

PUBLISHED EVERY WEEK. \$1.50 PER YEAR

THE FARMER'S ADVOCATE

AND HOME MAGAZINE

PERSEVERE
SUCCEED

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

ENTERED IN ACCORDANCE WITH THE COPYRIGHT ACT OF 1875.

VOL. XLVIII.

LONDON, ONTARIO, MARCH 27, 1913.

No 1070

Free to Stock and Poultry Raisers

We will send absolutely free, for the asking, postpaid, one of our large sixty-four page books, with insert, on the common diseases of stock and poultry. Tells how to feed all kinds of heavy and light horses, colts and mares, milch cows, calves and fattening steers; also, how to keep and feed poultry so that they will lay as well in winter as summer. No farmer should be without it.

NOW is the time to use Royal Purple Stock Specific. At a cost of only two-thirds of a cent per day per animal, it will increase it 25 per cent. in value. It permanently cured Bots, Colic, Worms, Skin Diseases and Debility. Restores run-down animals to plumpness and vigor. It will increase the milk yield three to five pounds per cow per day and make the milk richer.

Royal Purple is not a stock food. There is no filler used in its manufacture, and we import from Europe all the seeds, herbs, barks, etc., and grind them on our own premises. Therefore, we can guarantee it to you as being absolutely pure. We do not use cheap filler to make up a large package. We give you the best conditioned powder ever put on the market in a concentrated form.

A tablespoon levelled off, once a day, is sufficient for a full-grown animal. It prevents disease, keeps your animals in perfect health, and is absolutely harmless. It makes six-week-old calves as large as ordinary calves at ten weeks. You can develop six pigs ready for market in just one month's less time than you can possibly do without it, at a cost of only \$1.50, saving you a month's work and food.

A 50c. package will last a horse 70 days. A \$1.50 pail or air-tight tin, containing four times as much as a 50c. package, will last an animal 280 days.

If you have never used it, try it on the poorest animal you have on your place, and watch results. If it does not produce better results than anything you have ever used, or give you satisfaction, we will refund your money.

Toledo, Ont., July 1, 1910.
W. A. Jenkins Mfg. Co., London, Canada.

Gentlemen,—I have used a part of a package of your "Royal Purple Stock Specific." I fed it to one cow according to directions. She gained six pounds of milk while using part of a package. The rest of my herd reduced in milk while this one gained. I consider it has no equal.

T. G. BELLAMY.

Bondhead, Ont., Aug. 31, 1912.
The W. A. Jenkins Mfg. Co., London, Ont.

Gentlemen,—After experimenting with a great many stock foods, I was about convinced that there was very little virtue in any of it, but your dealer insisted on the trying Royal Purple Stock Specific, saying it was different from all others. I have since used a great lot of it, as I keep from ten to twenty horses and about the same of cattle. This Specific, in my opinion, is certainly in a class by itself as a conditioner, and is the best I have ever used.

GEORGE MAPES.

Clear Creek, Ont., Sept. 19, 1912.
W. A. Jenkins Mfg. Co., London, Ont.

Dear Sirs,—Your "Royal Purple" Stock Specific is the best stock conditioner I have ever had in my stables, and am never without it. I had a brood sow that had milk fever very bad. Your "Royal Purple" saved her life. Put her on her feet in three days. I had three calves last spring that got scouring very badly. Could not get it stopped until I used "Royal Purple." It did the work O.K.

Yours truly, H. B. MOULTON.

Saskatoon, Sask., Sept. 20th.
The W. A. Jenkins Mfg. Co., London, Canada.

Gentlemen,—Some months ago we bought some of your Royal Purple Stock Specific from Mr. Vogan here. We have been using it ever since, and we find it the best conditioner for driving horses we have ever tried.

H. F. McCALLUM, "The Palace Livery."

In using our Stock Specific, we guarantee you better results by using the ordinary food grown on your farm, such as good hay, oats and bran, and so forth, than you can possibly obtain by using any of the many patent foods on the market. In these the percentage of nutrition is usually very small for the amount of money paid for the same. You know exactly what hay, oats, bran, chop or any farm products cost you, and ROYAL PURPLE makes animals digest these foods properly.

What we wish to impress on your mind is that we manufacture nothing but pure, unadulterated goods. Our booklet gives over 300 recommendations for our different lines from people all over Canada. While we give you above the names of a few who have used it, our best recommendation is for you to ask any person who has ever used any line we manufacture.

W. A. JENKINS MANFG. CO., London, Ont.

AN ASSORTED ORDER AMOUNTING TO \$5.00 WE WILL PREPAY.

Scott, Sask., May 22nd, 1911.

The W. A. Jenkins Mfg. Co., London, Ont.

Dear Sirs,—Do you want a man to represent your Royal Purple goods in this district. I am from Ontario, and have fed your Stock Specific—got it from Mr. J. Corbett, of Brownsville. My cows, while using it, made the largest average, and tested five points over average at C.M.P. at Brownsville. I know your goods are the highest class Stock Specific on the market, and take great pleasure in representing you in this district.

NORMAN G. CHARLTON.

Royal Purple Poultry Specific

will make your hens lay in winter, as well as summer, and yet a 50c. package will last 25 hens 70 days, or a \$1.50 pail or air-tight tin, containing four times as much as a 50c. package, will last 280 days. It prevents poultry from losing flesh at moulting time, cures and prevents all the ordinary diseases, makes their plumage bright, and keeps them in prime condition.

Port Colborne, May 11.

W. A. Jenkins Mfg. Co., London, Canada.

Dear Sirs,—This is to certify that I have used one \$1.50 tin of your "Royal Purple" Poultry Specific, and there is nothing that can equal it. I wanted yours again and your agent did not have any, so he gave me another brand, and I can assure you it was not worth carrying home, for my hens layed better without it. I have been from 12 to 15 dozen eggs short every week since I have not used your "Royal Purple."

CHARLES RICHARDSON.

Sherbrooke, Que., Aug. 1, 1910.

W. A. Jenkins Mfg. Co., London, Canada.

Dear Sirs,—I have used your Specific for one year, and have given it to my birds with good results. See my winnings at the different fairs, which will tell the tale.

MISS GEORGINA CAMIRAUD.

Royal Purple Cough Specific

During the last four years there has been an epidemic cough going through every stable in Canada, which has been a great source of annoyance to horsemen. Our Royal Purple Cough Cure will absolutely cure this cough in four days, will break up and cure distemper in ten days. Absolutely guaranteed. 50c. per tin; by mail, 55c.

Royal Purple Gall Cure

will cure all sorts of open-sores on man or beast. Will absolutely dry up and cure scratches in a very few days.

Mr. SAM OWEN, coachman for the Hon. Adam Beck, says: "By following directions, I find your Royal Purple Gall Cure will cure scratches and make the scabs peel off perfectly dry in about four or five days." Price, 25c.; by mail, 30c.

Royal Purple Sweat Liniment

will reduce lameness in a very short time. Mr. John M. Daly, coalman in London, says: "We have nine horses constantly teaming coal, and have all kinds of trouble with them being lame at times. I have used your Sweat Liniment for a year back, and have never known it to fail to cure sprained tendons, etc." Price, 50c., 8-ounce bottles; by mail, 60c.

Royal Purple Lice Killer

This is entirely different from any lice killer on the market. In order for you to understand the process of manufacture of this lice killer, you will have to send for one of our booklets, as we give you a full history of it there. It will entirely exterminate lice on fowls or animals with not more than one or two applications. It smothers them. Price 25c.; by mail, 30c.

Royal Purple Disinfectant (Sheep Dip)

In this line we give you the largest value for the money of any disinfectant on the market. A tin containing 1 3-8 qts. Imperial measure will cost you only 50c. Also put up in 25c. tins.

Royal Purple Roup Cure

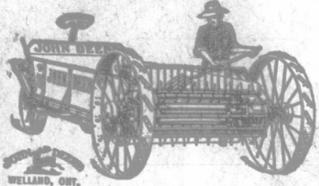
Mr. Dulmage, the great breeder, of White Rocks, tells us that he has never used a Roup Cure that will give relief so quickly to hens suffering from Roup or kindred diseases. Our book tells you all about it. 25c. per tin; 30c. by mail.

Royal Purple Worm Powders

For animals. 25c. per tin; by mail, 30c.

John Deere Spreader

The Spreader with the Beater on the Axle



Take any manure spreader you have ever seen, remove all the clutches and chains, all the countershafts and stub axles, do away with all adjustments and mount the beater on the rear axle. Rebuild the spreader so that the top of the box is only as high as your hips. Make it stronger. Remove some two hundred trouble-giving parts and throw them away. You will have some sort of an idea of what the John Deere Spreader, the Spreader with the Beater on the Axle, is like.

The Beater on the Axle

The beater and all its driving parts are mounted on the rear axle. This construction is patented. You cannot get it on any other spreader made.

Power to drive the beater is taken from the rear axle through a planetary transmission (like that on automobiles). It is positive, runs in oil, and does not get out of order.

Few Working Parts

The John Deere Spreader is so simple that there are no adjustments. It has some two hundred less parts than the simplest spreader heretofore made.

There are no clutches to throw it into gear. The lever at the driver's right is moved back until the finger, or dog, engages a large stop at the rear of the machine. All the chains and adjustments have been done away with.

Only "Hip-High"

Because the beater is mounted on the rear axle, it is only "hip-high" to the top of the box. Each forkful of manure is put just where it is needed. You can always see into the spreader.

Roller bearings, few working parts, the center of the load comparatively near the horses, and the weight distributed over four wheels, make the John Deere Spreader light draft.

Spreader Data Free—Tells about manure, when and how to use it, how to store it, and a description of the John Deere Spreader. Ask for this data as Package No. Y 119

John Deere Plow Company, Limited
Toronto, Ontario

PUMPING

With a "GOES LIKE SIXTY" Pumping Outfit.

No more backaches. No more waiting for the wind. The Gilson 60 SPEED is the ideal pumping engine. It "GOES LIKE SIXTY". Furthermore, it is a portable power house, ready to operate pump, saw, machine, cream separator, chaff cut, light dynamo, wood saw, feed mill, roller, pulper, etc. It is made of cast iron, complete with line shaft, belt and mangle pulleys, and universal joints.



simplest engine on the market. A child can operate it.

For full particulars and also catalogue of pumps, pump jacks, wood saws, etc. write to
GILSON MANUFACTURING CO.,
301 ... Guelph, Ont.



"Our Ideal"

FARMERS! Buy always the Best

Buy our famous, superior home-grown and imported seeds. Ask for catalogue. Order our famous Special Collections.

Farm garden collection, 26 selected varieties, \$1 postpaid.
Trial collection, 18 selected varieties, 50c. postpaid.
Children's collection, 15 selected varieties, 25c. postpaid.

OUR HOME-GROWN Yellow Mangel "Our Ideal"

leads them all. It is the new mangel with the greatest future. An easy harvester and a keeper of highest feeding value. The 1912 report of the Ontario Agricultural & Experimental Union in the competing co-operative experiments, shows the "Ideal" as the leading variety, with 100 value and 32.40 tons per acre.

50 cents per pound.
Give them a trial.

Ontario Seed Co., Successors
WATERLOO, ONTARIO
Our Hurst Sprayers are the best. Ask for Catalogue

The Anthony Fence

Made in Canada

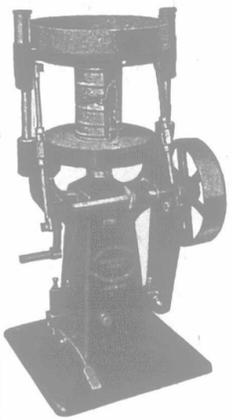


The Anthony Knot

A fence that is tied with a perfect lock. A lock that is strong, neat and compact. A lock that will not loosen by expansion and contraction from heat and cold. A lock that won't come off. The Anthony Fence is made of all No. 9 wire, which is thoroughly galvanized. The Anthony Fence will not bend down at the top or roll up at the bottom, but will stand up straight when erected.

The Anthony Fence will stop anything from a pig to a bull. If you are interested in a fence like this, write for full descriptive catalogue. Live agents wanted in all unoccupied territory.

THE ANTHONY WIRE FENCE CO. OF CANADA, LIMITED
WALKERVILLE, ONTARIO



"London"

CEMENT DRAIN TILE MACHINE

Makes all sizes of tile from 3 to 16 inches. Cement Drain Tiles are here to stay. Large profits in the business. If interested send for catalogue. London Concrete Machinery Company, Dep't. B London, Ontario. Largest manufacturers of Concrete Machinery in Canada.

STUMP EXTRACTOR

If you are troubled with stumps, give our "Patent Samson Stump Extractor" a trial. It has now been in use in Europe for the past three years with the greatest success. By its assistance, two men will do the work of three men and a horse. It can also be used for felling trees.

WRITE US FOR DETAILS.

The Canadian Boving Co., Ltd.
164 Bay Street, TORONTO

ISLAND OATS

If the farmers of the Maritime Provinces, Quebec and Ontario want to make sure of getting the highest possible grade of seed oats for the spring of 1913, apply to us at once. To prevent a repetition of the disaster that befell so many farmers last year by sowing devalitized grain, we have stored at Point Du Chene and Pictou 50,000 bushels of large, selected, separated white seed oats, true to name and free from noxious weed seeds. If will be the farmers' own fault if they do not procure good seed, as the extra yield of those oats pays twice over the cost of the seed. Our firm name is stencilled on every bag. Do not allow the dealers to give you other than Read's oats for seed.

JOS. READ & CO., Ltd., Summerside, P. E. I.

Corn That Will Grow

Canadian-grown seed corn. Your money back if not satisfied.

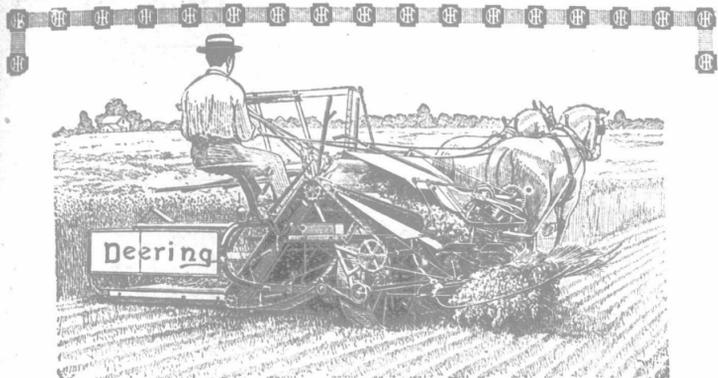
J. O. DUKE, RUTHVEN, ONT.

CANADIAN PACIFIC

EXCURSIONS To Manitoba, Saskatchewan, Alberta

HOMESEEEKERS	SETTLERS
Low Round Trip Rates each Tuesday, March to October inclusive Winnipeg and Return - \$35.00 Edmonton and Return - 43.00 Other points in proportion Return Limit two months.	For settlers traveling with live stock and effects. SPECIAL TRAINS Will leave Toronto Each TUESDAY MARCH AND APRIL 10.20 p.m. Settlers and families without live stock should use REGULAR TRAINS Leaving Toronto 10.20 p.m. Daily Through Colonist and Tourist Sleepers
TOURIST SLEEPING CARS on all excursions. Comfortable berths, fully equipped with bedding, can be secured at moderate rates through local agent.	
Home Seekers' Trains Leave Toronto 10.20 p.m. during March, April, September and October, and at 2 p.m. and 10.20 p.m. during May, June, July and August. Through Trains Toronto to Winnipeg and West	
Full particulars from local agent or write M. G. Murphy, District Passenger Agent, Toronto	

BEST RESULTS ARE OBTAINED FROM ADVOCATE ADVERTISEMENTS.



Make the Deering New Ideal Binder Your Standard

WHETHER your grain is short or tall, clean or filled with undergrowth, a Deering New Ideal binder will cut and bind it all without waste. It assures you a full harvest.

Deering binder features appeal to the farmer. The elevator, open at the rear, delivers the grain properly to the binding attachment. Because the elevator projects ahead of the knife it delivers grain to the binder deck straight. A third packer reaches up close to the top of the elevator and delivers the grain to the other two packers. A third discharge arm keeps the bound sheaves free from unbound grain. The T-shaped cutter bar is almost level with the bottom of the platform and allows the machine to be tilted close to the ground to pick up down and tangled grain without pushing trash in front of the knife. The reel has a wide range of adjustment for cutting tall, short, down, or tangled grain. Either smooth section or serrated knives can be used. The Deering knotter is one of the efficient mechanical wonders of the age. The I H C local agent will explain features which make Deering New Ideal binders the standard of binder construction. See him, or, write to the nearest branch house for a catalogue.



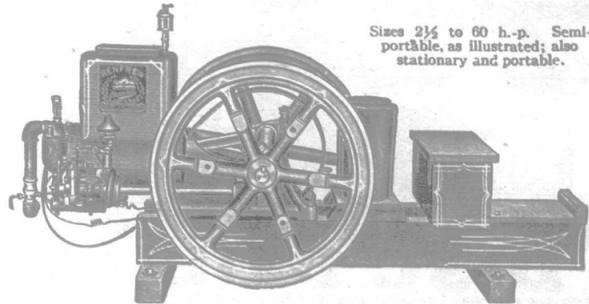
International Harvester Company of Canada, Ltd.
EASTERN BRANCH HOUSES

At Hamilton, Ont.; London, Ont.; Montreal, P. C.;
Ottawa, Ont.; St. John, N. B.; Quebec, I. C.

These machines are built at Hamilton, Ont.



Here is the Engine They're Talking About



Sizes 2 1/2 to 60 h.-p. Semi-portable, as illustrated; also stationary and portable.

To-day the sensation in the Canadian gasoline engine field is the success of the Renfrew Standard Engine. People started talking about the

Renfrew Standard

when they saw it at the big fairs last autumn. Here was an engine that started without cranking—that was so perfectly balanced it did not need to be anchored down—that had a governor of the fly-ball steam engine type—that had a remarkably simple carbureter—that had no pipes, fittings, cooling pumps or fans to freeze or get out of order. Was it any wonder that people talked?

It will set you talking, too, when you see it. You'll want one right away. That seems to be the case with everyone, judging by the way our sales are increasing by leaps and bounds. Write for our engine, bulletin and name of nearest agent.

The Renfrew Machinery Company, Limited

Head Office and Work: RENFREW, CANADA
AGENCIES EVERYWHERE IN CANADA

Write us about the Gifford 1 1/2 h.-p., which we believe is the handiest most compact, most efficient little engine made.

Reliable Help for the Farmer

Farm labor is scarce. Wages are high. All the more need for a BARRIE ENGINE. Soon pays for itself in time and labor saved. Grinds grain, shells seed corn, pumps water, cuts straw, threshes beans, saws wood, drives churns, separators and washing machines. Does many other things, too.

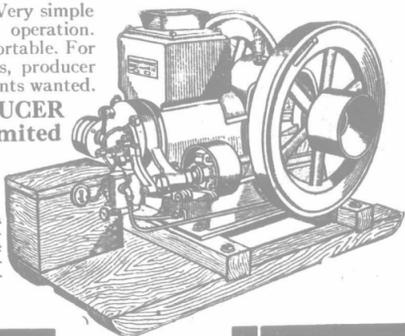
Barrie Engines Work Long

hours without getting tired. Very simple in construction. Reliable in operation. 3 to 100 h.-p. Stationary or portable. For gasoline, distillate, natural gas, producer gas. Write for catalogue. Agents wanted.

The CANADA PRODUCER & Gas Engine Co., Limited

DISTRIBUTORS:

James Rae, Medicine Hat; Canada Machinery Agency, Montreal; McCusker Imp. Co., Regina; The Tidhope-Anderson Co., Ltd., Winnipeg, Calgary, Edmonton, Lethbridge, Saskatoon, and Regina.

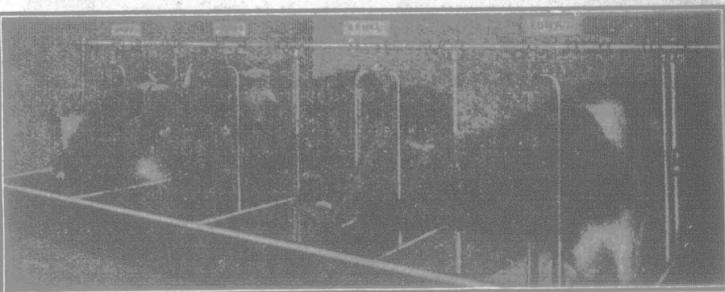


EUREKA SANITARY CHURN



There's no comparison between the ordinary wooden churn and the "EUREKA". Barrel is stoneware—top is clear glass. Besides being absolutely sanitary, the glass top enables you to see how the churning is coming along without opening the churn. Also made with Aluminum top. The "EUREKA" is the easiest churn on the market to operate. By tilting back the frame until the weight rests on the wheels, the churn can be quickly and easily moved—while the barrel remain upright. If your dealer does not handle the "EUREKA," do not take a substitute but write us for catalogue.

EUREKA PLANTER CO. LIMITED, WOODSTOCK, ONT.



Modern Barns Mean Less Work—Bigger Profits

BT Sanitary Steel Stalls and Stanchions make dairy barns modern—they save work. The Aligning Device on the BT Stall and Stanchion lines up every cow evenly over the gutter, so that no manure falls on the cattle-stand, or gets on the bedding off on the cow. This saves you time and labor in cleaning the stable, and your cows are always kept clean. BT Steel Stalls save time and money in a score of other ways—our Free Stall Book tells about them all. Mail the coupon for a copy to-day.

BT SANITARY BARN EQUIPMENT
STEEL STALLS, STANCHIONS, PENS, Etc.

Send for our Free Stall Book, whether you have 6 cows or 600. Our book will prove to you, beyond a doubt, that the Aligning Device, Divided Steel Mangers, and other labor-saving, time-saving features on the BT Equipment make it a profitable investment, no matter how many cows you have. Mail coupon now for our Stall Book. Also, we'll send you without charge, our valuable book, "How to Build a Dairy Barn," if you will fill in the coupon. Address

BEATTY BROS., Limited
501 Hill Street
Fergus, Ontario

Name.....
P. O. Prov.....

BEATTY BROS., Limited
501 Hill St.
Fergus, Ontario

Please send me, free, your book on Steel Stalls and your book, "How to Build a Dairy Barn."

Are you going to build?

Remodel?

If so, when?



SAGGING of a seeder allows the centredrills to sow too deep, and delays crop growth and ripening. But in the Cockshutt, a strong 1-beam across the entire machine prevents this. All crop grows at once, and ripens evenly.

Each disc has an oil well and dust-proof bearings. Oil once a season only. You have light draft and quick seeding.

The close-set crop sown by the "Cockshutt" prevents evaporation of moisture. You get better yield. The feed is made independent of wear and tear from jolting, and gives proper distribution. Write for full details.

THE "Cockshutt" Drill differs from others in having the discs set zig-zag, and only 6 inches apart instead of 7 inches. Experience has proven that this means 2 to 5 more bushels per acre. This means 500 extra bushels on each 100 acres of crop, if you use the Cockshutt Drill. This is pure profit, year after year. Just buying a "Cockshutt" gets it. Why not do it?

This drill does not clog with mud or trash. The boots are mud-proof. The discs have large scrapers to clean them. Besides, they "draw away" from the boot, and clinging trash falls off, instead of wedging. This feature means that you sow all your land. Also that stops are prevented. Seeding is done early. You save time and wages. Your crop gets an early start.

The "Cockshutt" is a perfect seeder, built to withstand wear for years. Get our drill booklet.

SEND for our "Drill" information. It is free. A post card brings it. All sizes in single disc, double disc or drag shoes from 13 to 22 discs.

COCKSHUTT PLOW CO. LIMITED
BRANTFORD, WINNIPEG 103

Sold in Eastern Ontario, Quebec and Maritime Provinces by

THE FROST & WOOD CO. LIMITED
Montreal SMITHS FALLS St. John, N. B.



Now is the time to install one of our
HAY CARRIERS

In the winter months when you are not busy is the time to figure and plan for your next summer's work. Every farmer should have in his barn a Hay Carrier, and we feel satisfied when you look into the merits of the Stratford Short Draft Hay Sling Carrier, you will agree that it is one of the best on the market.

It is not a complicated machine. Its simple construction assures no expense or time lost in repairing.

The team can elevate and the car can easily handle 2,000 lbs. per draft. Team can be stopped at any point and the load will be sustained instantly

by the Carrier. There is a great saving of rope when you use the Stratford Hay Carrier. Do not wait till the busy spring-time or haying-time comes to install one of our Carriers, but order one now and install the same in your slack time this winter. We are making an exceptionally low price on the Carrier at this season, namely \$8.00.

WRITE us, giving measurements of your barn and we will quote you price on a complete outfit. We carry in stock: Carriers, Pulleys, Slings, Steel Track and Hay Forks. Ask for Catalogue No. 1

The Stratford Mfg. Co., Ltd., Stratford, Ont.

MENTION THIS PAPER



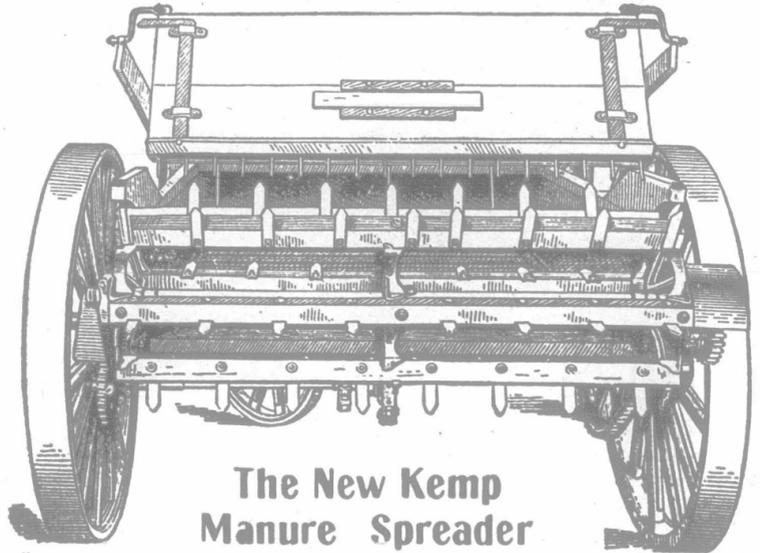
Central Nurseries Quality Stock

Apple, Pear, Plum, Cherry, Peach, Nut and Ornamental Trees in variety. Grape Vines, Berry Plants, Herburt, St. Regis, Himalaya and Cuthbert. Think of berries from July till October. Shade Trees, Evergreens, Cal. Privet, Hedge Shrubs and Roses. Just the kinds wanted. Send for our Priced Catalogue, and order quick for variety.

No agents. A. G. HULL & SON, St. Catharines, Ont.



Saving and Application of Manure



The New Kemp Manure Spreader

Made by oldest manufacturers of Manure Spreaders in the world.

Draft one horse lighter than any other Spreader built.

Strongest Spreader built.

Only Spreader equipped with J. S. Kemp's Patented Reversible, Self-Sharpening, Graded, Flat Tooth.

Handles all kinds of material found on the farm, even clear gum or rotted material.

This is the only Spreader that will do it satisfactorily.

Write to-day for catalogue and J. S. Kemp's article on Saving and Application of Manure.

The W. I. KEMP COMPANY, Ltd., 552 Ontario St., Stratford, Ont.

Cockshutt Plow Co., Ltd., Selling Agents for Western Ontario.
Frost & Wood Co., Ltd., Selling Agents for Eastern Ontario and Maritime Provinces.



This Name Protects You

The proverbial "pig in a poke" was not a more uncertain purchase than are garden seeds if you do not know that there is a reliable firm behind them.

You cannot tell by looking at them whether field and garden seeds are well-bred, vigorous and sure to grow, or exactly the opposite. You must buy by faith, and your faith has the best foundation when you select

EWING'S Reliable Seeds

For over forty years these seeds have produced the finest vegetables and flowers grown in Canada — and they are better to-day than ever.

They do not disappoint.

Write now for our illustrated Catalogue, and if your dealer hasn't Ewing's Seeds, buy from us direct.

WM. EWING & CO., Seedsmen
McGILL ST., MONTREAL.



Make 3 Cows Produce As Much Milk As 4

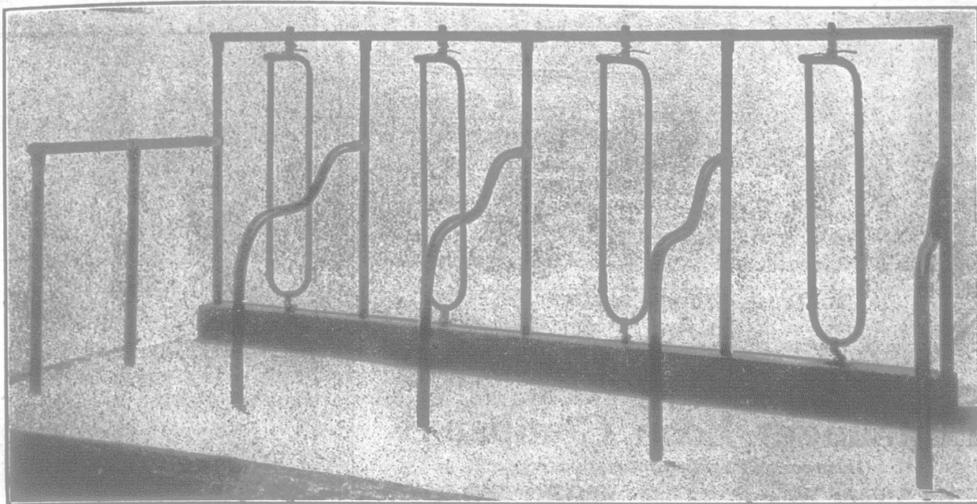
Plenty of farmers who have installed **Ideal Green Feed Silos** are doing it. A good silo soon pays for itself. It's the best investment a cow owner can make.

Get our silo book. Even if you are not quite ready to buy a silo you will find it contains much information on profitable dairy feeding which will interest you.

DE LAVAL DAIRY SUPPLY CO., Ltd.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA
PETERBORO MONTREAL WINNIPEG VANCOUVER





Don't buy Stalls and Stanchions until you see the
Chatham All-Steel Line

The latest, the strongest, the most improved. No castings or malleables to break. So constructed a child can release any animal. Ask for catalogue. Get our prices before placing your order.

AGENTS WANTED IN EVERY TOWNSHIP

THE CHATHAM MALLEABLE & STEEL MFG. CO., Chatham, Ontario

SKIPPED HILLS RAISE NO POTATOES

Every hill you miss in planting means money lost out of your pocket. No machine can plant perfectly unless there is hand correction of misses and double sets 10 to 50 bushels more to acre, using

IRON AGE Potato Planter (Improved Robbins)
(New made in Canada)

seed piece in every space and one only. No pickets used—no injury to seed. Perfect placing of seed and uniform spacing. Can't you see that it must pay for itself? Write for booklet, "100 per cent potato planting." We make full line Potato Machines, Garden Tools, Sprayers, etc.

The Batesman-Whitman Co., Limited
415 Symington Ave.
Toronto Ontario

YOUR SAVINGS

When amounting to \$100 or upwards will be received by this Company for investment. Interest at 4 1/4% is paid half yearly. The safety of both principal and interest is absolutely guaranteed.

The Fidelity Trusts Co. of Ontario
Dominion Savings Building, London
T. H. Purdom, K. C. W. J. Harvey,
President. Manager.

"STOP! HERE'S A DYER FENCE"

DYER sells at factory price, guarantees satisfaction or money refunded. 1 1/2c rod up. Lawn Fence 7 1/2c. A one cent postal card to me now may mean many a \$1 to you!

THE FENCE MAN, Dept C TORONTO

**A Big Crop
A Good Market**



In these times of high prices and big demand, the farmer who has anything to sell will have no trouble in selling it. A good market is waiting for everything he can raise. Parcels Post will help,

and the effort that is being made to regulate the commission business and to better transportation facilities. There never was a brighter prospect of a larger share of the consumer's dollar than 1913 offers to every farmer who has the crop and the quality.

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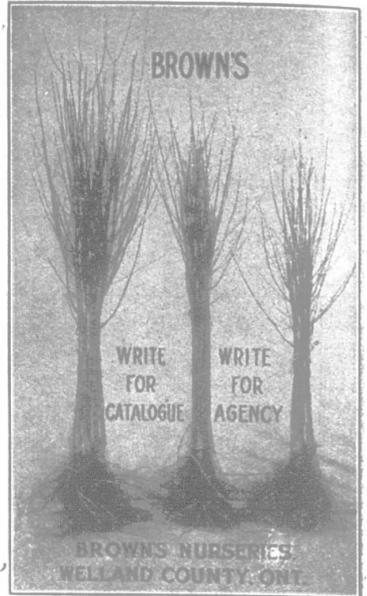
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The Farmer's Advocate and Home Magazine

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1886

REGISTERED IN ACCORDANCE WITH THE COPYRIGHT ACT OF 1875

Vol. XLVIII.

LONDON, ONTARIO, MARCH 27, 1913

No. 1070

EDITORIAL.

This is the season of the strongest call of the land.

Upon one important thing right now depends the issue of our summer's work. The quality of the seed grain sown may easily make the difference between a yield that will barely pay expenses and one that will leave a snug margin of profit. Which shall it be?

Who, for a difference of twenty cents per acre in the cost of seed, would take chances on the yield of a corn field? One of the advantages of the corn crop is the small cost of seed. Get the best, order from a reliable man, buy it on the cob, buy early, ear-test it for germination, and discard every ear from which six representative kernels do not all sprout strongly.

April, May, July and August, are the four months in which the silo earns its largest interest. Cattle fed on fresh succulent silage will remain contented and thriving in the stable until the pasture has made a fair start, and one is ready to turn them loose on the fields, while cattle obliged to regale themselves on corn stalks, get awfully hungry for grass.

To find out what is in your seed grain hand-pick a couple of quarts of it some evening. Spread out thinly on a table, and, with a knife, separate the weed seeds and other grains from the sample of barley, or oats, or wheat, as the case may be. The man who does that will find a larger percentage of impurities than he dreamt of and will never after have any difficulty in accepting the botanist's assurance that the chess plants in his fall wheat have sprung from unsuspected chess seeds in the grain he sowed. The chess is hardy, and when the wheat kills out it survives, stools, occupies the ground, and multiplies enormously. Sow absolutely clean seed in clean land and you will never have chess.

The Co-operative Credit Movement in India, initiated experimentally by the Government in 1904, seems to have developed rapidly, judging from an article in the December bulletin of the International Institute of Agriculture. Whereas in 1905 there were only 35 rural credit societies and six urban societies, in July 1911, there were 4,957 rural societies, 415 urban societies and six central societies, with an aggregate membership of 314,101. The rates of interest charged, although high, are much lower than those charged by money lenders, and a purpose to which many loans are applied is the repayment of prior debts contracted with usurers. Whilst the Government took the initiative in founding these societies and is prepared to advance a limited amount of money to them, little advantage has been taken of this privilege. The movement appears to have grown on its merits, and met a real need of the Indian peasantry.

Misconceptions of Town Life.

Canada is a free country. Every child born into the world, in "the Land of the Maple," has unequalled opportunities before him. No class distinctions manacle and bind him in chains of steel to any one walk in life. Because his father was an artisan belonging to the industrial class, is no reason why he should spend his life at this same kind of mechanics unless he sees fit to do so. There is no cast-iron rule to prevent a change of occupation or station in life in this country—a man working at one occupation, provided he be upright and energetic, has a perfect right and plenty of opportunities to change his position whether he be carpenter, mason, plumber, engineer, teacher, laborer, farmer or what not. As a consequence of this freedom we find changes taking place continually, and in large numbers. All thrifty people seek to better their financial position at every opportunity. We would not have it different, because as a person's scope for exercising his ability is limited so also is his ability limited, and limited also is the opportunity for helping himself and his fellow man. So changes of occupation are ever going on, especially with the younger people of the land. This is undoubtedly, to some extent, due to the restlessness of youth and the feeling which every young man or young woman at times has, that his or her own present occupation is much inferior to and has many more limitations than that of people of the same age engaged in some other walk in life. This feeling is nursed along until it dominates the person, and a change is made.

These changes are affecting rural life more seriously than city life, because the city with its glare, kid gloves, patent shoes, grand styles, fine feathers, and hurly-burly of moving pictures and vaudeville, together with shorter hours, nominally higher wages, so-called easier work, and opportunity for social advantages, has appealed to so many of the country boys and girls just at the time when this, the lighter side of life, seemed irresistible to them; thus to the city they have gone and are still going. If they really desire to go the only thing to do in this country is to let them go, but we fear that many have a great misconception of the relative advantages of city and country work and life. The word "work", is used purposely, because all the young people in country or city must work to be of any use to themselves and to Canada. Neither country nor city has any place for the person afraid of hard work, and every employer, no matter upon what scale his business is conducted, expects and demands that his employees, each and all, earn all that is given them.

The old cry is still heard, "farm work is drudgery." Farmers are frequently heard advising young people to get an education to make an easier living than farming, and these same farmers the next breath are grumbling about the scarcity of labor on the farm. Give the youth the education, but then encourage him to farm. A good day is coming, when the public school courses will discriminate less unfairly in favor of the pursuits of the town. A farmer of intellectual ability who uses his intellect to promote business principles in agriculture, has, beyond a doubt, the most attractive occupation in this country, that is, provided he likes farming, which he should if he rightly understands it.

Many boys and girls do not like farm work.

It seems too hard. Think a moment. Does the city offer "snaps"? Not to him who would succeed in life. Easy jobs draw little pay, and generally attract lazy laborers. If success is attained in the city, it is done after strenuous efforts and the closest application to duty. We hear of several who have left the country and gone to the city, and are now living in their mansions and riding in their "big six" touring cars, but we never hear of the masses who have likewise journeyed cityward and labored diligently, yes, hard every day, until their heads have whitened with age, and still were compelled, through lack of means, to walk. To this latter class belong the great majority of men and women who seek an easy (?) life in the city. Do they get easy work? No. In shop or factory, on street car or as a corporation laborer the work is trying; it is monotonous, and just as tiring as any of the heavy work on the farm, which latter is being each year lightened by the introduction of labor-saving devices. It is a delusion to suppose that it is possible to step out of the work of the backyard of the farm into a few hours a day of drawing-room luxury. Work is work in city or in country—at the motor of the street car, at the inanimate factory machine, behind the counter, at the desk, or cultivating the broad acres and feeding the growing stock. Do not leave the farm under the misconception that "good-bye farm means good-bye work."

