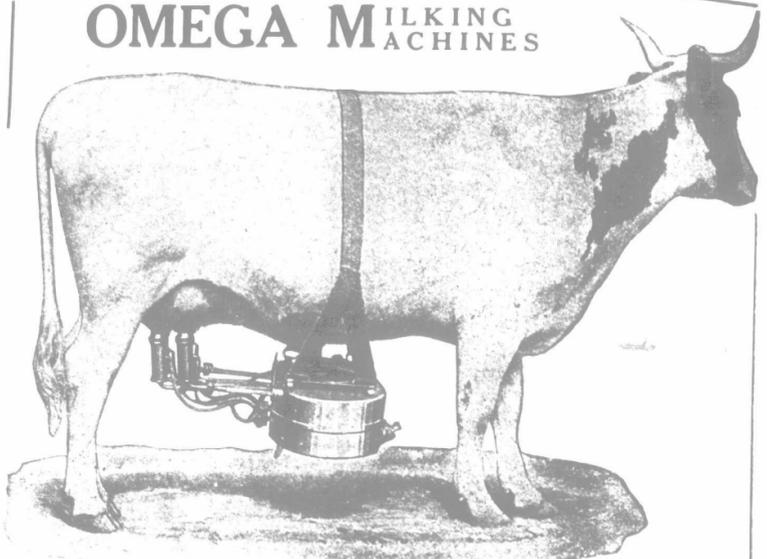
Veterinary.

Septicaemia.

Horse had septic lymphangitis. He almost recovered, but now sores are breaking out on various parts of the body and limbs. They appear on a small patch with the hair fallen out, soon crack and bloody matter escapes, then the part hardens. Some heal and others break out again.
 A. M. S.

Ans.—The septic condition has involved the whole system. Dress the sore parts three times daily with 1 part carbolic acid and 30 parts sweet oil. To those that refuse to heal apply butter of antimony once daily with a feather for two or three days. To the oily or moist patches apply three times daily, a lotion made of 1 oz. each of sulphate of zinc and acetate of lead to a pint of water. Give him 6 drams hyposulphite of soda three times daily. If his appetite is not good give him a heaped tablespoonful three times daily of equal parts powdered sulphate of iron, gentian, ginger and nux vomica. Keep his bowels loose by feeding soft food and if necessary giving a pint of raw linseed oil occasionally.
 V.

OMEGA MILKING MACHINES



Omega Milks Fast and Clean

No Tainted Milk. No Rubber Connections.

The Omega milking machine draws the milk from the teats by a gentle alternating motion similar to hand action, and conducts it to the pail through short, stiff, transparent celluloid tubes. The pail and the teat-cups are suspended from the back of the animal. The pail cannot be knocked over and the milk spilled, and the teat-cups cannot fall on the stable floor and suck up straw or manure. The Omega is

Sanitary, Efficient and Easily Cleaned

There are no corners and no rubber tubes to harbor fermenting particles of milk in the Omega. The Omega has few parts, and is as easily and quickly cleaned as a milking pail. At official government tests the Omega was the only machine that milked faster and cleaner than by hand. The Omega in a 17-day test on 10 cows, compared with the 17 previous days, increased the total amount of milk given by 3%. This test was conducted by Prof. Leitch, of O.A.C., Guelph.

Users Prize the Omega

Mr. R. R. Ness, of Howick, Que., the noted breeder and importer of Ayrshire cattle (whose cow is shown above) writes us regarding the Omega as follows:—"In my opinion it is the greatest boon which has ever struck our country, in the interest of the Dairy Farmer. This machine, in my mind, eliminates all the troubles and objections found in other milkers which I have had the privilege of seeing. It certainly has all other machines beaten, in point of cleanliness, with those celluloid tubes instead of rubber, the pail hanging on the cow's back, never touching the floor, the position in which the teat cups are held, insuring the most cleanly way of milking known to-day."
 The Health Departments of some large cities demand the use of Omega milking machines, (and them only) as they supply milk with a minimum bacterial count. Learn more about the Omega.

Write to-day

for free booklet which fully describes the Omega and its wonderful records.

C. RICHARDSON & CO.,

St. Mary's, Ontario

Three Males **16 SHORTHORNS** Thirteen Females

Will be sold by auction on

Wednesday, the 14th of March, 1917

Lot 35, Con. 7, West Nissouri, 2½ miles south of town of St. Mary's
 Hugh Mackay, Proprietor Wm. McNeil, Auctioneer

BURNFOOT STOCK FARM

Breeders of high-record, dual-purpose Shorthorns with a splendid conformation for beef.
 Visitors welcome.

S. A. MOORE, Prop.

CALEDONIA, ONT

WILLOWBANK STOCK FARM SHORTHORN HERD

Established 1855. This large and old-established herd has at the head the two great bulls: Imported Roan Chief = 60865 =, a Butterfly, and the prizewinning bull, Brownale = 30112 =, a Min. As extra good lot of young stock to offer of either sex. Splendid condition. Good families of both milking strain and beef.
 JAMES DOUGLAS, Caledonia, Ont.

SCOTCH SHORTHORNS (SHOW MATERIAL)

We are offering some extra quality in young bulls; two of the Emmeline family, fit for service now; one very promising Matchless bull calf (9 mos.); show bulls every one. Any person wanting something good of either sex will do well to see our herd
 (R.R. Station, Grand Valley)
 GEO. GIER & SON, R. M. D., Waldemar, Ont.

Creekside Farm Shorthorns We have for sale at present, a number of young things by our former herd sire, Clan Alpine (the Claret-bred bull, by Proud Monarch). We like them; so will you. If it's young bulls, or a few females you need, we would welcome a visit from you. Write or 'phone. Visitors met by appointment.
 Geo. Ferguson, Elora Stn. C.P.R., G.T.R., Salem, Ontario

IRVINEDALE SCOTCH SHORTHORNS

Our offering this year in Scotch Shorthorns is probably the best we have offered for many years. There are several young bulls of serviceable age; right good ones, and breeding the very best; also females of any age.
 JOHN WATT & SON, Elora, R.M.D.

MEADOW LAWN SHORTHORNS

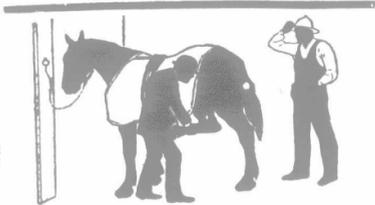
We are offering a splendid lot of young bulls from 10 to 18 months old, of the low-set, thick, fleshy type, from good milking dams. You are invited to inspect this offering.
 Elora, R. R. No. 1.
 F. W. EWING

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, BROOKLIN, ONT.

Spruce Glen Shorthorns

of such popular strains as Minas, Fames, Miss Ramsdens, Florences, Emils etc. Present offering, our stock bull, Earl Derby 2nd, 5 yrs. old, a show bull, hard to beat. Also a few young, thick, mellow fellows, fit for service.
JAMES McPHERSON & SONS, DUNDALK, ONTARIO



**WHERE IS HE LAME?
CAN HE BE CURED?**

It is surprising how accurately it is possible to diagnose the most chronic, complicated and uncertain form of lameness, and treat ALL such cases successfully by the aid of our FREE BOOK. It is a book of facts—nowhere else found—our discoveries of over 21 years. No horse owner should be without it.

SAVE-The-HORSE

is sold with a Signed Contract-Bond to return money if remedy fails on Ringbone—Thoropin—SPAVIN or ANY Shoulder, Knee, Ankle, Hoof or Tendon Disease. No blistering. Horse works. You should have this book and remedy always on hand in case of an emergency. No matter how old the case, SAVE-The-HORSE is guaranteed to cure; but the best time to cure is when the trouble starts. If you are not sure about the case, write us describing your trouble. Send today for this FREE Book, copy of our Guarantee-Bond and expert advice; no "string" attached. Get a bottle of SAVE-The-HORSE and be insured against your horse being laid up when you most need him.

Troy Chemical Co., 145 Van Horn St. (Made in Canada) Toronto, Ont.
Druggists Everywhere sell Save-The-Horse with CONTRACT or we send by Parcel Post or Express Paid.