Hours may be a trifle longer in the country, but are being steadily shortened to a regular system, and the work is far less monotonous. An employer expects his men to do the most efficient labor possible, consequently an eight-hour or a nine-hour day is, in some occupations, preferred to a ten-hour day, simply because more and better work is done by the men in nine hours than if ten hours constituted the day. The strain is greater on the laborers, or the day would not be shortened. Wages are not so much higher in city as many believe. Apply for a position as an apprentice, and see what you are offered. Street-car motormen and conductors, experienced men, often make less than \$1.50 per day to begin, and never get very much beyond two dollars per day in Eastern Canada. These men must board themselves, and city board (good board) costs from \$5.00 to \$6.00 per week, or from 70 to 80 cents per day. Wages are a little higher in the West, but living is correspondingly high. Then there is laundry and increased cost for clothes to keep up the latest Parisian styles. How much more has this man in the end than if he had remained in the country? Generally less. And their tallow-colored faces tell of the unwholesome atmosphere in which multitudes of factory toilers dwell.

Then there is the old cause, "social conditions." People seem to think that the social conditions in the country are almost barbarous. "We must have company, so we go to the city. In the city we'll be social aristocrats." The boy or girl who goes to the city to work soon finds that he has fewer opportunities to mingle with real friends than he or she had in the country. What is the social position of these people in the city? "Society" would frown upon such people. "He or she is a street-car conductor or a factory girl from the country." A walk up and down a crowded street, crowded, yet lonely, or night after night spent in a "nickel"

The Farmer's Advocate AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL
IN THE DOMINION.

PUBLISHED WEEKLY BY
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JOHN WELD, MANAGER.

Agents for "The Farmer's Advocate and Home Journal,"
Winnipeg, Man.

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or "dime" picture show. This is the city workman's social life. He may know two or three of his fellow laborers, but his acquaintances are far fewer than they were in the country. Is his social position more elevating than when he sang in the village choir, attended the village literary society, spent his evenings reading at home, or in elevating conversation and innocent games in the home of a neighbor? Socially the verandah of the village grocery is much to be preferred to the pool room, the picture show, or standing on the corners of the main streets smoking cigarettes, and making uncomplimentary remarks about the latest in fashions which passes by. Financially, socially, mentally, morally, and physically, the country wins.

A Yearly Business Statement.

"There are a lot of us who haven't the nerve to sit down and figure how we are coming out. We are afraid books will show a loss. So the year closes and all we know about our business is whether we have less money in hand or in the bank than we had a year ago. In the long run we know that we must be getting ahead a little, for most of us are worth more than we were ten years ago, but just how much more, how much we have made in each successive year, or what we have really made our best profits out of, we cannot precisely say. We have only a general idea, which is hardly more than a guess."

Thus candidly spoke a fellow-farmer of our acquaintance in the course of a visit not long since, and he undoubtedly voiced a general attitude. It is not easy to keep books on a farm. It is harder to keep a full and exact set of farm-books than to keep such a set in most other businesses. To secure the information necessary to make double-entry accounts, time records and feed records are necessary first of all, and, as a rule, there is no one to keep these and the other accounts but the busy working proprietor himself. It is not as in a large industrial or mercantile business, where a special book-keeper can be employed, with whatever assistance may be necessary. Work crowds, details press past, unexpected happenings postpone the entries and the overworked amateur bookkeeper soon finds him-

self behind, with what seems like a hopeless confusion of accounts. Probably about this stage the bookkeeping is dropped in despair, or deferred to a more convenient season, which never seems to arrive. City folk who deplore the farmer's unbusinesslike methods know little of the difficulties which beset him.

It is not every one whom we would advise to attempt a complete set of farm books, though such bookkeeping will very well pay any farmer with a reasonably good public-school education, an ordinarily good head for figures and enough resolute painstaking to keep up the records and carry them through. Others had better content themselves with a simpler system, but every one can do these two things: He can keep a simple diary record of receipts and expenditures, probably classifying each under several heads such as personal expenditures, household, implements and vehicles, horses, cattle, sheep, swine, etc. Then once a year he can set down in black and white a plain statement of his assets and liabilities, striking a balance and comparing it with the balance of the previous year. Such a statement will include the valuations of his real estate, horses, cattle and other stock, implements, household goods and the like. March 31st is a good time to compile this statement, as feed is low then and most of the previous season's crops have been either sold or converted into salable products. Also there is usually more time to take the inventory than a month later. There will be a great satisfaction from these annual records, and in time they may lead to a more minute and satisfying system of accounts. Make a start and know where you are at. The man who is afraid to find out is neither courageous nor wise.

Spring Seeding.

Half a dozen causes combine to make spring seeding the most strenuous season of the year, especially for the teams. There are many acres to be covered, and covered promptly. Experiments at the Ontario Agricultural College indicate that, for each day's delay in seeding oats and barley after the opening week has passed, there is a decrease in yield, per acre, of a bushel to a bushel and a half. This means that a week's delay in sowing a ten-acre field of oats may reduce the yield by seventy to a hundred bushels.

Practical experience bears out the lesson of these tests. Almost invariably the early seeding gives best results, even in those exceptional seasons, when, for a time, the later seeding appears to have an advantage. Ninety-nine times out of a hundred, it is early seeding for a full crop. There is need to haste.

Probably the weather comes on warm. The horses, not yet all shed of their winter coats, sweat freely under the exercise of hauling heavy implements over the soft fields. Their shoulders scald easily, as the soft palms of a hand unaccustomed to work. A little over-doing now, a little neglect to watch closely, lift the collars often, scrape them clean at noon and night, and bathe the heated shoulders with a toughening saline solution, and a summer's trouble may be speedily produced, perhaps laying up a horse for a time, or partially incapacitating him, and delaying the very work it was sought to rush. In the beginning, it pays to make haste slowly.

The temptation usually is to overdo. Perhaps the morning start is late. The stock is still all in the stable, and there are many chores to do, several fresh cows to milk, calves to feed, ewes lambing, and perhaps the maple-sugar season interfered with the cleaning of the seed grain. So the temptation comes to make up for lost time in the field. Do not do it—not on the start, any way. Prudence before haste, and forethought before prudence.

Is the grain all cleaned and bagged for the field? The clover and grass seed cleaned and mixed? The implements overhauled, and oiled? Plates of disk harrow and disk drill scraped and oiled? Harness oiled and in good repair? Collars well fitted and refaced if need be? Horses gradually fed up and toughened by exercise at drawing wood, manure, etc.? Shoul-

ders conditioned by washing with Castile soap suds to remove the old epidermis, and then toughened by bathing with white lotion (acetate of lead and sulphate of zinc, of each one ounce, in a pint of water)? All possible ditching done to facilitate removal of water from low places or cradle-knoll hollows in the fields to be seeded?

These things attended to, one is in a position to expedite spring work unhampered. The first day any knolls are fit to work, hitch up to the stone-boat, take out the harrows, and give a double stroke to these knolls, thus exercising the team lightly, breaking the crust on the clay, forming a mulch that will arrest evaporation and thereby help to warm that piece of soil. Then when you come to disk through these places they will pulverize nicely, instead of breaking up into refractory clods. We believe it will pay well to give every field such a stroke with the harrow as soon as it is fit, even though it means delaying the main working of the first field ready by half a day or so. In the end, it will mean less work and a better seed-bed on this land. The only exception we would make to this rule, in the case of clay land, would be when rain was impending and one had a chance to slap in some seed on the field he was at.

After the preliminary stroke of the harrow, or in some cases without it, a double disking will usually put a field into good condition for the disk drill, to be followed with smoothing harrow, the grass seed having been sown in front of the drill disks, and thus twice covered. Unless the drilling is crosswise of the disking, a stroke with the harrow preceding the drill is desirable to smooth the seed-bed and secure a more even depth of sowing. Details differ, however, and what one soil demands is superfluous on another. We would emphasize the four principles: (a) preparedness; (b) starting easy; (c) preventing crust from forming on the fields to be sown last, and (d) thorough pulverization of all seed-beds. The farmer to be congratulated is not necessarily the one with the first field sown, but the one with all his crop seeded in good condition, in good time, with a minimum expenditure of energy, and with teams fit for a summer's work.

Nature's Diary.

By A. B. Klugh, M. A.

The spring robin has arrived, the real spring robin, not the "Globe Robin" which appears at various far too early dates each winter and is really a bird wintering over in some sheltered spot in Ontario. You can always tell the true spring robin, because there are always "several of him," for robins do not arrive here as single birds or in pairs, but in flocks which spread out over the locality.

We welcome the robin for itself, its cheery calls, its rich carol, and its familiarity, but still more do we welcome it for what it stands for. We know that the arrival of the robin does not mean immediate and continuous spring weather, but we also know that such weather is at least comparatively near, and the call of the robin brings to our minds the woods filled with spring flowers, the sound of the "spring peeper" the little frog, the bursting of buds on the trees, the chorus of bird-song,—in short the awakening of life in its myriad forms in forest and swamp, in thicket and field.

Spring is a joyous season to the lover of nature, but it has a joy not untinged with sadness. It brings to our mind other springs now long past, and where are our companions of those other springs? Where are the good friends and true who shared our tramps afield, who shared our enjoyment of the spirit of spring, who shared our interest in some rare find? Gone, many of them, to "that land from whose bourne no traveller returns." Others are in distant lands and we feel that the spirit of spring will bring to them the memories of the old days and the old friends.

Besides the robins other birds have arrived, namely the Bronzed Grackle and the Killdeer Plover.

The Bronzed Grackle is commonly known as the "blackbird," or "crow blackbird." It is a maker of most unmusical noises, but even these noises sound good to us when we hear them for the first time in the early spring.

The Killdeer Plover is one of our few "shore birds" (a name applied to birds of the order Limicolae, which includes the sandpipers, snipe, woodcock, curlews and plover) which breeds commonly throughout Ontario. It is about ten

inches in length, brownish above, and white beneath, and has two black bars on the neck and breast. The wings and upper tail-coverts (the feathers overlying the base of the tail-feathers) are orange brown, and these last mentioned markings constitute the identification mark of the species. It is a bird of the pasture-fields, where in lays its four clay-colored eggs, marked with blackish-brown, in a depression in the ground. The name of "Killdeer" is derived from the similarity of its call to these words. The Killdeer should not be regarded as a game bird, since it is a valuable consumer of insects, eating wire-worms, pea-weevils, May beetles, grasshoppers and many other injurious species, and if shot its small body makes but a mouthful.

This winter has been one of the mildest in years, with snow on the ground in many parts of Ontario for but a month or five weeks and if the belief that a hard winter was necessary for the arrival here of northern birds was true we should have seen none of them at all. But we have had snowflakes, redpolls, Northern shrikes, Canada jays, and pine grosbeaks in the southern parts of Ontario, and in February, that distinguished visitor from the north, the evening grosbeak, was seen at Madoc and at Kingston.

The evening grosbeak is about eight inches long and has a very large yellowish bill. The male is dusky yellowish, with the forehead and rump brighter yellow. The crown and tail are black and the wings are black with a large white patch. The female is similar but more gray than yellow. It breeds in the northern portion of Western Canada and in Ontario is a rather rare winter visitor. When it does visit Ontario it usually comes in flocks of from ten to twenty, though occasionally the flock may include seventy-five or more individuals. It is very tame and may be observed at close range.

HORSES.

Is the box-stall ready for the colt?

Promptness means much in a case of difficult parturition.

Clean it out thoroughly, whitewash the walls and use a disinfectant on them, and keep it well bedded with clean fresh straw.

Prepare an antiseptic for the treatment of the colt's navel. A ten per cent. carbolic acid solution is good.

It might be well to have a little castor oil, and perhaps some laudanum on hand in case the foal should develop diarrhea.

In the article in our issue of March 13th, "The Thoroughbred and the Farm," an error in type occurred, \$750 being given as the subsidy to Thoroughbred horses, when it should have read \$250.

This is the season of the year when the work horses should get the best feed. The sweetest, brightest hay in the mow, and the plumpest, meatiest oats in the granary should be saved each year for the horses in preparation for and during the spring work.

It is said that the Minister of Militia is about to establish a remount station in Western Ontario, and that fifteen stallions are to be imported from England for this station, stallions to travel in various districts during the breeding season, and to return to the station when the season closes.

A writer in an American contemporary, recently advised the following to dry up a mare. "Milk all the milk from the mare, and rub the parts with soft soap and salt well mixed. If no soft soap is handy, melt common laundry soap (either factory or homemade) with a little water, and mix with the salt. Do not let the colt to the mare, or milk her yourself after using the remedy. The udder will fill, but finally go down and no bad results will follow." The paper referred to published this without comment, and we do the same.

The best time to clip the work horses is at hand. There is little doubt but that they will do the seeding easier and with less loss of flesh, and with less time spent in cleaning if their winter coats are removed before going on the land. A clipped horse requires some care, and should not be allowed to stand in drafts when heated up. A blanket is sometimes required, but clipping is surely good practice.

In Wisconsin State horse breeders' clubs have been formed on rather an extensive scale. There are now ten of these clubs called county clubs, the largest of which has 257 members. These clubs have been found very helpful in the enforcement of the stallion enrolment law. Any individuals having complaints, make them to the club officers whose duty it is to report to the department any infractions of the law.

Stallion enrolment seems to be working well in Wisconsin where since its inception in 1907 a steady decrease in the number of grade and mongrel or scrub stallions, used for public service, has taken place. In 1907 when the first statistics were compiled by Dr. Alexander, who has had charge of the work since its inauguration, 65 per cent. of the stallions of the state were of grade or scrub breeding. In 1910 this percentage had fallen to 55.5 per cent.; in 1912 to 51.5 per cent. Two hundred and fifty-six new pure-bred sires were enrolled in 1912. One hundred and ninety-four grade sires, and one hundred and ninety scrubs were retired from service during the same year. This is progress. Ontario will show like progress in time.

Should It Go Further?

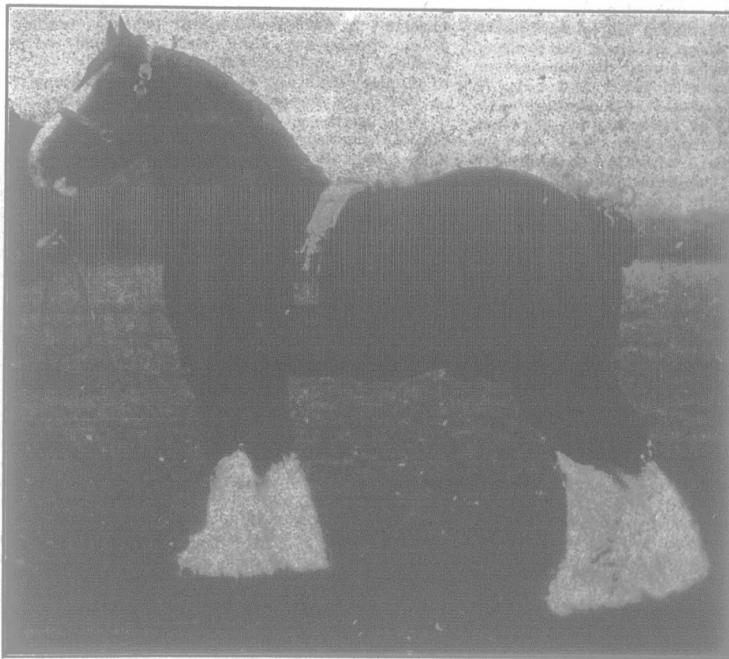
During the past few weeks several communications regarding Ontario's stallion enrolment measure have come to this office. Some have been adversely critical, and all have been statements of the belief that it does not go far enough. All are agreed that inspection and enrolment should be made compulsory, some going as far as to advocate the grading of the horses passing inspection. One correspondent suggests a minimum fee set by the government, to eliminate all

horse out of business. We must not be too hasty in our criticisms of the Ontario Act. It takes time for the effect to be noticeable, and at the time it was passed it was just about as far as the government dare go. Horsemen, as is the case with all other classes of people, do not care to be driven. The act, while not as effective and strong as it might be, has at least caused those interested to think. Horsemen from one end of Ontario to the other have discussed the measure and nearly all now favor compulsory inspection. How much more adverse would have been their criticism had compulsory inspection been upon them at the time the enrolment act was passed. Many would have been up in arms. The slower process will be the surer in the long run, and compulsory inspection is almost sure to come, and grading may also follow. Good is sure to come of the measure in time, and now that the horsemen are in sympathy with the taking of a step further in the matter the government should not hesitate to make the move. Let the act grow in scope and effectiveness as public sentiment warrants.

The Proof of the Pudding.

With horses, as with all other classes of livestock in the show-ring, the best advertisement a breeder can possibly get is a strong line of young stock bred by himself on his own farm. It may be a somewhat difficult matter for a man, no matter how well he may be versed in requirements of every breed or every class of horses, to go out and buy a championship string of youngsters, but if he will put up the money he can get the colts and with far more certainty than if he attempts to breed them. This is not meant to discourage the breeder, not at all, but to show him how really great is his work, when, after combating all the laws of atavism and reversion, and battling with the untold uncertainties of breeding, he has succeeded in producing a real champion or class header. Herein lies the merit. A stud which is producing winners is of far greater service to the community and to the country's horsebreeding than the one which is maintained at great cost, being built up entirely from other stables which are producing the good things.

One of the most noticeable features of the recent Shire Show in London, England, according to those who were present, was the increase in numbers, and the marked improvement in quality in the younger class. While some of the aged classes were not very well filled, all the classes for younger animals brought out strong



Danesfield Stonewall.

Shire stallion. First in the class for aged stallions, and reserve for championship, at the great Shire Show recently held in London, England. Exhibited by F. E. Muntz.

scrubs. He believes that setting a fair to high standard for all would cause mare owners to use nothing but good horses. This does not seem practicable. If the fees for scrubs were raised to say \$12, fees for the good horses would likely be raised correspondingly or nearly so, and the scrub would survive. Besides horsemen would not care to allow any government to dictate the service fees which they should charge. It would be just as logical for the government to set the price for seed grain, or the price which an owner should ask for his horse if he wishes to dispose of him. Service fees must be decided upon and set by the stallion owner, and the price, be it high or low, is usually a fair indication of the value of the horse, based on his conformation and breeding, especially where stallions are plentiful. Of course where stallions are very few in numbers this may not apply, a single horse, or perhaps two horses having a monopoly of a district, but usually, even where this latter condition prevails, some enterprising man sees the opening, and more and better horses are introduced.

As indicated in a paragraph elsewhere in this issue, stallion enrolment has been a success in Wisconsin, and is gradually driving the inferior

strings. This shows a healthy condition of affairs. Good youngsters are being bred in the studs. In this country conditions are a little different. Many of our best horses are imported, and we have room for still more good imported horses of the various draft breeds. We wouldn't for a moment think of discouraging the importing of high-class stock to improve that already in the country. Large importations, of course, swell the classes for mature horses at the shows, and the aged classes, three-year-olds and two-year-olds, are always stronger in this country than the classes for yearlings, foals and brood mares. This is, under the circumstances, no more than could be expected, but there is great room for improvement, especially in numbers in these younger classes. "By their colts ye shall know them," should be the motto of every breeder in this country, and when he has a promising colt he should not hesitate to take it to the exhibitions. Greatest credit is due the breeder who produces the top-notchers.

What significance has this at this time of year? The show season is a considerable distance off; yes it is, but the mating season is near at hand, and the kind of horse the mare is mated to, has much to do with the chances the

colts will have at future exhibitions. This is the time when the mare owner must study his mare and the sire to which he contemplates breeding her. The peculiarities of type and conformation in each must be carefully weighed against each other, and pedigrees must be looked into to as far as possible estimate what bearing the laws of inheritance are likely to have on the colt. There are scores of things entirely overlooked by the average man in breeding mares. He fails very often to secure the kind which "nicks" well with the mare by going to extremes. Of course, it is always well to use a sire strong where the mare is weak, but it is never advisable to use a horse abnormally developed in any particular. Choose the horse well developed, strong in every particular, and with good breeding behind him, and plan to get the colts which are bound to be a credit to your stable, and at the same time plan to take the colts to the exhibitions and show what can be done in our Canadian stables. Prove the value of your breeding stock by its progeny.

Fattening Draft Horses.

The Pennsylvania State College Agricultural Experiment Station has recently finished some experiments in the feeding of draft horses which are very interesting. The object of the experiments as outlined in Bulletin 117 of the Station, was to obtain data in regard to the efficiency of three different rations for fattening purposes. As practically all of the horses in the stall are fed home-grown feeds, a ration composed of corn, oats, and mixed hay, which is generally used, was selected as a basal ration. As the digestible nutrients in oats are usually much more expensive than in concentrated nitrogenous feeds, cotton-seed meal was used in place of oats in one of the groups to determine whether the less expensive ration of corn, cotton-seed meal and hay, was equally as efficient as one of corn, oats and hay. As corn silage furnishes digestible nutrients at small cost, a ration of corn, cotton-seed meal, hay and silage, was used in comparison with one of corn, cotton-seed meal and hay, to determine whether horses could be fed silage without detriment to health, or reducing the efficiency of the ration. Observations were made of the health of the horses, rate of gain, economy of grains as measured by the amount and cost of feeds consumed, changes in conformation due to increase in weight, influence of type, condition and temperament of individuals upon their behaviour during the finishing period.

Twenty-one horses, eighteen geldings and three mares, the predominating blood of which was Percheron and Belgian, and whose ages varied from four to eight years—typical market chunks, or light-draft animals, were used. These horses were divided into three groups of seven each, as nearly equal in size, age, sex, condition, conformation, temperament and weight, as possible. Three periods of 28 days each, or, in all, 84 days, constituted the entire feeding period. Horses were carefully weighed and housed in the basement of a general stock barn, tied in single stalls. All feed was weighed separately to each horse, group one getting corn, cotton-seed meal, corn silage, mixed hay; group two, corn, cotton-seed meal, mixed hay; group three, corn, oats, mixed hay. Each horse was started on a grain ration of eight pounds daily for the first week, after which it was gradually increased ($\frac{1}{2}$ lb. daily), until the horses would eat no more additional. Hay was fed according to the appetite of the horse, and silage, where used, was commenced at five pounds daily, and increased to twenty pounds, which was all the horses seemed to relish.

The feeding of corn silage resulted in a slight decrease in total grain consumption as well, and a marked decrease in roughage. Where cotton-seed meal was substituted for oats, the result showed a marked decrease in consumption of grain, and slight increase in that of hay. The average cost of grains varied from 13.4 cents in the silage-fed lot, to 17.7 cents per pound in the lot receiving oats. It is generally agreed among horse-buyers, that the value of a draft horse increases \$25 for each additional hundred pounds of weight, which would show a profit under normal conditions, varying from \$6.30 to \$12.60 on each hundred-pounds increase in weight during the feeding period.

The ability of a horse to lay on flesh is largely a matter of individuality, controlled by disposition, temperament, age, condition, digestive capacity, and type. The average gains made by horses weighing over 1,450 pounds at the beginning of the experiment, were practically the same as those of lighter horses, which would seem to indicate that weight is not a controlling factor in making gains. Mature horses, six to seven years of age, made more satisfactory gains than those four to five years of age. A higher finish was secured on the mature individuals. The most profitable type of horse for feeding purposes is

one which shows every evidence of draft breeding, with clean, short legs, wide cannon, depth and width in chest and middle, showing constitution and capacity throughout.

When the horses were placed in the experiment, a record of the outline of the chest and the middle of the paunch of each horse was made. Measurements after fattening showed that there was little change in depth of body, especially at the heart girth, but there was an apparent improvement in spring of rib, and a very material increase in width of body throughout.

When some of these horses were worked, after the conclusion of the experiment, they lost in weight and condition, and assumed a form similar to that which they had before the fattening period, showing that the horse at hard work may not only utilize his daily rations for the production of work, but may draw upon the reserve energy which is stored up in the form of fat on the body.

At the beginning of the feeding period, the horses were higher at the withers, but when finished, were higher at the croups. This is doubtless due to the deposit of fat within the heavy muscles over the hips.

While there were material increases in both the width and length of croup, the change in middle of chest was so much more marked as to deserve attention. The heavy muscles both in front of and behind the scapula, are so situated that any deposit

of fat within them would cause a material change in the width of chest, while the pelvic bones are rigid, and the place of measurement is not materially affected by thickness of muscle, thus any change in these regions would be due to a deposit of nearly pure fat over the outside of the body rather than within it. All girth measurements showed marked increase, as would be considered probable. While additional data should be secured along these lines before final conclusions are made, the results here presented seem to indicate that the greatest change in fattening horses is one of width rather than depth, that the smoothness, symmetry, and general appearance, are greatly improved by the "rounding-out" process, due to deposit of fat within the muscles, and that the form of the individual is largely a matter of condition, while the type is almost entirely due to breeding.

Some of the best gains in the 84 days were: Horse No. 1, Group I.—195 lbs., at a cost of 9.54 cents per pound. Horse No. 16, Group II.—Gain 201.7 lbs., at a cost of 10.83 cents per pound. The smallest gain was made by Horse No. 23, Group III., of 81.7 lbs., at a cost of 29.63 cents per pound. Gains seemed to be made more according to type than to feed.

The results are summarized as follows:

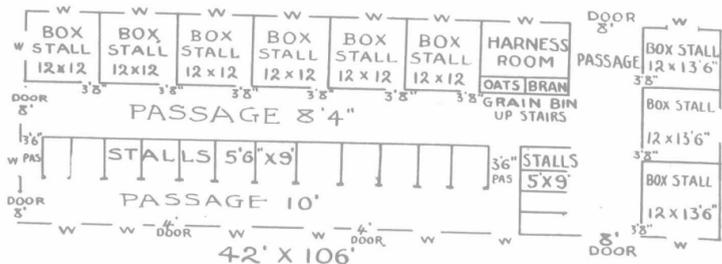
1. Silage, which is made from mature corn, is free from mould, has not been exposed to air too long before feeding, and is properly supplemented with other feeds which will make up the deficiency in protein, can be fed to horses with safety when care is used to have them become gradually accustomed to it.
2. Horses fed silage as a portion of their ration consumed less grain, made their gains at lesser cost per pound, were sleeker and better finished than when fed on rations not containing silage.
3. Using cotton-seed meal to replace oats, resulted in a cheaper ration, a larger gain, smaller cost of gain, and a higher finish in fattening horses.
4. The cost of gains varied from 13.4c. to 17.7c. per pound; the rate of gain, from 1.59 pounds to 1.78 pounds per head daily, due to selections of rations for fattening purposes.
5. The cost of gain due to individuality of horses in Group 1, varied from 9.54c. to 19.83c.; in Group 2, from 10.83c. to 19.05c.; and in Group 3, from 11.53c. to 29.63c. per pound.
6. The rate of gain depends upon the ration used, and the temperament, disposition, age, condition, and type of individual.
7. The most profitable horse for feeding purposes is one that shows every evidence of draft blood, with clean, short legs, wide canons, deep and wide both in chest and in middle, showing constitution and capacity throughout.
8. There is little change in depth of body or length of body from fattening, the greatest change being an increase in width, and an apparent improvement in the spring of rib.
9. The greatest changes in form due to fattening are noted in those parts of the body where the natural covering of muscle is thickest.
10. The height at withers is greater in a thin

horse than the height at croup. When finished, the height at croup is greater than that at withers.

Note.—Feeds were valued: Corn at 50 cents per bushel; oats, 35 cents per bushel; cotton-seed meal, \$32 per ton; mixed hay, \$12 per ton, and corn silage, \$2.50 per ton.

A Fine Horse Barn.

The large horse barn, a plan of which appears herewith, is situated on the Oak Park Stock farm in Brant County, Ontario. This barn is 42 feet wide and 106 feet long, stands on a cement foundation, the walls being built of hollow cement blocks. The ceiling is 10½ feet high with 14 feet posts. All the posts in the basement are oak, and all partitions are two-inch dressed oak 5 feet high. Partitions are fitted with stall guards and the box stalls have one-inch gas pipe 2½ feet high on top of the partitions and four inches apart. Passages are floored with concrete, stalls are floored with two-inch plank, and the floors of the box stalls are clay. All the windows are three feet by four feet. The plan shows all the other points.



Better Shoeing Needed.

Editor "The Farmer's Advocate":

I have taken much interest in reading your valuable paper for over a year, and have advised several of our best farmers to subscribe for it, telling them they did not know what they were missing in not having it to read. One of the most worthy items which deserves attention, appears in your issue of March 13th, "Encourage Good Horse-shoeing." I cannot quite agree with the writer that the blacksmiths are willing to learn, which they could do by studying some good authority on horse-shoeing, and then putting it into practice, but they think they know it all, and go right ahead destroying the feet of more good horses than you have any idea of. This is in reference to country blacksmiths, who really never learned the art, but picked up what they do know from some unskilled workman who was not fit to handle a horse's feet, say nothing about shoeing them.

Stanstead Co., Que.

J. B. REED.

LIVE STOCK.

Care and Feeding of the Stock Boar.

Editor "The Farmer's Advocate":

In the successful management of a herd of swine, to obtain the highest possible returns, the care and feeding of the stock boar are of great importance. Even after making the proper selection and having assurance that the quality of the boar is excellent it becomes imperative that all conditions are fulfilled to get the greatest benefit from his qualities. He may be of the best breeding and a superior individual but the care and feed used prior to, and his physical condition during the breeding season will regulate in a large measure, the vigor and value of his offspring.

If a young boar has been selected his welfare depends upon his care and feeding for the first six months. During this time he will be developing the largest part of his body and hence demands the most care. The strength and vitality of his body will also depend on the foods ant part in this development. He may be allowed to run with one or two pigs of his own size and will develop faster and show more contentment by being given this privilege. No special precautions need be taken as all will be least the first four months of the body for at he taken apart and fed on the bulky, frame-growing ration longer than those intended for market.

The feeds used should be such as shorts and oatmeal fed with skim milk until he is three months old followed by using a slight amount of barley in combination. A ration of one and a half shorts, one of peas and one of barley will be adaptable, or, one of shorts, one of ground oats, one of peas and half barley for youngsters may be fed to the boar until he is eight or nine months old to develop him more toward

the tendency of bodily growth. In combination with the grain foods he should have access to a pasture, or run and should receive green foods, which will promote growth and lower the cost of maintenance. A pasture will also furnish exercise which is an important essential in growing thrifty breeding animals.

At nine to ten months of age the boar will have reached normal breeding maturity and may be used with care. He should not be used to excess, and in fact as little as possible until he is one year old. Full maturity is reached at two years and if used to excess when young he will always remain undersized and lack the thrift and vigor well marked in a prepotent boar.

The fully mature or aged boar simply requires to be maintained in a healthy, vigorous disposition, and in fair flesh. The feeds should be of a cheap, bulky, nutritious nature, and not of heating or flesh-producing type. Ground oats and bran in equal parts by weight fed in quantities according to the condition of the boar will meet the demands necessary in ordinary season. Other grains may be substituted. Shorts or bran and small amounts of barley may be given, but an excess of barley causes loss of vitality and vigor in the breeding animal. Such carbonaceous concentrates as corn should not be fed unless in very limited amounts in winter, when the boar can use foods for the production of body heat. Such foods as skim milk, buttermilk, or whey, will decrease the amount of grain needed and hence lower the cost of feeding. Even water may be used to advantage to keep the grain foods moist and is better than feeding grain dry.

In summer the boar should be allowed all he will readily take of some green crop as pasture grass, clover or rape. The feeding of such not only decreases the amount of grain required but aids the digestion of all foods. It also produces a more rugged state of the body than where grain is fed exclusively. In winter, he should be fed roots to replace the green succulent foods of summer. Two or three average sized roots per day will suffice and will give just as good returns if fed whole as when cut or pulped.

Exercise is one of the essentials in maintaining a vigorous, thrifty animal, and this applies to the stock boar in full. Some form of pen, paddock or run should be provided to give him sufficient space to take all the exercise he needs. In summer it is an easy matter to keep him in a small pasture or paddock, and a shelter to protect him from the summer storms will be all that is needed. But in winter, when he must be kept fairly warm and allowed freedom as well, it is a difficult problem. If he is perfectly quiet, as few aged boars are, he can be allowed to run in an outside paddock with one or two aged sows until they approach farrowing. However, if there is a danger of him being rough, he should be allowed the run of a large pen in connection with a shed. If he can be kept in a pen without a floor, except where he must sleep, better results in sound feet and legs will be noticeable. Heavy boars are often of little or no value, from having been allowed to stand too long on a cement floor, or even a plank floor. Here the feet will become dry and sore from the heavy weight of the body and the unyielding nature of the floor.

If we visit the herd of the average breeder the three defects commonly noticeable in the care and feeding of the boar are underfeeding, overfeeding and lack of exercise. Few breeders realize how far-reaching each of these defects is, and how much it is affecting the profit coming from the herd. Keeping the boar in an underfed condition, is keeping him in a low state of vitality and it will be plainly seen in the young pigs coming from such a sire. Overfeeding has much the same effect, but we find it less prevalent. Lack of exercise produces a sluggishness in the boar, which results in general weakness or lack of strength in the offspring. The policy of the breeder, therefore, should be to keep the boar in a fair state of flesh and induce strength by the choice of feeds of cheap, bulky, and yet nutritious nature and by permitting or even forcing exercise. Such treatment would raise a profit-paying herd to a higher degree than that experienced by many breeders who treat the boar as a necessary evil.

Department of Agriculture, P. E. I. W. J. R.

Few people have any clear idea of the exact amount of straw or other material required to keep an animal well bedded. In some experiments carried on at the station in connection with the Pennsylvania State College it was found that 9851 pounds of straw were required to bed ten cows for 140 days and from this lot 88,405 pounds of manure were removed. This means that practically the straw from one acre of grain would be required per cow for this length of time and each cow would make 8,840 pounds of manure. More straw could have easily been utilized but enough was used to keep the cattle comfortable.

Our Scottish Letter.

Possibly you may be thinking that "Scotland Yet" has given up business. It is not so, he is still to the fore—but he is a very busy man, and finds it not easy to keep up his monthly letter to Canada. The weather has been on its best behavior here for about ten days, and February goes out with a balmy sensation of April. Up to the middle of February we had about as bad a winter as could be pictured. A long frost is not so detrimental to stock as a combination of sleet, snow, floods and violent storms, entailing heavy loss of life at sea and hindering farm work. Flockmasters on the Grampian ranges have not had a winter like this since 1881. There have been longer spells of frost but not such deep snowdrifts, and the bringing of flocks through this weather has been a costly business. Added to this the losses from smothering have been considerable. On the other side of the account stand several notable cases of endurance among the flocks, and several rescues have been made of Blackfaced ewes alive after many days of burial beneath the snow. A Blackfaced ewe is about the hardest animal to be found on the farm. She will find a living in the most impossible surroundings, and her maternal instinct is one of the wonders of the animal world. The recent severe weather has illustrated this anew, and everyone is thankful that it is over. Work on the fields in the low country was greatly retarded through flooding, and there is considerable leeway to make up in the ploughing. But now with the lengthening day a big spell of work can be got through by man and beast, and it is surprising how soon the arrears can be wiped out. The outlook for the farmer here is fairly bright. Prices are on a much higher level than has been known for many years, and the dreadful days of the eighties are almost forgotten. In every department there is advance. The cessation of imports from the United States, has greatly helped things, and in spite of increased costs the farmer sees his way to make a little money.

The triumph of the Board of Agriculture and Fisheries over the outbreak of foot-and-mouth disease seems to be complete. The Minister of Agriculture, Mr. Runciman, was feasted by Scots stockbreeders at Perth on Tuesday evening. William Duthie, Collynie, the world-famed breeder of Shorthorns, presided over the gathering, and Sir James Sivewright, of Tullyallan, one of the South African magnates and a spirited breeder of Shorthorns, proposed Mr. Runciman's health. The banquet was an acknowledgment of the success of the administration in keeping Scotland free of the disease all through the painful months which have elapsed since the first reported outbreak in England on the eve of the Royal Show at Doncaster. Mr. Runciman is, at the moment, able to make the proud boast that Great Britain and Ireland are more free of disease of every kind among live-stock than any other country in the world. There can be no doubt that we have a most efficient Veterinary and Animals Department, and Mr. Runciman is showing himself to be an extremely able administrator. He has succeeded in obtaining im-

portant concessions with respect to the period during which foreign countries are closed to British stock after an outbreak of foot-and-mouth disease has taken place. The antipathy of the Argentine to this disease in Great Britain is rather puzzling in view of the fact that the disease is rampant in the Argentine. However, we must admit the right of the Argentine people to manage their own affairs, and we certainly gain nothing by seeming to dictate to them or anybody else.

The export trade is a big thing for this country, and at the long last Great Britain is to have a testing station under Government control where cattle for export can be put through the tuberculin test, and this is to be accepted as final by several foreign Governments. The station is to be placed at Aldershot, south of London, and Scotland has a grievance, because this is so remote from the breeding areas in the north. Unfortunately Scotland is herself largely to blame for this. Mr. Runciman said he fully proposed getting funds to establish a station in Scotland, but at a conference held in Glasgow a motion was carried disapproving of such a station. The aim of the mover of that motion was to force the hand of the Government to do more than test cattle intended for export. His argument was that it was much more to the purpose to embark on a crusade for the elimination of tuberculosis, and in place of having only cattle for export tested he would have all animals tested, and "the reactions earmarked" in some way so as eventually to rid the country of this scourge. It is now announced that the Government have this also in hand, and on May 1st a tuberculosis order comes into force which will attach the cow with the tuberculous udder and get rid of her altogether. Compensation will be paid on a fixed scale, and evidence therefor accumulates providing that alike in the human and the bovine creation the white scourge is to be warred against.

The spring bull sales so-called are almost over, and so far have been uniformly successful. The trend of prices has been upward, and the whole of the breeds have shared in the advance. The Shorthorn still leads for top prices, but, on the whole, one would say that sound commercial bulls for crossing purposes were making quite as much money amongst the "blacks." The top price so far has been 1400 guineas, or £1470 paid at Perth by Mr. Duthie for Lothian Augustus, a beautiful roan bred by the Earl of Rosebery in his Dalmeny herds. This is a remarkable score at the very first appearance of the Dalmeny herd in the Shorthorn rings, and reflects great credit on the splendid management of the Earl's agent, J. T. McLaren, who is one of the best judges of Shorthorns in the country. The bull was fourth in his class. The next highest price was 1000 guineas, or £1050 paid by Mr. Casares, London, for Star of Dawn, the first-prize bull which was bred by J. J. Moubray of Naemoor, whose manager, it is worthy of note, is a son of J. T. McLaren, above named. It is rare indeed that father and son make such a notable record on one day. We believe that the dam of Star of Dawn was



Who's Afraid.

A lamb is the personification of innocence.

purchased when in calf with him, at a sale in England for 110 guineas. It is not often such a good investment comes the way of a breeder. Mr. Duthie also bought the highest priced heifer at Perth. She was bred by Messrs Perterkin, Dunglass, Dingwall, well known and successful breeders. She is only a yearling but was eagerly coveted, and cost Mr. Duthie 350 guineas. The Blossom tribe to which she belongs has had a remarkable succession of victories in the Argentine, where three full brothers have taken the champion honors in successive years at the Palermo Show. 340 Shorthorn bulls, at Perth, made an average of £60.19.7 each. The Aberdeen-Angus bulls were sold in the preceding week. 323 bulls of this breed made an average of £34.5.10 each. The judges and the public were arguing fairly well among the Shorthorns, but they were hopelessly at variance among the blacks. The highest price of the sale, 400 guineas or £420, was made for the Harviestoun bull Prince of Messina, which was not placed by the judges. He was bought by an Aberdeenshire tenant farmer, Mr. Penny, Skillymanno, so that the highest priced bulls of both breeds have been retained by tenant farmers for home use. The Harviestoun herd led easily at Perth for an overhead average. Mr. Kerr, its proprietor, sold five bulls at an average of £167.7.5. The best average for shorthorns was made by Lord Rosebery who had £767.11s. each for two. Mr. Moubray of Naemoor, having £369.5s. for three. The best average for a higher number was made by Lady Cathcart of Cluny Castle, with £226.12.6 for six, a first-class result. Highlanders and Galloways have both had their innings, but neither in respect of numbers nor quality nor results do they compare with the two leading breeds. Ayrshires have their turn next week at Lanark. Perth, Aberdeen and Inverness are the great centres for Shorthorns and Aberdeen-Angus, Oban for Highlanders, and Castle Douglas for Galloways.

The London horse shows are now in full swing. The Shire men have just closed their gates. Their champions this year are the two-year-old stallion, Champion's Goalkeeper, which was sold at Lord Rothschild's sale a week ago for 4100 guineas, a splendid price for a young cart horse, and the magnificent, big, chestnut mare Dunsmore Chessie, which has now been champion at least twice if not three times. Shire horse-men have been having a dispute as to the best kind of horse. Some are advocating less hair about the legs, others maintain that to breed Shires with a minimum of hair on the legs is to abandon one of the essential characteristics of the breed. Clydesdale men are not anxious that Shire men should abandon their hairy-legged favorites. So long as they breed that class of animal there are markets in which the Clydesdale will enjoy a monopoly. At the same time it is gratifying to find that among Clydesdale men there is a growing disposition to pay more attention to weight and the formation of top. Some gentlemen who have been determined adherents of the ultra-quality cult are recognizing that something more substantial is needed, and hence a marked improvement in respect of top and weight at the show here a month ago. New Zealand is going strongly in Clydesdale matters. The Clydesdale Stud Book of that Dominion, which has been recently started, is not based on soundness, but horses which have been passed as sound by the Government inspectors are distinguished in the Stud Book. There can be no doubt of the ultimate effect of this policy. Horses so marked will emphatically be preferred to those lacking the distinction, and a levelling up in soundness will ensue. Here we are having a fight on this question, but the Government Register of soundness is to win the day. Several horse owners, who have hitherto been determined opponents of the scheme, are putting some of their horses upon the Register, and there can be no doubt that, in the end, all reputable horses will bear the imprimature of the Boards of Agriculture. The one thing which the Government must avoid is any attempt to force the pace in favor of compulsory examination and the elimination of the unsound stallion by legal enactment. There was some hint of this in a circular letter addressed to the Breed Societies by the Board of Agriculture and Fisheries, but such a course, if adopted, would not secure the end in view. It would antagonize both horse owners and breeders, and the probability is that it will not be further heard of.

In a letter addressed a month ago to the Winnipeg edition of "The Farmer's Advocate," I gave by request some account of the Scottish horse hiring system. This year hiring was brisker than ever, and odd horses are being arranged for season 1915, while several engagements have been made for 1914. The system is being largely adopted in England, and in connection with schemes for assisting small land holders to use better sires, the Board of Agriculture for Scotland insists on a model constitution. This is quite right. The constitution of some

of the older clubs and societies is extremely loose, but at their worst these organizations did an amount of good, and secured a somewhat equitable distribution of superior sires all over the country. The export trade is very brisk. About 150 head will be shipped for Canada to-day.

SCOTLAND YET.

Feeding Cows on Single Plants.

To determine what would be the specific physiological action of various rations restricted to single-plant sources, upon cows subjected to the strain of reproduction, an experiment was undertaken five years ago at the Agricultural Experiment Station, Madison, Wisconsin. This experiment has been mentioned in previous issues of this paper. Young heifers were fed chemically balanced rations from the corn, the oat and the wheat plant, and as the animals reached physiological maturity and underwent the strain of reproduction it became evident that the ration from the wheat was strikingly deficient, the wheat-fed mothers producing either dead or weak undersized calves. During the past year the experimenters have concentrated their efforts in an endeavor to determine the cause of the disastrous effects of the wheat ration. In addition to the ration prepared exclusively from the wheat plant, rations were fed consisting either of wheat, grain or of wheat straw together with parts of other plants. Cows have produced offspring on various rations as (1) wheat grain and corn stover; (2) corn grain and wheat straw; (3) corn grain and equal parts of wheat straw and alfalfa hay. Upon rations consisting of wheat grain and corn stover, normal, healthy calves were produced. As soon as wheat straw formed the sole roughage, no matter what grain was used, invariably the calves became acid and weak, undersized offspring resulted. However, upon the ration consisting of the corn grain with equal parts of wheat straw and alfalfa hay, normal calves were produced. These results tend to indicate that the deficiency of the wheat plant is not due to toxicity of any part of the plant or to any insufficiency of the proteins, but rather to the acid condition imposed on the animal caused by an insufficient supply of lime and other alkaline substances in the roughage. While this disastrous effect of the wheat straw was overcome by the addition of alfalfa hay, especially high in alkaline substances, previous work indicates that it cannot be remedied by the addition of alkaline carbonates. The work is being continued and will be watched with interest.

Spring Cattle-Feeding.

How many feeders have noticed that it seems more difficult to keep up the condition of the cattle during the warm days of spring than in mid-winter? This often seems to be the case. After several months on dry feed their appetites seem to require something fresh to satisfy them. The young grass springing in the fields gives off a very appetizing aroma, and if the cattle are out in the barnyard they will be noticed at times with their noses elevated sniffing this delicious and refreshing odor as it is wafted to them on the balmy breezes. The more opportunities they have to enjoy the smell of the growing grass the more restless they become and the less they relish the dry feed, and if they ever once get out of the yard and get a taste of the tender springing grass the trouble of maintaining their appetites for hay, wilted roots, and even silage is greatly aggravated. There is very little feeding value in very young grass, it being composed largely of moisture, but it has the taste which the cattle crave. There are good reasons why cattle should not be allowed to roam over the fields, or around the fences as soon as the snow is off.

Cattle must be well fed in spring, for it is important that they go to pasture in good condition. All animals fail in flesh, or at least do not make any appreciable gains when first put on the tender grass. Especially is this so when the grass is young, or has made very rapid growth. It then acts as a laxative, and often when eaten to excess, as it very often is, produces more or less severe purgation. This coupled with its comparatively low food content, causes the cattle to remain practically at a standstill as far as gains are concerned. It is more or less of a trying time on them and they should be in good condition to withstand it to best advantage.

Spring feeding cannot be much different from winter feeding. All stable feeding is to a greater or lesser extent the same. It is dry feeding, and very often, especially in seasons of scarcity, when the winter has exhausted the greater por-

tion of the feed, rations are cut down in spring, rather than being by careful mixing increased. If there is at any time when the cattle demand variety it is at this season. They must have it in order to maintain their appetites and satisfy the desire for a change, which comes with spring. The best of the season's feed should be saved for spring use, and it is usually advisable to feed a little more grain at this season than in the winter. Hay can often be cut to advantage and straw as well. Roots should be pulped, and cattle may often be encouraged to eat the cut feed, silage, pulped roots and chopped grain, all mixed together, more readily than when each is fed separately, and also to consume more of them. Feeders must study closely the likes and dislikes of each animal at this season, and must cater to them even more carefully than in colder weather. The sluggishness which we all feel as the days rapidly warm up is also felt by the cattle. Their torpid systems require as much stimulating as possible. They need spring medicine, which is in their case pasture grass, but this is not available for some time, consequently stable feeding must be regulated, to as nearly as possible take its place until grass is plentiful. Avoid too much heating food, and keep the cattle's appetites good if possible.

Last fall a quantity of sugar-beet tops was placed mixed with corn in a silo at the Wisconsin Experiment Station. Though the silage had a slightly stronger odor than ordinary corn silage it was not offensive, the cows seemed to relish it and did as well on it as on the regular corn silage. Chemical analysis showed that this silage had practically the same composition as clear corn silage. The beet tops were left in small piles in the fields after removing the crop and were ensiled with corn fodder taken from the shock, water being added to give it the proper moisture content.

THE FARM

Thickness of Seeding Oats.

One of the most interesting topics taken up at the recent Canadian Seed Growers' Convention in Ottawa, was the influence of thickness of seeding upon stooling, early maturing and yield of oats. Prof. C. A. Zavitz, of the Ontario Agricultural College, presented the preliminary report on an experiment now being conducted to throw some light on this question. During four consecutive years four varieties of oats, including Joannette, a heavy stooler, Tartar King, a light stooler, Banner and Regenerated Abundance, medium stoolers, were sown 1, 2, 3, 4, 6, 8 and 12 inches apart each way. The average results of the four varieties for the four years are very suggestive, although the work is not nearly completed. The plants one inch apart, representing about 12½ bushels per acre, did not stool at all, and those two inches apart but very little. At four inches apart the plants averaged two heads, and at twelve inches a little over eleven heads. The time required for maturing ranged from 90 to 100 days, in direct relation to thickness of seeding. The highest yield, 41.73 bushels per acre, was obtained from the plots with plants three inches apart. Four inches apart yielded 38.99 bushels; six inches, 37.42 bushels; two inches, 34.95 bushels; eight inches, 31.77 bushels; one inch, 30.60 bushels, and twelve inches, 21.93. Contrary to common representations, the Regenerated Abundance is found to be quite a free stooler, about the same as Banner in this respect. The advantages claimed by some for light-stooling sorts thickly seeded have not been substantiated by the test, and the general conclusion seems to be that a variety that stools freely can adapt itself to circumstances better than a light-stooling one.

L. H. Newman, secretary of the Association, presented the results of a co-operative experiment conducted by members of the Association to determine the relative merits of Banner oats sown at 2 bushels per acre, and Regenerated Abundance oats sown at 2 bushels and 4 bushels per acre. The results showed that, with one exception, Banner stooled more heavily, with an average of 3.9 heads per plant, while with Abundance the average was 2.75 when seeded at 2 bushels per acre, and 2.13 at 4 bushels. The general vigor of growth was better with Banner and better with Abundance seeded at 2 bushels than at 4 bushels. In Saskatchewan Banner was six days later maturing, but there was no difference in the 2 and 4 bushels seeding of Abundance. In Ontario and the Maritime Provinces the heavier seeding induced earlier maturity. Banner out-yielded Abundance sown at the rate of 4 bushels per acre, while Abundance at 2 bushels per acre out-yielded the 4 bushels seeding by one-half bushel per acre.

Clover Seeding---Practical Experience.

In reply to the same questions as were published in our last week's issue on the subject of growing clover, we have received the following interesting letters.

Editor "The Farmer's Advocate":

Clover is commonly spoken of as one of the most important of all crops grown on the Ontario farms. As for myself I would place it in premier position of all. It holds a place in every system of rotation yet devised. From a clover crop we get, directly or indirectly, four sources of revenue or gain: (1) a valuable feed; (2) a valuable fertilizer; (3) a chemical action which stores up nitrogen for succeeding crops; (4) a mechanical subsoiling process carried on by its vigorous root system, that aids greatly in making clay land mellow and friable, a condition very necessary in all heavy lands. No other one crop pays four dividends per year, hence its undisputed claim for first place.

On our land which is fairly strong clay-loam with clay subsoil, we follow a six-year rotation, namely: first, clover; second, mixed hay; third, peas or fall wheat; fourth, oats; fifth, roots and fallow; sixth, barley or goose wheat (seeded).

We seed down after our hoe crop for two reasons: first, having applied all the farmyard manure on hoe crop the land is in the highest state of fertility, a prime essential in securing a good stand; second, clover following the cleaning crop supplements the good work done with the hoe in keeping the land from weeds, and in case you are fortunate in getting a crop of seed, freedom from weed seeds means everything today in clover seed.

A great many consider they should get one grain crop and seed down with the second after a hoe crop; but there will be just one-half the chance of getting a good catch of seeds.

We have on our farm at the present time a very clear illustration along this line. In a field of 14 acres 2 acres were cropped one year and seeded the following year along with the remaining 12 acres, the result being that last summer we cut twice as much per acre off the 12-acre that we did off the 2 acres.

Have no choice between barley and goose wheat as a nurse crop. We always try to sow the field to be seeded the first, using 1½ bushels barley or 2 bushels goose wheat, and 5 lbs. timothy and 6 lbs. clover per acre. In sowing clover alone would sow more than 6 lbs.

If sowing is done with drill would prefer sowing grass seed ahead of the drill, the field having been previously harrowed. The main thing to be kept in mind is that "seeds" need only a very light covering. We have followed the practice for years of using a 14-foot hand seeder, and depend on the roller to cover the seed sufficiently. This plan I consider the ideal one, but necessarily entails an extra amount of labor, so much so, that at times we have recourse to the grain drill with very good results.

The advantages of a late or early maturing nurse crop are almost wholly dependent on weather conditions after crop is removed.

As for seed, prefer Ontario grown seed in every case, and the plumper and more highly colored the better, from the standpoint of germinating possibilities. Have never inoculated any seed.

Leave nurse-crop stubble as long as convenient, as it will afford additional protection and help to hold the winter's snow. Above everything else be careful of pasturing in the fall, especially with sheep, as they are nearly as hard on the "new seeds" as the most-to-be feared evil, frost.

Have read a good many articles about building up run-down farms by the growing of clover, but clover alone would never do what was required unless supplemented by liberal dressings of farmyard manure, for the simple reason that you cannot insure getting good crops of clover unless the land you are seeding is in the pink of condition for raising grain or other crops.

York Co., Ont. JAMES A. RENNIE.

Editor "The Farmer's Advocate":

For growing clover I aim to have the soil as clean and free from weeds as possible, and harrow before cultivating and I do not cultivate too deep. I do not mean to harrow just once but harrow until the soil is thoroughly worked.

A great many farmers cultivate before harrowing which is a mistake, for the soil cannot be made as fine by that method no matter how much harrowing is done after cultivating, and a fine seed-bed is needed for clover.

If farmers would take a little more time in preparing the seed-bed for clover they would be well paid, particularly on poor soil.

I generally sow about eight pounds of clover and four of timothy to the acre. I sow behind

the drill, and always harrow after it with a light harrow.

I would prefer to seed barley at about sixty-five pounds to the acre, but have had some splendid catches with oats. The seeding needs to be done as early in the spring as possible.

The soil in this section is clay limestone or clay loam. The clover for a hay crop is just as good on the one soil as the other, but generally get more and better seed from the limestone.

It is advisable to leave a good stubble to protect the young plants.

It is a mistake to pasture clover in the fall unless it has an extra growth, and it should never be pastured out of sight nor should stock be allowed on clover when the soil is wet.

Some sell the best seed and sow what they can't sell, and then wonder why they can't grow clover.

The only secret I know is to prepare the soil, sow the best seed and plenty of it regardless of cost, and sow it every year, and the man who follows that rule will do best in growing clover. Prince Edward Co., Ont. WM. MONAHAN.

Editor "The Farmer's Advocate":

Regarding your enquiry as to best methods of securing catch of red clover, we always make a practice of sowing clover on our fall wheat, of which we still grow a good deal in this vicinity. We usually wait until the ground is dry enough to put a team on, and harrow with a light harrow with slanting teeth before sowing, and give another stroke of the harrow the opposite way after the seed is sown. In sowing with spring grain, we prefer to sow with the grain drill and always in front of the tubes. We have found barley the best spring grain to seed with, sowing not more than a bushel and a half of grain to the acre, we have never sacrificed the barley crop in the endeavor to secure a good stand of clover, and have so far usually had good success in getting a fair stand. As to quantity of seed per acre, we sow ten pounds of red clover when sowing it alone, and eight pounds of clover and two of timothy for a mixture. I think, as a rule, farmers do not sow enough seed. One of the most successful clover growers we ever had in this locality sowed fifteen pounds of clover alone. We have always found the earlier sown fields came through the dry weather the best. The dry weather after the grain crop is harvested is often the cause of the failure in getting a catch of clover. We never have made a practice of giving a field any special preparation for seeding any more than having it clean and in a fair state of fertility.

In the case of seeding to alfalfa, we give a special treatment in the way of cultivation until the middle of July, and then sow at the rate of twenty pounds to the acre without any nurse crop. We never have inoculated any of our seed. We never pasture new seeding unless it gets very rank in the fall like it did last year, and then only with calves or lambs for a short time. We always buy the best seed regardless of price, and try to get seed of dark color and plump. It is advisable to leave a fairly long stubble in cutting the grain crop to hold the snow.

Wentworth Co., Ont. R. S. STEVENSON.

Editor "The Farmer's Advocate":

I have always sown with grains, and at the rate of from 10 to 12 lbs. clover and 4 lbs. timothy per acre. This amount of clover, if the germination tests are good, should give a good stand without the timothy, as we find when the stand of clover is vigorous the timothy does not amount to much the first season, but will come in a good mixture for the second year, we just take two crops of hay and turn down for grain. We always sow in front of the drill, and cross harrow after. This is to spread the grain in the drill, also to cover any clover or grass seed that should be missed. There is little danger of covering too deep. We like barley best as a nurse crop, and wheat is our next choice. Barley is more open, and when sown early is harvested early, and gives clover a good long season to harden up and make root growth. We sometimes sow with oats with good results when sown with about two bushels per acre. With barley we sow six pecks of the barley, and with wheat six pecks of wheat.

We prefer seeding early, as the young plants get a good start while the ground is cool and moist, and will be more able to stand the hot, dry weather when it comes. Our soil is heavy clay, but think clover should do well on any soil if well prepared. We always put the ground in as good condition for all crops as time will allow, as it is necessary to have a fine even mulch on top to exclude the air and conserve moisture. We use nitro-culture and find it gives good success. Poor soil gives more difficulty in getting a catch. We always try to top-dress

hard places with manure when in pasture or meadow. When the ground is not too wet and the clover a good stand we pasture. Last fall we pastured 10 head of cattle on 10 acres spring seeding for six weeks, one day on and one day off, and clover increased in growth on the cattle, and the stand was about 10 inches high. This was seeded with barley.

We think it is very important to always leave a good stubble to protect the crop, and we always select the darkest seed, but have not given this any special attention.

Renfrew Co., Ont. PETER WILSON.

Editor "The Farmer's Advocate":

In securing a catch of red clover we have always found it necessary to have the land clean, fertile and in fine mellow tilth.

In the rotation we follow, we seed to clover and grass, after cleaning the field with corn and roots. We apply for corn twelve loads manure per acre, and for other roots sixteen per acre. With thorough and persistent cultivation in corn we find the land in just as good condition for sowing grain and clover as it would have been if we had fall-plowed it six inches deep, and I think fully better, as we almost completely cleaned out all the weed seeds in two inches deep over the entire field. That two inches produced practically no crop last season, as our persistent cultivation prevented its producing any growth. If wild oats and mustard seeds are in the soil this method secures a crop of grain and catch of clover without ripening any more of them, as those seeds which were near enough to the surface to grow were germinated and killed by cultivation last season; and there may still be plenty more of these in the soil, but they are buried too deep for germination this season.

To get rid of the corn stubble, which appears above ground, we find that with the action of the winter weather they are quite brittle by March and April, and by using a stick of timber 5 by 10 or 12 inches and 8 or 10 feet long which will cover three rows of corn; when by drawing this flat stick broadside along each three rows and back again, "use this when the land is frozen quite hard on top", it will break off all the stubble close to the surface.

We use a disc harrow doubled to pulverize the soil two inches deep. We harrow and roll before sowing to thoroughly pulverize the soil into fine particles. In sowing on this rolled land we find the drill will not sow more than about one inch deep, which we very much favor, as the grain stools out when sown shallow, but not when too deep. We thoroughly clean our seed grain three times with the fanning mill, securing only the best and largest plump grains that way. What blows out is good enough for feed, but not for seed.

As a preventive treat all seed for smut with formalin (2 ounces mixed in 1½ gallons of water to 10 bushels of grain) sprinkle this on the grain. Shovel over several times and let dry on the grain before sowing.

When seeding with oats we use five pecks of oats per acre, and with barley seven pecks of seed. With the stooling we find this quantity quite thick enough. We usually sow eight pounds red clover, two alsike and four pounds of timothy per acre. Always in front of the drill, as in that way the bulk of grasses are distributed in between the rows of grain. And we invariably sow the grain east and west on the field, because from the time the grain reaches knee-high that ground is pretty well shaded from the direct rays of the sun, which, if allowed to strike on the ground and overheat the soil, a large quantity of moisture is evaporated, which, if saved, would have gone to fill out the grain crop.

We always purchase No. 1 grass seeds, would not take any lower grades on any account.

As to fall pasturing we do very little of it, only enough to keep the clover from coming out in head. Our belief is that clover five inches high in the fall is a complete protection from heaving in spring. We leave our grain stubble five or six inches long, with the expectation that it will hold more snow during the winter months. In a real dry season we get a better catch of clover with barley than with oats, on account of not being so leafy and being earlier in maturing.

I have found the lighter class of soils not to heave so readily as stiff clay, but with the winter protection formerly provided I have had little difficulty with two clay fields that I have to deal with on our farm.

As the grass seeds seem to be getting higher in price each year, it seems to me to be well worth the while of every farmer to try and find out just how to prepare his soil, and sow nothing but the very best grade of grass seed.

Oxford So., Ont. W. C. SHEARER.

Editor "The Farmer's Advocate":

For land that is in good condition and has been fall plowed, would advise sowing about twelve pounds of red clover per acre. We do not make a practice of sowing timothy with clover, but if the field was low and not very well drained some timothy could be used to advantage. We always sow with the grass-seed attachment on the grain drill, setting the spouts to scatter the seed in front of the discs or hoes as the case may be. Of course, for sowing on fall wheat we use a small hand seeder. Clover seed is too valuable to be guessed at by hand.

Barley has given the best results for me. As a nurse crop it is cut sooner than oats, and seems to give the young clover more air space or head room. The young plants will be from four to eight inches taller at time of harvesting barley than they would be if grown with oats. At least this has been our experience.

The barley is sown at one and a half bushels to the acre, and two bushels of oats, or probably a little less if sown broadcast, makes a fair seeding. We always prefer early seeding. We have a seed time and a harvest, and if are not "up and doing" when the ground is ready for seeding, all our work will bring but small returns.

Any soil that is in good tilth will grow clover if worked properly. We have had little experience with light sandy soils, but would think clover would be a success if the season were not too dry. We do not make any special preparation of the soil other than that which would be made for a grain crop. We always put all the work we intend to do on the ground before sowing, because a considerable portion of the seed is tramped down to a depth of from three to six inches and often more if the land is soft, and worked after the seed is sown. This seed is consequently lost, whereas if the ground is left alone after the drill passes over it everything will be left at a uniform depth. We use a disk drill with chain drags behind. We have never sown inoculated red clover seed.

You cannot get a good catch of clover on poor soil any more than you could get a good crop of grain. Something cannot be had from nothing, and this will be demonstrated very forcibly if you try to get a catch of clover on worn-out land.

There is quite a marked difference in a catch sown with an early maturing crop as against that sown with a late maturing nurse crop, especially if the nurse crop is heavy. The clover in the late crop will be more tender and spindly, and will not stand up under a hot sun like that in the early crop.

We have pastured clover in the fall after spring seeding, but it is risky and would not recommend it at all. The longer the stubble left when harvesting the better. It will hold more snow, and give more protection during the winter. It pays to give the young plants every chance. We always buy seed from reliable parties, and if you cannot do that by all means test it.

We have never made tests of the results from sowing different colored seeds. As long as the seed is uniform and plump, and I knew where it was grown and how it was sowed, I would be satisfied.

Lambton Co., Ont. JOHN HUNTER.

Editor "The Farmer's Advocate":

There are three reasons why so many failures of seeding red clover occur. First, poor seed; second, soil poorly prepared, and thirdly, covering the seed too deeply. The latter being the most frequent mistake. Never sow seed in front of grain drill. I seed down with wheat with hand seeder, sowing from nine to twelve pounds of clean, plump seed per acre—seed that has been carefully tested for germination, getting best results seeding last of March or first week in April. If there happens to be a light fall of snow about that time all the better. Sow on the snow and you can see that all the ground is being seeded. Never leave off seeding wheat ground until land dries up and spring frosts have ceased. A little freezing and thawing are ideal conditions. I seed with barley and oats too, and have never missed a catch. Barley sown one bushel to the acre makes possibly a better nurse crop than oats. You can't expect a good catch with either barley or oats on spring plowing, unless ground is well prepared and rolled firm enough so that when you follow with hand seeder the seed will remain on top or as close to the surface as possible. We always have April showers to cover seed sufficiently and give it a start.

I have noticed so many farmers giving the ground a stroke with the harrows after they have finished seeding "to make sure" as they think that it is necessary to have seed covered, and as a result a failure or partial failure occurs. After you have succeeded in getting a catch, give the young plants a chance to grow. Never pasture the first fall. The plants will

have a better chance of standing frosts in winter and spring by following these simple methods in Kent County, at least a failure of a catch of clover is unknown.

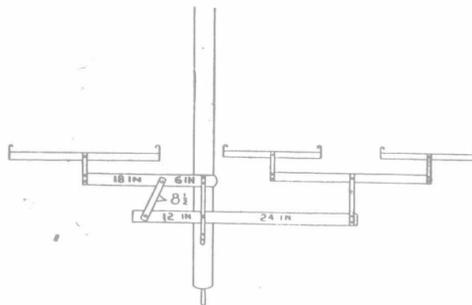
Kent Co., Ont. J. A. FLETCHER.

[Note.—Prof. Zavitz, of the Ontario Agricultural College, claims that clover sown with a nurse crop in the spring should always be sown in front of the grain drill.—Editor.]

Editor "The Farmer's Advocate":

The clover crop is without exception the most important crop we grow on our farms. It is valuable not only because of the large quantity of excellent food it furnishes for the feeding of all kinds of stock, both as pasture in the summer and as dry feed in the winter months, but also for the large quantities of plant food it stores up in the soil both in the form of free nitrogen it collects from the air, and also in the humus it produces. The tap roots strike deep into the subsoil and bring up soluble mineral matter sufficient to develop the plant, and thus made available to feed other plants. Again the clover roots perforating the subsoil and decaying make it more porous than can be done with any implement.

Of the various methods of seeding used, we prefer sowing the clover with barley, following with a corn or root crop. Following this method we have never failed to get a good thick stand. The field has been given an application of stable manure before plowing for corn or roots, and together with the cultivation given the corn or root crop it is in the best possible condition for a catch of clover. We sometimes sow oats instead of barley, and secure a good catch of clover. But the barley is preferable as it ripens earlier, thus giving the clover plant more time to develop after the crop has been taken off. We also have had good success in sowing our grass seed on land that has had a light dressing of stable manure, during the winter months sown to either barley or oats. Again we have had very strong catches on fall wheat that was top-dressed and worked in before the wheat was sown, but as most of our wheat is sown on sod, plowed down after haying, this is not seeded again.



Three-horse Evener for a Tongued Implement.

Republished by request. This contrivance has been criticized as not quite equalizing the draft, but it is near enough for practical purposes.

When sowing red clover alone we sow about ten pounds to the acre, and when sowing clover and timothy mixed we sow about seven pounds of clover and five of timothy to the acre. We sow the clover and grass seed with the seeder attached to the grain drill when possible. The seed is sown in front of the tubes, and given a stroke with the harrow. If sown behind the tubes and harrowed, quite a quantity of the seed will be buried too deep to even reach the surface. Sowing by hand is too slow when labor is so scarce, and does not insure as even seeding.

We do not make any difference in the quantity of seed sown as a nurse crop for our clover. We do not believe in heavy sowing of any grain crop. Our practice is to sow six to seven pecks of barley, and about eight pecks of oats to the acre. When sowing clover on our wheat we like to sow on a little frost, as the action of the frost on the ground helps to work the seed into the soil, and it is ready to germinate as soon as the soil warms up.

Red clover does well on almost all well-drained soils, but has a tendency to heave on dark loam and flat clay soils, the yield becoming less if the soil is light or sandy.

We do not give the ground any special cultivation other than that mentioned above, with the exception that sometimes after harvest we disk or plow the stubble very lightly and work it down into a fine seedbed for the germination of weed seeds and ridding the land of quack grass, which can be cleaned out quite thoroughly if the season is sufficiently dry. Last year being so wet nothing could be accomplished with fall tillage.

Our seed has never been inoculated, but have found it difficult to get a catch of clover on land

that has been successively cropped for three or four years without being seeded, or having an application of manure.

While we pasture our clover in the fall, it is done more from the need of the feed than for the benefit to the clover. If the clover has a tendency to blossom it is better to pasture, for if the plant forms seed its nature is to die. Pasturing has a tendency to break down the stubble, thus leaving the plant more exposed to the driving winter winds with nothing to hold the snow and form a covering. A year ago we ran the mower over a field of the new catch to prevent ragweed from seeding, which made the field very bare, and, last season, on the exposed parts of the field there was very little or no clover. We have never tested our seed, but try to learn where and when the seed was grown. Light-colored seed should be shunned unless it has first been tested, as light-colored seed is an indication of age.

Too much care cannot be taken in the selection of our seeds, as to weed-seed content. If my memory serves me right the Seed Control Act allows in No. 1 seed per ounce five noxious and one hundred other weed seeds. In No. 2, twenty noxious and two hundred other weed seeds per ounce. Few of us have ever taken the pains to figure out the number of weed seeds we are sowing on our farms by using either of the grades No. 1 or No. 2. In sowing seed that will barely grade No. 1 we are sowing in every bushel 4,800 noxious weed seeds, and 96,000 other weed seeds; while if we are sowing seed that will grade No. 2, we are sowing 19,200 noxious weed seeds, and 192,000 other weed seeds to the bushel. There is no wonder it is difficult to secure clean seed, when many are sowing seed that will only grade No. 3, and in so doing are sowing, on their farms from every bushel of seed, no fewer than 76,800 noxious and 384,000 other weed seeds.

Brant Co., Ont.

A. W. VANSICKLE.

Silo Questions.

1. I intend to build a concrete silo 12 ft. in diameter by 30 ft. high, (about 8 ft. in ground.) I may put 10 or 15-ft. of stone on top in a year or two. Would you advise putting a continuous door in same?
2. If so, how would door be constructed, (material), and how would reinforcing be fastened?
3. If not, what size of doors would you advise?
4. Would twelve inches thick at foot and 8 inches thick on top be strong enough, also how many loads or cords of stone would it be safe to put in this wall?
5. Would you advise concrete bottom in silo or not, if so should it be drained and with what size of drain?

V. C. P.

Ans.—1 and 2. Our preference is not for the continuous door although some like it. Rods span the door space and are hooked to the longer rods or wire used to reinforce the silo. In building a shoulder one and a half or two inches deep is left in the inner corners, and against these shoulders the ends of the short pieces of 1½ or 2-inch plank are placed, one piece above another as the silo is filled.

3. Our five silo-door spaces were made as follows: On every third ring we placed a mold made of 1½-inch boards, its dimensions being 27 inches high by 20 inches wide, on the interior edges and one inch higher and one inch wider along the exterior edges, so as to give the door space a flare outwards, facilitating the removal of the mold after the ring had been raised above it, and also contributing to appearance and convenience of use. To provide an offset into which the frame doors might be subsequently fitted, four 2x2-inch strips were lightly toe nailed around the outside of the interior edges of the mold, the two horizontal pieces at top and bottom being cut in the circle of the silo perimeter. The toe-nails holding these 2x2-inch strips were drawn each time before the mold was taken out. To bevel the exterior corners of the door openings, strips such as are used for laying corrugated roofing, were nailed around the outer edges of the mold. These do not require to be taken off for removed.

4. This thickness is greater than necessary. Ten inches at the bottom, tapering to six at the top, is plenty, if proper reinforcing is employed and the wall is built of good clean gravel and cement mixed 8:1, properly put up and moistened a few times if the weather is dry and hot. It is hard to say just how many loads of stone might be employed. One course around the ring may be imbedded, but that is all, and as the wall becomes thinner near the top only small stones must be used, if any are used at all. Each stone should be completely surrounded with cement and as soon as one course is covered

another may be placed. Several loads may thus be worked in.
 5. We like a cement bottom and recommend a drain especially in an unroofed silo. A line of ordinary 3-inch field tile is sufficient but should be screened with perforated metal plate, and it is probably well to have it trapped to prevent air getting into the silage. Our drain, however, has no trap and the need for it has not been demonstrated very conclusively.

The Influence of Heredity in Mangels.

In studying the relative feeding values of the more common types of farm roots, as determined by analysis, it was found by the Dominion Chemist, Frank T. Shutt, M. A., that greater differences might exist between two varieties or strains in the same class of roots than between the classes themselves. Thus, while averages taken season by season showed that mangels, as a class, contained more "dry matter" than carrots, the differences in this regard between many of the strains of mangels examined were frequently greater than between the aforesaid averages. It was further discovered that, arranging the varieties of any class according to their dry-matter content, much the same order was obtained season by season. These results seemed to point to certain inherited qualities and that, in spite of seasonal influences on the composition of the root, the relative value for feeding purposes of any particular strain, as compared with other strains or varieties in the same class, would be maintained from year to year. To obtain further information on this interesting point, which implies the transmission of characteristics of composition in roots, two varieties of mangels—the Gate Post or Long Red and the Giant Yellow Globe, were selected in 1900, as typical of the richer and the poorer varieties respectively. These have been grown every season since that time, side by side on practically identical soil, and with the same manure and culture, the harvested roots being analysed as to dry matter and sugar content. In the following tabular scheme are presented the data obtained, including those of the past season and the averages of the twelve years' results.

Season of growth	Gate Post		Sugar in juice Per cent.	Giant Yellow Globe		Sugar in juice Per cent.
	Average weight of one root Lbs. Oz.	Dry matter Per cent.		Average weight of one root Lbs. Oz.	Dry matter Per cent.	
1900	2 9	11.14	6.15	3 3	8.19	2.64
1901	3 2	9.41	4.15	3 9	9.10	4.08
1902	3 3	13.90	9.39	3 13	10.24	5.24
1903	2 14	12.93	7.38	2 13	10.89	6.17
1904	2 13	12.64	7.62	2 13	9.24	5.26
1905	2 2	12.07	6.83	3 12	8.64	3.55
1906	3 10	12.90	6.59	1 8	12.73	6.45
1907	1 11	12.53	7.25	2 7	10.78	6.34
1908	3 14	12.02	4.94	2 4	10.66	4.47
1909	6 8	11.82	6.64	3 7	10.95	5.82
1910	2 11	9.59	4.26	6 13	7.80	2.74
1911	2 11	10.04	3.86	3 1	6.66	1.85
Average for 12 years.....		11.75	6.26		9.66	4.55

It will be observed that while the differences in composition between the two varieties are, from year to year, by no means constant, the Gate Post has every season proved the superior root. Taking the dry-matter content as the basis of calculation, it will be found from the average of twelve years that the Gate Post mangel is approximately 20 per cent more nutritious, weight for weight, than the Giant Yellow Globe, or put otherwise, one ton of the former has the feeding value of 1 ton 427 lbs. of the latter. The average yields of these two varieties for twelve years (1900-1911) at Ottawa, as furnished by the Cereal Division, are Gate Post, 32 tons 758 lbs.; Giant Yellow Globe, 32 tons 713 lbs.; which goes to show that there is not much difference between these mangels as to cropping values. However, on calculation, using these averages as to yield and composition, the superiority of the Gate Post is readily seen, for from it 7,600 lbs. per acre of dry matter would be obtained, whereas from the Giant Yellow Globe, from the same area, there would be but 6,250 lbs.

The dry matter of mangels is completely digestible, or practically so, and is of very considerable value as a source of heat and energy to the animal by reason of its high sugar content. Comparing these varieties from this standpoint of richness in sugar, it is apparent, from the averages of the yearly analytical data, that in the Gate Post approximately 50 per cent. of the dry matter is sugar, while in the Giant Yellow Globe this percentage is 45, another indication that the Gate Post is the more nutritious variety.

A Boy's Essay on Growing Corn.

(Prizewinning essay by boy or girl under sixteen years of age, at the Ontario Corn Exhibition, 1913.)

PREPARATION OF SOIL

To grow a good crop of corn the first and most important thing is a thorough drainage of the soil. This can only be secured by tile drainage. The most important thing in tile drainage is to have a proper outlet. The tile should be placed about two or two and a half feet deep and not more than four rods apart, with a fall of about twelve inches in every forty rods. The field should be fall plowed and well furrowed, so all surface water will be carried off as quickly as possible. In the spring, as early as it can be worked, it should be well disced, harrowed, and furrowed. This will give all weed seeds time to germinate. About the middle of May it should be well disced, harrowed, and furrowed again, and is ready for planting. It should be planted about three feet eight inches apart, and with three kernels in a hill.

SELECTION AND TESTING OF SEED

The proper time to select your seed is in the fall before the corn is cut, but if it is impossible to do it then, it should be done while husking. In the selection of seed, the shape of ear, size of cob, depth of kernel, and germination are the most important features to be considered.

Before planting your corn it should be tested. Procure a large shallow box, mark it off into sections about one and a half inches square and number each section, then number each ear, take six kernels from different places of the ear and after putting some fine soil in the box place them in the section numbered the same as the ear. After the box is filled, about one half inch of fine soil should be placed over the corn. If kept in a warm place and moistened daily it should be well sprouted in four or five days. If the kernels germinate in that time and produce a strong, healthy plant that ear should be selected for seed. If they are slow to germinate, and produce small, weakly plants they should be discarded.

CULTIVATION.

As soon as the corn is three or four inches high the cultivator should be put to work. The

first cultivation should be at least three inches deep. The cultivator teeth should be set to throw the soil a little away from the corn. In four or five days it should be cultivated crosswise of the first cultivation and this time the soil should be thrown towards the corn. It should be cultivated once every week up to the time the corn tassels and begins to ear. After the corn is about three feet high the cultivation should not be more than two inches deep, for too deep cultivating at this time would cut the tender roots.

HARVESTING

As soon as the corn is well glazed it should be cut, and if cut with the binder should lie on the ground at least one day before shocking, to allow the fodder to wilt. If shocked immediately after the binder it will sometimes mold, and is much heavier to handle. It should be shocked with about fifteen bundles in a shock and securely tied about two feet from the top of the shock. As soon as the fodder is properly cured and the husks thoroughly dried, husking should be done, and while it is still in the field, if it is to be husked by hand, which is the better way, as the shredder shells a great deal of the corn which is more or less a loss.

STORING

As soon as husked the corn should be sorted while being loaded, all soft ears and nubbins should be separated from the good ears. After being properly sorted, it should be placed in a perfectly dry, and well ventilated place. The proper place to store corn is a crib, which should

be about five feet wide at the bottom, and seven feet on the top, and not more than eight feet deep.
 Essex Co., Ont. STANLEY PLANT.