**Kendall's Spavin Cure
The Old Reliable
Horse Remedy**

THOUSANDS of farmers and horsemen have saved money by using Kendall's Spavin Cure for Spavins, Curb, Ringbone, Splint, Bony Growths and Lameness from many other causes. It keeps horses working. A \$1 bottle may save a horse for you. Get a bottle the next time you are in town. Sold by druggists everywhere, \$1 a bottle, 6 for \$5, also ask for a copy of our book "A Treatise on the Horse"—or write to
Dr. B. J. KENDALL COMPANY
Enosburg Falls, Vermont 117

**Fistula
and
Poll
Evil**

Any person, however inexperienced, can readily cure either disease with FLEMING'S FISTULA AND POLL EVIL CURE—even had old cases that skilled doctors have abandoned. Easy and simple; no cutting; just a little attention every fifth day—and your money refunded if it ever fails. Cures most cases within thirty days, leaving the horse sound and smooth. All particulars given in Fleming's Vest Pocket Veterinary Adviser. Write us for a free copy. Ninety-six pages, covering more than a hundred veterinary subjects. Durably bound, indexed and illustrated.
Fleming Bros. Chemists
75 Church Street, Toronto, Ont.

**GLENFOYLE
SHORTHORNS**

Seven bulls, big, straight, smooth, fleshy fellows, some from cows milking 40 to 60 lbs. a day. Also a few outstanding heifers that are bred. Three young cows. Prices right. Bell phone.

Stewart M. Graham, Lindsay, Ont.

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

Shorthorn Bulls for sale, by Mina Boy 18th, Guelph. Also one imported Clydesdale stallion.
GEO. B. ARMSTRONG, Teeswater, Ontario
Mildmay, G.T.R. Teeswater, C.P.R.

"Maple Leaf Farm"

Shorthorns; Shropshires; both sexes. Mail orders satisfactorily filled.
J. BAKER, R. R. 1, Hampton, Ont.

**Questions and Answers.
Miscellaneous.**

Stable and Driving House.

My driving house and horse stable walls on the outside are of cement, but a board partition and doors, which are usually kept open, divides one from the other. I would like to know if it is the walls, or the ammonia from the stable, that causes the paint and varnish on the rigs to spoil?
C. W.

Ans.—The ammonia from the stable would be the most likely thing to cloud the varnish on the rigs. The cement walls might be a little damp, but would only affect seriously things which were touching them.

Outlet for Drain.

I have trouble getting an outlet for a drain. There is a creek across my farm and a large area of land drains into it. How will I go about it to get this creek deepened and widened, as the limit of the Drainage and Water Course Act does not extend far enough? There will be about three and one-half miles of a drain before the proper outlet is reached. I petitioned the Council and had the majority of the ratepayers on the area to be drained sign the petition, as is called for in the Drainage Act, but the Council refused to accept it. How will I go about it to get a ditch large enough to carry the water away? We are at a big loss every year on account of our land being flooded.

RATEPAYER.

Ans.—The Municipal Drainage Act reads: Upon the petition of a majority, etc. . . . the Council may procure an engineer to make an examination of the area to be drained. This Act leaves the Council entirely free to accept or reject the petition. Ratepayer can do nothing with regard to his drainage scheme unless he obtains the consent of the Council of his municipality.
J. R. S.

Ringworm.

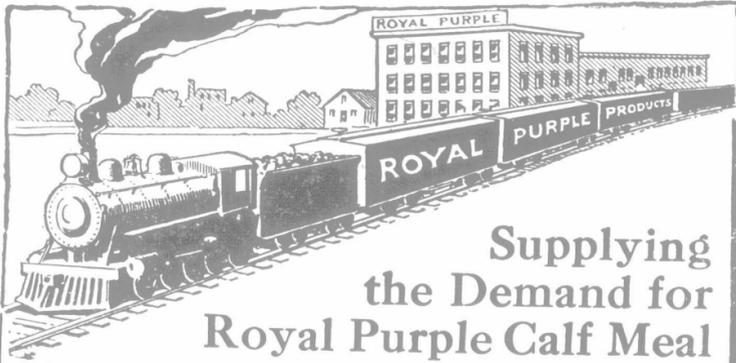
We bought a cow last spring but she has not been giving as much milk as we would like. She goes two meals without drinking, and will not eat salt, but eats her regular feed readily. The hair on her face and neck is coming off in patches. What is wrong with the cow?
E. U.

Ans.—The hair coming off in patches indicates ringworm. The face and head is a favorable seat for this parasite to attack. Isolate the diseased and disinfect the premises. Moisten the scales with sweet oil; remove them and apply tincture of iodine twice daily until cured. This should not cause the cow to fall off very much in her milk. Evidently her system does not require water any more than once a day, or else she would take it when she has the chance. So long as she eats freely and looks thrifty, there is not much wrong with her other than the ringworm. Some cows are naturally poor milkers, and no quantity of feed will induce them to give a large flow.

Whey for Calves.

Kindly inform me if calves can be raised on whey. As my milk goes to the cheese factory, skim-milk is not available. Would it be advisable to mix ten to twenty per cent. whole milk with the whey, together with some oil-cake meal? The calves would also have hay or grass and grain. I can purchase low-grade, dried skim-milk at four cents per pound to feed in the proportion of one pound to eight pounds of water. This would cost me from \$12 to \$15 per calf for five months, which would be half the value of the calf at one year old, after wintering it. I doubt whether this would pay me.
E. H. A.

Ans.—Where pasteurized whey can be obtained sweet and undiluted, whey gives fair results for raising calves, if fed under the strictest rules as to quantity, regularity of feeding and cleanliness of the vessels used. Experiments have been conducted to test the value of whey for calves, and where 10 to 14 lbs. of whey was fed daily, with alfalfa hay and sieved ground oats, the calves continued thrifty and healthy, although not quite so fat as those getting skim-milk. Whey is not rich in protein like skim-milk, therefore, it is necessary to feed substances which are high in protein along with it. Linseed meal, wheat bran and oats are very good concentrates to feed along with legume pasture or hay. It is advisable to feed whole milk until the calves are two or three weeks old and then gradually wean them on to the whey.



**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."
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.

W. A. Jenkins Mfg. Co., Ltd., London, Can.
35

FREE BOOK

Send for our 80-page book which describes the common diseases of stock and poultry; also methods of feeding and our many products. Get a copy to-day.

**A CLEARING-OUT SALE OF THE ENTIRE HERD OF
SHORTHORNS**

Owned by W. J. Abernethy will be held at the farm near Bradford,

Friday, March 9th, 1917

Although numbering less than 30 head, this is one of the best little Shorthorn herds in Ontario. The foundation cows are large and smooth and nearly all excellent milkers. Many are choice bred Missies, descended from the Dutch-bred cow, Collynie Mistletoe Imp. The younger cows are from these dams and by Scottish Crown, by Ben Lomond.

There are 8 bulls (including calves) by the present sire, Lavender Premier. Many of the females will be calving around sale time to this bull. Everything, including the herd bull, will be sold.

SEVERAL CLYDESDALE MARES, 22 PURE-BRED OXFORD EWES and the STOCK RAM will also be in the offering.

CATALOGUES READY FEBRUARY 20TH.

TERMS OF SALE: Cattle, grain and pigs will be cash. 9 months' credit will be allowed on horses, sheep and implements to those furnishing approved notes.

Trains will be met at Beeton, C.P.R., Bradford, G.T.R. and Schomberg (York Radial) on day of sale.

Implements, Grade Cattle, Hay and Grain will be sold in forenoon.

W. J. Abernethy, Prop., R. R. No. 1, Beeton, Ont.

Auctioneers, J. K. McEwen & Son

Young Bulls of serviceable age. Young cows with calves by their side and rebred. 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

Pleasant Valley Herds—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. Inspection invited. Farm 11 miles east of Guelph, C. P. R., 1/2 mile from station.
Geo. Amos & Sons, Moffat, Ont.

Imported Shorthorns 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.
J. A. & H. M. Pettit, Freeman, 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., DRUMBO, ONT. Phone and Telegraph via Ayr

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 Broadhooks Golden Fame =50018 = (imp.), and out of such noted families as Campbell-bred Claretts, Nonpareils, Marr Missies, Stamfords, Crimson Flowers, Village Girls and Charming Gems, ranging from 9 to 16 months old. All are good reds and roans.

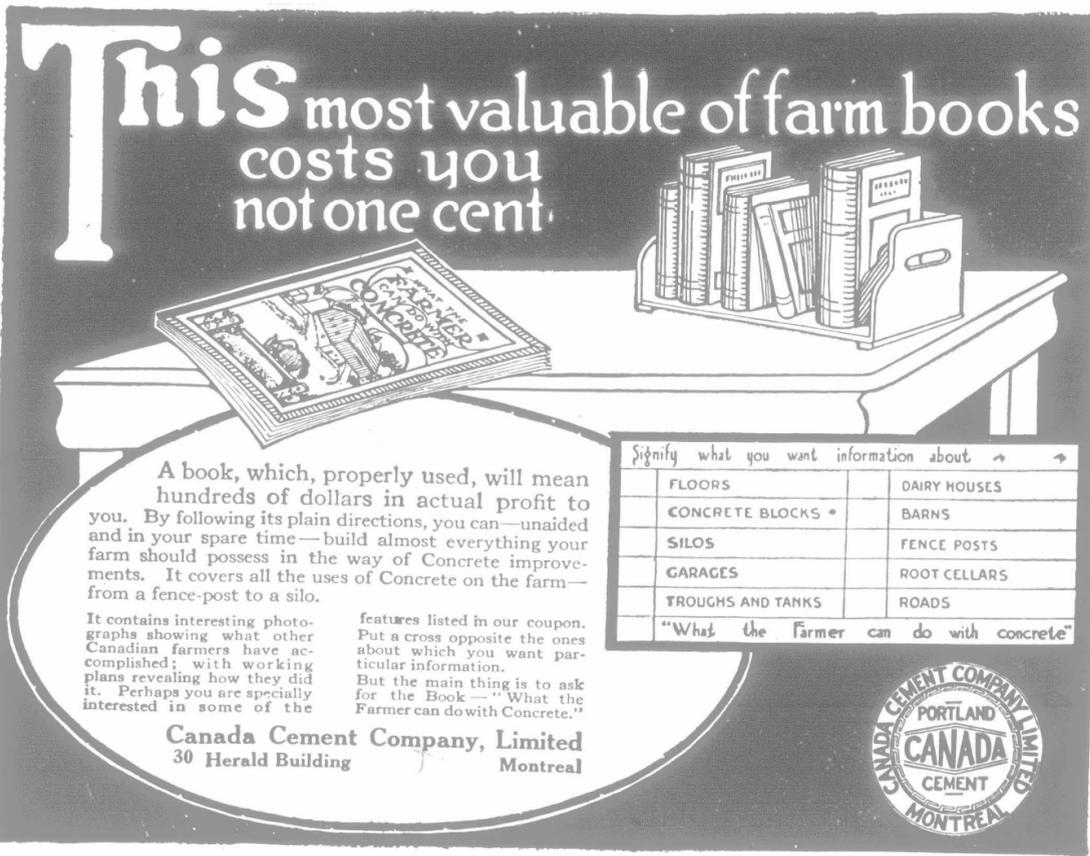
Glengow Shorthorns, Cotswolds

For the present, we have sold all the Cotswolds we wish to spare, but we have a choice offering in young bulls fit for service. They are all of pure Scotch breeding, and are thick, mellow fellows, bred in the purple WM SMITH Columbus Ont; Myrtle C.P.R. Brookline G.T.R. Caledonia C.N.R.

IMPORTED SHORTHORNS

Have just received from Scotland some very superior Shorthorns. All cows and heifers have either calves at foot or are close up to calving. Also four imported bulls and a number of good Canadian-bred cows. These cattle will strongly appeal to the most exacting. Visitors can be met if notified.
A. G. FARROW, OAKVILLE, ONTARIO

This most valuable of farm books costs you not one cent



A book, which, properly used, will mean hundreds of dollars in actual profit to you. By following its plain directions, you can—unaided and in your spare time—build almost everything your farm should possess in the way of Concrete improvements. It covers all the uses of Concrete on the farm—from a fence-post to a silo.

It contains interesting photographs showing what other Canadian farmers have accomplished; with working plans revealing how they did it. Perhaps you are specially interested in some of the features listed in our coupon. Put a cross opposite the ones about which you want particular information. But the main thing is to ask for the Book—"What the Farmer can do with Concrete."

Signify what you want information about →	
FLOORS	DAIRY HOUSES
CONCRETE BLOCKS *	BARNs
SILOS	FENCE POSTS
GARAGES	ROOT CELLARS
TROUGHS AND TANKS	ROADS
"What the Farmer can do with concrete"	

Canada Cement Company, Limited
30 Herald Building Montreal



Ontario Provincial Sale of Shorthorn Cattle

An auction sale of Shorthorn cattle (male and female) under the auspices of the ONTARIO DEPARTMENT OF AGRICULTURE and the management of the GUELPH FAT STOCK CLUB, will be held in the

WINTER FAIR BUILDINGS, GUELPH
on
Wednesday, March 7th, 1917
commencing at 12.30 p.m., at which will be offered about fifty (50) head, carefully selected, good individuals, many of them fashionably bred animals.

For catalogues and further particulars apply to:—
C. L. NELLES, J. M. DUFF, Secretary,
President, Guelph, Ont.

ROYAL DUBLIN SOCIETY

Auction Sales of
Pure-Bred Bulls
to be held at DUBLIN, on the
10th AND 11th APRIL, 1917
For Catalogue and other particulars apply to the
AGRICULTURAL SUPERINTENDENT
LEINSTER HOUSE, DUBLIN

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 Stn., C.P.R. L-D. Phone.

Mardella Shorthorns

Bulls, cows, heifers. Have size, quality; breeding dual-purpose cattle over 40 years. Have great milkers and heifers. Glad to have you see them, or write—Thomas Graham, Port Perry, R. R. No. 3

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.

Shorthorns

We have some young cows with calf at foot or to calve, by the Augusta bull, Augustine (imp.) = 201804 = Also 2 red and 3 roan bulls, smooth and fleshy. We invite inspection. **JOHN SENN & SONS, Caledonia, R.R. 8, Haldimand Co., Ont.**

"He's had GARDINER'S CALF MEAL ever since he was weaned"



"I've never seen anything like it to take the place of new milk and keep calves going right ahead. I feed it first with separated milk, then with milk-and-water, and finally with water only as the calves grow older. I find it pays for itself several times over in better condition and faster growth."

Gardiner's Calf Meal is guaranteed to contain 19% to 20% Protein and 8 1/4% to 9% Fat. This exceptional food value and its easy digestibility, explains its success with young colts, lambs and pigs as well as with calves.

Buy it in 25, 50 or 100 lb. Bags. If your dealer hasn't it, write us for prices on it and also on Gardiner's Saco-a-fat, Pig Meal, Ovatum and Ontario Feeders' Cotton Seed Meal.

GARDINER BROS., Feed Specialists, SARNIA, 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.

ROBERT MILLER Pays the Freight on his Shorthorns

I have six Lavender bulls over a year old, two Duchess of Gloster bulls over a year; four other bulls from good families, all have good bone and good feeding qualities, and they are naturally thick fleshed, but not highly fitted in some cases. They are half reds and half good roans. I have some heifers in calf, and some to be bred soon. You can get the right kind from me at reasonable prices.

ROBERT MILLER, STOUFFVILLE, ONT.

SHORTHORNS

Some of the best cattle in America can be bought from us at reasonable prices. Visitors welcome.

A. F. & G. AULD (A. Gordon Auld, Owner)
R. 2, Guelph, Arkell Station, five miles from Guelph

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, ELORA, ONT.

HOLSTEIN BULLS READY FOR SERVICE

Two are by King Korndyke De Kol, a son of the great Pontiac Korndyke. One is from a 25-lb. three-year-old, and the other from Queen of Oxford, dam of Queen Butter Baroness. We have others younger, by King Walker Pride, a 24.36-lb. son of King Walker. Write us also for females.

GOLLVER V. ROBBINS, WELLANDPORT, ONTARIO

PIONEER FARM HOLSTEIN HERD

Of long-distance record makers, the kind that milk heavy and test around 4 per cent. the whole year. Of the six highest butter fat records of two-year-olds in Canadian R.O.P., one half were bred at Pioneer Farm. Young bulls for sale from dams of the same breeding as these and sired by Canary Hartog, whose three nearest dams average 30 lbs. butter in 7 days and 108 lbs. milk in one day.

WALBURN RIVERS, R. R. No. 5, INGERSOLL, ONT. Phone 343 L., Ingersoll Independent.

Questions and Answers. Miscellaneous.

Growing Beans.

Could you give me some information on growing and harvesting beans? What is the best variety to plant, and how many pecks should be sown to the acre?

L. A. S.

Ans.—Bean growing was discussed on page 327 of February 22 issue of "The Farmer's Advocate," and the questions here asked were fully answered there.

Bushels of Roots in a Cellar.