THE DAIRY.

The Difference in Milkers.

Every observant dairyman knows there is a great difference in the amount of milk that may be secured from a cow by a quiet skillful, as compared with a loud, rough, unskillful milker. It is not merely a question of milking out dry. A cow that has not given over two-thirds her normal mess may have been milked dry to the point where no milker could extract anything more worth mentioning from her at that sitting. Quietness is important and so is skill,—the suppleness of the touch. Milk is largely secreted during the process of milking. If the touch of the milker's hand is uncomfortable to the cows teats and udder, or if his presence is disturbing, she will not give down all her milk. Feel her udder afterwards and you will find it more or less turgid. The materials for milk-making are probably there, but the fluid has not been secreted. Such a milker will soon shrink the flow, especially of a highly strung cow, and may permanently dry her up.

It is not enough, that a milker be quiet, nor yet that he be skillful. He must be both, and even then there will be slight variations in the results secured by various milkers from various cows.

As illustrating this latter point one of the most striking instances we ever heard of was reported recently in Hoard's Dairyman by O. E. Reed, of the Kansas State Agricultural College. A heavy-producing Holstein cow in the dairy herd of the Kansas Agricultural College, freshened in December and was milked for a time by man No. 1, who, after milking her for several weeks, left for a vacation. Man No. 2 took charge of the milking. The cow responded to his milking and gave as much as 81.4 pounds of milk per day. Her highest day previous to this was 70 pounds. Man No. 1 returned after a short time and again took charge of the milking. The cow began to decline in milk production at once, and fell as low as 64.2 pounds of milk per day. After six days man No. 2 was given charge of the milking and the cow began to make an increase in the flow of milk. The following shows the results obtained:

Average of six days by man No. 2, 76.11 lbs. milk.

Average of six days by man No. 1, 64.88 lbs. of milk.

Average of six days by man No. 2, 69.5 lbs. of milk.

Evidently man No. 1 could not get the cow to respond to his milking as well as man No. 2. For an average of six days the cow gave 11.23 lbs. less milk per day when she was milked by man No. 1. When man No. 2 took charge of her she showed an increase for the next six days of 4.62 lbs. milk per day. Man No. 2 has been milking the cow for two months and the production has never been as low as it was during the six days in which man No. 1 milked her. The influence of the changing of these milkers is really greater than the above figures show. By eliminating the two days immediately after each change, and taking an average of the last four days' milking in each period, we have the following:

Average for four days by man No. 2, 76.8 lbs. of milk.

Average for four days by man No. 1, 63.4 lbs. of milk.

Average for four days by man No. 2, 70.6 lbs. of milk.

The four days milking by man No. 2 would be the last four days he milked her before man No. 1 took charge. Two days were eliminated after man No. 1 took charge and the next four days give the average of 63.4. The average of 70.6 lbs. was made by eliminating the two days after man No. 2 again took charge and making an average of the next four days. The weather conditions and the feeding were approximately the same throughout the experiment. The above results show the importance of changing milkers until each milker is handling the cows which will respond to his milking. This is especially important in large herds where there are several milkers. The evidence is at hand to show that man No. 1 is an efficient milker, and he is able to get more milk out of some other cows in the herd than is man No. 2.

This experiment also shows the importance of keeping daily milk records. Some milkers will dry off cows in a herd and it will be done so gradually that it will not be noticed until the cow is nearly dry. If milk records were kept, such declines could be readily noticed.

Parturient Troubles in Cows. INVERSION OF THE UTERUS

Inversion or expulsion of the womb or uterus occurs more frequently in cows than in females of other classes of stock. It is due to relaxation of the uterine ligaments, and like other uterine troubles cannot be accounted for. The conditions or surroundings of the animals do not appear to have much effect in either causing or preventing the accident, except in the fact that cows standing in stalls which are considerably lower behind than in front are more liable to suffer than others. The inversion may be partial or complete. The symptoms are practically unmistakable. The patient may be either standing or lying, straining will be well marked, and a mass of tissue appears through the lips of the vulva, as straining continues the mass becomes greater until the whole organ becomes expelled and of course inverted. If seen when inversion is incomplete treatment is comparatively simple. The patient, if lying, should be got upon her feet and the mass washed and pressed into its place by careful and sufficiently strong pressure to return it. If the afterbirth be adherent it is well to remove it, providing it can be easily done, but if it be firmly attached it is better to wait a couple of days to allow the neck of the womb to contract sufficiently to prevent reinversion before severing it. After it has been returned it is good practice to put a couple of stitches through the lips of the vulva. For this purpose some strong cord, or slightly waxed shoemaker's hemp disinfected with a 5 per cent solution of carbolic acid, or silk sutures may be used. A narrow stall should be arranged, either with a false floor, or built up with manure or straw, or in other ways, so that it will be one foot higher behind than in front, and the cow kept tied to it for two or three days, or until straining ceases, then the stitches should be removed, and, if the afterbirth, be still retained, it should be carefully removed.

When inversion is complete, treatment is more difficult. In mostly all cases the patient is recumbent. If the afterbirth be attached it must be carefully removed, the womb well washed with a warm antiseptic as a 5 per cent solution of creolin or zenoleum in warm water, a rubber or other sheet placed under the womb to keep it clean, and then it must be returned. In returning it great care should be taken to not tare off any of the cotyledons (the lumps attached to the uterus) or press the fingers or hand through the organ. Any attempt to return it while the patient is lying, will, in most cases, result in one or both of these accidents. If she will rise the uterus should be supported by two assistants, one at each end of the sheet, while the operator, standing behind the cow will return the womb by commencing on the portion nearest the cow and working patiently and carefully, endeavoring to hold in with one hand that portion which he returns with the other, and when about two-thirds have been returned the remainder will be easy. When the patient refuses to rise, she must be suspended, or her hind quarters raised. This can be done by fastening the outside rings of a neck yoke or whiffletree to the hocks by means of straps, then hooking the end of a pulley rope or chain into the centre ring and raising her up until the hind parts are suspended and the patient resting upon her withers. Another plan is to build the hind part up with straw or timbers, but the pulley is the better when it can be procured. The womb can now be returned comparatively easily as she has little resistive power. When returned the above mentioned measure to prevent reinversion should be attended to and in some cases in addition to others a truss causing pressure upon the vulva is also applied for a day or two. She should be kept in the elevated stall for three or four days, at least until straining ceases. It is good practice to give her about forty drops of carbolic acid in a pint of cold water, either as a drench, or sprinkled on her food three times daily until all discharge ceases.

COW POX

Cow pox is a form of vaccinia peculiar to cattle. It affects the teats and udders, is contagious, and very easily spread in a milking herd, by direct contact, or by the hands of the milker carrying the virus from an affected to a healthy cow. In many cases its appearance in a herd cannot be accounted for. The symptoms are readily recognized, and in mostly all cases are strictly local, seldom causing constitutional disturbance. Outbreaks which are apparently spontaneous, occur among cows, especially when confined to close sheds, and shortly after calving. While we say the outbreaks are "apparently spontaneous" we believe that this is impossible, but it is often also impossible to explain how the virus was introduced into a herd. The first symptoms of the disease is a redness of portions of the teats and udder, at first somewhat diffused, but soon becoming localized in patches, accompanied by some pain and swelling. Small

hard nodules appear and increase in size until they attain about the size of a ten cent piece. This is called the papular stage. This is followed by the vesicular stage in which a quantity of serum forms extending from the centre rendering the parts bluish in color, though still surrounded by a congested ring. The central parts of the vesicles, however, do not become elevated, but generally remain slightly compressed. About the eighth or tenth day these vesicles attain their maximum development. Then follows the pustular stage which lasts two or three days, and then the contents of the pustule, if not liberated by rupture or lancing, and a peculiar brown scab remains for a varying length of time.

Treatment.—If extreme soreness be present the udder should be drawn off by the use of a milk syphon, but if not too sore milking by hand should be continued. If scabs form on the end of the teats they must be removed in order that milking may be possible, but when in other parts they should not be forcibly removed. The milk should not be consumed. The person who attends to the udder of a diseased cow should not touch that of a healthy one, except after he has thoroughly disinfected his hands. As the virus is not volatile isolation is not absolutely necessary. The application of an antiseptic ointment should be made two or three times daily. An ointment made of four drams boracic acid, twenty drops carbolic acid and two ounces of vaseline gives good results, and should be regularly applied until all scabs have been removed and no new areas are appearing. In rare cases inflammation of the udder may appear as a complication, in which case the usual treatment, which will be discussed later, should be given.

WHIP.



Dorothy.

A dairy Shorthorn, bred by Lord Rothschild. She won first milking prize at Barnham, Spencer, and the Lord Mayor's Challenge Cup at the London Dairy Show, 1908. Her first calf was dropped in 1903, and from that date until Sept. 30, 1912, she gave 89,582 lbs. of milk, or an average of 9,953 lbs. yearly for nine years.

Pasturized-Sweet-Cream Butter Keeps Well.

Two hundred and seventy-seven samples of butter made from pasteurized sweet cream packed for the United States Navy last spring and summer were recently opened and examined by experts at the American Department of Agriculture after having been kept in cold storage for from seven to ten months, and were found to be of fine quality, being graded as "extras," the highest market grade.

The United States Navy requires about 600,000 pounds of butter annually, which must be of high grade and good keeping quality, as it is sometimes necessary to provision a fleet for a cruise of several months which may extend to tropical waters. The specifications call for fresh butter, made during the early summer from pasteurized sweet milk or cream; it must be strictly "extra" in grade when scored at the time of packing; the moisture must not exceed 13 per cent in tinned butter and 14 per cent in tub butter; and there must be no preservative other than common salt, the quantity of which must be between the limits of 2½ and 3¼ per cent at the time of packing. The entire process of manufacture, packing, etc., must meet the requirements of the Dairy Division inspectors, who have authority to reject any product that is not up to the standard.

Navy butter in 1912 was all packed in 5-pound tins, which are lacquered both inside and outside and hermetically sealed. This butter was produced in five different creameries.

Samples from cold storage were scored when from seven to ten months old. The scoring was

done by three experts independently, and the average scores ranged from 91 to 92½, the butter thus being in the grade known as "extras." The experts all agree that it was a fine lot of storage butter, well made and very uniform.

The scientists of the Dairy Division have for several years been conducting experiments in making butter from pasteurized sweet cream as compared with that made from ripened or sour cream, and the results have demonstrated that butter made from sweet, pasteurized, clean-flavored cream is superior in quality and will keep longer in storage than butter made in the ordinary way.

Cow manure is the very worst kind of dirt so far as the contamination of milk is concerned. Fancy quality of butter is made from clean sweet cream and can only be produced by the co-operation of all concerned.

POULTRY.

Poultry Experience.

Editor "The Farmer's Advocate."

Having had good success with my flocks of hens this winter perhaps my methods of feeding and care might be of interest to other hen fanciers.

I have two houses holding flocks of about fifty-five hens in each. The houses consist of scratching-pens and roosting rooms. They are separated by a narrow doorway that can be closed at night during extremely cold weather. In the scratching pens I endeavor to keep a foot in depth of litter, a box of ashes in front of a window for a dust bath, a hopper containing oyster shell, gravel and charcoal in different compartments.

My hens are Orpingtons and Mottled Anconas, both breeds being kept pure. The Anconas are proving themselves great layers and healthy, hardy birds.

As to my methods of feeding I like to get the best results with the least labor. Rolled oats are kept in a hopper continually before the hens. This is the staple food used. Every morning about four quarts of wheat and corn are thrown in the litter and the litter is then piled up in a heap. This keeps the hens busy all day. No hot mash or other food is given. The drink has been sweet skim

milk direct from the separator.

A pocket made of chicken netting about three feet high and four feet long is nailed on the wall with the top open. This is kept filled with alfalfa clover. The hens soon strip off the leaves and it is then replaced with a fresh forkful.

The little red mites that infest the roosts and suck the blood from the hens at night are fought with coal oil and hot whitewash. Coal oil is poured directly on the roosts and care is taken to reach all crevices where the mite could hide. Hot whitewash is applied with a spray pump, and roosts, walls, floor and ceiling are all covered. This effectually rids the hens of the mites. For the body lice which live on the hen I have found an application of fish oil applied in a ring around the vent to be very efficacious. Apply it liberally and the hen will soon be free of lice. At first I used common machine oil for this purpose. It killed the lice but blistered the hens and shut off the egg supply for some time.

During past winters I have had much trouble with feather eating, different remedies such as sulphur and fresh meat were tried with varying success. This winter I have had no trouble whatever, and I attribute my freedom from trouble of this kind to the skim milk given as a drink.

I have been told that feather eating was due to a lack of animal food and that I should feed some form of meat. That winter a sheep died, I carted a liberal portion up to the hens. They attacked it and ate ravenously. The taste of the fresh mutton seemed to madden them and they went for one another and several hens were killed and eaten by those cannibals before I looked in and found what was happening. I immediate-

ly drove the whole flock out into the snow and thus stopped the slaughter for the time being. But that was the last mutton I ever fed to hens. The hens themselves were pure-bred Buff Orpingtons, but any other breed would probably have done the same under similar circumstances. Another experience may prove amusing to "Advocate" readers. One spring I had a nice flock of white Leghorns which were laying well. The egg production began to shrink without any apparent cause. I examined the hens and found them to be lousy. Being at that time only a novice I scarcely knew what to do. I knew creolin would kill lice on sheep so why not on hens? Accordingly I mixed up a good big tub full of warm water and creolin and dipped those hens into it right up to the eyes. That evening the weather turned cool and when I went into the roosting room to see how those hens were doing their breathing sounded like the rushing of a spring flood. I bundled them into crates and dumped them all down by the furnace in the house before a roaring fire. They were a shaky looking crowd and looked the very picture of misery. I left a good fire on and went to bed. In the morning when I woke up the first sound I heard was the poultry cackling and crowing. The hens were all nicely dry, but I never tried any more creolin baths. I might say that those hens were free from lice for the whole summer, but egg production was completely stopped for nearly a week after the dipping.

My fowl are all hens hatched and reared on a free range by the colony house system. Self-feeders and drinking-fountains are used to lessen the labor of feeding. For the first few weeks of their lives they are kept in the vegetable garden, where the freshly stirred soil provides them with animal food. When large enough to prove troublesome they are moved into the orchard, where there is a cover crop of rape. It is surprising what a quantity of this the chickens will eat. At the approach of cold weather the pullets are moved into their permanent houses there to be confined till warm weather the following spring.

Middlesex Co., Ont.

W. E. WILLIAMS.

Instructions on Turkey Raising.

Editor "The Farmer's Advocate":

Will the editor of the poultry department kindly give the readers some information about "turkey." We do not mean the "unspeakable Turk." Every daily paper tells us more than we care to know about him. We refer to that most beautiful and profitable domestic bird. Has the cackling hen with her money-making "winter egg basket" entirely crowded out our turkey? Seriously I've carefully searched back-numbers of "The Farmer's Advocate" for the last three years (have been a careful reader and always keep them) and I only found two short paragraphs relating to the care of turkeys. Now will the editor of the poultry department kindly furnish us with some information with regard to the proper care, rearing, and general health of young birds, prevention of sickness or treatment of ailing birds.

Some years ago I always was quite successful with turkeys, seldom losing any, then they began to take sick, more especially after August or when haying was over and the fields were clean so they could go anywhere, loss of appetite, birds dull and stupid, droppings white or yellow, many dying, next year was the same. I killed off all I had, on examining birds that had died I found liver "spotted" just as I since read about.

Have not kept any now for three years, but now that ground, etc., is all clean, intend to purchase new stock, and wish for information so that I can make turkey raising a success.

Here near St. John, our winter port, one can get almost any money for good turkeys about Christmas time, or before the steamers sail on the Christmas trip. A neighbor of mine, who has always had fine flocks of turkeys, had last spring a flock of over fifty, they all did finely until after haying, when some began to droop, walk slow, and stand with drooping wings, and all the other symptoms that show "blackhead," to any who have studied the disease, they kept on dying all fall, she had never lost turkeys that way before, and could not make out what ailed them. In going through the hay fields they sometimes ate off the green buckwheat that grew next to the hay land, but never stayed long at it. Would that bring on the disease? She knew nothing of "blackhead" or "spotted liver," but I'm satisfied that was the trouble. Last spring she bought a fine male bird from stock lately imported from Ontario, he was one of the first to die, and I expect he brought the disease with him.

I should like to state here that having written to Dr. C. H. Higgins, I received valuable information from him, also from A. G. Gilbert, Dominion Experimental Farm, but still I look to

"The Farmer's Advocate" and hope the readers of the poultry department will soon see a good column of advice about the care of the turkey.

In concluding, where can one buy good stock that will likely do well on farm where there are large pasture fields with heaps of grasshoppers and crickets down this way? "The Farmer's Advocate" has many readers and is highly esteemed. Wishing it continued success I hope to remain in the future as I have been the past ten years.

Queens Co., N. B.

A. McD.

[Note.—Either some copies are missing from our correspondent's file, or else she has overlooked several of the articles that have been published. Without attempting a complete bibliography of these, we might mention a few. A column on turkeys appeared in our issue of June 30th, 1912. A good article on "Care of Turkeys" was contributed by a correspondent in October 24th. "Care of Young Turkeys" and "Rearing Turkeys" appeared in May and June, 1911. "Success With Turkeys" was published in August, 1910. Besides these we have had various practical items on blackhead, marketing, etc. The subject is again lively, however, and experience of successful turkey raisers is in request. If contributors fail to cover the ground, we shall add a few points in good season.—Editor.]

GARDEN & ORCHARD

Varieties of Vegetables for the Farm Garden.

The farm garden should be one of the main sources of delicacies for the table during the entire summer season. There is no reasonable excuse why every farm should not be able to boast of an excellent vegetable garden as land is available and fresh vegetables pulled directly from the home garden a half an hour before meal time are much to be preferred, are cheaper and more desirable than those bought on the market or at the grocery.

As with all the more important farm crops variety has a considerable bearing upon the results obtained with garden crops. There are many classes of crops with early and late varieties, and where possible the best of each should be used. We do not attempt to name all the good varieties. Many must be omitted from an article of this kind, but a few of the leading varieties of each of several different kinds or classes of vegetables are interesting at this season.

There are two score vegetables which every garden should give a place,—asparagus, beans, beets, cabbage, cauliflower, carrots, corn, celery, citron, cucumber, lettuce, onions, parsnips, peas, potatoes, pumpkin, radish, salsify, squash and tomatoes. These are not all the good things but are the most important. Other valuable plants, where they succeed, are melons, (water and musk,) parsley, peppers, rhubarb, spinach, turnips, vegetable marrow, egg-plant, kohlrabi, and perhaps Swiss chard and Brussels sprouts. With these added the grower has quite a complete list, and where the garden is so laid out as to be able to accommodate them all, and where soil and climate are suitable all may be profitably produced.

Taking the regular list in alphabetical order we find asparagus first. This is a perennial plant requiring a deep rich soil and should find a place in far more farm gardens than it does. Three of the very best varieties are Conover's Colossal, Argenteuil and Palmetto. The first named is most widely grown although Palmetto is said to be very hardy.

To all those who have a taste for vegetables green beans are especially appetizing. This is an annual warm-weather crop which should not be planted too early and which does best on a fairly light loamy soil. Keeney's Rustless Golden Wax, Detroit White Wax, German Stringless, Stringless Green Pod, Valentine and Wardwell's Kidney Wax are best for summer use, while in southern sections Burpee's Bush Lima may mature for autumn use.

Beets for early use should be sown as soon as possible in the spring and for winter use about June first. A rich soil is best. For extra early try Egyptian Turnip, then for early, Early Model, Eclipse and Black Red Ball are the best. For later use Detroit Red and Long Smooth Blood give good satisfaction.

Cabbage should be started in the hot-bed early in March. Jersey Wakefield and Winningstadt are the two best early varieties, while for late use All Seasons, Danish Round Head, Flat Dutch and Savoy are among the best. Mammoth Rock is a good red variety.

Cauliflower is not so commonly grown as cabbage but should find a place in every garden. Extra Early Erfurt and Early Snowball are two of the best varieties.

Of carrots, Chantenay is the best with Danvers and Rubicon following closely. Two sowings should be made one very early and another about June first.

Who does not enjoy eating green corn? Everybody wants it early and late. The king of all early varieties is Golden Bantam with Early Cory a good second. For later, Country Gentleman and Stowell's Evergreen are among the best.

Another crop which should be started in the hot-bed in March is celery. Try some White Plume of Golden Self-blanching for early, Paris Golden Yellow for medium and for late Giant Pascal, Evan's Triumph or Winter Queen.

A crop to plant in hills 6 to 8 feet apart, when all danger of frost is over, is the Citron and the best variety Colorado Preserving.

Another hill crop is the cucumber, Davis' Perfect and Cumberland are the best for slicing, and Westerfield and Chicago Pickling are good for pickling.

Lettuce, the delicious vegetable which may be sown in rows as soon as land is fit to work, is a crop of many varieties, but Grand Rapids, Black-seeded Simpson, Hanson, Big Boston and Paris White Cos are among the best.

Onions, another crop to be sown early, has for best varieties, Yellow Globe, Danver's, Prizetaker, Red Wethersfield, Southport Yellow Globe and Southport Red Globe.

Parsnips should be sown early, and two good varieties are Hollow Crown and Guernsey.

Peas should be sown at different times, or early, medium and late varieties. For early try Extra Early, Alaska, or Nott's Excelsior. Medium: Gradus. Late: Advancer, Strata-gem.

Potatoes early and late should be extensively planted in every garden. For early: Early Eureka, Early Ohio, Early Fortune and Irish Cobbler. Late: Empire State, Rural New Yorker, Delaware, Carman No. 3.

Pumpkin: Sugar is best for pies. Jumbo is another good variety.

Radishes are a crop which for best results require sowing at intervals throughout the season. Rosy Gem, Scarlet Turnip, White Tip, French Breakfast and White Icicle are among the best early kinds; while Scarlet China and Black Spanish are fine for winter use.

Salsify, or vegetable oyster is a delicious vegetable, and Mammoth Sandwich Island a good variety.

Squash,—Summer: Crookneck and White Bush Scallop. Winter: Hubbard.

Tomatoes,—Early: Earliana and Wealthy. Medium: Chalk's Jewel. Late: Stone and Success.

Of the less common but profitable vegetables the musk melon and water melon are easily grown and make very fine dessert. Of the former Rocky Ford or Emerald Gem, Hackensack and Montreal Market are good and of the latter, Hungarian Honey and Cole's Early are the most likely to ripen in these northern districts.

Rhubarb, a perennial plant valued for pie-making is easily grown in a corner of the garden and Victoria and Raspberry are two of the best varieties.

Spinach,—Victoria, Virofly, Bloomfield.

Turnips,—Early: Extra Early Purple-top

Milan, Golden Ball. Late: Swedes.

Vegetable Marrow,—Long White Bush and English Vegetable Marrow.

Egg Plant,—Black Beauty and New York Improved.

Kohlrabi,—Early White or Purple Vienna.

A Romance in an Apple Orchard.

Ben Davis was an awful flirt, he was a Tall-man and a handsome native of Spitzenburg, Holland, he became hopelessly smitten on Bellflower, who looked like a Duchess dressed beautifully in Russett gown, his attentions to her were so sweet that he made the Maiden Blush.

Now she was engaged to another Mann, although he was a Baldwin he was Wealthy as a King, and when he was advised of this he Swear, and with rage turned white as Snow, and nearly took an Apple-ptic fit.

He at once engaged a Spy, who informed him that he need Seek No Further for her affections.

He immediately left Ontario for a Newtown down on the St. Lawrence, there he met a Rome Beauty, and now he declares there are Nonsuch as she.

Wentworth Co., Ont.

L. H. CAREY.

THE FARMER'S ADVOCATE.
SPRAY CALENDAR.

FOUNDED 1866

REVISED UP TO DATE FOR "THE FARMER'S ADVOCATE" BY L. CAESAR, O.A.C., GUELPH.

PLANTS AND PEST.	1st APPLICATION.	2nd APPLICATION.	3rd APPLICATION.	REMARKS.
APPLE. Scab or black spot, canker, leaf spot, codling moth and other biting insects, scale insects, blister mite and aphids.	Shortly before the buds burst. Use A1 or B.	Just before the blossoms open. Use A2 or D, with 2 or 3 lbs. arsenate of lead to each 40 gals. of the liquid.	Immediately after the blossoms have all, or nearly all, fallen, and before the calyces close. Use A3 or D, with 2 lbs. arsenate of lead to each 40 gals. This is the application for codling moth.	Cut out, disinfect and paint or cover with coal tar, cankered areas on trunks and large branches. In moist climates, or if the weather is wet or foggy, give a 4th application with A3 or D for Scab about two weeks after 3rd. If late summer is cold and damp, spray again in August with A3 or D for scab or sooty fungus. See if aphids are present just before leaf buds burst; if so, spray at once with Black Leaf 40 or kerosene emulsion or whale-oil soap. Black Leaf 40 may be used with lime sulphur.
PEAR. Scab or cracking, blight, codling moth, other biting insects, scale insects, blister mite, psylla and slug.	Shortly before the buds burst. Use A1 or B.	Just before the blossoms open. Use A2 or D, with 2 or 3 lbs. arsenate of lead to each 40 gals. of the liquid.	Just after blossoms have fallen. Use A3 or D, with 2 lbs. arsenate of lead to each 40 gals.	Cut out and burn blight as soon as seen, cutting always one foot or more below diseased areas. Disinfect tools after each cut. For fungous disease spray as outlined above for apple. For Psylla, spray thoroughly with A1 or B just after buds burst, or with Black Leaf 40 just after leaves open. For slugs spray with arsenate of lead or dust fresh air-slaked lime over the leaves.
PLUM AND CHERRY. Black-knot, brown rot, leaf blight or shot-hole fungus, curculio, slug and aphids.	Just before the buds burst. Use A1 or B.	Just after fruit is set. Use A2 or D, with 3 lbs. arsenate of lead to 40 gals.	About two weeks later. Use A3 or D, with 3 lbs. arsenate of lead to 40 gals.	Watch for black-knot, cut out well below diseased area and burn. If leaf blight is troublesome, give a 4th application with A3 or D as soon as fruit of cherry is picked. Destroy mummied plums in autumn. Look for aphids just before buds burst, and if present spray at once with Black Leaf 40 or kerosene emulsion or whale-oil soap. May use Black Leaf 40 with lime-sulphur. Treat slug as on pear.
PEACH. Leaf-curl, scab or black spot, yellows, little peach, curculio, borer, San Jose scale, shot-hole borer.	Before the buds begin to swell. (All must be done before any sign of bursting of buds.) Use A1 or B.	Just after fruit is set. Use 2 or 3 lbs arsenate of lead, and 1 or 2 lbs. freshly slaked lime to 40 gals. of water for curculio.	About one month after fruit is set. Use C.	If brown rot is likely to be troublesome use C again about one month before fruit ripens. Destroy mummied fruit in autumn. Remove at once and burn any tree attacked by yellows or little peach and also all suspected trees. Dig out borers at base of tree with knife in May and again in October. For shot-hole borer cut down and burn before April all dead or dying trees or branches, and leave no brush heaps near orchard.
GRAPES. Black rot, powdery mildew, downy mildew, anthracnose, flea-beetle, thrip or leaf hopper.	When 3rd leaf is appearing. Use D.	Just before the blossoms open. Use D.	Just after fruit sets. Use D.	Spray again whenever wet weather threatens. It should always be done before, not after rain. At first sign of powdery mildew dust with sulphur or spray with C. For flea-beetles use poison whenever they appear. For leaf-hoppers or "thrips" use Black Leaf 40 or kerosene emulsion or whale-oil soap in July to destroy nymphs. Clean cultivation is very important, and destruction of all old mummied grapes and prunings.
CURRENT AND GOOSEBERRY. Mildew, leaf-spot, currant worm and aphids.	Shortly before buds burst. Use A1 or B.	Just before blossoms appear. Use A2, with 2 lbs. arsenate of lead to 40 gals.	Just after fruit is formed. Use A2, with 2 lbs. arsenate of lead to each 40 gals.	For worms when fruit is ripening, use hellebore. Look for aphids just before buds burst; if present spray with Black Leaf 40 or kerosene emulsion or whale-oil soap. Of little use to spray for these after leaves curl.
RASPBERRY AND BLACKBERRY. Anthracnose, red rust, crown gall.	Before growth begins. Use D.	When shoots are 6 or 8 inches high. Use D, and add poison if caterpillars are present.		If anthracnose is very severe, set out new plantation of healthy shoots. If disease begins, cut out old canes as soon as fruit is picked, also badly-attacked new ones, and burn. For red rust, remove and burn plants at once. No other remedy. For crown gall set out plants in fresh soil, rejecting any plant with a gall on root or crown.
STRAWBERRY. Leaf-spot and white grub				For leaf-spot set out only healthy plants with no sign of disease. First season spray with D before blossoms open and keep plants covered with mixture throughout the season. Second year spray before blossoming with D and again soon after picking; or mow and burn over after picking. Don't take more than two crops off. Plow down at once after second crop. For white grubs dig out as soon as injury is noticed. Do not plant on land broken up from old meadow or pasture for at least three years after breaking.
BEAN. Anthracnose and bacterial spots.				Get seeds from pods showing no signs of disease. Do not work among the plants if they are wet with rain or dew. Spraying scarcely pays as a rule.
CABBAGE AND TURNIP. Flea-beetles, caterpillars, root maggots, aphids.				For flea-beetle on turnip sow after June 21st, or dust plants as soon as they appear above ground with Paris green, or spray with Bordeaux and a poison and a sticker. Repeat in two or three days. For caterpillars dust with Paris green until heads begin to form on cabbage and cauliflower, then spray with pyrethrum, 1 ounce to 2 gallons water. For root maggots use medium thick tarred paper discs, putting on as soon as plants are set out, or set out plants after July 1st. For aphids use kerosene emulsion as soon as they appear, or 1 lb. common laundry soap dissolved in 4 gallons water.
POTATO. Tip burn, early blight, late blight, scab, Colorado beetle, flea-beetle.				Keep foliage covered with D from time plants are about 5 inches high. Take special precautions to see this is well done if weather is at all damp after about 15th July, as late blight begins about this time. Add a poison to each application when necessary. For scab, soak tubers before cutting 2 hours in formalin solution, 1 pint of formalin to 30 gallons of water. Spread out on grass to dry. Wash all boxes, bags or other vessels to be used in same liquid. Plant none but perfectly healthy tubers.
TOMATO. Leaf blight, black rot, flea-beetle.				Spray plants in seed-bed with D. Keep foliage in field covered with D until danger of staining fruit. Add a poison if necessary for flea-beetles.
ASPARAGUS. Rust, beetles.				For rust, let no plants, not even wild ones, mature during cutting season. Late in fall when growth is about over, cut and burn old plants. For beetles, let poultry run in the plantation. After cutting season is over spray with arsenate of lead; repeat in two weeks. May add sticker and a little lime.

NOTE.—A1—Concentrated lime-sulphur, strength 1030 specific gravity (1032 for San Jose scale)—commercial 1 gal. to about 8 gals. water.
 A2—Concentrated lime-sulphur, strength 1009 specific gravity = commercial 1 gal. to from 32 to 35 gals. water.
 A3—Concentrated lime-sulphur, strength 1008 specific gravity = commercial 1 gal. to from 35 to 40 gals. water.
 B—The old home-boiled lime-sulphur, 20.15.40 formula.
 C—Self-boiled lime-sulphur.
 D—Bordeaux mixture, 4.4.40 formula.

Formulæ for Insecticides.

1.—POISONS (for biting insects only).

1.—ARSENATE OF LEAD—2 or 3 lbs. to 40 gallons liquid spray; 3½ lbs. for potato beetles.

2.—PARIS GREEN—(a) ¼ to ½ lb. to 40 gals.; 1 lb. for potato beetles. If used with water alone, add 1 or 2 lbs. fresh lime. (b) 1 lb. mixed with 50 lbs. land plaster, air-slaked lime or some similar substance, for dusting on plants. (c) Poisoned bran, mix 1 lb. Paris Green with

50 lbs. bran moistened with sweetened water. Scatter in evening on soil by plants for cut-worms.

3.—ARSENATE OF LIME—Boil 1 lb. white arsenic and 1 lb. sal soda (crystals) with stirring for about 15 minutes in 1 gal. water

till all the arsenic is dissolved, then add 2 lbs. stone lime and let slake in boiling liquid. Add water to make up for what has evaporated. One quart of this when well stirred is sufficient for 40 gals. spray liquid. Arsenite of lime can be made in large quantities and stored. Label barrel "poison", and be careful to keep white arsenic itself labeled "poison." Keep barrel covered to prevent evaporation. Stir well before using.

N. B.—With Bordeaux, 1, 2 or 3, may be used; with commercial lime-sulphur only 1; the others cause burning.

4.—WHITE HELLEBORE—One oz. to 2 gals. water, or dust undiluted over the plants. For root maggot dust close to plants, or pour round roots.

II.—CONTACT POISONS (chiefly for sucking insects).

1. KEROSENE EMULSION—

- Kerosene (Coal Oil) 2 gals.
- Rain water 1 gal.
- Soap ½ lb.

Dissolve the soap in water by slicing and boiling; take from fire, and while hot pour in kerosene and churn vigorously for five minutes. For use dilute with 9 parts of water, so that the above 3 gals. of stock emulsion will make 30 gals. of spray mixture.

2.—WHALE OIL SOAP.—For brown or black aphids, 1 lb. in 4 gals. For green aphids, thrip and leaf-hopper, 1 lb. in 6 gals.

3.—TOBACCO WATER.—Steep 1 lb. refuse tobacco in 2 gals. of water for 1 hour, make up for water that evaporates.

4.—Black leaf 40 sold by Tobacco Product Co., Louisville, Kentucky. Directions on the cans.

5.—PYRETHRUM (or insect powder).
Pyrethrum Powder 1 oz.
Water 2 to 3 gals.

Dry mixture. Mix thoroughly 1 part by weight of pyrethrum with 4 of cheap flour, and keep in air-tight vessel for 24 hours before dusting over plants.

Note: Pyrethrum is useless if left exposed to the air.

6. LIME SULPHUR WASH.
(See under fungicides.)

Formulae for Fungicides.

I.—BORDEAUX MIXTURE:

- Copper Sulphate (Bluestone) 4 lbs.
- Unslaked Lime 4 lbs.
- Water 40 gals.

Dissolve the copper sulphate in a wooden or brass vessel with hot water, pour into a barrel and add cold water to make 20 gals.; slake the lime, preferably with hot water; add cold water to make 20 gals. Stir both barrels well, and pour lime into the copper sulphate barrel. (Never mix concentrated milk of lime and copper sulphate solutions.)

A stock solution of each may be made and kept indefinitely if not mixed. Dissolve 40 lbs. copper sulphate in 40 gals. of water by suspending just below the surface of the water in a coarse sack. Each gallon of the liquid will now contain 1 lb. copper sulphate. Slake any desired quantity of lime and put into a box or barrel in shaded place, or sunk in the ground. Keep covered with small amount of water to exclude the air. Calculate how much is required for 4 lbs. lime if well stirred.

To test Bordeaux mixture, let a drop of ferrocyanide of potassium solution fall into a little of the mixture in a saucer, when ready. If this causes it to turn reddish brown, add more lime until no change takes place.

II.—LIME SULPHUR WASH.

1.—HOME BOILED (for use on dormant wood only).

- Fresh stone lime 20 lbs.
- Sulphur (flour or flowers)..... 15 lbs.
- Water 40 gals.

Slake 20 lbs. of lime in about 15 gals. boiling water in a kettle or other boiling outfit. While slaking add the 15 lbs. sulphur made into paste by the addition of a little water. Boil vigorously, with stirring, for 1 hour. Dilute to 40 gals. with cold or hot water. Strain and apply at once.

2.—HOME MADE CONCENTRATED LIME-SULPHUR—This may be used as a substitute for commercial lime-sulphur, but is only about two-thirds as strong as a rule.

- Sulphur (a fine grade)..... 100 lbs.
- Fresh stone lime, high in percentage of calcium 50 lbs.
- Water 40 or 50 gals.

Put about 10 gals. water in the boiling outfit, start fire, add sulphur, stir to make paste and break lumps, then add remaining water,

and when near boiling put in lime. Stir frequently while slaking until all the sulphur and lime are dissolved. Add water from time to time to keep up to 40 or 50-gal. mark. Boil 1 hour, then strain through a screen of 30 meshes to inch into storage barrels. Make enough at once for a season's work. Cover well to keep out air, or pour oil of any kind over surface to depth of ½ inch for same purpose.

To determine how much to dilute for different applications use an hydrometer with specific gravity readings, and apply the following rule:

Put the hydrometer in the clear liquid when it is cold and the sediment has all been settled for a day or two. Note the number to which it sinks. Suppose this is 1240. The strength for use before the buds burst should be 1030 or slightly stronger. To determine how much to dilute a strength of 1240 to get 1030, divide the three figures to the right in 1240 by 30, that is 240 divided by 30=8. This means that each gallon of such a wash must be diluted to 8 gals. with water to give us a strength of 1030, the proper spring strength. For the second application 1009 is about the right strength. To get it divide the 240 by 9 which gives 26⅔, or roughly speaking 27. This means that each gallon of wash of the strength of 1240 must be diluted to 26⅔ or 27 gals. to make the right strength for the second application. For the third application and any later ones 1008 is about the right strength and to get this we proceed in the same way and divide 240 by 8=30, so that each gallon must be diluted to 30 with water for this application. If the strength of the concentrated were 1212 or any other number, you would in the same way divide the three figures to the right by 30, 9 and 8 respectively to get the proper dilutions for each spraying.

TABLE FOR CHANGING BEAUME READINGS INTO THEIR EQUIVALENT SPECIFIC GRAVITY READINGS.

Beaume.	Specific Gravity.	Beaume.	Specific Gravity.
18	= 1141	27	= 1230
19	= 1150	28	= 1240
20	= 1159	29	= 1250
21	= 1168	30	= 1260
22	= 1178	31	= 1271
23	= 1188	32	= 1282
24	= 1198	33	= 1293
25	= 1208	34	= 1305
26	= 1219	35	= 1317

Note.—Commercial lime-sulphur should be tested with the hydrometer and diluted according to the same rules as the home-made concentrated form.

3.—SELF BOILED (chiefly for use on peach foliage).

- Fresh stone lime 8 lbs.
- Sulphur (flour or flowers)..... 8 lbs.
- Water 40 gals.

Best prepared in quantities of 24 lbs. at a time to get sufficient heat. Place 24 lbs. lime in a half barrel, add enough cold water to start it slaking well and to keep the sulphur off the bottom. Dust the 24 lbs. sulphur over the lime, having first worked the sulphur through a screen to break lumps, then add whatever further amount of water is necessary to complete the slaking. Stir well with a hoe to prevent the lime caking on the bottom. As soon as the slaking is over, add enough cold water to cool the whole mass and prevent further combination. Strain into spray tank. Keep well agitated while spraying.