1. What is the rule to measure turnips in a cellar?
2. How many bushels of turnips will a cellar 27 by 10 by 7 feet hold?
3. Which would you advise, cement or stone foundation for a hen-house, and which would be most satisfactory for a floor, cement, clay or gravel? What height should the floor be to promote dryness?

E. P.

Ans.—1. A cubic foot of turnips is estimated to weigh 33 lbs. Find the cubical contents of the cellar in feet, and multiply by 33 and divide by 50 in order to get the number of bushels.

2. According to the above rule the cellar would hold about 1,248 bushels.

3. A concrete foundation is very satisfactory for a hen-house, and it should be raised about 18 inches above the ground level. A concrete floor is permanent and proves quite satisfactory when covered with a thick layer of straw. A clay or gravel floor is harder to keep clean, but if raised 12 or 15 inches above the surrounding ground level, it can be kept comparatively dry.

Feed for Sow—Law Book.

1. Can I secure through your office a law book which would be useful to the farmer, and what is the price?
2. What line of farming do you consider to be most profitable on a 100-acre farm? Would dairying, with hogs and poultry, be more remunerative than general farming with dual-purpose cows?
3. Where can I secure a holder for a cow's tail? I had two but lost them both.
4. What are the names of the leading Canadian R. O. P. Holstein cows, and what is their record? Will Holsteins do better than other breeds on low land?
5. What is the best feed for a sow, both before and after farrowing?

P. P.

Ans.—1. The book entitled "The Canadian Lawyer" may be secured through this office for \$2.00, postpaid.

2. It depends a good deal on how a man is situated as to the kind of farming which proves most profitable. Dairying is generally considered to be remunerative, whether whole milk or cream is sold. When selling cream or butter, the skim-milk and buttermilk are excellent by-products for hogs and poultry. With general farming and dual-purpose cows there would be very much the same work as with straight dairying. There would be dairy products to sell and possibly the same by-products as previously mentioned. It is generally understood with dual-purpose cows that the calves are raised and fattened for beef and a good revenue is secured in this way, possibly more than from raising the calves of the straight dairy breeds. However, there is usually a good demand for calves of both sexes, provided they are pure-bred.

3. We do not know where these clips can be secured at present. Manufacturers of them should advertise.

4. The present leaders in the various R.O.P. classes are: Mature class, Toitilla of Riverside, 24,090 lbs. milk; four-year-old class, Hill-Crest Pontiac Vale, 22,789 lbs. milk; three-year-old class, Plus Pontiac Artis, 21,018 lbs. milk; two-year-old class, Duchess Wayne Calamity 2nd, 16,714 lbs. milk.

5. The sow should be kept in good, strong condition, but not overloaded with fat. Equal parts ground oats and middlings make a good ration for a sow during gestation. Roots may also be fed to advantage during the winter. Turn the sow in the pasture field in the summer. After farrowing little more than a drink should be given at first, followed by a slop of middlings and water. After the third day the ration should be increased and equal parts ground oats and wheat middlings soaked between feeds make a good ration. Roots and green feed are always in order.

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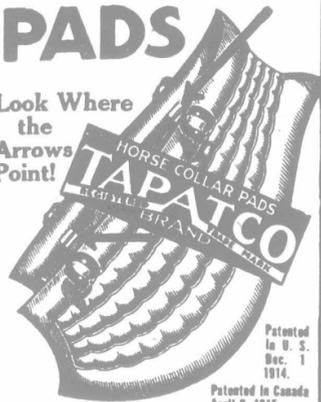
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GREATLY IMPROVED HORSE COLLAR PADS

Look Where the Arrows Point!



Patented in U. S. Dec. 1 1914. Patented in Canada April 6, 1915.

Our new staple and felt reinforcing device gives the hooks a larger, firmer hold on the pad and keeps them from coming off easily. It adds to life of the pad and satisfaction of the user. This form of attachment is

Found Only On Pads Made By Us

Ask your dealer for free Tapatco booklet. Shows pads in colors and contains valuable horse remedies. If he hasn't request him to write us direct.

The American Pad & Textile Co.

Main Office and Plant, Greenfield, Ohio, U.S.A. Chatham, Ont.

GET MORE MILK BY FEEDING

Creamo Brand Cotton Seed Feed Meal

(Registered)

Car lots or less. Prices on application.

FRED. SMITH

32 Front St. W., Toronto, Ont.

A PAYING INVESTMENT



Store your corn in a BISSELL SILO and it will keep sweet and sappy. BISSELL SILOS are built of seasoned timber saturated with Wood Preservative Oils. They are durable, heavy-hooped structures, with air-tight walls and tight doors.

In several sizes with or without roofs. Write Dept W for free catalogue. 97 T. E. Bissell Co., Ltd., Elora, Ont.

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
London, - Ontario

LIVINGSTON BRAND

The purest and best.

OIL CAKE MEAL

THE DOMINION LINSEED OIL CO., Ltd. Manufacturers, Baden, Ont.

Questions and Answers.

Veterinary.

Miscellaneous.

1. Heifer occasionally quids her cud. She eats well and appears in good health, but some mornings there is about 1/4 bushel of quidded cud in her manger. She will go three or four days at a time without doing this.

2. About two months previous to calving, fluid commenced to form in cow's womb. This increased until she could hardly rise. She calved at full term, but died in a few days. Should the calf be removed when fluid commences to form?

3. A large three-year-old heifer commenced to bloat. I treated her but the bloating persisted. After starving her for 12 hours she would apparently be all right, but so soon as she ate anything she bloated. She got very thin and I destroyed her.

4. Cow had milk fever, I gave the air treatment and she recovered, but she took udder trouble, the udder became gangrenous and she died. E. F.

Ans.—1. The trouble is in the mouth. Have the mouth examined by a veterinarian. He will find that the teeth require dressing, or find some other cause which he probably can remove.

2. Fluid forms in considerable quantities in all cases. In some cases it forms in abnormal quantities and the cause is not understood and cannot be controlled. It is not at all probable that the quantity of fluid caused death. A careful post-mortem might have revealed the cause of death.

3. It is probable there was some foreign matter in the stomach, or the trouble may have been due to weakness of the digestive glands. Treatment, in the first case would have been an operation by a veterinarian, provided a diagnosis could have been made. In the second the administration of 3 ozs. oil of turpentine in a pint of raw linseed oil to dissipate the gases. This followed by a purgative of 1 qt. raw linseed oil, and after its action the administration three times daily of a tablespoonful of equal parts powdered sulphate of iron, gentian, ginger, nux vomica and bicarbonate of soda, and feeding easily digested food in very small quantities and gradually increasing the amount as digestion improved.

4. The inflation of the udder with oxygen gas or sterilized air is the proper treatment for this disease, but in order to avoid udder trouble it is necessary to be very careful when using either of these as the introduction of any septic material into the udder is always followed by more or less udder trouble. The introduction of ordinary air by means of a bicycle pump or other contrivance gives the same immediate results, but where the air is not sterilized and the udder and teat syphon thoroughly there is the danger mentioned. No doubt this was the cause of death in this case, oxygen gas is somewhat expensive, but instruments especially designed for the purpose of sterilizing the air can be purchased from any dealer in veterinary instruments at little cost. By using one of these and sterilizing the udder, teats and syphon with a warm 5 per cent solution of one of the coal-tar antiseptics, danger of this trouble is avoided. It is a great mistake to use a bicycle pump and to be careless about sterilization in such cases. It of course saves the veterinarian's fee, but often results in disaster. V.

Miscellaneous.

Bull Running in Pasture.

1. A has a mongrel bull between one and two years old. Last summer he let him loose with his other cattle. B owns a pasture next to A's, in which he had two pure-bred heifers. The bull bred the heifers and got them with calf. What damages can B claim against A?

2. Has anyone a right to let a bull of that age run loose? E. G. K.

Ans.—1. If B can prove the case, he can collect to the extent that damage has been done.

2. We are not familiar with the law regarding this matter in Quebec. Write the Clerk of your County for information regarding this matter.

Secure More Pails of Milk From Your Herd

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 Brownsville. My cows made the largest average and tested 5 pounds over average at C. M. P., Brownsville. I believe you make the best conditioner on the market."

Royal Purple Stock Specific

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 Komoka, 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, 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.

W. A. Jenkins Mfg. Co., Ltd.
London - Canada 36



Holstein Breeders of Eastern Canada

Do you know that 75% of Canada's high record cows were bred in the Belleville District? A number of them have been purchased before making their records at one of the six sales held by

The Belleville District Holstein Breeders' Club

The 1917 sale will be held in the city of Belleville

Wednesday, April 4th, 1917

This year's sale will, as usual, contain much of this same high record blood. Write for catalogue early.

JAS. CASKEY, Madoc, Ont., Sales Manager.

F. R. MALLORY, FRANKFORD, ONT., Secretary-Treasurer

19,753 lbs. milk, 762 lbs. butter

in one year as a 4-year-old, is the official record of "Helena Hengerveld Keyes 3rd" (12254). We are offering her son, born Oct. 15, 1916—a real beauty. His sire is "May Echo's Prince", a son of "May Echo" and a 3/4 brother of the great "May Echo Sylvia", 41 lbs. butter, 1,005 lbs. milk in 7 days, 121 lbs. milk in one day.—World's Champion. This is the kind of breeding you want in your next herd sire. Write us about this fellow—he is priced right.

Joseph O'Reilly, R. R. No. 9, Peterboro, Ontario

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

Bull Ready for Heavy Service

Straight in top, deep, low set, smooth, lots of length, good dairy type, light in color. R.O.P. records of dam and grandam average fifteen thousand pounds milk and six hundred and fifty pounds butter. Sired by a grandson of King Segis and Blanche Lyons De Kol, a 33-lb. cow, with a 33-lb. full sister. Price \$140 on car, at Toronto.

R. F. HICKS, NEWTONBROOK, YORK COUNTY, ONTARIO

SUMMER HILL HOLSTEINS

The only herd in America that has two stock bulls that the dam of each has milked over 116 lbs. a day and their average butter records are over 35 lbs. a week. We have fifty heifers and young bulls to offer, by these sires, and out of dams just as well bred. We invite personal inspection.

D. C. FLATT & SON, R. R. 2, HAMILTON, ONT. PHONE 7160

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. 2

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.

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.



Beat the high cost of leather

The price of all-leather harness has gone up to unheard of figures, and the end is not in sight. This hits the farmer particularly hard on his work harness because it gets such rough usage.

Griffith's Team Outfit, including Giant Rope Traces, Giant Yoke Ropes, harness, hame straps, plow pads, belly bands and billets, gives him a strong, serviceable work-harness equipment at the low price of \$13.00 (\$14.00 west of Fort William.)

Griffith's Giant Rope Traces will stand a tremendous amount of rough usage. They are as strong as leather and only cost about a quarter as much. Per set of four, \$4.50 (\$5.00 west of Fort William.)

Griffith's Giant Yoke Ropes are becoming more and more popular. They wear well. Price, per pair, with traps and slides, \$1.00 (\$1.25 west of Fort William.)

Meet dealers sell these specialties. If you can't get them from your dealer order direct. Our booklets will be interesting to read. Send for it.

G. L. Griffith & Son
60 Waterloo St.,
STRATFORD, ONT.



Boo Spavin

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

FLEMING'S SPAVIN CURE (Liquid) is a special remedy for soft and semi-solid blemish—Dog Spavin, Thoroughpin, Splint, Curb, Capped Hock, etc. It is neither a liniment nor a simple blister, but a remedy unlike any other—doesn't irritate and can't be irritated. Easy to use, only a little required, and your money back if it ever fails.

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

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FULLY GUARANTEED
CREAM
SEPARATOR

A SOLID 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.

"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 his 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.**

WILLOWBANK DORSETS
Amongst our ram lambs is the first-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.

Spring Feeds for Hens.
What is the best feed for hens in the spring?
SUBSCRIBER.

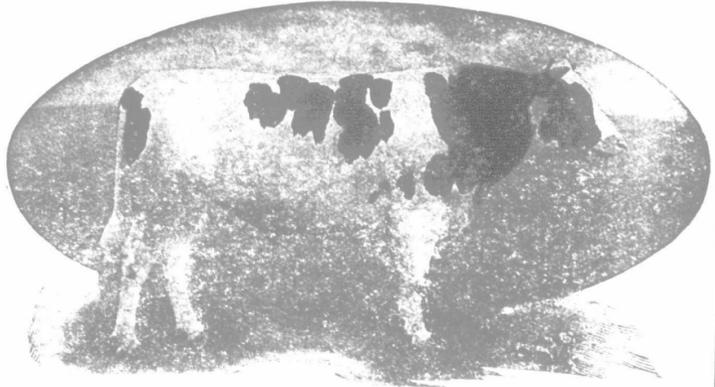
Ans.—Wheat is considered to be the best individual grain for hens. A mixture of oats and wheat, with a small sprinkling of corn added, should prove very satisfactory. It will require about a quart for every ten hens, and it is advisable to keep a supply of rolled oats in a hopper all the time. A mash might also be fed at noon. The birds require green feed, which may be supplied by roots, cabbage, clover leaves, etc., until such time as they can go on to free range. Oyster shell and grit are also necessary. Wheat food should be fed in the mash or else given in the form of milk.

Girl Collecting Her Own Wages.
1. A girl under the age of eighteen years is away from home working in a munitions factory and sends her money home. Can she, if she so desires, keep her money for her own use after she is eighteen, or can her parents claim her money until she is twenty-one?
2. A girl marries under the age of twenty-one but over eighteen, with her parents' consent. Can the parents lawfully collect wages from the husband until she is twenty-one? Would it make any difference if the girl married without the parents' consent?
M. S.

Ans.—1. Generally speaking, a girl is considered to be of age when she is eighteen years old, and can collect her own wages. However, there is a limit (\$100) to the amount she can sue for in the Division Court.
2. No.

Hens Do Not Lay.
We have a flock of seventy hens which have not been laying for over two months. They are kept in a pen about 30 feet long and 24 feet wide. In the morning they are fed about three quarts of oats and barley mixed; at noon they get a warm mash consisting of boiled apple and potato peelings, mixed with clover chaff, middlings, bran or corn chop, with a small quantity of red pepper. The night feed consists of three quarts of whole corn fed in a litter. They get water or buttermilk to drink. The house is cold enough that the water freezes at night. Grit, sand and lime are available for the birds; green feed is also fed. The birds are mostly young hens. Do you consider the hen-house too cold? About what temperature should it be? Is sufficient feed being fed for egg production, or am I over-feeding? Why is it they are not laying? H.F.J.

Ans.—Sometimes it is difficult to state why birds do not produce eggs during the winter. It may be in the breeding, time of hatching, kind of feed, or nature of the house. Any one of the things mentioned might be a limiting factor in production. In order to secure winter eggs from pullets, it is usually advisable to have them hatched before May 24; with yearling hens they seldom commence laying until late in January or early in February. There is a possibility that the pen is damp, which is detrimental to the birds. You do not state whether the pen is open front or has a straw loft. If it has neither, we would advise putting about one-third cotton on the south side of the pen, and if the pen is so constructed that a straw loft can be put in it would be advisable, as the straw tends to absorb dampness. However, the cotton front would give good ventilation. If the pen is dry, the birds will not suffer from the cold. There are numerous flocks kept in single-board pens with the entire low front open. No hard and fast rule can be laid down regarding the amount of feed to give the flock. It depends on the birds. They should be given what they will eat. Wheat is considered to be one of the best individual grains for hens, although oats and barley are used a good deal. The noon feed given should be very satisfactory, and corn is an excellent feed for hens in the winter-time. Try keeping a dry mash consisting of a mixture of 200 lbs. of bran, 100 lbs. of cornmeal, 100 lbs. of feed flour, 100 lbs. of beef meal and 100 lbs. of gluten meal before the birds, in a hopper. If all these feeds are not available, excellent results are obtained by giving the birds access to rolled oats. Wheat might also be included in the grain ration. Some poultrymen find that it requires about one quart of grain per day for every ten birds, besides access to dry mash at all times and a wet mash at noon.



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.

COMPLETE DISPERSION

SALE OF HOLSTEINS

Twenty Head *The Celebrated Herd of Prize-winning Cattle, the property of Elias Snyder, Burgessville, Ont., will be sold at the farm.* **Eighteen Females**

Thursday, March 15, 1917

We have all been to sales before now where 100 head of cattle have been sold, and in all there would not be 20 really outstanding good ones. In this sale, however, there are only 20 in the herd, but all of the 20 are good ones. There is, perhaps, no other herd of this size in Ontario that has, in the past 5 years, won more honors in the Toronto and London show-rings than has Mr. Snyder's. Nearly every cow in the stable has been out at some time or other, as there never was a whole lot to choose from. They are right individually, they are bred right—bred for type, bred for production, and live up to both. The majority of the mature cows have good official records and a number are making others at the present time. Others will be freshening before sale and tested. In so far as possible, all records will be included in the catalogues, which should be ready for mailing by March 1st. Make application now.