III.—DISINFECTANTS (for pruning tools and for wounds on trees):—

1.—One pint formalin diluted to 2 gals. with water;

1.—Corrosive sublimate, 1 part to 1,000 by weight=1 tablet to 1 pint of water. Apply with a swab on end of a stick.

CAUTION.—Corrosive sublimate is a deadly poison to man or beast if taken internally. It will also corrode iron or metal, so use in a glass or wooden vessel and be sure to wash these out very thoroughly when through using them.

3.—Lime-sulphur about twice spring strength, or bluestone, 1 lb. dissolved in about 4 gals. water, may be used to disinfect wounds or cankers, but is not satisfactory in case of Pear Blight.

STICKER

- Resin 2 lbs.
- Sal Soda (crystals) 1 lb.
- Water 1 gal.

Boil together till a clear brown color which takes from 1 to 1½ hours. Cook in an iron kettle in an open place. Add the above to 40 gallons Bordeaux, for use on smooth

foliage like onions, cabbage or asparagus. If used with arsenate of lead, Paris Green, or arsenite of lime, add 1 or 2 lbs. of fresh lime to every 40 gallons of spray.

Fruit Growers' Organizations Active

A great deal of interest has been shown along co-operative lines during the past winter, according to P. W. Hodgetts, Director of the Fruit Branch, of the Department of Agriculture, for Ontario. This, he says, is undoubtedly due to the poor prices received by independent growers in the fall of 1912. While the poor markets will undoubtedly seriously check the planting of orchards, it has had just the opposite effect on organization work in connection with the fruit growing business. There have been already organized, or are now in process of organization or re-organization, over a dozen associations. Middlesex County, which has been very much behind in the movement, is alone responsible for a list of five. Ancaster Township formed a strong committee and has, we understand, decided to unite with the Wentworth Association under the management of Lorne Carey. Oakville, at one time a prosperous concern, has now re-organized with splendid chances for doing good work both with apples and small fruits. Lambton County is continuing its organization in the fruit sections, with likely two more entirely new concerns. The men at Amherstburg have also got together and completed preliminary organization. A small association was started at Inwood a year ago, and has excellent chances for strengthening its membership this year. An organization meeting is to be called at Salem, between Brighton and Colborne, in the course of a few days, and as there are good men concerned with it the movement will likely succeed. Other points that will be in line for 1913 are Walkerton and Formosa, in Bruce County, and St. Davids, in Niagara Township.

A number of the older associations are taking out the incorporation papers, so as to strengthen their organization, and a full list of the associations now organized in Ontario, shows the large number of fifty. Altogether the outlook is very favorable for a remarkable increase in the number of these shipping associations. We only hope that in the individual cases attempts will not be made to start on too large a scale, and if good fruit is provided by the members and an efficient manager appointed, there should be little cause for failure in any section of the Province. The question of marketing will, of course, become a very important one, and it is hoped that the central association will be able to make a step forward so as to handle the sales for as many of the associations as find that they will require that assistance.

APIARY.

Should Farmers Keep Bees?

Editor "The Farmer's Advocate":

Being a close reader of "The Farmer's Advocate," I have been following with much interest the discussion on "Should Farmers Keep Bees." As I am a farmer and in a position to know something of farming in general, also some of its sidelines, such as bee-keeping, apple-growing, and, to an extent, the growing of small fruits, I would say that the farmer is just the man who should keep bees. Considering the time spent and money invested, I claim that bee-keeping will yield a greater profit than any other sideline on the farm.

By working into sidelines, the farmer will put himself in a position to not only employ but keep good labor, because he can afford to give good wages, also a few comforts, and at the same time make work for employer and employee. If these sidelines are properly managed the employer will find time to superintend the work of the farm and to help his employee in busy times, such as seeding, haying and harvesting.

In considering the financial part, Mr. Pettit's report of forty-nine experimenter showing a dividend of fifty-eight per cent I am sure is a very fair estimate, and it is safe to say that an average lot of bee-keepers sent in reports.

In my own case my average for 1910 was 120 lbs. of honey per colony; in 1912, 64 lbs. per colony, spring count. In 1910 and '11, I did no feeding. In 1912 I fed 1,600 lbs. of sugar at \$5.50 per cwt., which was an average of 11 lbs. per colony or at a cost of about 60 cents a colony. This does not include the work which I did myself. Two cents per lb. would pay all other expenses. The following will show my profit per colony for three years:

1910, 120 lbs. at 9 cents=\$10.80—.02 per lb. =\$.84, average per colony.
1911, 120 lbs. at 9 cents=\$10.80—.02 per lb. =\$.84, average per colony.
1912, 64 lbs. at 11 cents=\$7.04—.02 per lb. and 60 cents for feed=\$5.16, average per colony.

For the three years my average is \$7.32 per colony. I also kept a timetable and found that the average time spent on each colony was 5 hours which is equal to two colonies for a ten hour day. Thus we see that \$14.64 are my wages for one day, and this, I consider, a very moderate estimate.

As for disease, true it is a serious question, but have we not disease and sometimes very heavy losses among our animals on the farm? Not many years have passed since contagious abortion got into our herd of cattle and spread as rapidly as fowl brood possibly could in an apiary. In a few weeks it spread through the whole stable, thus taking two years to stamp it out. In the case of fowl brood, if necessary precautions are taken, and good Italian stock introduced, it has been proven that fowl brood can be kept in check. Men interested in farm-stock, or in property of any kind, are growing to learn to protect their property; therefore the bee-keeper will learn to protect his property.

During the short course in bee-keeping at the O. A. C. the bee was spoken of as a pollinizer of fruit and alsike clover. Now is it not the farmer who is growing the fruit and clover seed? Why then is it not to the farmer's interest to keep bees to pollinize his fruit and clover? It has been proven time and again that bees in the locality of alsike clover fields not only give a larger yield of honey but are the means by which a much larger yield of seed is produced. Who then would say that the farmer should not keep bees when he has everything to gain and nothing to lose?

The danger of over-production and low prices are things of the past. Bee-keeping, as yet, is in its infancy, and as time goes on and people learn the value of honey as a food, consumption will increase. Go into any country store and you will see shelf upon shelf of canned goods. The day is not far distant when honey will take its place among these goods. Unlike fruit, it will not deteriorate in quality, therefore we are not compelled to dispose of the crop at once but can hold it until we find a ready market.

In conclusion, I believe that no one should encourage any other to put much money in bees at the beginning, and anyone wishing to take up bee-keeping I would advise that he subscribe for a good bee magazine, get some good books on the subject, and by all means, if he has the opportunity, to take a short course, at least, at the O. A. C. I am sure no one can attend one of these courses, without receiving a great deal of benefit, for here all the troubles and difficulties of bee-keeping are brought before the students. This course is carried on in a fair and honest way and I do not think bee-keeping was misrepresented. Those who took part in the program were all practical men; men who understood the difficulties as well as the pleasures. I believe I can safely say that the greater number of bee-keepers in the Province are satisfied that the course our Provincial Apiarist is taking will put bee-keeping on a basis second to no other industry in the Province.

Dundas Co., Ont. R. E. L. HARKNESS.

THE FARM BULLETIN.

A joint meeting of the Executive of the Ontario Provincial Winter Fair and the Guelph City Council, and representatives of the Guelph Board of Trade and Fat Stock Club, was held at Guelph, on Wednesday, March 19th. Plans had been drawn showing a large horse arena, which would also provide for all the stabling of horses of the track, being used for an extension of the extension in this department. This would permit of the present horse stalls, on the north side of the track, being used for an extension of the Dairy Department, and would also permit of increased accommodation for all other departments. The estimated cost of the arena was \$100,000, and it was suggested that \$25,000 should be spent in changing and further equipping the old building. Such portion of the land as was to be purchased, was to be purchased by the City of Guelph. The land now owned by the Winter Fair Board would be made use of and the balance of the ground it is suggested to procure from the Militia Department.

A meeting was arranged with the Minister of Agriculture on Thursday, March 20th, at which there were six representatives each from the City Council, the Board of Trade, and the Fat Stock Club. A meeting of the Winter Fair Board was called for the same day, and they formed a part of the deputation waiting on the Minister, who promised to bring the matter before his colleagues.

The Veterinary Director General, Dr. F. Torrance, V. S., has sent out notices that the issuing of permits for the importation of cattle, sheep and swine, from Great Britain, will be resumed April 1st, 1913.

Macdonald College Notes.

By the death of John Brittain, D. Sc., professor of Nature Study, Macdonald College, on Monday, March 17th., the Province of Quebec loses one who did much to improve the condition of education in rural sections. For two or three years he was supervisor of school gardens at Cowansville, Bromes, Richmond and other places; and for the past six years was in charge of large classes of young men and women who were preparing themselves to return to the rural sections either as farmers or teachers. He had a strong refining influence on his pupils, on account of his quiet but strong personality. His love for nature was catching, and many a young person will acknowledge that his interest in the flowers, the birds, the insects, and the rocks was obtained through the helpful and inspiring teaching of Dr. Brittain.

Dr. Brittain was born in New Brunswick in 1849, and was a teacher for over 35 years—12 of which were spent in the public schools, 14 as Science Instructor in the Normal School at Fredericton, 3 as Professor of Chemistry in the University of New Brunswick, and 6 as Professor of Nature Study in Macdonald College. His life was full of helpful work for others, done unselfishly and unobtrusively.

The following Macdonald College men and women—members of the staff and graduates—have recently been appointed to positions elsewhere:—

C. H. Cutler, B. S. A., Lecturer in Cereal Husbandry, appointed Professor of Cereal Husbandry in the Faculty of Agriculture of the University of Saskatchewan.

Wm. Aikenhead, B. S. A., Assistant in Horticulture, engaged by Flavelles Limited, to conduct commercial orcharding at Oshawa, Ont.

Miss Elizabeth Russell, Assistant in Household Science, appointed Housekeeper of the Montreal General Hospital.

Miss Mary Brittain, appointed Dietician of Children's Hospital, Montreal.

Whyllie Baird, B. S. A., Manager of Sir Wm. Van Horne's farm at St. Andrews, N. B., appointed Superintendent of the Dominion Experimental Farm at Nappan, N. S.

R. Newton, B. S. A., Demonstrator in Pontiac County, appointed Assistant Dominion Cerealist.

L. V. Parent, B. S. A., Demonstrator in Rouville County, appointed Quebec Representative of the German Potash Syndicate.

E. A. Lods, B. S. A., appointed British Columbia Representative of the German Potash Syndicate.

H. B. Durost, B. S. A., appointed Instructor in Bee-keeping, Fertilizer, and Drainage, for the Department of Agriculture of the Province of New Brunswick.

Ernest Rhodes, B. S. A., appointed Assistant Agricultural Editor of the Family Herald and Weekly Star, Montreal.

Co-operative Experiments in Destroying Weeds.

The co-operative experiments in weed eradication instituted by the Ontario Experimental Union in 1912 are to be continued in 1913.

The experiments are as follows: (1) The use of rape in the destruction of perennial sow thistle. (2) A system of intensive cropping and cultivation, using winter rye followed by turnips, rape or buckwheat, for eradicating perennial sow thistle. (3) The use of rape in the destruction of twitch grass. (4) A method of cultivation and cropping for the destruction of twitch grass. (5) A method for the eradication of bladder campion or cow bell. (6) Spraying with iron sulphate to destroy mustard in cereal crop.

All experimenters will be supplied with full and detailed instructions for carrying on the experiment selected, and with blank forms on which to report the results of the same. Address communications to J. E. Howitt, Botanical Department, Ontario Agricultural College, Guelph, Ontario.

Prouse's Holstein Sale.

The dispersion sale of pure-bred Holstein Friesian cattle at Alfalfadale Stock Farm, the property of W. C. Prouse, near Tillsonburg, on Friday, March 21st, was very successful, the crowd being large and the bidding brisk. Moore and Dean, Tillsonburg's well-known auctioneers, were in fine form, and the cattle, were a good lot, and in fine working condition. The highest price of the sale was \$475, paid for the young bull less than 1 year old, Canada's Pontiac Korndyke, a son of the great Pontiac Korndyke. Grace Irene De Kol made the highest price for females, going to Peter Arbogast, of Sebringville for \$300. Twenty-six head including calves averaged \$177.50, twelve head making \$200 each and over, and only six calves selling under \$100 each. Some of the buyers were: C. Holman, Straffordville; Wm. George, Cramp-

ton; Alex. Waldie, Stratford; M. S. Haley, Springford; Frank Weir, Agincourt; J. M. Alderson, Carlisle and A. C. Hatch, Maple Grove.

How It Is Done.

By Peter McArthur.

In the days when baseball was a game that needed an able man to keep track of the runs, we were more careful to have a friend keeping score than we were to have a friendly umpire. Everything depended on the man who kept the count. Many a hard-fought game was won in those days by the man who was not afraid to be liberal to our side in the matter of runs, and stingy with the other side. I am moved to indulge in these reminiscences by the studies I have been making of modern business conditions. I have finally discovered that success depends largely on the bookkeepers and accountants. And this is by no means entirely because they keep an accurate account of the profits and losses, but because they can make the figures friendly or unfriendly, just as their employers may require. A really competent bookkeeper can make the books of a monopoly that is breeding millionaires show a loss if its operations should be reviewed in court. If I were going to investigate modern business conditions in a court I would not employ a lawyer, but an accountant. He would know how to get to the bottom of things. One time in New York, when I was doing an article for a magazine, dealing with insurance matters, I interviewed Miles Dawson, consulting actuary. He had an office and was doing business without being employed by any of the big insurance companies. The way he went through the statements of those companies for me, and showed up their trickery was a caution. He explained all the jugglery by which profits or losses were made to disappear at will. I found it absorbingly interesting, and realized at once the importance of the accountant or actuary in this particular form of big business. Some years later when the big insurance companies of New York were investigated and the world was shocked by the scandal that resulted, everyone was surprised at the wonderful grasp of insurance conditions shown by the investigating counsel, Mr. Hughes, later Governor of New York, and now Justice of the Supreme Court. I shared in the general surprise until I discovered that he was in constant consultation with Miles Dawson, and then I understood.

Because of this experience I was particularly pleased when a practicing accountant, who is also skilled in statute law, was attracted by some paragraphs I had written, and dropped me a line to set me right. It led to some correspondence, and I was not at all surprised to find that from his knowledge of affairs he did not think it would be so very hard to get at the root of matters in big business and to put through effective reforms. Dealing with those forms of big business that operate under public franchise and have a natural monopoly, such as banks, railroads, telegraph and telephone companies, etc., he suggests the following remedies:

First, to limit dividends to (say) ten per cent. Second, to compel the company to sell stock by public auction (after the first issue, which must be sold at least at par and for the purchase of tangible assets, with a limited reasonable amount for organizing and promotion expenses). With such restrictions enforced (there is where the if's come in) we might really be on friendly terms with the common carriers and the coal man.

After explaining that all our laws for the regulation of big business are merely bluffs, because they do not carry adequate penalties for infraction of their provisions, he explained how his process of limiting profits would work out. For fear you may think that it is useless to try to correct these public evils, I am going to let him explain the situation in his own words. You will find them well worth your careful reading. Speaking of limiting profits he says:

"This would be a simple process if profits were only distributed in the old-fashioned, open and above-board method of a cash dividend, at a stated rate per cent. upon the cash invested in the business. But it was long ago recognized that doing this in concerns operating public utilities of a monopolistic nature, would be sure to result in limiting such dividends to a reasonable amount, because the public (who furnish the profits) would not consent to pay excessive profits. Therefore it became necessary to disguise these dividends, and bogus stock, politely called "watered stock," was invented to meet the difficulty. If a street railway company, for instance, had one million dollars invested in its plant, powerhouses, properties, rolling stock and other equipment, and the net earnings were, say, 8 to 10% on this investment, there could be no ground for complaint about excessive profits. But if the earnings grew to be 20% or 25%, it

would almost certainly encourage criticism of the equipment or service, or demands for reduction of rates. But 20% on one million is only 10% on two million or 6 2/3% on three million, and what could be simpler than to issue another million dollars of stock, and so reduce the rate of the dividend? After this disguise became too common to deceive, more subtle methods were devised, but all having the same object and being based upon the practice of showing greater stock issue than the actual cash investment, necessary to carry on the business. The commonest of these improvements, perhaps, is to form a new company, buy the old company, pay for it with stock of the new, make the purchase price as high as is necessary to make a low rate of dividend, and the thing is done, (till the later shareholders want a higher rate).

Just as if you had a hundred barrels of apples to sell, for which you wanted \$5.00 a barrel. They cost, we will say, including your time and care, picking and packing, \$1.25 a barrel in your orchard, and to make the case parallel, we will just fancy that some kind-hearted council or legislature has given you or sold you the exclusive right to sell apples in your county, or if that requires too great a stretch of imagination, suppose that you are the only person who has apples to sell. It wouldn't do to set the price at \$5.00 a barrel—you would be sent to the asylum if you escaped lynching. So you engage a high-class broker and he buys them from you at \$1.50 a barrel, sells them to you at \$2.50, buys them back at \$3.50, and sells them to you at a "price to yield 5%", say \$4.75, and then you are in a position to sell them to the public at \$5.00 and cross your heart they cost you \$4.75, and you're not making more than 6% on the deal. Of course, it might make you a little dizzy at first, but when you get used to it you could eliminate the zig-zags and make the deal with yourself right off at \$4.75 or even \$4.90, and you couldn't sell them at \$5.00 if it wasn't for doing it on a large scale. (That large scale argument always seems weighty). The only trouble about looking at this as a parallel case is that too many people know what apples are worth (or think they do, which makes it worse)."

The simplicity of the situation seems positively funny when explained in this way, and certainly the remedies suggested seem to be about what is needed. It is worth thinking about, especially as the promoters of big business always try to convince us that the business they are doing is beyond the grasp of ordinary people.

Essex Notes.

Spring has appeared. The snows of winter have assumed a liquid form, while the mother earth is being liberated from her northern prison house. Song sparrows, bluebirds, meadow-larks, blackbirds and the robins may be seen hopping around the meadows or cornfields, or heard singing their glad carrols on the swaying branches of some budding poplar, sycamore or maple. Frogs have awakened from their annual slumber and join with piping notes the feathered orchestra, furnishing a pleasing if not harmonious melody.

That spring is really at hand is further indicated by the bustling activity of truck farmers. All enterprises, peculiar to Essex, apparently are going forward by leaps and bounds. This is especially true regarding the tomato-growing industry. Hundreds of hot-houses are being or have been erected throughout the southern part of the county, for the purpose of hastening the growth of early tomato plants. A very much increased acreage will be given over to the cultivation of this most remunerative crop. Late tomatoes are also receiving greater attention. New canning factories are springing up in many localities, while several of those already erected are increasing their working capacity. The acreage here also will be largely extended. That greater interest is being taken is manifested by the fact that inducements, worthy of recognition, are being offered to corporations who are desirous of locating factories in tomato-growing sections.

The first association, under the auspices of tomato growers, was organized in January of this year, and is known as "The Blytheswood Tomato Growers' Association." A board of officials, consisting of president, vice-president, secretary-treasurer, and ten directors, have been appointed. By-laws setting forth the object of this Association, and regulating its actions were adopted. Much good is apparently being accomplished in the way of uniting the growers, and bringing them into contact with each other, thus proving a source of education, stimulation and encouragement. Financially it is also beneficial, as they are able to buy commercial fertilizers direct from the manufacturing companies, thus eliminating the middleman's profit. The Association likewise agrees to place upon the market nothing but the best grade of tomatoes.

The unanticipated and altogether unexpected place now occupied by the corn growers' exhibit, as determined by the exhibition in February first, has engendered greater enthusiasm in the minds of many Essex farmers. Our "Corn King", J. O. Duke, has many recruits joining the ranks of his ardent followers. Some of our most prominent and promising young farmers are becoming exporters of choice seed corn.

Parties wishing to procure seed for ensilage would do well to avoid purchasing indiscriminately, to their lasting regret and loss. Property is still changing hands very rapidly, and for good value. Our American cousins are again invading this territory. Several dozen car-loads of settlers' effects having crossed the borders during the past few weeks. Those who disposed of their farms to American Companies for what they considered fancy prices, have been compelled to shift quarters to some point where land is not so high.

Owing to prices for cattle and pigs soaring so high the supply is being seriously depleted, and prospects for the future are not very bright.

A. E.

The Winter Fair at Brandon.

The new Winter Fair Arena at Brandon, was opened under very auspicious circumstances during the first week in March, when the most successful winter exhibition ever held in the West filled all its space but still all had room, for the accommodation is second to none in America. As is usually the case, horses were the outstanding feature, with over 450 entries, and Clydesdales were out in greatest numbers, while Percherons made the strongest showing ever seen at Brandon.

Clydesdales.—The class for aged horses brought out fourteen entries, and it was a battle royal, Gartly Bonus taking first for R. Stinton, Regina, with General Notice second, for D. J. White. A. Galbraith, of Edmonton, was third on Dunwoodie Star.

Sinton won the class for three-year-olds with Burch Surprise by Auchenflower, defeating the great winner, Critic.

Seventeen two-year-olds were the class of the show. McKirdy Bros., of Napinka, Man., had a winner in Crowned King, Crossrig Yet going second for Sangster Bros.

Rembrandt, by Everlasting headed the yearling class for Sinton.

Of nine mares, Countess of Moray, by Bonnie Buchlyvie, was the best. W. H. Bryce is her owner, also getting second on Doune Lodge, Floradora.

After a hard fight Gartly Bonus was made champion stallion.

Canadian-bred Clydesdales were out in fair numbers and the quality was excellent.—The best Canadian-bred filly was Bryce's Doune Lodge Floradora, and the champion stallion was Baron's Headlight, owned by D. McLaren. This horse was beaten in his class by Prince Robert, but the latter was injured before the championships were placed and did not compete.

Percherons.—The stallion classes were very strong, but there were very few females out. In aged horses Gasdon won for Colquhoun and Beattie, Hogate's Incarville, by Medoc, going second.

Jaume, the winner at Winnipeg and Brandon summer shows, headed the three-year-olds for Colquhoun and Beattie with Ramsay's Joliet a good second.

John Stout's, Marmont, headed a strong class of two-year-olds, Hogate getting second on Karliste.

Jaume was made champion of the breed. About a dozen Shires and a very few Belgians were forward, all being good individuals of their respective breeds.

Cattle.—The cattle exhibit was the weakest feature of the entire show, only about thirty head being out in all breeds. H. L. Emmert, Oak Bluff, was the only exhibitor of pure-bred Shorthorns. J. D. McGregor, Brandon, Man., and Browne Bros., Neudorf, Sask., were the only exhibitors of pure-bred Aberdeen-Angus. McGregor had the grand champion in Gleucarnock Boy, a yearling which was a first prize winner at the Chicago International. Emmert had the best export steer.

The sheep exhibit was very encouraging, the strongest class being the ewe or wether lamb class for pure-bred, medium or short wools, there being thirteen forward. J. D. McGregor was the heaviest winner, getting the championship on a pure-bred Suffolk.

Hogs made a grand showing, especially Yorkshires and Berkshires. Twenty-five hogs were out in one Yorkshire class alone. A pure-bred Yorkshire exhibited by A. B. Potter, Langbank, Sask., was champion bacon hog and Emmert got first on best pen of three grades.

Close Competition at Regina.

Following the successful Brandon Winter Fair came another unqualified success—the Regina Winter Fair. Some classes were even stronger than at Brandon. Clydesdales were a feature but Percherons, Belgians and Hackneys also made a creditable showing. In cattle, Shorthorns and Aberdeen-Angus fought it out for supremacy.

Clydesdales.—Aged stallions were thirteen strong, and Gartly Bonus repeated for Sinton, with Nether Baron second for Horner.

Fifteen stallions foaled in 1909 were headed by the Brandon winner Burch Surprise, with MacLanta second.

Fyvie Stamp, by Baron Beaulieu, headed the two-year-olds for R. H. Taber, of Condie, Sask., second going to Bryce's Clive, by Revelanta.

A. G. Mutch got first on his yearling Hillcrest Buchlyvie, in a class of five.

Great interest was manifest in the stallion championship, which finally settled on Gartly Bonus after a great tussle with Fyvie Stamp.

Bryce's Countess of Moray and Doune Lodge Floradora were the best of the fillies, the former being champion.

Canadian-bred Clydesdales made a very creditable showing. Doune Lodge Floradora being champion female.

Percherons.—The aged class for stallions was fairly strong. D. E. Hepburn getting first place on Frank J., and E. W. Brett second on Ixion.

Alex. Galbraith was first on three-year-olds, with D'Artaguan while Koatneu won the two-year-old class for Stanley and Ketcheson, of Moosomin.

Pootmans and Sons, of Regina, made a clean sweep of the filly classes, and they also made a great showing in Belgians.

Only a few Shires were forward but the quality was excellent.

Cattle.—There was a good display of cattle in the open competition. R. W. Caswell, Saskatoon and H. L. Emmert, of Oak Bluff, fighting it out in Shorthorns. Burnbrae Wimple, a Chicago winner, finally won out for Caswell.

As at Brandon, McGregor and Browne Bros., were the competitors in Aberdeen-Angus. Glen-carnock Boy won the Aberdeen-Angus Championship for McGregor.

Burnbrae Wimple, was the best beef animal of the show, beating the great Angus yearling.

Nova Scotia Agricultural Report.

The annual report of the Secretary for Agriculture, for Nova Scotia, for the year 1912, has just been issued, and is now available as long as the copies last for free distribution on application to the Secretary for Agriculture, or to any of the members representing the counties of Nova Scotia.

The report consists of an outline of the year's work in the Department of Agriculture including exhibitions, agricultural societies, farmers' associations, field crop competitions, meetings, dairying, etc., and also the report of the work at the Agricultural College, showing the progress that has been made in the various departments of this institution.

Besides this matter dealing with the routine work of the Department and the College, the report contains a series of articles on swine breeding in Nova Scotia. This series is a continuation of the series of articles which have been appearing in the report of the Secretary for Agriculture since 1907. These previous reports have dealt with sheep raising, dairying, soils and soil cultivation, orcharding and horse raising. As in previous years, the series of articles on topical subjects are being printed in separate cover, and may be secured either by themselves or under the same cover with the general report of the Secretary for Agriculture. We may state that any who have not received copies of the previous reports may get them on application to the Secretary for Agriculture at the same time when they apply for a copy of the present report of 1912.

The series of articles on Hog Raising includes a description of the various breeds of swine, methods of feeding, care, breeding, etc., and there is also a valuable article on the housing of swine, which contains plans of various types of houses recommended for keeping swine. The series is concluded with a splendid article on diseases of swine and their treatment. The whole series is a valuable one, and should be in the hands of everyone interested in swine breeding and feeding in the Province of Nova Scotia.

A limited number of these reports are also available for distribution outside of the Province. Those who are interested should apply to M. Cumming, Secretary for Agriculture, Truro, Nova Scotia.

Why 1912 Was Wet.

FREE DRAINAGE ASSISTANCE.

Which is the wettest month of the year in Ontario? Probably nine people out of every ten would name April in answer to this question, while as a matter of fact it is the driest month in the whole twelve, according to Prof. W. H. Day, of the Ontario Agricultural College, Guelph. Taking all the stations in Ontario where records of the rain and snow have been kept, he finds the average precipitation for the various months during the past ten years to be as follows: January, 2.23 inches of rain and melted snow together; February, 2.40 inches; March, 2.22; April, 2.14; May, 2.81; June, 2.92; July, 3.46; August, 2.62; September, 2.81; October, 2.54; November, 2.43, and December, 2.63 inches respectively, making a total average precipitation for the ten years of 31.87 inches. April it will be noted has the least precipitation of all. "From these figures," Prof. Day remarks, "one receives another surprise to learn that July is really the wettest month, so far as actual amount of precipitation is concerned. Why does the driest month seem the wettest, and the wettest seem the driest? During the winter the snow accumulates, and when it melts in late March or early April it forms several inches of water which saturates the soil and drains away very slowly. Besides in the spring there is cool weather usually coupled with considerable cloudiness and gentle rains, so that evaporation is largely prevented, and hence the soil and roads remain wet; in summer the showers are heavy, but being few and far between, and, as a rule, with clear sky and hot weather intervening, evaporation is much greater than even the heavy rainfall, so that the soil and roads become drier and drier.

"The year 1912 will go down in memory as an exceedingly wet one, yet as a matter of fact 1902 was wetter, so far as actual rainfall is concerned. And 1909 had within an inch as much rain as 1912. But the precipitation of 1912 was not well distributed. February and March were considerably below the normal. May had nearly twice as much as usual, June and July were both much below the average, while August and September were unusually wet. But worse than the rainfall, was the almost continuous cloudiness, which retarded evaporation and thus prevented the soil, roads, and grain from 'drying out' rapidly between rains, even in the summertime. These factors combined to make the soil wetter during 1912 than it has been in many years.

"Never, perhaps, has the value of thorough underdrainage been more emphatically demonstrated than during the past year. Land that was thoroughly tile-drained gave splendid crops, despite the excessive wetness, while thousands of acres of undrained land could not even be seeded; and some that was seeded and did produce a partial crop was so wet that the grain could not be harvested. The effect of this lesson," says Prof. Day, "is reflected in greater interest and activity than usual in matters relating to tile drainage. We are holding over a larger number of applications for drainage surveys than we have for some years past, and fresh applications are coming in rapidly, so that the drainage campaign promises to be unusually active."

The Department of Physics, of which Prof. Day has charge, makes tile drainage surveys for farmers on application, the only outlay to the

farmers being the necessary travelling expenses connected with the survey. These are usually small, as generally several surveys are made on the same trip. Those wishing surveys should write the Department of Physics, O. A. C., Guelph, for regular application forms.

An Equinoctial Hurricane.

A shingle-scattering, roof-raising equinoctial hurricane swept across the continent last week, striking the southwestern peninsula of Ontario on the forenoon of Good Friday. Across the international boundary at Detroit the wind reached a velocity of 86 miles an hour, the highest point ever attained there during any five-minute period in the history of the local weather bureau. In Canada it seems to have been at its worst everywhere. Several deaths and serious injuries were reported, and heavy loss was occasioned. Thousands of barns, silos, and out-buildings were wrecked or unroofed, while shingles by the million were ripped off buildings and broadcast over the fields. Dealers in roofing material speedily harvested a nice crop of orders. One Lambton County farmer, who caught the humor of the situation, telephoned in for a new metal roof, remarking that his old one was over in the back fifty, and the barn doors were on the way to the bush. Preceded by one rain, the wind-storm was followed by another on Sunday night and Monday forenoon, wetting exposed feed, and, in some cases, unhusked live-stock. Residents in many localities declared that the wind storm was unparalleled in their experience for fury and duration combined. The real wonder is that the casualty list and property loss were not both greater than they are. The disturbance was not confined to America, for cablegrams tell of the Easter holiday in the south of England having been spoiled by tempestuous weather. The Easter holiday will be one to be remembered.

A New Idea For Supplying Training Teachers For Rural Schools.

A meeting of vital importance to rural education was recently held at Macdonald College, when Dr. Sincclair, head of the school for teachers, addressed the schools of agriculture and household science and the school for teachers on the subject of rural education. He submitted a scheme by which students in agriculture and household science by taking a minimum of pedagogical training might be legally qualified to teach in Quebec rural schools. The scheme was a recognition of the principal that, with proper safeguards, a certain amount of training in agricultural or household science, or both may, with advantage, be substituted for part of the work hitherto included in a teacher's professional training course for rural schools.

The chief argument urged in favor of the change is that one of the most important qualifications of the rural teacher is appreciation of the advantages of country life, ability to make the best of country conditions, and a desire to remain in the country. It has been urged that the attitude is more likely to be secured by a training in an agricultural college, and by a study of agricultural and household science, then by the ordinary course of a city normal school. Practically all of the audience, who were from the rural districts, remained for the subsequent

discussion in which a number of professors and students took part, and the general principal of the proposal was unanimously approved.

The scheme was submitted to the teacher's training committee, and by it referred to the protestant committee. At a meeting of the protestant committee, held February 21st, a favorable resolution was adopted.

The Transmission of Light.

Editor "The Farmer's Advocate":

Mr. Way has asked how the rays of light from a fire reach the eye of a distant observer through the intervening darkness. The answer is that they get through because there is nothing to stop them. Radiations from a mass of burning fuel are of a complex character, and speaking generally, invisible in transit. What happens in the above case is that two small bundles of what we call Visual Rays are absorbed by the eyes of the observer, exciting the optic nerve which in turn registers a mental impression of illumination. It would be the same if the light came from a lamp across the road, or a lighthouse many miles away, or a star at such a distance that years are required for the light to reach us at all.

I suppose, from the manner of the question, that Mr. Way is thinking about the diffusion of light from a generally illuminated surface, such as a landscape by daylight. In this case it is the reflected light that strikes the eye, and as the whole visible area is illuminated we get the idea that the air is full of light, which, in a certain sense is true.

Sometimes we may observe both phenomena at once. If a light shines through fog, it seems to come in a streak, which is caused by the partial absorption and reflection of the visual rays by the drops of water. One cannot go very far into the question in a paragraph, but a perusal of the articles on light and related subjects, in a good encyclopedia, will be found interesting, also books on light, optics or astronomy, which may be had from a public library.

Lambton Co., Ont. WILLIAM Q. PHILLIPS.

Why Not a Banking Commission?

The Christian Guardian, whose editor is one of the most alert journalists in Canada, seconds the interrogative suggestion in a recent issue of "The Farmer's Advocate," proposing a Banking Commission analogous in character and function to the Railway Commission. "There is a large body of able men," observes the Guardian, "who argue that our present (banking) system is a good one; has done us most excellent service, and should not be interfered with, least of all by men who know little or nothing of banking. Most of the bankers appear to be, or are supposed to be, upon this side. But there is a very much larger body of men who hold that the banks exist to serve the people, and as they hold a virtual monopoly they are in duty bound to change their methods to suit the people for whose convenience they have been called into existence. These men for the most part are not professional bankers, and do not pretend to be, but they think the country has a right to keep its hand upon its banking systems, just as it does upon the railways. * * * Why should we not have a Bank Commission?"

Gossip.

Attention is called to the advertisement elsewhere in this issue, of Holstein cattle, the property of L. E. Connell, Fayette, Fulton Co., Ohio. This advertisement has been running some time with a few typographical errors. Instead of "A. R. C." in the first line, it should read "A. R. O.," and the record of Colantha 4th's Johanna is 35.22 lbs. of butter in seven days, and Johanna Colantha 2nd's record is 32.90 lbs. of butter in seven days, and the average butter in seven days, 34.06 lbs. All these are printed "per cent." in the advertisement, which will be corrected next week. Look up this advertisement if interested in Holsteins.

Attention is directed to the advertisement of J. E. Thompson, Orangeville, Ont., in which he is offering by auction in the town of Orangeville, on Thursday, April 10th, three imported Clydesdale fillies, and three Canadian-bred registered Clydesdale fillies. The stallions are all rising three years of age; nine of the imported fillies are rising three years, and three are rising two years. The Canadian-bred fillies are: two rising two years, and one rising one year. This is one of the best-bred lots of Clydesdales

ever offered by auction in Canada. Four-, five- and six-numbered dams are in evidence in the breeding of practically all of them. In next week's issue will be a summary of the high-class breeding of the lot. Write for catalogue to J. E. Thompson, Orangeville, Ont.

P. N. Haight, Box 124, St. Thomas, Ont., advertises for sale Improved Early Ohio potatoes, choice seed, described as a white, heavy cropper, of extra good quality.

The combination sale of Clydesdales, Shorthorns, Yorkshires, and Shropshires, the property of R. W. Caswell and W. C. Sutherland, held at Saskatoon, February 28th, was quite successful. Ten Yorkshires were sold at an average price of \$56, the highest price being \$85, and the lowest \$50. The Shropshires averaged \$19 each, the highest priced pair bringing \$50, and the lowest \$32. The Shorthorns averaged \$180, the highest price for a female being \$275, and the highest for a bull \$400. Clydesdales averaged \$451. W. J. Graham, of Unity, Sask., took the highest priced pair at \$1,380. T. C. Morris, of Griswold, Sask., and Col. C. M. Jones, of Chicago, were the auctioneers.

A stumpy or stoney field detracts from the appearance of the farm, and also reduces profits. Land is too valuable to be taken up with such hindrances. Stumping powder is the quick remedy. See the ad. of Canadian Explosives, Ltd., Montreal, Que., and Victoria, B. C., in another column.

The Southern Ontario Consignment Sale Co., held a meeting recently at the home of T. W. McQueen, all the members of the Company being present except M. H. Haley whose absence was due to illness. All the business of the last sale having been satisfactorily disposed of, it was decided to hold the next annual sale on Tuesday, December 30th, 1913. After the meeting Mrs. McQueen gave an oyster supper to the members of the company and their wives, and a very enjoyable evening was spent.

Trade Topic.

A massive pedestal table, made of select hard wood, and finished in rich golden oak, will be shipped, freight-free, to any point in Ontario, for \$12.50, by the F. C. Burroughes Furniture Co., Toronto, Ont. Write the company for catalogue F.

Inspector (to arrest woman)—What's your name?"

Woman—Jest run froo the nimes o' the Cabinick Ministrels, will yer, ole dear? I've forgot for the minit oo's my usbing!

"I'm sorry to tell you, mum, that I'll be leaving you next week. I'm going to get married."

"That so, Emma? Who is the lucky man?"

"He's a policeman, mum, on this beat, too."

"That's fine. I wish you joy. And what is his name?"

"I don't know yet, mum. But I have got his number. It is 518."

Mr. Hoyt is the mother of a large family of children, and they are all rather small. A few days ago a new baby appeared upon the scene. Little Margaret, aged five, was allowed to see her mother and the new sister.

After looking at the tiny specimen for a few minutes in silence the little girl said:

"Mother, don't you think it would be better to have less of 'em and have 'em bigger?"

MARKETS.

Toronto.

REVIEW OF LAST WEEK'S MARKETS

The total receipts of live stock at the City and Union Stock-yards last week were as follows:

	City.	Union.	Total.
Cars	8	245	253
Cattle	117	3,053	3,170
Hogs		4,886	4,886
Sheep	25	1,031	1,056
Calves	43	572	615
Horses		192	192

The total receipts of live stock at the two yards for the corresponding week of 1912 were as follows:

	City.	Union.	Total.
Cars	194	174	368
Cattle	2,423	2,149	4,572
Hogs	5,043	2,864	8,007
Sheep	452	205	657
Calves	404	55	459
Horses		292	292

The combined receipts of live stock at the two markets for the past week, show a decrease of 115 cars, 1,402 cattle, 3,121 hogs, and 100 horses; but an increase of 399 sheep, and 156 calves, compared with the corresponding week of 1912.

Receipts of cattle at the Toronto markets were not as large as for the previous week, but quite large enough to supply all demands, as there were few buyers from outside points. Trade was dull and sluggish all week, with prices lower in all grades of fat cattle, especially for the choice, well-finished export weights, of which there was a fair supply; in fact, the supply of these was greater than the demand, and had it not been that the commission firm of Corbett, Hall & Coughlin received an order, "the first in several months," for eight carloads of exporters, from Shamburg & Sons, of New York, prices for this class would have gone still lower. The abattoirs and wholesale butchers had got their supplies of Easter cattle the week before. The principal demand was for cattle selling from \$6 to \$6.50, as the retail butchers find it hard to dispose of beef, costing more money, which caused the decline in prices for the choice, heavy, export cattle. And the present outlook is that unless there is a larger demand for these heavy cattle from outside points in Canada, or from the British markets, prices for them will certainly go lower.

Exporters.—There would be about 200 cattle of export weights and quality sold this week, including the eight carloads bought by J. Shamburg & Son. The cattle of this class bought by the local dealers, sold at from \$6.75 to \$6.90, and \$7. The price for the eight loads bought by Shamburg was not made public, but it was around \$7 to \$7.10 or \$7.15, as nearly as we could gather, which would cause the drovers selling them to lose considerable money, as the bulk of these cattle, we were informed by reliable authority, cost from \$7 to \$7.25 in the country. One drover, P. J. Henry, of Ridgetown, Ont., had five steers, corn-fed, of extra choice quality, on the market on Wednesday, weighing 1,860 lbs. each, and the best offer he got was \$7 per cwt.

Butchers.—Picked lots and loads of choice cattle, sold at \$6.40 to \$6.65; loads of good, \$6 to \$6.25; medium, \$5.50 to \$6; common, \$5 to \$5.40; inferior, light steers and heifers, \$4.75 to \$5; cows, \$2.50 to \$5.50; bulls, \$4.50 to \$5.65. In one or two instances, \$6 was paid for choice, heavy, Shorthorn bulls of extra quality.

Stockers and Feeders.—The demand was greater than the supply, and prices were higher than at any time this year. Steers 950 to 1,025 lbs., sold at \$5.90 to \$6.25; stockers of good quality, 650

to 800 lbs. each, sold at \$5.25 to \$5.75; medium and common stockers sold at \$4.50 to \$5.

Milkers and Springers.—Trade in milkers and springers continues to be quiet, with prices unchanged. Demand centers on the better grades, most of the fairly good to good cows selling at \$55 and \$65, and choice to extra from \$70 to \$80, but very few reach \$80.

Veal Calves.—Receipts of veal calves were a little larger, but prices remained steady to firm. Good to choice calves sold at \$9.50 to \$10; fair to good, light calves, \$8.75 to \$9; strong, weight calves, \$6.75 to \$8.25; inferior, rough, heavy calves, \$3.50 to \$5.

Sheep and Lambs.—Receipts of sheep and lambs continue to be light. Sheep—Ewes sold from \$6.75 to \$7.25; rams, \$5.50 to \$6.50; yearling lambs, \$8.50 to \$9.50; spring lambs sold at \$3 to \$10 each; but there was not, it is safe to say, half a dozen choice spring lambs on the market all week.

Hogs.—Selects, fed and watered, sold at \$9.50 to \$9.65, and \$9.20 to \$9.30 f. o. b. cars at country points.

Horses.—There was a fair trade in horses at the Union Horse Exchange, Union Stock-yards, during the past week. Outside of two cars going to Montreal, and one car to a point in the West, the trade was principally local. There was little change in prices from those given in our last report, and ranged as follows: Drafters, \$180 to \$250; general-purpose horses, \$150 to \$225; express and wagon horses, \$180 to \$225; drivers, \$100 to \$150; serviceably sound, \$35 to \$100.

BREADSTUFFS.

Wheat.—Ontario, No. 2 red, white or mixed, 93c. to 95c., outside; inferior grades, down to 70c. Manitoba wheat, No. 1 northern, 97c.; No. 2 northern, 94c., track, lake ports. Oats—Ontario, No. 2, 33c. to 34c., outside; 33c., track, Toronto. Manitoba oats, No. 2, 41c.; No. 3, 39c., lake ports. Rye—No. 2, 60c. to 63c., outside. Peas—No. 2, \$1 to \$1.05, outside. Buckwheat—51c. to 52c., outside. Corn—No. 3 yellow, 56c., track, Toronto, all-rail shipment. Barley—For malting, 51c. to 53c.; for feed, 48c. to 48c., outside. Flour—Ontario winter-wheat flour, \$3.90 to \$3.95. Manitoba flour—Prices at Toronto are: First patents, \$5.30; second patents, \$4.80; in cotton, 10c. more; strong bakers', \$4.60, in jute.

HAY AND MILLFEED.

Hay.—Baled, in car lots, track, Toronto, No. 1 per ton, \$12 to \$13; No. 2, \$10 to \$11. Scarcely any No. 1 hay to be got.

Straw.—Baled, car lots, track, Toronto, \$9 to \$10 per ton.

Bran.—Manitoba bran, \$19 to \$20 per ton; shorts, \$21.50; Ontario bran, \$19 to \$20, in bags; shorts, \$21.50, car lots, track, Toronto.

TORONTO SEED MARKET.

Unchanged, and very quiet. Alsike No. 1, per bushel, \$11.50 to \$12.50; alsike No. 2, per bushel, \$10.50 to \$11; alsike No. 3, per bushel, \$9.50 to \$10; red-clover seed, Ontario-grown, \$7 to \$9 per bushel; timothy No. 1, per bushel, \$1.90 to \$2.25; timothy No. 2, per bushel, \$1.25 to \$1.60.

The above quotations are prices paid to farmers for seed that has to be re-cleaned by the seedsmen.

COUNTRY PRODUCE.

Butter.—Market remains steady, prices being unchanged. No. 1 creamery rolls, 32c. to 34c.; creamery solids, 28c. to 30c.; separator dairy, 28c. to 30c.; store lots, 22c. to 24c.

Eggs.—Receipts were large, and prices down. Strictly new-laid, 23c. to 24c., and plentiful at that; cold-storage, 16c. to 18c.

Cheese.—Large, 14c.; twins, 15c. Honey.—Extracted, 12c. per lb.; combs, per dozen sections, \$2.75 to \$3.

Beans.—Car lots, at Toronto, hand-picked, \$2.60 per bushel; primes, \$2.25, ranging down to \$1.25 for poor quality.

Potatoes.—Car lots of Ontario potatoes, track, Toronto, 60c. to 65c. per bag; New Brunswick Delawares, 80c. per bag, and market easy at these prices.

Poultry.—Receipts continue light, and prices firm. Turkeys dressed, 25c. to 26c.; geese, 18c. to 20c.; ducks, 20c. to 22c.; chickens, 20c. to 23c. per lb.; hens, 16c. to 18c.

HIDES AND SKINS.

No. 1 inspected steers and cows, 13c.; No. 2 inspected steers and cows, 12c.; city hides, flat 12c.; country hides, cured, 11c.; country hides, green, 10c.; calf skins, per lb., 14c.; lamb skins, \$1.10 to \$1.50; horse hides, No. 1, \$3.50 each; horse hair, per lb., 37c.; tallow, No. 1, per lb., 5c. to 6c.

FRUITS AND VEGETABLES.

Apples of No. 1 quality are scarce, with prices firmer. Spies, No. 1, \$4.25; Spies, No. 2, \$3.50 to \$3.75; Greenings, No. 1, \$3 to \$3.50; Greenings, No. 2, \$2.50 to \$2.75; Kings, No. 1, \$4 to \$4.25; Baldwins, No. 1, \$3.50 to \$3.75; Baldwins, No. 2, \$2.75 to \$3.25; cabbage, \$1 per barrel; beets, 75c. per bag; turnips, 40c. to 50c. per bag; parsnips, 70c. to 80c. per bag.

Montreal.

Live Stock.—During the week of the Easter live-stock markets, the offerings of live stock were larger than usual, and the quality was superior. The top price paid for loads of fancy beef was 7c. per lb., and the range for really choice stock was from 7c. to 7c. per lb. In a few cases, 8c. was paid, but not for lots. Some choice bulls sold at 6c. to 6c. per lb. Some choice veal calves, also sold at rather unusual prices, as high as 9c. per lb. having been paid, and in a few cases even 10c. was granted. Some heavy calves, weighing 500 to 700 lbs., sold at \$50 to \$70 each, while others ranged from \$15 to \$20 each. Supplies of sheep and lambs were restricted. Some spring lambs sold at \$10 each, and from this price ranged down to \$4, according to quality. Sheep sold at 5c. to 6c. per lb., bucks and culls being 5c. to 5c., and lambs 8c. to 8c. per lb. Hogs were very firm in price, selling at 10c. to 10c. per lb., weighed off cars.

Horses.—Offerings from the country were light, and prices firm, as follows: Heavy-draft horses, weighing from 1,500 to 1,700 lbs., \$300 to \$350; light-draft, weighing 1,400 to 1,500 lbs., \$225 to \$300; light horses, 1,000 to 1,100, \$125 to \$200, and broken-down animals, \$75 to \$125 each. Choice saddle or carriage animals sold at about \$350 to \$500 each.

Poultry.—Prices held firm, at previous quotations, stocks being light, and no more being received. Choicest turkeys were quoted at 22c. to 25c. per lb.; ducks and chickens sold at 18c. to 21c., and some at slightly more, while fowl brought 15c. to 18c., and geese from 14c. to 16c. per lb.

Dressed Hogs.—Dressed hogs were very firm in tone, and prices advanced to 14c. to 15c. per lb., for abattoir-dressed, fresh-killed, a very unusual figure.

Potatoes.—The market continued to grow a little easier, and Green Mountains were quoted at 67c. to 70c. per 90 lbs., carloads, track, while Quebec grades were down to 60c. and 63c. In a jobbing way, prices were 25c. more than the above. Quality inferior.

Eggs.—It was expected that the market would hold up till after Easter, but the mild weather and large receipts could not be withstood, and prices fell to 25c. and 26c. per dozen for fresh-laid. Other qualities neglected.

Syrup and Honey.—There did not appear to be anything doing in the syrup line, the weather being evidently unfavorable for sap-running. White-clover comb honey was quoted at 16c. to 17c. per lb., extracted being 11c. to 12c., dark comb honey 14c. to 15c., and extracted 8c. to 9c. Syrup not quoted.

Butter.—Prices held about steady, at 29c. to 31c., as to quality and quantity. Practically no new-milk butter was offered, but this will be changed presently.

Grain.—The market for grain showed little change. Oats interesting, and sold at 41c. to 42c. per bushel for Canadian Westerns, while No. 1 feed, extra, sold at 40c. to 41c. per bushel, ex store, car lots.

Flour.—There was little or no change in conditions in the flour market. Prices for Manitoba first patents were \$5.40 per barrel, in bags; seconds, \$4.90, and strong bakers', \$4.70. Ontario winter-wheat flour sold at \$5.25 per barrel for choice patents, while straight rollers sold at \$4.85 to \$4.90 per barrel.

Millfeed.—There was a very good demand for millfeed of all classes. Bran sold at \$20, and shorts at \$22 per ton, in bags, while middlings were \$25 per ton. Trade in mouille was fair, prices being \$35 to \$36 per ton for pure grain, and \$30 to \$33 for mixed.

Hay.—Prices continued very weak, owing to large offerings. No. 1 pressed hay was quoted, in car lots, track, at \$13 to \$13.50; No. 2 extra, \$11 to \$12; No. 2 ordinary, \$9 to \$10, and ordinary timothy, \$8 to \$9.

Grass Seeds.—Timothy was offered in large quantities, and prices were \$3 to \$4 per 100 lbs., country points. Red clover prices were \$6 to \$10 per bushel of 60 lbs. Alsike was \$10 to \$12, these prices being paid to farmers.

Hides.—The quality of the hides was bad, and prices steady, being 12c., 13c., and 14c. per lb., for Nos. 3, 2 and 1 hides. Calf skins were 15c. and 17c., respectively, per lb., for Nos. 2 and 1. Sheep skins were \$1 to \$1.10 each, and lamb skins 10c. each. Horse hides were \$1.85 and \$2.50, as to quality, and tallow was 1c. to 3c. per lb. for rough, and 6c. to 6c. for rendered.

Buffalo.

Cattle.—Prime steers, \$8.65 to \$9; shipping, \$7.50 to \$8.50; butchers, \$6 to \$8.35; heifers, \$6 to \$8; cows, \$3.75 to \$7.25; bulls, \$5 to \$7.25; stockers and feeders, \$5 to \$7; stock heifers, \$4.50 to \$5; fresh cows and springers, \$35 to \$80.

Hogs.—Heavy, \$9.35 to \$9.50; mixed, Yorkers and pigs, \$9.40 to \$9.50; roughs, \$8.40 to \$9.60; stags, \$7 to \$8; dairies, \$9.25 to \$9.50.

Sheep and Lambs.—Lambs, \$6.50 to \$9; yearlings, \$5.50 to \$8; wethers, \$6.50 to \$6.75; ewes, \$3.50 to \$6.25; sheep, mixed, \$5 to \$6.50.

Chicago.

Cattle.—Beeves, \$7.10 to \$9.20; Texas steers, \$6.50 to \$7.50; Western steers, \$6.80 to \$8.15; stockers and feeders, \$6 to \$8.20; cows and heifers, \$3.50 to \$8; calves, \$7 to \$11.25.

Hogs.—Light, \$8.85 to \$9.20; mixed, \$8.70 to \$9.15; heavy, \$8.50 to \$9.15; rough, \$8.50 to \$8.70; pigs, \$6.90 to \$9; bulk of sales, \$8.95 to \$9.10.

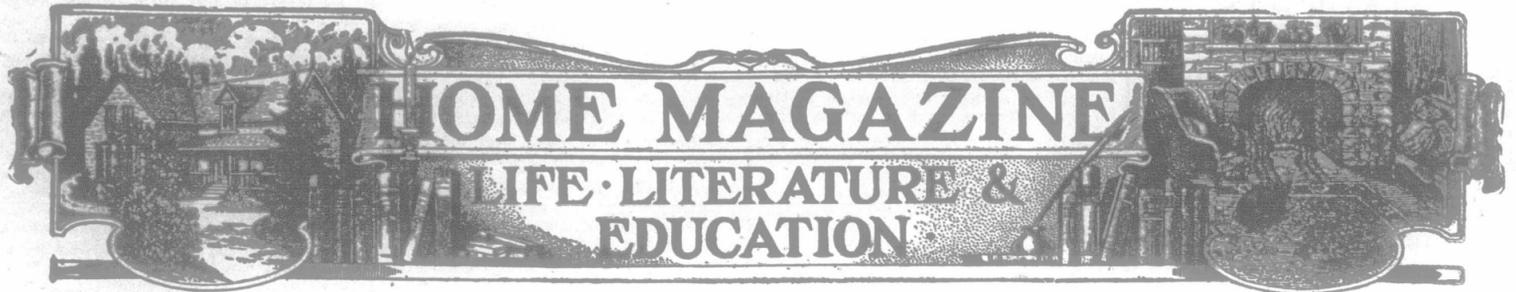
Sheep and Lambs.—Sheep, native, \$6 to \$7; Western, \$6.25 to \$7; yearlings, \$7.20 to \$8.25; lambs, native, \$7 to \$8.85; Western, \$7.25 to \$8.90.

Gossip.

LAST CALL FOR BELLEVILLE SALE. The catalogue of 85 head of registered Holstein cattle, including 20 young bulls, consigned by breeders in the Belleville district, to be sold by auction on Wednesday, April 2nd, in the town of Belleville, Ont., shows that the stock to be sold is of the highest class in type and dairy production, most of the cows having splendid official records, all of the offering being rich in the blood of high-record matrons, and sired by sons and grandsons of notable dams. The Belleville breeders contributing to the sale have a high-class record for fair dealing, and this sale will afford a rare opportunity to secure good bargains. Belleville is on the main line of the G. T. R., and arrangements are made for reduced rates.

Trade Topic.

The D. Moore Company, Hamilton, Ont., in their advertisement of the Othello Cast-iron Kitchen Range, which appears on page 596 in this issue, call attention to the prize competition for a beautiful china dinner set of 100 pieces, free, to the first person who will guess the correct number of biscuits, or nearest to it, that their range will bake with one fire-pot of chestnut coal (weight thirty pounds).



Point Pelee.

(By T. B.)

Projecting out into Lake Erie about twelve miles from the shore-line of Essex County, Ont., is a tapering point of land known as Point Pelee. It is not a promontory, however, but the very reverse. Instead of the rocky or hilly backbone which is characteristic of that kind of cape, Point Pelee is no higher at the center than at the edges, and, for a considerable part of its length, the low shore ridges are higher than anything between. In shape it resembles the horn of a young animal, straight on one side, and slightly curved on the other, except that near the base it widens rapidly, the shore-line on either side sweeping with an easy curve to join, imperfectly, the main line of coast. Like its great prototype at the lower end of South America, Point Pelee might also have been appropriately named Cape Horn.

The town of Leamington is situated on the western side of the broad base of the Point, just where the line of beach starts to curve outwards to form the cape.

So regular are the outlines of this projection of land, that a person standing on its extreme end can look down both sides clear to the main coast, and on the west side, in particular, can see practically every yard of the beach for its full length.

Driving to the Point from Leamington, little change from the ordinary level clay land of Essex County is observed for a few miles. The shore-line for a mile or so from the dock is made up of a sand beach of average width, and a low, clay cliff of four to eight feet in height, which represents the difference in level between the flat country and the lake. Proceeding farther down the Point, the land level keeps dipping lower, until, where the marsh begins, the surface of it is just a little lower than the lake itself. The whole of this marsh land—which is practically the full width of the Point, and, narrowing as it goes, extends to within two miles of the outward end—was, forty years ago, but a vast expanse of reeds and rushes, in which countless thousands of wild water-fowl sported. A considerable portion of it has been already reclaimed, a huge ditch having been dredged out into which the soil water, by means of other ditches and drains, is drawn, to be pumped by steam power into the lake at either end. Beginning at the west side, where one pump is situated, this great ditch runs for a time parallel to the coast, then turns and goes straight across to the eastern edge, where it again runs a short distance parallel to the shore before it stops at the eastern pumping station. When it needs cleaning out, a steam dredge is used instead of the pick and shovel. North of the ditch the land is drained, while to the south of it, bulrushes and cattails still spring out of the shallow water. From the dike road, which runs along a narrow ridge, partly cast up by the lake waves, and in part raised by earth scooped out of the big ditch, a prosperous farming country is seen on the one hand, with comfortable houses and good outbuildings. The ground is level, very,—how can it be else?—and dark in color. The black muck, which rests on clay, varies in

depth from two to twenty feet. Onion-growing has of late years become a specialty in this district, and the acreage set apart for this purpose is rapidly extending. Even without fertilizer of any kind, great crops are raised. In the year 1910, there were fifty-five carloads of dry onions shipped from Leamington, nearly all of which were raised on the Point Pelee marsh land. Some trial plots of celery have also been grown,

apex, practically six miles. It contains in the neighborhood of 4,000 acres. This area, which is now a paradise for the man with the gun and the cartridge-case, will doubtless yet be transformed into one of the finest vegetable gardens in Canada.

On the western side, between the lake and the marsh, there is a rather low sand ridge, in width varying from fifty to a hundred yards, about which the lake

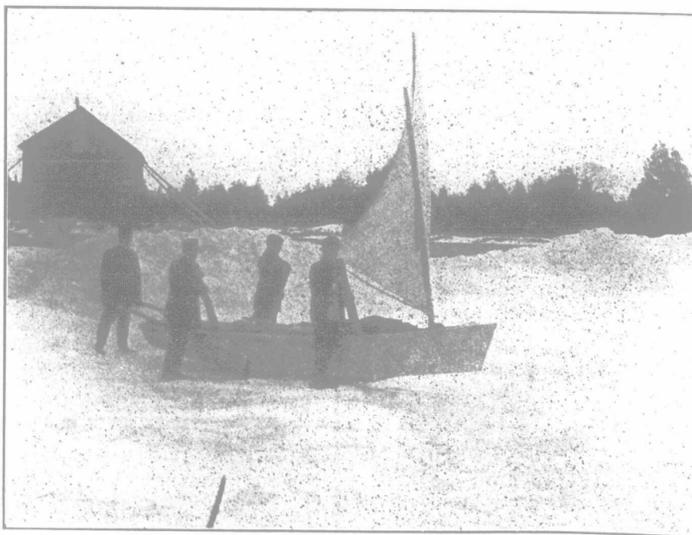


Lee Side of West Shore Ridge, Pelee Point.

and in both yield and quantity the results are said to have been phenomenal, but nothing extensive in the growth of this vegetable has yet been attempted. Land values are rising rapidly. For instance, a young man in Leamington who owns five acres, for which he paid \$100 an acre two or three years ago, was this winter offered \$150 an acre for it.

This sand ridge is public property, and is unfenced. It is covered with beautiful red-cedar trees, and extends to the outward end of the Point, though for the last mile or two its height has almost vanished, it being, there, little above the lake level.

Continuing down the lake road, a width of ground on the left-hand side



Pelee Island Mail Boat and Crew Ready to Start Back to the Island.

Life-saving station and Point Pelee in the background.

His near neighbor, also a Leamington citizen, who has ten acres, says that he would not sell his for \$200 an acre. "Why," said he, "I can get that much every year for the onions I raise on it."

The marsh land still unreclaimed is in the form of a triangle, almost three miles wide at the base, and from base

gradually becomes less marshy, until a widening stretch of fenced-in farm land is again seen with houses and the ordinary outbuildings. Where the sand and clay meet, and extending inward, there is a space in which deciduous trees, such as basswood, elm, walnut and hickory, abound. The course of the lake road

here is along this space, keeping close to the fence along the front of the farms. Drawing nearer the Point proper, the marsh ends, and the whole breadth, with the exception of the sand reaches on either side, is cultivable. Here, peach trees are being planted, with fine promise of success.

A Government life-saving station, housing a fine surf life-boat, is built on the west shore, about one-fourth of a mile from the actual point. Our illustration shows this building back of the boat on the ice. The boat seen is used for the carrying of the mails in winter to and from Pelee Island and the Point, a distance of eight miles. It is sheathed with metal, has runners below, and is built for crossing either ice or water.

Point Pelee is, as might be expected, the jumping-off place for many of the migratory birds on their annual pilgrimage. Here their lines of travel on their flight southward naturally converge. A party of five naturalists, who hail from places as far apart as Ottawa, Toronto, London, and Detroit, visit it several times a year, and have built for themselves a shack not far from the life-station, which is headquarters for them while making observations. One of them, W. E. Saunders, London, writing to the "Ottawa Naturalist," says: "This is the spot where a greater winter population (of birds) may be expected than in any other part of the mainland of Ontario, on account of its being the most southerly extension." And again: "The visit of the enthusiasts to Point Pelee proved no exception to the rule, that the Point always has something of extraordinary interest for the bird man. This time we discovered Henslow's sparrow (a rare species) in migration." During a visit beginning February 1st, 1909, when the ground was snow-covered and a cold blizzard blowing part of the time, more than forty species of birds were observed. September 18th, 19th and 20th, 1909, the following seventy-six species were seen by these sharp-eyed ornithologists—pages 158, 159 and 160.

The most of us farmers, familiar as we are to the sight of birds, would probably not have been able to detect more than one-fourth as many. So much for trained senses—"the harvest of a quiet eye."

Point Pelee is simply a very shallow lagoon enclosed by a sand bar. The question will arise in many minds—how is it that this protecting sand bar has not washed away and the whole become part of the lake again? What seems from a distance the extremity of the Point, the limit beyond which no cedars grow, is really not the end. Outward of this, the east and west sand beaches, joining in one, continue in the line in which they have previously been running, thus forming a flat tongue of sand which projects far out into the lake. A trickle of water running across it would speedily wear out a gully for itself. But here there will be an almost constant wave wash, and, when a storm is on, the breakers must thunder on it with terrific violence; yet the soft sand tongue still continues to be shot straight out, practically unmoved. How is it? Doubtless the unseen current which first cast up the sand keeps it still in its place.

There is no need to travel hundreds of miles or to cross the ocean in order to see fine sights. Essex County is extremely rich in soil, yet flat and uninteresting from a scenic point of view. But, jutting out from its coast, there is this singular cape fringed on the western side with its spire-pointed red cedars—elsewhere unknown in the county, as indeed are all native evergreens—which may well be added to the long list of nature's beauty or wonder spots within easy reach.

Letters from Abroad.

V.
ON MEDITERRANEAN SHORES.

Taormina, Sicily, Feb. 25th.

Dear Jack,—I'm going to write to you this week, just to heap coals of fire on your head for absolutely ignoring my European address. I also have another reason, and it is that I am in a horrible temper, and have to work it off on somebody who can stand it. It is enough to irritate a saint to travel miles and miles after a summer climate, and when you reach the ideal spot to have it snow. Yes, actually snow. We have had nine days of cold, cloudy weather, with one little half-day of sunshine wedged in the middle. First there was a tramontana (north wind, accompanied by snow and hail, and then there was a sirocco (south wind), with heavy rain and dense fogs. Most of the time we were housed in, and went about with heavy sweaters on, or sat in chilly groups with steamer-rugs over our knees, and tried to be nice and amiable and philosophical.

But one can't keep up an ideal pose indefinitely. Every once in a while some person would sneeze, and then assume the facial expression as of one doomed to an early death.

The fifth day started in gloriously. The English landscape photographer who had been fuming around the house for days bemoaning his fate, quite cheered up, and after gazing at the sky critically, announced in an oracular manner that there was no doubt that the weather was settled. "There's a certain feel in the air," he said, "you can't mistake." So, forthwith, he departed for the next village, with his camera on his back and the tripod in his hand, and before he had been gone an hour the rain was coming down in sheets. He returned in the late afternoon with mud up to his collar, and a vocabulary of descriptive English epithets not used in polite circles.

Being shut in the house so much, we naturally sat around the fire and talked a good deal to put in the time. One day we were talking about the terrible handicaps some unfortunate people have to drag through life with. Everybody had some fine tale to tell about some person they knew or had heard of who did remarkable things in spite of drawbacks of one kind or another.

So I thought I might as well give them a few sensations, having so much material in the family to draw on, so I launched out into a recital of your chequered career, and told of your many hair-breadth escapes by fire and flood, and how you always picked up broken threads of your life and adapted yourself to new conditions with philosophical calm, and how much you had accomplished in spite of the fact that you were blind in one eye and couldn't see much with the other. Oh! I piled it on thick when I started. You wouldn't have recognized yourself. When I had finished my eulogy, they all sat and gazed at me as if they envied me being a relative of such a noble person, and the widow leaned forward with her whole soul in her eyes, like "a nun, breathless with adoration," and said: "What wonderful courage! How I should like to know a man like that! He is a real hero!"

Since then, Jack, she has asked me a lot of questions about you, and seems to be tremendously impressed, and it just occurs to me that she would be just the girl for you. She's so full of lofty thoughts herself, and would be so appreciative of your high aims and noble purposes. I can see that she is just ready to adore a live hero, and you may as well be the subject of her adoration as another. Perhaps if you could manage to come over here whilst she is travelling with us, there might be a real romance. How interesting that would be!

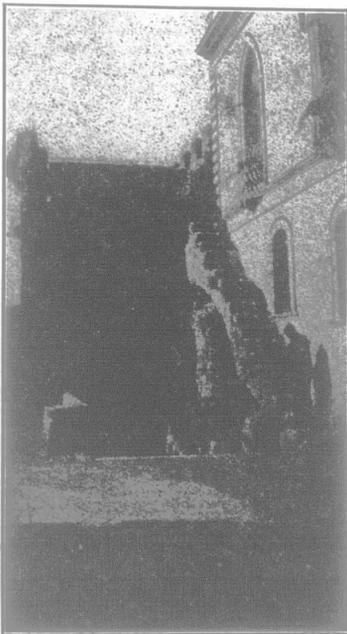
When I was paddling around in the mud the other day, watching some poor over-worked horses dragging a heavy load up the hill, I thought how indignant you would be at some of the things that happen here daily. The Sicilians are horribly cruel to their animals, and it makes one fairly sick to see the condition some of them are in. If by any freak of fate you were made absolute Ruler of Taormina, I know you would start right in to remedy every evil, and

one of the first improvements you would make would be to construct a penicular railway up the hill, and thus make a short cut from the sea (and station) to the town.

At present, everything that is used has to be dragged up three zigzag miles by bony, over-worked horses, and dispirited, half-starved donkeys. Then, of course, you would put in a drainage system, for the city has never had one. And if you could invent some sort of a house that would keep the heat in and the cold out, instead of the vice-versa method which is in operation here, I

Your woolly arms mean much to me, And even when the days are bright, I cannot let you out of sight, For if the sun its face should hide, Or I should in the shade abide, Within your meshes I must get, My comforter! my woolly pet! For all around this island's coast, You either freeze or else you roast; In every shadow lurks a breeze That brings a shiver or a sneeze; The houses are like living tombs, No heat in any of the rooms— Except in those that get the sun— And very often sun there's none.

LAURA.



One of the City Gates, Taormina.

think the multitude of tourists to come would rise up and call you blessed. But I'll warn you that it takes at least a century to get anything new introduced here, and another century to change a habit, so perhaps even your courage would fail at such a prospect. What special things are you reforming now in Canada?

In a few days we expect to say goodbye to the rock-bound town of Taormina,



Corner Store, Taormina.

with its magnificent views, and its fickle February.

I wrote the enclosed jingle one day during a spasm of disgust—with the weather.

TO MY SWEATER.

O, comforter of dismal days, When from the sun proceed no rays To warm me in this sunny clime (!), Where tourists flock in winter-time; This Sicily!—this Southern land, By icy tramontanas fanned, And drenched for days by the sirocco, That comes across from old Morocco. Beside this over-rated sea

The New Public Health.

The Farmer's Advocate Bureau of Public Health Information.

QUESTIONS, ANSWERS, AND COMMENTS.

Conducted by Institute of Public Health, London, Ont.

[Questions should be addressed to: "New Public Health, care of 'The Farmer's Advocate,' London, Ont." Private questions, accompanied by a stamped, self-addressed envelope, will receive private answers. Medical treatment for individual cases cannot be prescribed.]

Question re Germs.

1. What diseases, other than tetanus, are caused by germs commonly associated with dirt? In what particular forms of filth do these respectively most commonly abound? What is the nature and means of injury of the germs causing putrefaction in milk, meat, and other foods? What is the germ in unclean milk which is popularly supposed to cause dysentery in human beings, particularly children?

Ans.—1. Diseases, such as scarlet fever, tuberculosis, etc., i. e., those due to germs, are not associated with dirt in the general sense at all. Dirt is matter out of place, fertilizer in the drawing-room instead of on the fields; orange-peel on the floor instead of on the orange; nail parings on the table instead of on the fingers. The very babies' hair you love to smooth and kiss on the

of which we do not know. But if all these were abolished as causes of disease, they would reduce the total only by a small fraction of one per cent.

As to putrefaction in milk, meat, and other foods, the harm done by these is often very slight, or none. You know, many people will not eat meat at all unless it is "high." Others demand sour milk; and alcohol is the product of a germ, just as vinegar is. Saurkraut is due, like Rochefort cheese and Stilton cheese, to growth of molds; and germs of various sorts produce the ripening of cream, butter and cheeses. Practically, spoiled foods are therefore foods you do not like because of peculiar changes from germs. They do not necessarily harm you. If you like Camembert cheese, or Limburger, which are full of germs, you do not consider them spoiled at all.

Ptomaine poisoning proper, is due to germs which make poisons in the food as they grow in it. These poisons seldom or never yield disagreeable tastes or smells, so that ptomaine-poisoned food can seldom be detected except by its effects. Of course, spoiled food that smells or tastes bad, may have poisonous ptomaines in it, too, but not necessarily.

The germ in milk, "clean" or "unclean," that is supposed to cause dysentery, is the Shiga bacillus, but, as a matter of fact, more than three-quarters of the summer diarrhea of children is not due to this germ at all. Cows' milk is so poor a diet for children under one year, that 80 per cent. of deaths of children of this age are amongst those fed on cow's milk instead of human milk; and most of these deaths are not due to the milk being "dirty" cow's milk, but chiefly to its not being human milk. Only perhaps one-quarter of the deaths of young infants are due to "dirty" milk, and even this is doubtful. Clean milk is a grand, good thing for older children, but it is the wrong food for babies: "dirty" milk, of course, does still more harm, not merely on account of infectious dysentery, but because the germs in the dirt spoil the milk as a food: they make a poor food worse, in other words.

TUBERCULOSIS GERMS—WINDOW TENTS.

2. (a) How long will tuberculosis germs remain dormant in a room to which sunlight has no access? (b) How soon could a room, formerly occupied by a consumptive, be occupied again with safety? (c) Is fumigating of use in freeing such a room from the bacilli?

Ans.—2. (a) Tuberculosis germs seldom live over three weeks in an ordinary room. They may last longer in really dark rooms, especially if the rooms are also damp.

(b) An ordinarily well-lighted room would generally be safe for occupancy after a month or so, provided germs had not been deposited in dark, damp corners, or under carpets or rugs, etc.

(c) Fumigation, properly performed, makes a room safe from danger of giving consumption. Such fumigation should always be done before strangers use the room, etc.

3. Do you think that the use of window tents should be general? I refer to the canvas bed-tents for sleeping-rooms, which ensure that fresh out-door air shall reach the head while the rest of the body is in a warm room.

Ans.—3. The use of window tents for people who can use them steadily, might well become a general practice; but experience goes to show that people who must often sleep indoors, especially travellers, do not benefit much by sleeping out-doors sometimes and indoors sometimes.

BRONCHITIS.

4. Some years ago I had a rather severe attack of bronchitis. Generally I am free of it, but sometimes it returns for a time. Would be glad if you could give any directions that would prevent its return.

Ans.—4. I would be glad, too. But supposing I was losing hens from my hen-roost every now and then and asked you how to stop it? You would say: "How can I tell you how to stop losing hens, when you don't tell me the cause. Are you losing them by rats, or weasels, or foxes, or men, or do they get the pip?" So I must answer you.

Bronchitis is due to many different causes. In general, repeated attacks are due either to repeated infections with the same or different germs, picked up from other people, just as "colds" are; or repeated attacks may sometimes be due to an old infection, the germs of which die down until they are almost gone, and so can do no harm; then, later, they begin to grow again, and reproduce the former trouble. Sometimes irritants, like dust or gases, or smoke, will produce a short attack, which ends as soon as the irritation is gone. Feeble heart action of certain kinds may cause bronchitis of certain kinds. There are attacks in some persons precipitated by reflex action from stomach or intestinal poisoning, such as indigestion, etc.

Of all the forms of repeated attacks, the most apt to be serious is that form due to a chronic infection, dying almost out, and then developing again.

You do not say how frequent or severe the attacks are, or when they happen, and only a physician can decide whether or not they really are "bronchitis" or something else perhaps more serious. In brief, the only way to find out what is wrong, and how to fix it, is to have a physician examine carefully, in view of all the facts, doing exactly as you would with a machine; then carefully, cautiously, correct the difficulties, whatever they may be. See a physician, have an examination, and find out the facts. This is the only honest advice I can give you.

H. W. HILL.

The Roundabout Club

Two of the Prize Essays--- Study No. III.

Subject:—If you were compelled to spend a year alone on an island, and were allowed but one book (the Bible not to be considered), what book would you choose?

MY ISLAND COMPANION.

"If I were to spend a year alone on an island with only one book (exclusive of the Bible), what book would I choose, and why?" That is certainly a very hard question, and requires a great deal of thought to be answered.

It may be easier to answer it if we look over Sir John Lubbock's list of the hundred best books. This is a carefully-selected list of the greatest among books. Which one of this collection would be the best under such circumstances? One would suppose, perhaps, that the best book to have with him in such a case would be something like "What to do When Alone on an Island," or "Robinson Crusoe." Yet, the book I would choose, the one that, it seems to me, for many reasons would best fill all requirements, would be a copy of Shakespeare's Works.

The first thing one would need in such circumstances would be company. One's lonely condition would demand that the book serve as a friend, and something to take his attention. It would need to be a worthy interest, too. Where would he find any book to fill this need that could equal Shakespeare's plays? He would find in them persons like himself, natural people, with thoughts and feelings like his, with both good and evil in their natures. He would not be alone at all, for he would have with him a host of personalities representing all kinds and classes of humanity, men and women who felt, and acted just as he did.

One who was left alone like this for a whole year, would need to have a book of very pure English to read, for he would be in danger of forgetting how to express himself. If he only read his Shakespeare aloud, he would hear better English, perhaps, than is contained in any other volume except the King James' Bible. Shakespeare is said to be the greatest master of our language that ever lived. He had a larger vocabulary than any other English-speaking person ever possessed. If, after being on an island without any other influence for a year, a man would go on the marketplace, he could scarcely understand the common slang he would hear.

There is another quality which would be very necessary in the One Book. It would have to be essentially truthful, truthful in life, philosophy, and religion. It would be dangerous for our prisoner were his book unsound in these respects.

Is Shakespeare? That is one of the reasons for the greatness of his works, and,—the man must appear in his writings,—his own greatness. Shakespeare is truth. We perhaps do not realize the significance of that fact until we consider what some other great men like Dryden, Byron, or Voltaire, have been in their teachings. When to his other qualities in their abundance is added that of truth, is it strange that the world should call him "Great"? One other reason for his greatness is his simplicity. "It takes a great man to appreciate a great man," and this is what Victor Hugo says about Shakespeare in this respect: "The poet is nature—simply magnificent"; and then continues,—"Sobriety in poetry is poverty; simplicity is grandeur. To give to each thing the quantity of space which fits it, neither more nor less, is simplicity. Simplicity is justice; opulence, profusion, dazzling radiance, may be simplicity. The sun is simple."

If a person had only one book, it should combine the spirits of many books into one. Merely fiction, for instance, could hardly satisfy. Shakespeare's

(Continued on page 594.)

Hope's Quiet Hour.

Behold Your King.

Pilate said: "Behold your King!"—
S. John xix: 14.

"As a King with many crowns He stands,
And our names are graven on His hands."

When Pilate placed JESUS in full view of the great crowd of people, surging like an angry sea before his judgment seat, he little knew the tremendous meaning of his careless words. That morning a Prisoner had been brought before him whose strange silence and marvellous calmness had impressed the hardened Roman very deeply. This Man had been accused of trying to make Himself a king, and when Pilate questioned Him about His royal claims, saying: "Art Thou a King?" He had accepted the title as a right: "Thou sayest that I am a King." In the margin of R. V., our Lord's answer is translated: "Thou sayest it, because I am a King."