Terms of Sale will be **Cash**, or six months' credit on approved security, at 6% per annum.

Owing to the temporary cancellation of many trains, the noon train to Burgessville has been taken off. All trains will be met on day of sale at Woodstock and Norwich.

AUCTIONEER:
T. Merritt Moore **Elias Snyder, Burgessville, Ont.**

AT SERVICE

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 41.18-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 seven days, and 170.5 lbs. in thirty 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. Elliott, A. J. Camplin, C. R. Dyke, L. M. Kennedy, G. Brownsberger.

W. F. ELLIOT, Sec., (Bell Phone) Unionville, Ont.

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

2 ONLY ORCHARD LEIGH HOLSTEINS ONLY 2

prize mature cow at Guelph Dairy Test, 1915, R.O.M., 7 days, 27.96 lbs. butter and 514 lbs. milk in 7 days. Price \$200. No. 2.—Born October 18th, 1915. His sire's 7 nearest dams average over 30 lbs. butter in 7 days. His dam, at 3 years, made 25.81 lbs. butter and 559.5 lbs. milk in 7 days. Price \$175

JAS. G. CURRIE & SON, (Electric car stops at the gate) INGERSOLL, ONT

Fair Play for the Producer.

A subscriber down in Quebec sends us the following clipping from "The Christian Herald" and the matter is so to the point that we thought it worthy of reproduction in our columns even though it does refer specifically to United States conditions.

"The farmer is not in a position to make prices to suit himself, if he were so inclined. To bring the point before you, I will ask you who makes the prices on all farm products? Are they not made by a few men in your cities? Are they not made by men who are members of your Chambers of Commerce? Have you ever known of any board of farmers demanding a certain price? Do you know that the farmer is the only producer that has no voice in the selling price of his product? He takes what is offered, and that regardless of the cost of production, in many instances.

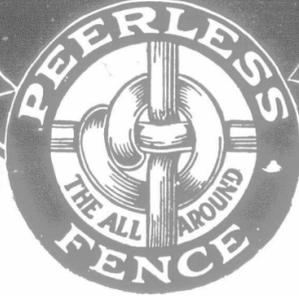
"Some time ago the meat-packers, while in convention in Cincinnati, had the question put to them, who would stand the loss if an embargo was placed on meat products. It was agreed that an embargo would affect the prices; but the speaker said it made no difference to them, as they merely acted as a clearing-house between the farmer and the consumer, and that the loss would have to fall to the farmer or producer. He was honest, at least, and he left no doubts in our mind on the point. But why should the producer saddle the burden? Why not divide the loss with the packers?"

"The writer of this letter has not always lived on a Dakota prairie farm. He went to work with the whistle and he has seen about thirty-five years of the ups and downs of life in a large city. He has been one of the dinner-pail squad. I was one of many who thought that everything the farmer sold grew on trees, and that the woods were full of them. Since leaving the city, I have learned that I knew little or nothing of the questions the farmer meets with. You asked us to raise a big crop. We answer that a big crop cannot be raised at a profit to us. That seems strange, doesn't it? It can easily be proven. The crop of 1913, which was regarded as the largest crop this country ever produced, was raised at a loss to the farmers of the northwest. Why? Because we got for it less than the cost of production. We were at the mercy of a few city people. Had we had a voice in the price of that crop, we would have had at least a fair margin of profit for our labor. As it was, that crop left a bad taste with us.

"When any one is asked to put special efforts into anything he is promised some special reward. You promise us the everlasting gratitude of the people in the cities. The reward in itself is worth striving for. But allow me to ask you how we farmers are going to buy and pay for your high-priced city manufactured goods, of which we are large consumers? We will have the everlasting gratitude, it is true, and we will also have a beggarly price for our crop. Will the city people come to our rescue and, instead of asking us to pay them for their products of the factories and mills at the present rate of eight hours' work and ten hours' pay, will they let us have their products at the rate of twelve hours' work and ten hours' pay? The farmer fails to see why he should work from daylight till dark, without ever thinking of the half or full holidays that the city man never overlooks, and with no more reward than the good wishes of the city people.

"You may think that the writer is heartless. Oh, no; I have sisters and brothers, as well as an old father and mother, who are feeling the effects of the high prices. However, that does not keep me from thinking that the pill that is being swallowed in the cities is bearing the city trademark. As long as the people in our cities want to get all they can, and do as little as they can in getting it, they must expect the other fellows to do the same thing. The farmer has to contend with the weather conditions in his efforts. He has a

PEERLESS PERFECTION



The Crimped horizontal wires allow ample provision for expansion and contraction from extreme changes in temperature and shocks from unruly animals.

The Peerless Lock (shown in the circle opposite) holds the intersecting wires in a firm grip that is non-slippable. Every part is heavily galvanized.

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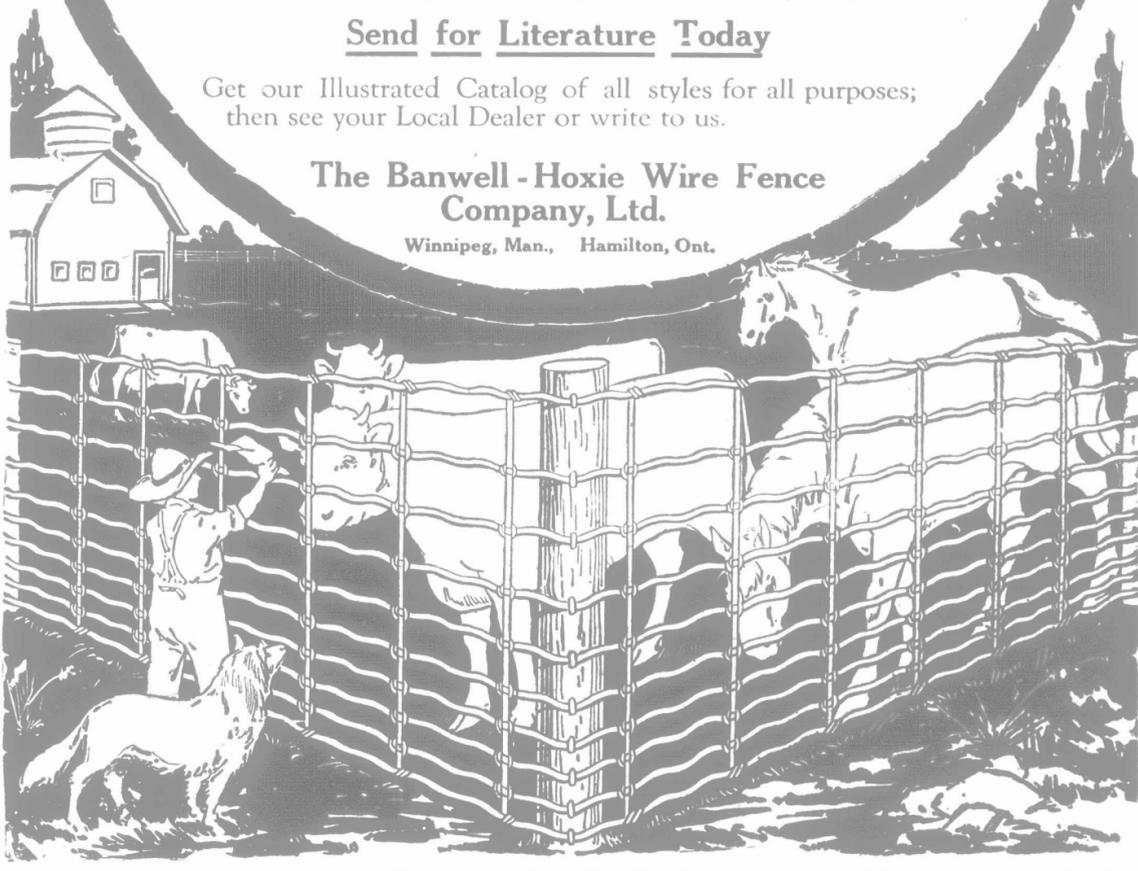
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For the next fortnight we are making a special offering on young bulls, bred from the highest producing families ever introduced into Canada. Brampton Jerseys and their descendants hold all Jersey R.O.P records, save one. Females, all ages, also for sale. **B. H. BULL & SON, BRAMPTON, ONT**

THE WOODVIEW FARM JERSEYS LONDON, ONTARIO
Jno. Pringle, Prop. We work our show cows and show our work cows.
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.