The Roman governor did not know that his name would be remembered for all time, just because of his cowardly

fear of using the power he claimed to have—the power of releasing that apparently friendless Prisoner. He was Pilate, a man well known in the country, and this JESUS would soon be forgotten—so Pilate probably thought. Yet untold millions of people only know the name of Pilate because of his connection with that King Who seemed to have no soldiers nor subjects. Other kings have lived and died, and have now no power to affect the destinies of nations. But this King has for nearly two thousand years been extending the limits of His kingdom, and is constantly bringing under His rule more and more of the nations of the earth. We live in an age of great missionary activity, and can already see the dawning brightness of that day spoken of by the prophets when "the LORD shall be King over all the earth," and when "the earth shall be full of the knowledge of the LORD, as the waters cover the sea."

The men and nations who bow obediently to His commands are steadily increasing, and His reign means righteousness and civilization. There are, indeed, many who call JESUS their King who are very far from righteousness; but that is simply a proof that they are not His servants. It is impossible to really obey our Master and live in wilful sin. He is the Light of the world; and those who walk in His steps, trying to live as He lived on the earth, never walk in darkness.

"Let the song go round the earth—
JESUS Christ is King!
With the story of His worth,
Let the whole earth ring!"

There is a wonderful attractiveness about this Man, strong enough to capture hearts in every country where He is known. He—and He only—can satisfy the hunger of the human heart. I say this in all confidence, and have yet to learn that the strong assertion can be disproved. Other affection may satisfy the heart for a time, but the love of JESUS is soul-satisfying for a lifetime. He can meet the varied needs of a little child and a learned scholar, of a poor, blind beggar by the roadside, and a king on his throne, of a cultured poet and an ignorant black slave—filling each according to his capacity.

Less than thirty years ago there was a terrible persecution of the African Christians in Uganda. Some of those brave soldiers of Christ endured tortures which we can hardly bear to read about, and yet—in the midst of persecution—

others came to the missionaries to enrol themselves under the banner of our King. Bishop Tucker says: "The persecutions of 1886 left the Church in Uganda stronger than ever." And, as usual, the blood of the martyrs was the seed of the Church. In one year, 1894, the country reading-rooms and churches (exclusive of the capital) increased from 20 to 200. On Sundays, about 20,000 people gathered in these buildings to hear about Christ. On Christmas Day, 1892, a vast congregation of about 5,000 people listened to the Bishop with rapt attention and earnest devotion, filling him with joy and wonder. This was in the great cathedral of Uganda, a building with magnificent columns of forest trees (about 500) supporting its roof.

Pilate may have been speaking in mockery of the silent Prisoner before him when he said: "Behold the King!" How could he know that the Man Who seemed so powerless to save Himself should be the central Figure of history for all time? How amazed he would have been to learn that all the foremost nations of the earth would, as a matter of course, date every event from the Birth of JESUS of Nazareth. We say that one Roman emperor reigned so many years B. C. ("before Christ"), and that another reigned so many years A. D. ("the year of our Lord"). Even the great emperor, before whom Pilate trembled, is only an empty name to-day, while JESUS is the King of kings, and His Name is honored and loved by a great multitude of every kindred, and tongue, and people, and nation. Bishop Tucker, writing of the condition of things in Uganda in 1895, says: "Men and women in thousands were coming forward for instruction. Candidates for Baptism or Confirmation daily thronged the Mission-houses in the hope of having their names enrolled. Young men in large and ever-increasing numbers were offering themselves as evangelists or teachers. Books, mainly Scriptures, were selling like wild-fire. On every side churches and reading-houses were springing up, and were being crowded daily by eager seekers after the Truth." He says that he confirmed 1,200 candidates within the first four months of his arrival in the country. And that is only one little corner of the great kingdom of Christ on earth.

No one can dispute the self-evident fact that the Name "JESUS" is above every name. The countless churches erected to His honor, the great multitude of men and women dedicated to His service, the prayers and hymns daily going up in the



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"Listen, Rose."

Bud reads:

"Madam, your own white hands are the first to touch FIVE ROSES.

"For nearly one mile it travels through hygienic automatic processes—more and more spotless.

"Till in a clear creamy stream it flows into clean new packages, filled full-weight by infallible machinery—sewed automatically."

"Goodness!" said round-eyed Rose.

Bud reads eagerly:

"Hand-proof, germ-proof. Every littlest bit of machinery is bright—polished like those piano keys of yours. FIVE ROSES is healthy flour, wholesome, none like it. Unbleached, too."

"Nobody touches my flour—but me" said Rose.

Imagine such purity—get FIVE ROSES.

Five Roses Flour

Not Bleached



Not Blended

LAKE OF THE WOODS MILLING COMPANY, LIMITED, MONTREAL

power of His Name, the steady stream of offerings laid at His feet cannot be denied. But our test is not: "Behold the King of Kings!" but it is a personal message—Behold "your" King!

Many loyal subjects of the King have lived and died for Him. Countless lives are now being spent in His service. No man—nor company of men—can possibly destroy the Kingdom which the God of Heaven has set up on the earth (Dan. ii.: 34, 35, 44).

Do you belong to that wonderful kingdom? Are you really acknowledging Christ as your King, are you loyal to Him, and do you hold yourself always ready to carry His messages and obey His orders?

Sometimes the King speaks to you through other servants of His. Sometimes He speaks to you directly, in that still and secret voice which you will not hear unless you are listening for it. Other great leaders of men direct their followers to look above them, but this Leader holds Himself up as the One infallible Light of the world. He offers Rest to the weary and heavy laden, Forgiveness to the sorrowing sinner, and Life to His obedient servants. He claims the awful responsibility of judging justly, considering all the special conditions of heredity, environment, temperament, and education, which weigh so heavily for good or evil. He demands as His right our absolute obedience—even in our secret thoughts—and the highest love of each heart. He asks this unhesitatingly from all of us, though we have never seen Him nor heard His voice with our ears. No other man in all the ages of the world's history has ever made a tremendous claim like this. Kings have exacted outward obedience from their own subjects, but this Man requires inward obedience also, and the highest place in the affections of every man, woman and child in all the world. Most wonderful of all is the fact that

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We offer, subject to sale, the following stock, which we guarantee to be true to name. No. 1 stock in every respect; 5 to 7 feet high. Price, f.o.b. Pointe Claire, Que., \$27.00 per 100.

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| 200 ALEXANDER | 500 BEN DAVIS | 600 STARKE |
| 200 BALDWIN | 500 DUCHESS | 600 SPY |
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POSITIVELY THE LARGEST SALE IN CANADA

not one soul in all these thousands of years has ever yielded to this Man's Kingly authority without becoming nobler, purer, braver, and more unselfish.

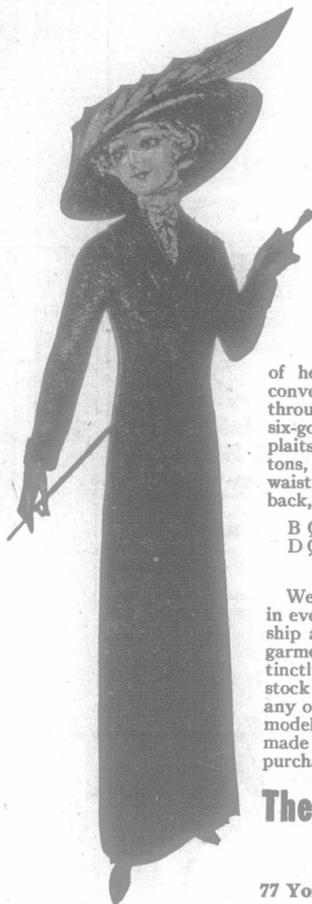
Is He your King? Each day spent in His service is clear gain. Did you ever hear of any person who looked back at the close of life and said: "I wish I had not served the Lord JESUS?" Haven't you often heard of people who looked back regretfully because life had been wasted in self-seeking, instead of being laid at the feet of Christ? Choose this day Whom you will serve—offer your life to the King afresh, if you have already chosen to serve Him. Kneel at His feet each morning and consecrate the new day to His service. Kneel at His feet at noon and feel the touch of His hand on your bowed head—then go on, refreshed and strengthened. Kneel at His feet in the evening for forgiveness and peace. Wherever you may be, and whatever your special work may be, I say to you to-day, "Behold your King!" His throne shall stand for ever.

"Wider, and wider yet,
The gates of the nations swing;
Clearer, and clearer still,
The wonderful prophecies ring.
Go forth ye host of the Living God
And conquer the earth for your King."
DORA FARNCOMB.

ANOTHER "COUNTRY WOMAN."
Since writing the above, I have received the letter given below, and wish to thank the writer for her generous donation, which will give needed help to some of her poorer sisters. I will be glad to give particulars of the way it is spent, if "Another Country Woman" will send me her name and address. I have a special reason for asking the name and address of both the unknown friends who have sent gifts to the poor through me. Some answers have been

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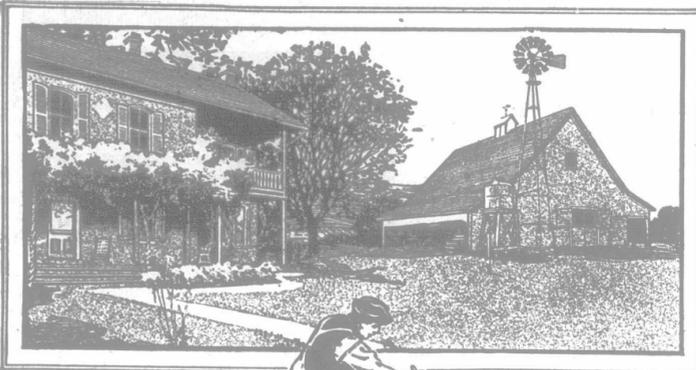
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Then, remember, that it is just as much trouble and expense to apply cheap paint as it is to apply good paint. Cheap paint won't wear, so you lose both the cost of your paint and your labor. SHERWIN-WILLIAMS paint is good paint, made of pure materials, mixed by powerful machinery, supervised by experts. It will cover the greatest amount of surface, looks best and wears for the longest possible time.

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received to the question about magazines and papers, but I will hold them over for another week, as more will probably come in. When am I going to hear again from "Barbara"? I should like her name and address, too.—Hope.

ANOTHER "COUNTRY WOMAN."

Dear Miss Farncomb,—You wrote in the "Advocate" about a letter you received from a woman with \$2 enclosed "for the furtherance of God's work in this world." I wish to add \$4 to that sum for the same purpose. I am particularly interested in young girls who are finding it hard to make a living (there are so many dangers surrounding them), and in old women and babies. I am interested in the mothers, too; but to give a baby something it needs very much may be the best way to comfort the mother.

I thank you very much for your talks in "The Advocate."

A few years ago I saw in the Weekly Witness about two poor women who had succeeded in saving up either one or two dollars to help fight the horrible white-slave traffic. Seeing about them, started me giving, and since that I have managed to give over \$120 for the purpose. It is not likely that I am the only person who saw about them, and gave because of their self-sacrificing efforts.

ANOTHER COUNTRYWOMAN.

The Ingle Nook.

[Rules for correspondents 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.]

Delicious Bread.

Dear Friends of the Ingle Nook,—During our flower-garden judging trip in Peel County in 1911, we had a pleasant call, as I think I told you before, at the old log cabin which Mr. Pearson has had renovated so that it may be used as a summer cottage. Miss Alderson, in her account of the judging trip for 1912, referred to the same interesting old cabin, as you will remember. But it is not of the cabin that I wish to speak to-day, interesting though it is as it nestles there at the foot of the Caledon Mountain, nor even of its most hospitable host and hostess. I wish to tell you about the bread and butter to which we were "treated" while there, the most delicious bread I ever tasted in my life. The recipe used was that of Mrs. Jane Huckstep, of Goderich, who has very kindly sent it to us.

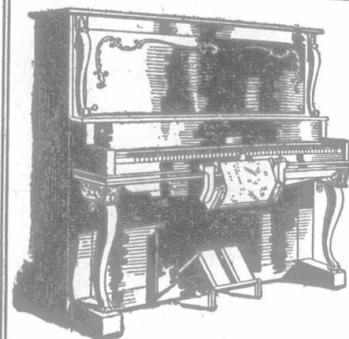
To make five small loaves: Scald 2 tablespoonfuls of flour with a quart of potato water, 1 teaspoonful of sugar, and 1 teaspoonful of salt. Soak one-half yeast cake in lukewarm water. When batter is cool, stir in the yeast cake, set to rise three or four hours. Put in 1½ quarts of lukewarm water for sponge, and set to rise over night. In the morning, stiffen well with flour, and give it two or three mixings. When it rises enough, put in pans. Let rise one hour, and bake.

BREAD QUESTION—HANDY "WRINKLES."

Dear Junia,—Some time ago I read in an article that it is as necessary to use a thermometer for successful bread-making as it is for butter-making. Will you kindly give the proper temperature for yeast? Like that for cream, it doubtless varies with conditions, but please give the extremes.

Any mother who has a baby just beginning to stand alone, will find a large packing-box a great comfort. When you are washing, or obliged to go outside for water, or up-stairs, place baby in the box with some playthings, and you will not be alarmed lest he pull over the lamp, climb up on chairs, etc. My box is about twenty inches high, and four feet long, so he has plenty of room to walk up and down by holding on to the sides. On a fine day, set the box out on the porch so that baby can have a change of scene, only don't leave him too long, as the little people get tired.

To avoid being "flustered" by unexpected visitors at meal-time, always have



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88-Note Player Piano

HE WRITES:—

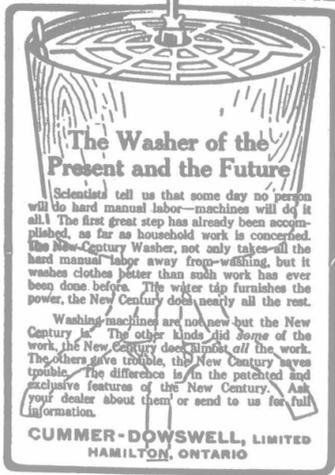
"The Player Action installed in our Piano a short time ago, we are glad to say, has come up to our expectations. We are much pleased with the simplicity of the Player Action and the instrument as a whole is very satisfactory. We also might say that you need not hesitate to recommend the Doherty Attachable Player Action and I would be pleased to advise anyone should they write me personally."

Write for particulars.

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Washing machines are not new but the New Century is. The other kinds did some of the work, the New Century does almost all the work. The others gave trouble, the New Century saves trouble. The difference is in the patented and exclusive features of the New Century. Ask your dealer about them or send to us for full information.

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on hand some canned fish, canned vegetables, and fruit cake. They will keep indefinitely, and are sometimes a boon to the farmer's wife who has young children, and no help.

Each winter make up your mind to read three or four good books, as there is so little time in the summer. It is quite as important to have something new in your brain as to have a new hat above it.

Kent Co., Ont.

Conn, in his book "Bacteria, Yeast and Molds," says: "In winter, a temperature of 95 degrees is not too great for the proper raising of dough, while in summer a temperature of 70 degrees is more satisfactory." If the flour is thoroughly warm, the temperature in winter may be lower than 95 degrees. Conn strongly advises using a thermometer when making bread.

BUTTER TARTS.

Dear Junia,—In looking over the Ingle Nook, I see that you cannot find recipe for butter tarts. You are welcome to mine.

One cup brown sugar, 1 egg, (currants, if liked), butter size of small egg.

This is the filling for one dozen tarts. You can supply the "crust" as you have often done before. By the way, filling and crust are baked together.

MRS. JAS. BROOKS.

Perth Co., Ont.

HELPFUL HINTS — BUTTER TARTS — MUSTARD PICKLES.

Dear Junia,—I have been a silent reader of your columns for some time, and have received many helpful hints, and we are all very much pleased with "The Farmer's Advocate." I enjoy reading the "Mending Basket Department" very much. I also think as does "Minnetaki," that it is a mother's duty to teach her children to wait on themselves. I am going to tell you of a scheme which I have put into practice in our home to teach my children to be tidy and care for their own clothes, etc. I fixed up a box with a little opening in the top, which we call the "untidy box," and whenever I find any of their clothes thrown over a chair, or their slippers or school-bags lying around, why, they just have to put five cents in the "untidy box." They have been earning a little money all winter, and they do dislike to have to put any of it in this box, so they are always on the lookout. Consequently, I have very little work to do in the mornings now, beside the kitchen work, to what I had before.

N. W. would like some of the Ingle Nook friends to send her a recipe for butter tarts, and another, Subscriber, would like a recipe for mustard pickles which does not require turmeric. I am very glad I can send you both of these recipes, which you will find enclosed.

Butter Tarts.—Line patty pans with a good, rich pie-paste, and fill with the following: One cup of brown sugar, 1/2 cup of butter, 1 cup of currants, 1 egg, and a little vanilla.

I use the small-sized patty-pans, and put in a large teaspoonful of the above mixture and bake all together.

French Mustard Pickles.—Two quarts of Silver onions, 2 quarts of cucumbers, 1 large cauliflower. Soak all over night in salt and water in separate dishes, then scald them separate in vinegar and water (half of each), drain, and make a paste of: 6 cups white sugar, 2 cups of flour, 1/2 cup of mustard, 1 ounce celery seed, and 1/2 gallon of the best white-wine vinegar. Mix all together and cook until creamy, then remove from the stove. When partly cold, put in vegetables, and bottle.

NELLIE.

Waterloo Co., Ont.

CHOCOLATE ICING—BUTTER TARTS.

Dear Junia,—I noticed in your journal of March 6th that a reader signing herself "N. W.," Ontario County, Ont., requests a recipe for "Butter Tarts."

This one I am enclosing was given me by a Canadian farmer's daughter, and is considered very delightful.

I am an English girl, born in London, have only just commenced fruit farming, but like it immensely, as does my husband, also an Englishman. We like "The Farmer's Advocate," and find it both useful and interesting.

I enjoy the Ingle Nook, and have ob-

tained quite an amount of useful recipes.

Butter Tarts.—One egg, butter size of small egg, 1/2 cup sweet milk, 1 cup currants, 1 teaspoon extract vanilla, 1 cup of granulated sugar. Make paste and line pie dish; mix ingredients well together, place in pie dish or small pans, and bake in moderate oven. This pie does not require top crust.

CHOCOLATE ICING FOR LAYER CAKE.

English—Mix two cups of granulated sugar with 2 tablespoonfuls grated chocolate (unsweetened); stir in one cup milk; add 1 level tablespoon butter, and boil very slowly, until it forms a ball when dropped in cold water, then add teaspoon vanilla extract, and beat till stiff. Success mainly depends on the slow boiling and patience in spreading, but it is well worth the trouble when finished.

Wishing you everything you would wish yourself.

Lincoln Co., Ont.

PAINTING AND PAPERING.

Dear Junia,—I have never written to you before, but, like many others, I have come for help. I want to paper and paint my parlor, and I do not know what color would look well. Can you please help me? The room is 18 x 15, in height 8 feet, with box beams across the ceiling. There are two small windows, one north and one south, three doors and an open fire-place. The room is rather dark. The carpet is peacock blue, with yellow roses; there are curtains over door and a fire-place drape, peacock blue. There is a space between 2 feet wide. Would the woodwork the carpet and side of room about around fireplace look best dark oak? It is painted white now and the ceiling is sky-blue.

Yours gratefully,

BESSIE.

As your room is rather dark, have all the woodwork ivory white (a sort of creamy, not a "dead" white), and the ceiling a deep cream. Choose a light, dull buff paper for the walls, and have window curtains drawn well back over the wall, made of cream scrim, with a printed or stencilled border in peacock blue.

SOAP BARK.

"Will you tell me how to use soap-bark to clean clothes?"

SCHOOLGIRL.

Stormont Co., Ont.

Make a strong decoction of the soap-bark, by boiling it in soft water, then add a little alcohol. Sponge the mixture on the spots until they are removed, then rinse off with clean water.

ICINGS AND FILLINGS.

Dear Junia,—Having received much valuable information from the Ingle Nook in "The Farmer's Advocate," I, like many others, have come for help. Could you give me some good recipes for icings and fillings for cake?

Would a brown velvet dress be suitable to get?

ARCHER.

Bruce Co., Ont.

Milk Icing.—Allow 4 tablespoons milk to a cup of sugar, and cook until the syrup "spins a thread," then beat until thick and white, and spread on cake. Maple sugar or brown sugar may be used instead of the white, or chocolate may be added.

Burnt Almond Icing.—Parboil almond meats and rub the skins off, then put in a pan with some butter and brown in the oven. Next mix with confectioner's icing sugar and roll with a rolling pin. Last of all, mix with milk or lemon juice to make the icing.

Orange Icing.—To the grated rind of an orange add 2 tablespoons orange juice and one of lemon juice. Add gradually to the beaten yolk of an egg, then stir in confectioner's sugar.

Chocolate Icing.—Take white of one egg. Do not beat it, but stir into it 8 tablespoons powdered sugar, beating until smooth. Add 1 inch-square of chocolate melted over hot water, season with 1/2 teaspoon vanilla, and spread on cake. The frosting may be varied by

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Bishopric Wall Board is made with Asphalt-Mastic. This is asphalt, toughened by a patented process, and is vermin-proof. In hot Asphalt-Mastic, kiln-dried, dressed laths are imbedded at a pressure of 500 pounds to the square inch. The other side of the Asphalt-Mastic is surfaced with heavy-sized cardboard. Bishopric Asphalt-Mastic protects the lath. It will save 50 per cent. on labor.

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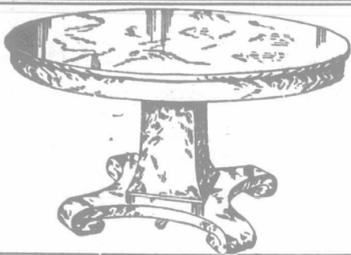
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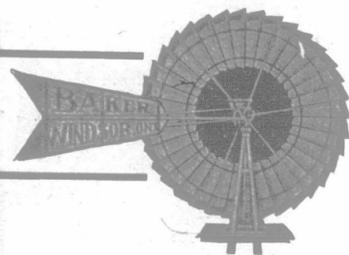
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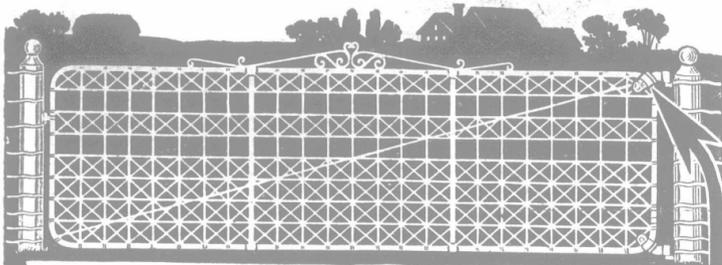
At the Commercial Hotel Stables, ORANGEVILLE, ONT., on **Thursday, April 10th, 1913**

Mr. J. E. THOMPSON will sell three imported Clydesdale stallions, rising 3 years of age, sired by Baron of Buchlyvie, Iron Duke and Royal Abundance. Twelve imported Clyde fillies, nine rising 3 years and three rising 2 years, by such great sires as Everlasting, Marcellus, Rycroft, Up-to-Time, High Degree, Baron Gartley, etc. In individuality, quality and breeding, they are toppers every one.

TERMS: Cash, or 8 months with 6%. Stallions, one-half cash, balance arranged with 6%. Write for catalogue.

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Orangeville, Ont.



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Should the BRACE WIRE in an ordinary gate become slackened or broken, you know from experience that it cannot be tightened or replaced so as to make the gate as serviceable as when you bought it.

OUR PATENT HINGE-CLIP

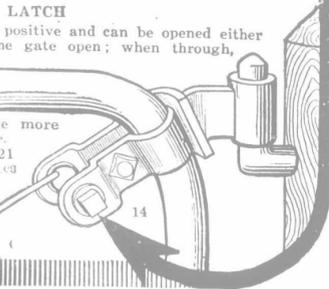
with attached BRACE TIGHTENER overcomes this disadvantage. In "IDEAL" GATES the brace wire can be adjusted or replaced in less than two minutes with an ordinary wrench and then you practically have a new gate. Our new Hinge Clip also carries the weight of the gate direct from the top hinge bolt, thus relieving the frame from any unnecessary strain.

OUR PATENT LATCH

is supplied with all "IDEAL" GATES. It is positive and can be opened either way. Raise the thumb latch and push the gate open; when through, swing it shut—it always locks.

These new features are all covered by patents and "IDEAL" GATES are the only gates sold in Canada with these improvements, which makes the gate more serviceable and add many years to its life. A postal card will bring you our catalogue 121 which describes in detail the many advantages of "IDEAL" GATES.

The McGregor Banwell Fence Company, Limited.
Walkerville - Ontario



omitting the chocolate and adding prepared coconut.

Lemon Cake Filling.—One-half cup cold water, 1 cup sugar, 1 level tablespoon flour, rind and juice of 1 lemon, yolk of 1 egg, 1 teaspoon butter. Put 2 tablespoons of the water on the flour and stir until smooth, then add the beaten yolk and beat again. Put the rest of the water, the sugar, lemon juice, and grated rind, and the butter, over the fire in a saucepan set in boiling water. When it boils, stir into it the flour mixture, and cook. Let partly cool before using.

Cocoonut Filling.—Whites of 2 eggs, 16 tablespoons powdered sugar, 1/2 cup prepared cocoonut, 1/2 cup freshly-grated cocoonut. Stir all together. Do not beat whites of eggs.

Maple Filling.—Beat the white of one egg with grated maple sugar. Add one teaspoon melted butter.

Sour Cream Filling.—To 1/2 pint slightly-soured cream, add 1/2 pint sugar and 1/2 pint crushed walnut meats. Boil for 15 minutes; when about two-thirds cool, spread on cake. Cake should be cold.

A brown-velvet dress is very pretty for winter wear; something lighter would be prettier for summer. Would you like shantung, or foulard silk? The cotton goods shown this spring are also very pretty, and will be much worn during the summer.

HOMEMADE VINEGAR.

Dear Junia,—I have been intending to write to the Ingle Nook for some time, but I seem to be always busy. I enjoy reading the Ingle Nook letters very much, and have found many helpful things. I wanted to send in a recipe for homemade vinegar. I have tried it, and found it splendid.

What a pleasant winter we have had. I have enjoyed it very much, and hope that all the Nookers have enjoyed it, too. I live on a farm, and would not be content to live anywhere else. I am an ex-school teacher. I have only been married five years, so my teaching days are not yet forgotten. I put in far longer hours now than I did then, but I have no wish to go back to the old work. A woman's happiness is in her home, her husband, and children.

Well, I must quit chattering or you will never want me to come again.

Homemade Vinegar.—Cover apple peelings with water and boil thoroughly, then strain and set away to sour. If a little vinegar or "mother" is added, the juice will sour much quicker.

DUTCH LASSIE.

Lambton Co., Ont.

RE CORRESPONDENCE.

Will you kindly answer the following questions:

1. When writing a business letter, how should a married lady sign her name?
2. How sign when it is not a strictly business letter, but to a stranger?
3. How should a widow sign her name?
4. How should a letter to a widow be addressed?
5. When calling, is it correct to use one card, with Mr. and Mrs. Blank, or should the single one for Mrs. Blank and two for Mr. Blank, be used?
6. Is it correct to answer an invitation on the stiff cards that come for invitations? If not, what should be used?
7. When a funeral is announced to be private, but a few cards are sent around, should one receiving a card attend the services?

Norfolk Co., Ont.
We quote you from "Encyclopædia of Etiquette":

"A married woman should sign herself Mary Blank, not Mrs. John Blank, in social correspondence. In concluding a business communication, if she has doubts whether the person to whom she is writing knows her married title, she writes it in brackets beneath her name, thus:

Mary Blank.
[Mrs. John B. Blank.]"

A widow signs her name just as any married woman does. Letters should be addressed to her thus: "Mrs. John Brown."

When calling, a married woman leaves one card of her own and two of her husband's,—one for her hostess and the

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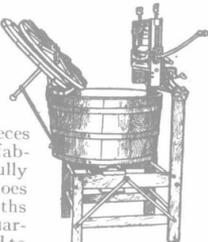
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need no insurance—because they are permanent. They cannot burn; they will not blow over; last a lifetime.

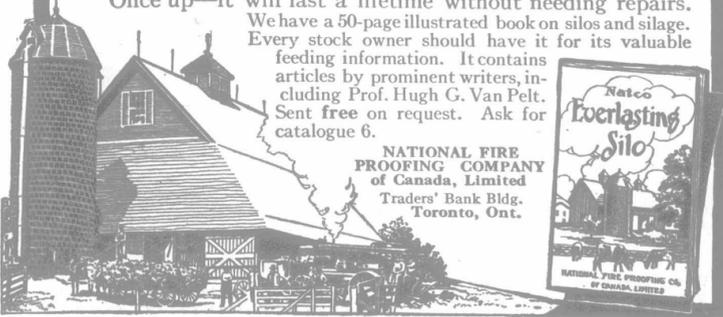
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Traders' Bank Bldg.
Toronto, Ont.



other for her husband. A woman never leaves her own card for a man.

When answering an invitation, use fine, plain note-paper, with envelope to match.

Those who receive cards are expected to attend a funeral service

The Beaver Circle.

Our Senior Beavers.

A New Competition.

Look at the accompanying picture, then write an essay about any poem of which it may remind you,—all essays to be received at this office not later than March 30th. Address, "The Beaver Circle," "The Farmer's Advocate and Home Magazine," London, Ont.

Dear Puck and Beavers,—This is the first time I have written to you. I live on a farm of one hundred acres. I go to school; am in the Second Book, and I am nine years old, and have to walk a mile and a half to school. I like going to school very much; I also take music lessons. We live three-quarters of a mile from church. I go to Sunday-school. We are half a mile from our post office. Well, I think my letter is getting rather long.

F. McMILLAN (age 9, Class II.).
Kirkhill, Ont.

Dear Puck and Beavers,—This is my second letter to the Beaver Circle. My father has taken "The Farmer's Advocate" for as long as I can remember. I have three sisters and one brother. I go to school nearly every day, and like it fine. We have two cats; one is white



The "Competition" Picture.

AN ORIGINAL POEM.

Dear Puck and Beavers,—My father has taken "The Farmer's Advocate" a number of years. As this is the first time I have written to the Beaver Circle, I will not write a very long letter.

I am sending you some verses, and I hope they will miss the w.-p. b. These verses I composed myself. Wishing the Beaver Circle much success.

and gray, and the other one is all white. My teacher's name is Miss McFaddin, and I like her. Well, I guess my letter is getting rather long, so I will close.

LYDIA WAGLER (age 8, Jr. II.).
Crosshill, Ont., R. R. No. 2.

Who visits me just once a week,
And words of truth and wisdom speak,
For knowledge teaches me to seek?
Dear Advocate.

When wearied with my work and play,
Who helps to cheer the busy day,
With Beaver letters and stories gay?
Dear Advocate.

Who tells me of Rebecca dear,
Her trials, temptations, pleasures, fears,
Kind friends she had abroad and near?
Dear Advocate.

Who tells us how to till the soil,
What seed to sow, the hay to coil,
And mow in barns so it won't spoil?
Dear Advocate.

When tender chicks and lambies cry,
What precious book is always nigh,
To help us so they will not die?
Dear Advocate.

Whose pages teach us how to treat
The dear old horse and cow so sweet,
And never once to kick or beat?
Dear Advocate.

What book is always pure and true,
For boys and girls like me and you,
And kind acts teaches us to do?
Dear Advocate.

Who brings to us Hope's Quiet Hour,
And tells us of God's holy power,
How we must live from hour to hour?
Dear Advocate.

MILDRED LEONORA METLER.
(Age 10, Book III.)
North Pelham, Welland Co., Ont.

We really think this poem deserves a prize, Mildred. You scarcely needed to tell us that you "made it up yourself," did you?

Dear Puck,—Every Saturday night when "The Farmer's Advocate" comes there is a scramble for it, between my brother and myself. Then we find the letters and read them. Sometimes we have to crawl on each other's backs, and look over each other's shoulders. My father and grandfather have taken "The Farmer's Advocate" for ten years, and now they say it is the best paper they take, and they take ten or eleven papers. A baby sister came on October 18th. She laughs, and is good. Well, I will close, hoping this letter will escape the w.-p. b.

JOHN SENN (Class Jr. III.).
York, Ont.

Dear Puck and Beavers,—I have taken great interest in your charming little Circle, and in one of your issues of "The Farmer's Advocate" I saw that you asked the Senior Beavers to write little stories, so here is one, Beavers.

AN ALARM.

"May I go to Jane's?" asked little May of her mamma one bright day.

"And pray, child, why do you want to go to Jane's alone?" asked her mamma.

"Just to play," was the reply.

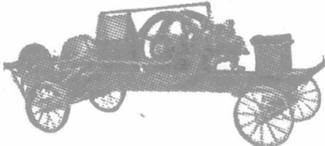
May had made a plan with Jane which was to go over to "Boblo" Island to spend the day. May's mamma knew nothing about it, but May was in a terrible "shuffle" when her mamma said that she could not go.

Finally, May was tired of being with mamma and Mary, so she quietly slipped up-stairs and sat on her tossed bed for about five minutes, then said to herself, "I will fumble in Mary's trunk to see what she has."

So she opened the trunk, took the box of letters and cards, and just began reading, when alas! the cover of the trunk fell, which made a terrible noise. Mamma and Mary ran up-stairs, and when Mary heard the stair door open,

Use Up Scrap Wood

Don't throw money into the kitchen stove by burning up valuable cord wood. Cut up the scrap wood lying around loose with a



Rumely Saw Rig

and put some money in your pocket.

A 5 h.p. Rumely-Falk Kerosene Engine

will run your saw rig for you. Oil it and start it, you do nothing but saw wood. No attention, no repairs necessary. It will run until you're through, and it's speed won't vary. Smooth running, throttle governed, economical, burns kerosene and distillate. You'd find it handy for a hundred jobs. It will save money on fuel.

Furnished in any style. Skid-mounted, portable or stationary, in any size.

Send for "Data-Book No. 118a on Rumely-Falk Kerosene Engines and Folder No. 461 about Rumely Saw Rigs. Ask name of our nearest dealer.

RUMELY PRODUCTS CO.

(Incorporated)

POWER-FARMING MACHINERY

Winnipeg Vancouver Edmonton Regina Saskatoon
Brandon Yorkton Toronto Estevan Calgary 575



The Elastic Cultivator

Made by The Peter Hamilton Co., Limited,
Peterborough, Ont.

On any cultivator when the front and rear teeth are fastened to the same section or tooth frame, the back teeth are bound to cultivate deeper than the front ones, or perhaps the front row of teeth do not enter the ground at all. On THE PETER HAMILTON the sections or tooth frame are divided into rows, and each row of teeth swings or moves independent of the others. What is the result? Even cultivation on every square inch of field and better crops. This is only one of our exclusive good points. See John Deere, dealer, for additional information. Sold by

John Deere Plow Co., 77 Jarvis St., Toronto, Ont.



Greater Fertility—More Chicks

You can get more eggs and bigger hatches from your present flock without increasing your labor or feed bills. And the extra eggs and chicks are all "velvet"! Here are the facts:—Every hen will lay heavily and produce fertile eggs if you keep her in the right condition. This means perfect health, with every organ doing its full share of the work of converting feed into eggs; strong circulation, active liver, bowels and reproductive organs. Weakness or inactivity of any of these will surely reduce production and cause loss.

Pratt's Poultry Regulator

tones up and strengthens the entire system, and gently stimulates every organ, inducing it to perform its full duty. It has been accomplishing wonders for poultrymen for forty years.

25c, 50c, \$1. 25-lb. Pail, \$2.50

To save your chicks from intestinal troubles use

Pratt's White Diarrhea Remedy

If you want to raise them all and make them grow like weeds, strong healthy, lusty, feed

Pratt's Baby Chick Food

In boxes and bags, 25c up. "Your money back if it fails." Pratt's 160-page poultry book 10c. by mail

Our products are sold by dealers everywhere, or PRATT FOOD CO. OF CANADA, LIMITED, TORONTO.

AUCTION SALE OF Farm Stock and Implements

on Dundas Road, at COOKSVILLE, on

Thursday, April 3rd

Aspinwall Potato Planter, with corn planter and fertilizer attachments; a London Spray Motor, will spray four rows of potatoes at once. This machinery was new last spring. Also a large quantity of implements, cattle and horses for sale at the same time at

Mr. Hutchinson's Farm

CANUCK FEEDS
BABY CHICK FEED makes strong, healthy birds. A sure PROFIT-MAKER.
SCRATCH FEED The great EGG PRODUCER. Write us for free samples and prove the astonishing results.
 CHISHOLM MILLING CO., LIMITED, TORONTO, ONT.



A Fortune in Chicks

One Man and His Son Made \$12,000 In One Year With Poultry

You will want to read his letter telling how it was done. And best of all any one who will follow the same simple practical rules will be sure to make big money with poultry. Every one who keeps poultry or who is thinking of starting in this business should have a copy of this big

112 Page Book—Free

Nothing like it has ever been published before. It is filled from cover to cover with splendid illustrations and bristles with money-making money-saving facts. You will be interested in the articles by Prof. W. R. Graham of Guelph, Ontario, "Hatching and Rearing" and "The Automatic Henhouse." Other subjects discussed are "How to Select Layers," "Which Breed is Best," "How to Treat Diseases." Just think of it—75 of the 112 pages contain no advertising—just helpful information from the greatest authorities on poultry raising. This book will save you a thousand mistakes and make poultry raising profitable if you will follow the advice it gives.

Write Your Name on a Postal and mail it to us at once. We will send the complete book free and postpaid. You will want to know about the new **PRATTS** **STATE INCUBATOR** with Sand Tray also the **PRATTS** **STATE UNIVERSAL MOVER BROODERS** which you can make at home and save money. All leading agricultural colleges and expert stations endorse **Pratt's State Incubator** because they hatch chicks that live. Write for free book **Ship your eggs to us and get highest market prices**
Gunn, Langlois & Co., Ltd.
 Box 116 Montreal, Canada
 Has the largest stock of the famous Pratt's State Incubators

DOMINION POULTRY SUPPLY HOUSE.
 Cycle Hatchers, Brooder Hatchers, Floorless Brooders, Model Hot Air Incubator, Model Out-door Brooders, Grain Sprouters, Bone Mills, Nursery Chick Food, Grit Shell and all Poultry Supplies.

MODEL INCUBATOR CO., River St., Toronto
Seed Barley O. A. C. No. 21
 85 cents per bushel, bags included. J. H. Smart, Kingsville, Ontario.

What Each Section Needs

IS A **Central Custom HATCHERY**

WHERE one man hatches eggs for everybody, cheaper and better. Start the Hatchery this spring and your customers will raise

More Poultry and Eggs to supply the Market, instead of Importing them.

Write for our free Custom Hatching Book.
Canadian Incubator Co., Limited
 152 BAY ST., Dept. 5, TORONTO, ONT.

SEED OATS FOR SALE 300 bushels Registered Banner, a quantity of "Early Wisconsin and Banner Variety". The first variety won First Prize in the Field Competition of twenty-one entries.
 ALEX SMITH & SONS,
 R. R. No. 5, Embro, Ont.