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The home of Canada's greatest producing Jersey **SUNBEAM OF EDGELEY**, the Sweepstakes Dairy Cow at the recent Guelph test; is also the champion R.O.P. butter cow for Canada. Would a grandson or a great-grandson of this famous cow improve your herd? We have them. Write for particulars. **JAS. BAGG & SON, Woodbridge, C.P.R., Concord, G.T.R. EDGELEY, ONT**

Glenhurst Ayrshires
For 50 years I have been breeding the great Fier tribe of Ayrshires, dozens of them have been 60-lb. cows; I have lots of them get 60 lbs. a day on twice-a-day milking. Young bulls 1 to 10 months of age, females all ages. If this kind of production appeals to you write me. **James Benning, Williamstown, Ont.**

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CRAIGIELEA FARM

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Locust Hill, C. P. R. Home 'phone. Bell connection at Markham.

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at Special Prices—Several young bulls of service-able ages. All from R.O.P. sires and dams. Come and see them.
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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.**

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Live-stock Labels for cattle, sheep and hogs, manufactured by the Ketchum Manufacturing Co.
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TOP DRESS all your Crops with Nitrate of Soda, no matter what other fertilizers you may have used—100 pounds to the acre for seeded crops and 200 pounds to the acre for the cultivated ones. The increase will yield large profits over the cost.

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Improved Powers Combined Well Boring and Drilling Machine

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FOR SALE
Large number of choice males and females. All ages.
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Pine Grove Yorkshires, bred from prize-winning stock of England and Canada. Have a choice lot of young pigs of both sexes, pairs not akin, to offer at reasonable prices. Guaranteed satisfaction.
Joseph Featherston & Son, Streetsville, Ont.

Yorkshires & Shorthorns
Choice young sows, four months; two good young bulls, six and eleven months.
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Polands, Durocs and Berkshires
Young stock at all times, both sexes, and all ages. Can also supply anything in Dorsets or Southdowns. Everything priced to sell.
CECIL STOBBS, Leamington, Ont.

Sunnyside Chester Whites and Dorsets. In Chester Whites, we have both sexes, any age, bred from our champions of many years. In Dorsets we have ram and ewe lambs by our Toronto and Ottawa champion, and out of Toronto, London, and Guelph winners. **W. E. Wright & Son, Glanworth, Ont.**

TAMWORTHS
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.

Gloverdale 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.

Meadow Brook Yorkshires
I am offering a splendid choice of sows bred for May and June farrow. All bred from prize-winning stock. Prices reasonable.
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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 prize-winning stock.
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Morrison Tamworths and Shorthorns. Bred from the prize-winning 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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Prospect Hill Berkshires
Young stock, either sex, for sale, from our imported sows and boar. Also some from our show herd, headed by our stock boar, Ringleader. Terms and prices right.
John Weir & Son, Paris, Ont., R.R. 1

thousand and one things to meet before he is even sure of a crop. He goes at his work with the object in view of having his labor rewarded. He sometimes gets a crop, and he often does not. If he does, he permits some one, who has probably never raised a crop, to make the price at which he is obliged to sell. The farmer gets wages if the city speculator lets him have them.

"This talk of an embargo is all very well in a way. It keeps hope in the hearts of the consumer, and it educates the farmer. True, it has cut the farmer out of a few dollars, as it has affected prices a little. I wonder whether it has affected the consumer as much as it has the farmer? It educates the farmer to this extent: He knows, by previous experience, that a big crop, with the doors of the world open to receive it has meant a money loss to him. He knows that a big crop to be kept at home means all work and no pay for him. With a threatened embargo, his seed wheat at two dollars a bushel and his hired help at about double its value, what inducement is there for him to try his best to relieve the situation?

"Let me go to the meat question. Let me say at the start that it takes three years to raise a three-year prime steer. I simply mention this so that we may reach a working basis, as it were. Take it that we have an embargo on meats. The packers say the loss falls on the producer, and we will not question that. That puts it to where the producer must lose to benefit the consumer. It is admitted that the free range in the West is a thing of the past. It means that cattle must be raised on land that is growing in value each year. It means that it is costing more money every year to put this stuff on the table. Suppose the price the producer gets is below the cost of production? What will the result be? Just this: The consumer will eat meat at the expense of the producer for a short time. Then he will gradually get over the habit of eating meat at all. Is it reasonable to suppose that the cattle and hog breeders will comb the country for high-class breeding stock with a loss staring them in the face? Even a farmer will get out from under as quick as he can. The breeder will either have to go back to where he started from, or get out of business. He will sell off his blooded stock at a loss in preference to keeping it and losing in the end, for lose he must.

"Let me bring it a little closer to you. Last fall a certain man whom I am well acquainted with had 65 hogs fit for market. At that time the packers had their cellars empty, and they had a fairly good idea of the number of hogs that would go on the market. They knew that cold weather was due, that the feed was about gone, and that the hogs were ripe. They made up their minds that they were going to get these hogs at their own price, and they did. Now, when this man sent his hogs to market, the packers were there waiting for them. When he got his returns, I happened to meet him, and inquired how he came out. Well, it only took him a few minutes to let me see where he stood. He saved over enough breeding sows to assure him of at least a spring crop of a hundred pigs. He went home and fed these remaining sows all the feed he had left, and then threw them on the market. He saved one sow and raised a litter. That man is eating bacon, and his wife has lard to grease the griddle for buckwheat pancakes this winter. He isn't worrying about you fellows in New York, or whether you are eating or not; he gets his regularly. Yes, an embargo will help out on the meat question without doubt. You can cut the head off the goose that lays the golden egg and still have the goose, but headless; you can also place an embargo on the products of the farm, which is the labor of the farmer, but in the end you will have neither.

"What has become of those back to the farm fellows? With the farmers getting rich it seems that this is the time to get back to the soil.

"What we need at the present time is a large injection of brotherly love. We need more of Do to others as we would have others do to us than we. It will come, don't you think?

EDW. W. HERRERT.



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Plants get the greatest part of their feed, and their growth, from the soil. If you give the crop you sow the exact Plant-Food it requires to grow and ripen, you can count on a strong stand and a rich harvest.

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ADAM THOMSON, R. R. NO. 1, Stratford, Ontario
Shakespeare Station, G. T. R.

LYNNORE ENGLISH BERKSHIRES

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 and Berkshire Pigs.

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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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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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GRAND TRUNK RAILWAY SYSTEM

Winter Tours

SPECIAL Fares now in effect to resorts in Florida, Georgia, North and South Carolina, Louisiana and other Southern States, and to Bermuda and the West Indies.

Return Limit, May 31, 1917
Liberal Stop-Overs Allowed

For full information write to

C. E. HORNING,
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 23rd day of March, 1917, for the conveyance of His Majesty's Mails, on a proposed Contract for four years, six times per week over Strathroy No. 5 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 Strathroy and Kerrwood and at the office of the Post Office Inspector and G. C. ANDERSON, Superintendent.

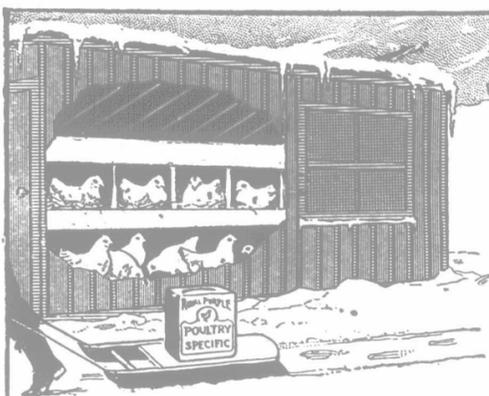
Post Office Department, Canada, Mail Service Branch, Ottawa, 9th February, 1917.

Steel Rails

for Reinforcing Bridges and Barn Driveways
CUT ANY LENGTH
JNO. J. GARTSHORE
58 Front Street West, Toronto

Put up a Lasting Fence

Standard Fence and Steel Tube Fence Posts make an ideal pair. Send for prices.
Standard Steel Tube & Fence Co., Limited,
Woodstock, Ont.



On the Job Laying

Though Snowed In

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, Ospringe, 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."

Royal Purple Poultry Specific

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; Rouse Cure, 25c.; Disinfectant, 25c., 50c., \$1 sizes. Secure these products from our dealer in your town.

W. A. Jenkins Mfg. Co., Limited
London, Canada

FREE BOOK

Write for FREE 80-page booklet describing all common diseases of stock and poultry. It tells how to build hen-houses and how to raise calves without milk.

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.

For full information as to terms, regulations and settlers' rates, write to:
H. A. MACDONELL, Director of Colonization. HON. G. HOWARD FERGUSON, Parliament Buildings, TORONTO, ONT. Minister of Lands, Forests and Mines.

You can assure your family a MONTHLY INCOME FOR LIFE or assure yourself an income during your old age, by means of an

Imperial Monthly Income Policy

Write for particulars now, and mention "The Farmer's Advocate." Address: Imperial Life Assurance Co., of Canada Head Office: TORONTO.

TREES & SHRUBS
BROWN BROTHERS Co.
NURSERYMEN LIMITED
BROWNS NURSERIES, ONT.

All cows give some MILK
Well fed cows of course give MORE MILK
but cows fed COTTON SEED MEAL give the MOST MILK
and do it at less cost per pound.
COTTON SEED MEAL

when carefully selected, such as our BRANDS are, is the most economical and most satisfactory concentrate on the market. It is rich in protein, and offers it to the animal in a highly palatable and digestible form, and cows need protein to produce the maximum amount of milk. A scientific dairyman will always include in the ration sufficient cotton seed meal. More natural farm roughage and less grain products can be used. Ask your Experiment Station.

OUR BRANDS:

Owl Brand	Dove Brand	Jay Brand	Fox Brand
41-43% Protein	38 1/4-40% Protein	36-38% Protein	20-22% Pro.

All selected quality—Cotton seed meal is our specialty and has been for forty years. Come to headquarters.

F. W. BRODE & CO.

Memphis, Tenn.

Established 1875 Incorporated 1915

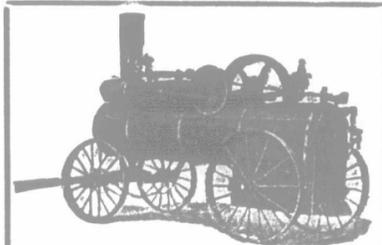
50c CASH Given for This Ad.
Worth \$5, Special at \$1.50, To-day only \$1



The Duplex Automatic Hair Cutter has 4 times the cutting power of any hair cutting machine ever placed on the market. It is 4 times the size, and will do the work 4 times as well and 4 times as fast as any other machine. We have been so busy filling wholesale orders that we haven't been able to offer this wonderful tool direct to the public before. We now have a large supply on hand, and for a very short time we offer the Duplex direct by mail at wholesale price. Some people will wait until it is too late, and they will have to pay the full price. Get yours now at the wholesale price of \$1.00.

THE SLANTING TEETH PREVENT PULLING

This special patented comb with the slanting teeth and the handle to fit the hand is the only one of its kind. It costs four times as much to produce as the ordinary comb, but it is worth it. It directs the hair on to the cutting blades at exactly the correct angle, to get a perfectly smooth and even hair cut. You Can't Go Wrong With a Duplex. It Won't Let You. The Duplex is made of the very best quality steel and silver plate. The blades are double edged, oil honed and double tested. You can comb your hair any style you wish and the Duplex will cut it smoothly and evenly. It cuts while you comb. Cuts the front hair long and the back short without adjusting. It will last a life time. Figure out how much you can save. We allow you 50c. cash for this ad. Cut it out and send it to us with only \$1.00 and we will send you the Duplex complete attached to the comb. Five minutes after you receive the Duplex you can have your hair cut better than it was ever cut before. Remember none genuine without the slanting teeth. DUPLEX MANUFACTURING CO., Agents Wanted, Dept. T, Barrie, Ont.



Rebuilt Portable, Traction Engines and Threshers

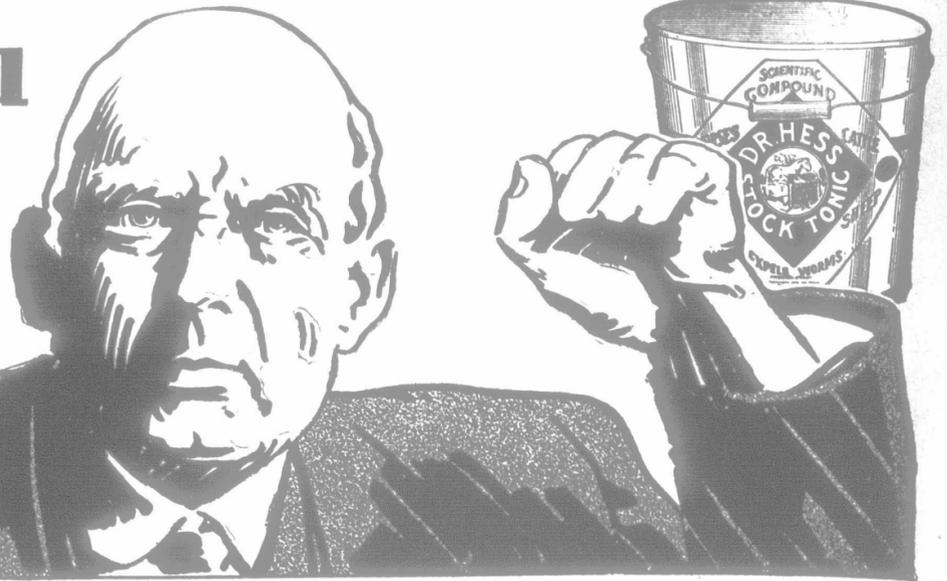
A number of good, rebuilt Portable and Traction Engines suitable for silo filling and threshing; also a few good separators for sale cheap.

The Robt. Bell Engine & Thresher Company, Limited
SEAFORTH, ONTARIO

For Sale —Baled hay, car-load lots. Alfalfa clover and mixed hay. Apply to
W. E. TODD, Hay Dealer,
Hagersville P. O., Ontario

It's Up to You

When Your Animals
Get "Off Feed" and
Do Not Thrive



Dr. Hess Stock Tonic

Gets Rid of Worms
Makes Stock Healthy

We are now in the dead of Winter. Animals are closely stabled and on dry feed. You are crowding them. You want them to eat well and turn their feed to good account. Remember, your animals are not out on pasture. It is up to you to supply the laxatives and tonics and blood purifiers. Dr. Hess Stock Tonic will

Condition Your Animals

It cleans out the worms and improves the appetite. They will then eat their feed with a relish because worms will not be distressing them. They will be free to digest, assimilate and get the good of their feed.

Dr. Hess Stock Tonic is not a secret preparation. Here are some of the ingredients and what they do—the same for animals as for the human family. Ask any doctor, consult any medical work:

Nux Vomica, nerve tonic, aids digestion.

Quassia, tonic and worm expeller.

Sulphate of Iron, blood builder, worm expeller.

Charcoal, prevents unhealthy fermentation.

Sulphate of Soda, a laxative and liver tonic.

Epsom Salts, a laxative.

Nitrate of Potash, acts on the kidneys.

Foenugreek, a flavor.

You will be well repaid for this special care of your live stock. Horses will be in condition for spring work, cows for heavy milking, sheep will fatten up, hogs will be free from worms and make larger growth.

Dr. Hess Poultry PAN-A-CE-A

It's a Tonic — Not a Stimulant

Mating time is the time your poultry need this tonic and internal antiseptic to make them vigorous and free of disease. It will help you get more fertile eggs and give the chicks a better chance to reach maturity healthy and strong.

My Pan-a-ce-a contains, among other ingredients, *Nux Vomica*, a nerve tonic; *Carbonate of Lime*, a shell former; *Hyposulphite of Soda*, an internal antiseptic; *Quassia*, an appetizer, and *Iron*, to enrich the blood. It has stood the test for 23 years.

Read my guarantee below and remember that Pan-a-ce-a is easy to feed and costs but a penny a day for 30 fowl. 1½ lbs. 35c; 5 lbs. 85c; 12 lbs. \$1.75; 25-lb. pail, \$3.50 (duty paid). Now get this:

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 Dr. Hess Poultry Pan-a-ce-a will help make your poultry healthy, help make your hens lay and your chicks grow, that I have authorized my dealer in your town to supply you with these preparations and if they do not do as I claim, return the empty packages and get your money back.

96-page Veterinary Book free for the asking.

DR. HESS & CLARK, Ashland, Ohio

I'll Save Your Veterinary Bills

When you have a sick or injured animal or ailing poultry, write me, telling symptoms. Enclose two-cent stamp for reply and I will send you prescription and letter of advice free of charge.