For Sale—A Jersey bull, pure St. Lambert; solid color; fourteen months old; an extra good one. For particulars, address
H. M. ROLPH
 Glen Rouge Farm, Markham, Ontario

For Sale—Suffolk Punch Stallion, sired by pure-bred Suffolk Punch Stallion, Ontario; brown; 8 years old.
THOS. KNAGGS, Drumbo, Ont.

For Sale—Yearling and coming 2-year Percheron Colts, Stallions and Fillies, registered, and good ones. For further information, address
 John J. Sullivan, 202 King Ave., Detroit, Mich.

she put the letters on the floor and sat on them.

Mamma inquired what she was doing. "Oh, just playing with my doll," was the untruthful reply.

"May," said Mary, "will you please get off my trunk so as I can get a clean apron for tea?"

May stayed for a little while, but finally got off, and, sad thought to her! Mary discovered the letters on the trunk.

"Is this the way you play with your doll? Aha, Miss, that is what you do to revenge me! Let it not happen again. After this, my little girl, you may not go upstairs without asking Mary or me."

Mary said nothing, but hung her head, and after that she never went up-stairs without Mary's or mamma's permission. I think it served her right. Don't you?

Well, Puck, must say good-bye, and if this takes too much room and crowds others, just pitch it into the w.-p. b.
 RITA COYLE (age 11, Bk. IV.).
 Auld, Ont., R. R. No. 4.

Riddles.

What goes up - stairs with its head down? Ans.—A peg in your boot. Sent by Gertie White, Brooklin, Ont.

What edged tool grows sharper with constant use? Ans.—A woman's tongue. Sent by M. J. Morgan Dalton, Kingsbridge, Ont.

Beaver Circle Notes.

Sadie Carruthers wishes to know if she may enter the Garden Competition this year. Certainly; announcement will be made later.

The Mending Basket

Training Boys for Husbands.

Dear Friends,—I have been reading the letters in "The Mending Basket" lately, and they make me feel sad. The object seems to be to make selfish people, whether husbands or wives, think, and the task seems such a hopeless one, especially to those who have drifted apart on life's journey and have become set in their habits. True, "it is never too late to mend," and the love that made all service and sacrifice sweet in their younger days might be rekindled if they sought to understand each other and to forgive and forget past annoyances and profit by past mistakes.

But, parents, what about the next generation of young men and young women? We have the training of them largely in our hands. Are we going to have our failings perpetuated in our sons and daughters? Many a selfish husband of to-day has been made so by an over-indulgent mother who made herself or her daughter a slave to a brother who might have been a gentleman if trained to properly appreciate the women of the home. Do not be afraid it will make a sissy of your boy to get a meal, if necessary, nor that it will make a tomboy of your girl to help at any outdoor work for which she has the physical strength. What a pleasant sight it is to see the sons and daughters growing up as "chums" and in happy partnership in the home, instead of as selfish individuals, each bent on imposing on the other.

To the man who thinks, because his mother got along with various make-shifts, that his wife should be content with just as poor equipment, I should like to introduce the hand rake, the scythe, the cradle and the oxen, and demand as up-to-date a method of work with these crude implements as that of his neighbor with the modern outfit. He would then be on a par with his wife, and might be able to see where the shoe pinches. If they are both agreed (and few wives are not) to get the money-making appliances first, it is, no doubt, the wise thing to do. But the wrong comes in when the wife's cares increase and her strength perhaps decreases, and instead of the comforts promised in the future come "investments," etc. Then comes the "rift within the lute," and "hope deferred maketh the heart sick." The circumstances may be no worse than at first, but the attitude towards

POULTRY EGGS

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

ANCONAS and Buttercups—Unexcelled layers, prize-winners; day-old chicks. Ancona eggs \$1.50 per fifteen; Buttercup eggs \$3.00 per fifteen, and up. Booklet free—write quick. E. C. Appa, Box 224, Vice-President International Ancona Club, Brantford, Ontario.

BUFF ORPINGTONS—Large, vigorous stock; good colour and type guaranteed; laying strain. Eggs \$1.00 for twelve. Rev. A. E. Jones, Belmont, Ont.

BRED TO LAY. S. C. White Leghorn (Cyphers Stock) eggs, \$1 per 15, \$5 per 100. R. C. Rhode Island Reds (Prize Birds), eggs \$2 per 15. Barred Rock (Prize Birds) eggs \$2 per 15; also baby chicks. Indian runner duck eggs \$2 per 13. C. S. Wilson, Tambling's Corners, London, Ont.

BEAUTIFUL Buff Leghorns—All year layers, choice birds, eggs \$1.25 per fifteen. Unfertile eggs replaced free. Charles Watson, Londesboro, Ont.

BARRED Plymouth Rock eggs for hatching from high-grade stock. Write for catalogue Leslie Kerns, Freeman, Ont.

BUFF, Black and White Orpingtons' eggs two dollars for thirteen. Roberts and Mallot, Essex, Ont.

BARRED ROCK eggs from well-bred, heavy-laying, prize-laying stock; \$1 per 15, \$2 for 40, \$4 per 100. Chas. Hilliker, Norwich, Ont.

BRONZE turkeys from prize stock. R. G. Rose Glanworth, Ont.

CANADIAN Ringlet Barred Plymouth Rocks—Winners International Laying Contest. Pedigreed cockerels, pullets, strong baby chicks. Large hatching eggs. Custom hatching. Alf. B. Wilson, St. Catharines, Ont.

EGGS—Ontario Agricultural College Barred Rocks, Indian Runner Ducks, \$1.50 per setting. Tisdelle Bros., Tilbury, Ont.

EGGS Barred Rocks, good winter layers and well barred, bred from prize winners. \$1.00 per thirteen, \$3.00 per hundred. Miss Z. Barbour, Box 57, Erin, Ont.

EGGS from Imported Single Comb Brown Leghorns, grand layers, sixty-three eggs gathered daily from eighty hens. Price \$1. for fifteen, \$2.00 for forty or \$4.50 for a hundred. W. C. Shearer, Bright, Ont.

EGGS, Indian Runner ducks 10c. each. Pure Barred Rocks (headed by grand laying strain cockerels) and S. C. R. I. Reds, \$1.00 per fifteen, \$1.75 per thirty. Frank Binaud, Glanworth, Ont.

EGGS FOR SALE, R. C. Rhode Island Reds \$1.50 per 15 or \$5.00 per 100, also middle of May \$1.00 per sitting, good laying strain. Henry Dodge, Cairnarm, Ont.

EGGS—\$1 setting, \$5 hundred, "Snowflake" S. C. W. Leghorns. Record layers. E. W. Burt, Paris, Ont.

EGGS FROM OUR "GREATEST LAYERS" Barred Rocks, only one dollar per fifteen; five dollars per hundred. Few birds for sale. Central Ontario Poultry Yards, Colborne, Ontario.

FAIR VIEW BRED-TO-LAY Barred Plymouth Rocks pay; why? because they are a uniformly well colored flock of strong healthy birds. Always had large orchard run. During Dec. Jan. and Feb. my 100 hens laid 225 dozen large yellow eggs. Eggs \$1. per 15, \$5 per 100. S. H. Culp, Campden, Lincoln, Co.

FOR SALE—Single-comb White Leghorn cockerels and pullets. Good birds, \$2 a pair and up. Eggs for hatching. R. Hughes Ideal Poultry Yards, Collingwood, Ont.

GOLDEN Wyandottes—Large, handsome, hardy, great layers. Beautiful pullets \$1.00 up; show cockerels \$2.00. Eggs \$1.50 for 15. Get in on these bargains. Glenside Stock Farm, Rodney, Ontario.

SINGLE Comb White Orpingtons—Bred to win and lay. Eggs from pen of prize-winners \$5.00 per fifteen. From known layers \$2.00 per fifteen, \$5.00 per fifty, \$9.00 per hundred. Wm. Kappler, St. Mary's, Ont.

SUPERIOR Barred Rocks—Laid 4,928 eggs this winter in sixty days. Pullets laid at four and a half months. Pens headed by Ringlet Males. Eggs \$1.25 per fifteen. Unfertile eggs replaced free. Charles Watson, Londesboro, Ont.

SINGLE Comb White Leghorns for sale—Now is the time to buy your eggs for hatching. Ideal Poultry Yards, Collingwood, Ont., is the place to get choice stock. Prices reasonable. Fine pullets, laying. R. Hughes, Prop., Collingwood.

SETTINGS for hens or incubators in Rhode Island Reds. Circular free. Wm. Runchery, Byng, Ont.

SILVER Campines—The greatest layers yet. Eggs \$2.50 per setting. Walter Watson, Richmond Hill, Ont.

TWENTY large vigorous white Wyandotte cockerels of heavy laying strain, at \$2.75 each—Our best birds. Also Barred Rock Cockerels—Canada's champions. Satisfaction guaranteed or money refunded. First comers get the choice ones. Jno. Pringle, London, Ont.

UTILITY ROSE COMB Rhode Island Red eggs fifteen, one dollar and one fifty; White Wyandottes same prices; trio Reds, six dollars. Wesley Shanklin, Vanneck, Ont.

WHITE Rocks, Guelph winners. Booklet free. John Pettit, Fruitland, Ont.

WHITE WYANDOTTES, big, vigorous, stay white Cockerels from heavy laying strain, \$2. \$3. and \$5. each. Have won 36 out of 42 first prizes at New York State Fair in seven years. Eggs \$3. per 30, \$9 per 100. Free illustrated catalogue. John S. Martin, Drawer R., Port Dover, Ont.



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

ALL KINDS OF FARMS—Fruit Farms a specialty. W. B. Calder, Grimsby.

FARM FOR SALE OR RENT. 130 acres or 180 acres well drained sandy loam and clay loam, well adapted for dairying or grain growing.

FARM FOR SALE—200 acres; grain and stock farm, brick house, frame barn, power mill, modern stabling, 6000ft. cement floor, water throughout; splendid farm for alfalfa and corn.

FARM FOR SALE—North half lot 17, 2nd range north, Ekfrid, containing 100 acres. Good clay loam; 10 acres in woods: good sugar bush; young orchard, including apple, pear, each, plum and cherry trees, and grape vines.

WANTED—Experienced cattleman (single) yearly engagement. Oak Park Stock Farm Co., Brantford.

WANTED—Capable girl or woman for general household work. W.C. Good, Brantford.

WE HAVE a few choice farms within thirty miles of Winnipeg, good for grain or mixed farming, cultivated, with fair buildings.

WANTED—CUSTOM TANNING—Send me your cattle and horse hides, and have them tanned and made into robes and coats.

SPRING TERM

from March 25th following Easter, merges into our Summer Term in all Departments of "Shaw's Schools," Toronto—Central Business College, with four city branch schools.

W. H. SHAW, President

WANTED

Live representatives to sell high-class nursery stock in best districts of south and western Ontario.

STONE & WELLINGTON Fonthill Nurseries, TORONTO.

INCUBATORS AND BROODERS COMBINED The Philo System

We promise you the largest percentage of hatch and stronger chickens than any other machine on the market.

THE CYCLE HATCHER COMPANY G. M. COLLINS, Canadian Manager Dept. 4, 415 Symington Ave., Toronto, Ont.

BOYS, ATTENTION!

Here's your chance to earn a good watch. To the boy in each county who will send us before May 1st the largest and most reliable list of farmers and dairymen who are building or remodeling their dairy barn, we will give a guaranteed reliable silver watch.

Chatham Malleable & Steel Mfg. Company Chatham, Ontario

Fruit Farms for Sale—From two to one hundred and fifty acres in Grimsby, Beamsville and Winona Districts.

Agents Wanted in every county for the most improved line of Sanitary Dairy Barn Equipment. Apply Chatham Malleable & Steel Mfg. Company Chatham, Ontario

them changes. She cheerfully denies herself, but she chafes at being denied.

The selfish, extravagant wife is even a more contemptible excrescence than the miserly husband, for his ambition may be to lay up for his family's benefit, and may to him look justifiable.

It would save much heartache if each practiced the motto, "Bear ye one another's burdens," and tried to strew some of the flowers along each other's pathway now, even if fewer went on the coffin lid.

"A FARMER'S WIFE," Thunder Bay District, Ont.

HAPPINESS IN MARRIED LIFE.

I have read with great interest the patches of the Mending Pasket, and thought I would send in a patch, too, be it ever so poor. I think the greatest fault with both man and wife is they won't overlook the little faults of each other.

I have no use for a woman that is always telling something mean about her husband. She forgets that she married him for better or for worse.

Some women forget to think of how hard their husbands have to work to keep a wife and family and pay all expenses. They may have to work hard, too, but God intended us to work, when He said, "Take up thy cross and follow Me."

I always have respect for every man I meet, and think, when they know we respect them, they will respect us in return. There may be a few like the wild broncho type—the better you use them, the harder they kick—but, like the broncho, they are very few.

When Adam and Eve started house-keeping, the Devil tempted them to do wrong, and made the first home unhappy, and he is still at work yet, trying to make every home unhappy, if we are not on our guard and watch and pray lest we enter into temptation.

Some blame Adam; I don't—I blame Eve. Of course, like most women, she tried to put the blame on poor Adam.

Huron Co., Ont. MARIE.

"The Farmer's Advocate" Fashions.

HOW TO ORDER PATTERNS.

Order by number, giving age or measurement as required, and allowing at least ten days to receive pattern. Also state issue in which design appeared. Price ten cents PER NUMBER.



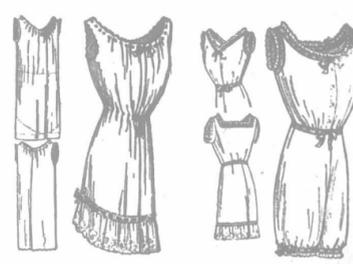
7668 Child's Rompers, 2 to 6 years. 7686 Boy's Knickerbocker Suit, 2 to 6 years.



7606 Girl's Under Waist and Drawers, 6 to 12 years. 7688 Empire Night Gown, Small 34 or 36, Medium 38 or 40, Large 42 or 44 bust.



7692 Child's Caps, 6 mos. or 1 year and 2 years. 7684 Infant's Bishop Dress, One Size.



7683 Combination Chemise or Corset Cover with Open Drawers, 34 to 40 bust. 7602 French Combination Corset Cover and Open Drawers, 34 to 44 bust.



7773 Girl's Princess Petticoat, 4 to 8 years. 7594 One-Piece Closed Drawers for Misses and Small Women, 14, 16 and 18 years.

Jersey Bull for Sale

Brilliant's Golden Lad—1033—, C. J. C. C., son of Brilliant's Golden Fern—610—, 3 1/2 years old; quiet and gentle to handle, but a good worker and sure stock-getter.

WM. CABE, Rannock, Ont.

HARAB FERTILIZERS

Make worn-out soils yield bumper crops.

Improved Early Ohio White heavy cropper; quality extra; choice seed \$2 per bushel. F. N. Haight, Box 124, St. Thomas, Ont.

THE NAME RENNIE IS RECOGNIZED BY LEADING AUTHORITIES AS A HIGH STANDARD OF EXCELLENCE IN THE QUALITY OF SEEDS

RENNIE'S SEED CATALOGUE FOR 1913

Full of interesting and instructive information for the Farmer and Gardener. Tells what and how to plant. A bright book—profusely illustrated. Shall we send you a copy? If so, write to-day.

WM. RENNIE CO. LIMITED TORONTO MONTREAL WINNIPEG VANCOUVER 101

Years' Income, \$2,050

190 ACRES, \$5,000; EASY TERMS Three horses, 17 cows, 5 heifers, bull, 5 calves, 2 hogs, 100 hens and all machinery and tools thrown in to quick buyer; one of the big money-makers in famous fertile dairy section of Central New York; rich machine-worked fields, creek and brook-watered pasture for 30 cows, lots of wood and timber, 100 apple trees; 2-story 12 room house big basement barn, running water to both; other buildings; only 3 miles to stores, creamery, milk station; although owner is very old, his income last year was \$2050; insists upon retiring immediately; if taken now farm with complete equipment goes for only \$5000, easy terms. Further particulars with travelling directions to see this and a 20 acre poultry farm for only \$1400 on easy terms, page 32, "Strout's Big Farm Catalogue 1913," filled with hundreds of fresh, new farm bargains, just out, write to-day for free copy. E. A. Strout Farm Agency, Station 2415, 47 West 34th Street, New York.

RUN IT YOURSELF. You can quickly learn to run steam engines by studying Young Engineer's Guide. Save the expense of hiring an engineer. Book recently revised to 254 pages. Illustrated. Endorsed by engine manufacturers and leading engineers everywhere. Price postpaid \$1.00. Windsor Supply Company, Windsor, Ont. Free out large catalogue—"Engineer's Bargains."

BEGINNER'S COURSE Starts you at the first in Elementary subjects—Arithmetic, Composition, Grammar, Geography. If your education is weak, you need us. Write Canadian Correspondence College, Ltd. DEPT. E., TORONTO, CANADA

MITCHELL SLIDE-EASY QUALITY TIES STYLE VARIETY

Imported Hackney Stallion

For sale: Brandy (9622). Sired by Polonus (4931); stands 16.1 hands; weight 1,200 lbs. or over; is very strong, fast mover, and a fancy stepper. Perfectly sound and a grand stock horse. His colts coming large and showy like himself. This grand horse is just the kind to get good remounts. Will sell at reasonable figure for quick sale. Come and inspect him at once. Fred O. R. Simpson, Newmarket, Ont.

Cream—Sweet or sour, bought at highest Toronto prices, at any point in Ontario. We furnish cans, pay promptly—haven't paid less than 32 cents for weeks. Write: TORONTO CREAMERY CO., Ltd., Toronto

O. A. C. No. 21 Barley.

Another supply of beautiful seed now ready. We increased one pound to nine hundred bus. in three crops. Price 90 cents per bus. Best cotton bags twenty seven cents. Jno. Elder, Hensall, Ont.

PAIR STANDARD BREO MARES 4 and 5 yrs., well mated, stand 16 hands, weight 1100 lbs or over; dark bays. Robt. L. Fendergast, St. David's, Ont.

Shires For Sale—One 3-yr.-old stallion well bred, good quality, a big fellow with lots of substance; also a 7-yr.-old imported Shire mare in foal. R. D. Ferguson, Fort Stanley, Ont.

BELLEVILLE DISTRICT

The home of yearly record CHAMPIONS
is now offering

100 Head of High-class HOLSTEINS

At BELLEVILLE, WEDNESDAY, APRIL 2, 1913

A bull to head your grade herd, a bull to head your pure-bred herd, some young cows to start a herd, tested cows to increase the value of your herd, champions to make your herd the best in Canada. All can be procured at this sale.

A consignment and dispersion sale combined. One herd of twenty all to be sold.

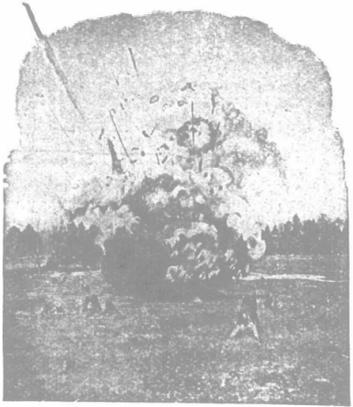
Among contributors are: G. A. Brethen, Norwood; S. J. Foster, Bloomfield; A. Parks, Napanee; B. E. Hagerman, Minto; W. G. Huffman, Gilead; G. A. Kingston, Campbellford; F. R. Mallory, Frankford; and others.

Catalogues with extended pedigrees now ready.

Address;

F. R. Mallory, Frankford, Ont.

C X L



S T U M P I N G P O W D E R

Stumps Minimize Your Profits

How much of your fertile land is occupied and wasted by stumps and boulders. Why not blast them with

C X L STUMPING POWDER

The cheapest, quickest, best method known to-day for clearing land. Write at once for our Free Booklet.

Canadian Explosives, Limited
Montreal, Que. Victoria, B. C.



125-Egg Incubator and Brooder Both For \$13.75

If ordered together we send both machines for only \$13.75 and we pay all freight and duty charges to any R. R. station in Canada. We have branch warehouses in Winnipeg, Man. and Toronto, Ont. Orders shipped from nearest warehouse to your R. R. station. Hot water, double walls, dead-air space between, double glass doors, copper tanks and boilers, self-regulating. Nursery under egg tray. Especially adapted to Canadian climate. Incubator and Brooder shipped complete with thermometers, lamps, egg testers—ready to use when you get them. Five year guarantee—30 days trial. Incubators finished in natural colors showing the high grade California Redwood lumber used—not painted to cover inferior material. If you will compare our machines with others, we feel sure of your order. Don't buy until you do this—you'll save money—it pays to investigate before you buy. Remember our price of \$13.75 is for both Incubator and Brooder and covers freight and duty charges. Send for FREE catalog today, or send in your order and save time. Write us today. Due to delay.

WISCONSIN INCUBATOR CO., Box 244, Racine, Wis., U. S. A.

The Roundabout Club.

(Continued from page 586.)

dramatic writings are, of course, centered in tales, but how much more there is contained in them. Nature, art, philosophy, religion, history, everything!—it is all found in one volume. Shakespeare is the great painter. He is the all-powerful artist. Everything is represented in its right proportion. Shakespeare saw everything; which is to say, he saw the world; he saw men, and he painted all as he saw it.

Shakespeare would prove a fine companion in a way we have not yet mentioned. His fine sense of humor runs through all his plays. Nothing would help a lonely person to forget himself so well as plenty of humor, and Shakespeare is full of it. There is fun always near the surface. However, it is not the empty-pated fool's kind. Rather that which is really "the spice of life," which oils the friction of society's machine. "Shakespeare was the worst rake that serious aesthetes ever had to lord it over."—Hugo.

There is still another point we have not mentioned which gives this book merit for such an occasion. One may carefully study Shakespeare from cover to cover and never find an immoral word to suggest evil thoughts. Wickedness is described, but only as wickedness. It is rather shown in its true colors, and not in a way to make it appear half-right. One is as safe reading his Shakespeare as his Bible.

We have tried to show in what ways Shakespeare would fit such a peculiar case; to pick out such a one's needs, and how they would be better supplied in Shakespeare than any other book. There are great books; there are interesting and instructive and good books, but to fill the situation of "the one and only book," what volume can compare with the "Complete Works of Shakespeare"? Wentworth Co., Ont. TAPS.

MADAME CRUSOE'S OPINION.

Once on a time, in prehistoric ages, his Satanic majesty, pondering on how he could work most mischief, hit upon the problem, "Mary and Ann are sisters; Mary is twenty-four years old; she is now twice as old as Ann was when Mary was as old as Ann is now. How old is Ann?" The result, when turned loose on unsuspecting pilgrims in this vale of tears was horrible to contemplate. No two got the same answer, but each was willing, even eager, to prove that his answer was correct, and the more figures and explanation it took, the more certain he was of its infallibility. High and low suffered alike. The haughty professor and the illiterate ditcher each wrestled with the problem diabolic. At last, however, even it passed away, as do the Bubonic plague and the German war scare, and the man was left in peace—but not for long. So, in "The Farmer's Advocate," woe is me that I should be so betrayed by an old and trusted friend! appears the query. "If you were shipwrecked on a desert isle, and had one book to read during the year, what book would you choose?" Since the fatal day, my eyes fell on that question I have had no peace. I attempt to admire the beauties of the sunset, and at once the desert isle and the book without a name, obstruct my vision. I set about preparing dinner, and the thought, "Would a cook-book be best?" intrudes, and by the time I have argued the question out, I awake to find my dinner is burned and my temper spoiled. Mayhap I amble toward the hen-house in search of eggs, and the very hens proclaim, "Caw daw! What book! what book! what book!" What book indeed! Shall it be prose or poetry, theology or humor, mathematics or fiction?

Not poetry I choose. It has no charms for me since my far-distant school days, when a stern task mistress, with "specks" astride her nose, bade me parse or analyze some stanza full of immortality and disguised verbs. The more undying the poem, the more invariably was the subject tucked away in an obscure corner, while some audacious adjective stood brazenly in front and lured me into the belief that it was the noun of my search. No poetry then on my isle; 'twould recall memories too painful.

Shall I choose one of those classics

THIS WASHER MUST PAY FOR ITSELF.

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

So I told him I wanted to try the horse for a month. He said "All right," but pay me first, and I'll give you back your money if the horse isn't all right." Well, I didn't like that. I was afraid the horse wasn't "all right" and that I might have to whistle for my money if I once parted with it. So I didn't buy the horse, although I wanted it badly. Now, this set me thinking.

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

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

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

I know it will wash a tub full of very dirty clothes in Six Minutes. I know no other machine ever invented can do that, without wearing the clothes. Our "1900 Gravity" Washer does the work so easy that a child can run it almost as well as a strong woman, and it don't wear the clothes, fray the edges, nor break buttons, the way all other machines do.

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

So, said I to myself, I will do with my "1900 Gravity" Washer what I wanted the man to do with the horse. Only I won't wait for people to ask me. I'll offer first, and I'll make good the offer every time. Let me send you a "1900 Gravity" Washer on a month's free trial. I'll pay the freight out of my own pocket, and if you don't want the machine after you've used it a month, I'll take it back and pay the freight, too. Surely that is fair enough, isn't it?

Doesn't it prove that the "1900 Gravity" Washer must be all that I say it is? And you can pay me out of what it saves for you. It will save its whole cost in a few months in wear and tear on the clothes alone. And then it will save 50 to 75 cents a week over that in washwoman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 60 cents a week, send me 50 cents a week 'till paid for. I'll take that cheerfully, and I'll wait for my money until the machine itself earns the balance.

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

Address me personally:

E. E. MORRIS, Manager 1900 Washer Co., 357 Yonge St., Toronto, Can.

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The successful home treatment of Skin, Scalp, Hair and Complexional troubles has been a specialty with us for over 20 years. We treat Pimples, Blisters, Blackheads, Eczema, Freckles,

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do away with all discomforts and disappointments in fitting, and render the work of dressmaking at once easy and satisfactory. This form can be adjusted to 50 different shapes and sizes; bust raised or lowered, also made longer and shorter at the waist line and form raised or lowered to suit any desired skirt length. Very easily adjusted, cannot get out of order, and will last a lifetime.

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CAPACITY 300
TO 350 POUNDS
PER HOUR

These Separators
skim very close, are
strongly built, and
are the best and
most modern. Note
the sizes and prices.

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YOUR
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The frame of our new Separator encloses every particle of gearing. The bowl casing is a part of this solid one-piece frame, and it is impossible for it to get racked out of true. The base is heavy, and cast in one piece. It is just high enough to lift the frame off the floor, and open enough to allow of sweeping underneath. The top cap lifts off, giving access to the top drive gear. The door in the frame just below the bowl casing opens to expose the worm and lower gear wheel, thus all parts are readily accessible, yet entirely enclosed, so that no dust or dirt of any kind can get to the bearings, nor can fingers or clothing be caught in any exposed gearing. The frame is low. The top of the supply tank is only 34 inches from the floor—just waist high. This allows milk to be poured into it without high lifting, and makes it convenient to use the supply tank for washing the skimming device in. There are no protruding shelves, as your pails can be set on floor safe and solid. The crank handle is just the right height, where your hands grasp it naturally without bending low or reaching. The design of the frame is graceful, and the finish, a rich red, gives it a handsome and distinguished appearance, in keeping with its mechanical excellence.

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that my grown-up relatives used to recommend as improving reading for the young, when I was in the tadpole stage and longed with all my heart to know whether Rosalind was the Duke's daughter, and if Lord Russel loved her more than he did the haughty Claribel? No, Plutarch's Lives, Burke's Reflections, and all the rest of you, if I should say I'd take one of you, it would be just like some of my well-meaning relations, to hoard the idea up till next Christmas, and then, instead of that leather handbag, or those embroidered pillow-cases that my soul was longing for, I should receive Epictetus,—"Because, you know, dear, you chose it for your desert isle, so I know you love it."

Shall my book, then, be on zoology, biology, or any of the numerous 'ologies? I can remember old Uncle Silas sitting every Sunday afternoon with Latimer's Sermons on his lap and a holy expression on his face, but close inspection proved that he never turned a page, while ever and anon a tiny snore attested to the fact that theology is soothing reading. No 'ologies, then, else I might become a hibernating animal, and anyway, the only 'ology I ever did enjoy, was the Doxology.

Shall it be a novel that I clutched to my bosom on that lone beach? Old friends of mine—David Copperfield, Mill on the Floss, John Halifax, Little Women, and all the rest of you, how can I bear to single one of you out and slight the rest? As well ask a mother which child she would rescue from a burning building, and which she would leave to perish! Good-bye my old beloved ones, the desert isle will be more hopelessly arid without you, but I can't take one without you all.

The Dictionary! Ah, now that is an inspiration! Such a fine lot of reading, any subject I should happen to wish, perhaps not so connected as some carp-



Now and here—not then and there—lies your opportunity. The Ford product has been multiplied by two-and-a-half—but the demand has been multiplied by four. If you want one for spring service you must get it now. Don't delay.

There are more than 220,000 Fords on the world's highways—the best possible testimony to their unexcelled worth. Prices—runabout \$675—touring car \$750—town car \$1,000—with all equipment, f.o.b. Walkerville, Ont. Get particulars from Ford Motor Company of Canada, Limited, Walkerville, Ontario, Can.

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Seed Corn—Every ear carefully selected by hand. Always a prize winner at O. C. G. A. **S. E. OAKEY**, Edgar's Mills Essex County, Ont.

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The latest production in Cast-iron Ranges on the Canadian Market. It is a WONDER WORKER and will keep a fire for days without replenishing the fire.



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of 100 pieces, given away absolutely FREE to the first person who will guess the correct number of Biscuits (or nearest to it) that the OTHELLO TREASURE RANGE will bake with one fire-pot of Chestnut Coal (weight of Coal 30 lbs. Biscuits weigh 1 lb. to the doz.) Each guess to count from date of mailing by Postmark.

Competition will open

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Competition open to All

Get your friends busy guessing as the Prize is well worth trying for, being a valuable set of dishes.

The correct answer and the winner's name will be published in the issue of this paper after the contest closes.

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Size No. 9-21. Has 6-9 in. Holes. Oven 21 x 20 x 13. Special lining for burning wood. Takes 28 in. wood. This is the best farmer's range on the market. Has a large Oven, large Reservoir, supplied with either High Shelf or High Closet. Ask your dealer to show you the Wonderful Range. You will buy no other when you see it, and it will pay for itself by coal you will save.

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CANADA

ing critics might wish, but for that reason never monotonous. Old book, on which all other books depend for their meaning, it shall be you. Ever do I come to thee to solve my problems, whether they be knotty or naughty, or both as in this case. Good old Webster's Unabridged, you kept a human being before me busy for somewhat more than a year. I, too, can devote a long time to you, and still, when I get back to civilization, have to consult you to see if "crum," and "thot," and "thru," are words, or just Teddyisms.

What a vocabulary I shall acquire! How I shall astonish the birds with my sonorous speeches! and incidentally I might astonish the good man when I returned from my exile. Though, for the matter of that, he has never complained

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that I could not express my thoughts fluently and pointedly. Nevertheless, how soul-satisfying it would be, when he tramped mud into the house, or sifted pipe-ashes on my best table-cloth, to be able to use those "words of learned length and thundering sound" that brought on the "Deserted Village." The Dictionary, then, for me!

N. B. No. 1.—Having chosen something in the line of heavy literature, I ask "The Farmer's Advocate" to set me on dry land. Please don't expect me to swim with my book under my arm.

N. B. No. 2.—If anyone wants to know how old Ann is, don't refer them to me. I've already gone to my silent sale, and a tidal wave has swallowed it up.

MADAME R. CRUSOE.
Lambton Co., Ont.

How to Combine Money-making with Pleasure.

(By A. L.)

Dear Girls,—being a farm-owner myself I know whereof I speak because I have been in many cities and lived in some. Now I am going to tell you a few secrets that if practised, will make you more contented with farm life. Everyone supposes himself capable of giving advice and not everyone cares to accept, but why should I take a notion to impart a measure of my success to you? Because I know if you have a practical and practicable means of money-making that you will be more in love with life for farm life is really the best and most healthful in the world, especially if the other members of the home are kind. If not you can make money anyway—which is the third best aid to happiness. (For aren't kindness of others, and your own honesty the first two sources of happiness?) Did you ever learn the profit derived from gardening? "But," you say "I'm not strong enough to engage in manual labor." I say it will make you strong. I weigh under 105 lbs. If you are more frail than that, you need the out-door exercise to rebuild your broken constitution. Can you not obtain a small plot of good soil, purchase two ounces of Wethersfield or Yellow Globe Danvers onion seed and earn your spending-money for the summer, or buy cauliflower seed, sow in one corner of the hotbed, and reap a good sum? This entails more trips to market, as cauliflowers mature unevenly, while onions can be sold all at one time. In some towns there is easy sale for wee cucumbers, cauliflowers, or onions, already pickled, if you have a talent along that line. I don't mean peddling, but at the grocery or hotel to which you sell your butter, eggs, fowls, etc. A scheme which I have found successful, as I never sold on the market, is to stop at the same hotel until well acquainted with the proprietors. Then I tell them what I have for sale. As they have noticed that I am a patron of theirs, they willingly pay me for my surplus produce. They are sure I could have no object in palming off a stale article upon them.

Have you ever tried raising ground cherries? Five cents' worth of seed sown in a hotbed, transplanted like tomatoes, will yield you ten dollars if properly attended to. If you wish to look ahead to future profit—set out strawberry plants. It will be a delightful surprise to learn how easily you can supply the neighbors with this necessary fruit. "Oh! but"—someone says, "we haven't any experience. How can we succeed without training in gardening?" Learn by experience. Some catalogues volunteered by seed firms for the asking, give valuable information. Rennie gives a 25-cent book with all necessary instructions, with every \$2 seed order, I think. Ask people what you don't know, and you will at least find vast amusement in learning that each will advise a different method of procedure. You can learn from this that more ways than one spell success to an earnest, intelligent worker.

What about contracting with father to thin an acre of field carrots or sugar beets? You can do it mornings and evenings. You can work wonders with an old steel table fork. One year I did all the work in a carrot-patch, producing 100 bushels, besides teaching school and caring for the family garden, which produced everything, from spinach to brusselsprouts, including flowers for cutting for every day, from early pansy-time until the late dahlias froze. If you have no artist's delight in the long, straight rows of vegetables, change the effect by introducing flower seeds every fifth row, or as you have space to spare. How much more "homey" a table looks with a low flower decoration, a dish of radishes cuddling in lettuce, and some sprays of parsley on the meat-platter. Now, I took it for granted that you can all get a garden-spot, if you have to rent a plot that was ploughed last fall. For others who find these suggestions impracticable, this is to be continued.



Style 70

A Piano is no better than its hidden parts. That's why we so confidently ask you to compare the Sherlock-Manning 20th Century Piano with the best makes.

MARK you, we do not urge you to buy a Sherlock-Manning Piano—we simply ask you to compare the Sherlock-Manning with the world's best. We know that the Sherlock-Manning 20th Century Piano is

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- The famous Otto Higel Double Repeating Action.
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- Weickert Felt Hammers, the Hammers that endure.
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—Billings Brass Action Flange, the latest improvement.

There are other essential features, but ask to be shown these—the most essential. You will find that only high-grade, first quality instruments possess these. Now Sherlock-Manning 20th Century Piano is the embodiment of quality. It possesses every feature that makes for piano excellence and the lasting life of the instrument. Yet—you can save money, a considerable amount of money, if you buy a Sherlock-Manning Piano. Ask us to show you where and how the saving comes in. Write for inside information anyhow.

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A "HAPPY HOUR"



It is not necessary for us to explain why you should use an up-to-date washing machine. You know that the old wash board is a back-breaker.

In our "HAPPY HOUR" Washer we feel that we have one of the most up-to-date machines on the market to offer you.

The tubs are constructed of Louisiana Cypress lumber, which, if you do not already know, you will find upon inquiry, is the best lumber to stand water.

The lid is double thickness, the lower half fitting tightly inside the tub, which prevents the steam from escaping. This keeps the water hot, and "Hot Water Chases Dirt."

The Washer operates on the principle of the old English Dolly Peg, and this style is still the best method of removing dirt from clothes without the slightest injury to the fabric.

You can operate the "HAPPY HOUR" standing or sitting down.

An average family washing can be done in one "HAPPY HOUR."

We want to tell you more about this wonderful labor-saver, so drop us a postal card to-day.

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Children's sizes 7-2, reg. \$1.25	1 10
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Seed Corn, Barley, Oats for Sale—High grade seed of Improved Leamington Oats, Oats of "Golden Wonder" and O. A. C. 21 Barley. For samples and prices write. W. A. BARNET, Mgr. Gov. Exp. Farm Harrow, Essex Co.

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An up-to-date High Grade Bicycle fitted with Roller Chain, New Departure Coaster Brake and Hubs, Detachable Tires, high grade equipment, including Mudguard, \$22.50 Pump, and Tools.
Send FREE 1913 Catalogue, 100 pages of Bicycles, Sundries and Repair Material. You can buy your supplies from us at Wholesale Prices.
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INSTANTLY RELIEVED BY THE OLD
DR. MARSHALL'S CATARRH SNUFF
25¢ AT ALL DRUG STORES OR SENT PRE-PAID BY CHEMISTS CLEVELAND OHIO

Evergreen Stock Farm offers for sale four young bulls, 12 months old, from officially backed ancestors, running from 18½ lbs. at 2 years to 23½ lbs. at 3 years. Also butter made from 24 6-10 to 29 lbs. of butter in seven days. Write, phone, or come to F. E. PETTIT, Burgessville, Ont.

New Hose Free

Send for six pairs of warm Cashmere Holeproof Hose. Six pairs are guaranteed to wear six months. If any wear, tear or break a thread in six months, you get new hose Free! Six guarantee coupons with every six pairs.

More than a million people in the United States and Canada now buy their hose from us in this way. They save all the darning they formerly had to do. They never wear darned hose now. Their hose are soft and warm, but not of excessive weight. They save money, too, for twelve pairs a year keep their hose whole forever. Six pairs of medium grade for men cost but \$2 (33½c a pair). Six pairs of fine grade for men cost \$3 (50c a pair). Six pairs for women cost \$3. Three pairs of children's Holeproof Stockings, guaranteed three months, cost \$1.

Think What It Means!

Think what such hose—at the price of common hose—save in time, trouble and money. Forget the darning. Forget hurtful darned places that make the feet sore. Forget the whole question of hosiery by simply buying two boxes a year!

Our 13th Year

We have been selling fine hose in this manner for the past thirteen years. In that short time we have come to be the largest house of our kind in existence. Our success is due solely to making the hose that the most people seem to prefer. The same people buy them again and again because of their wonderful quality. In all our experience 95% of our output has outlasted the six months' guarantee. That amounts to 24,700,000 pairs.



"Wear Holeproof Hose and Find the Mend"

Our \$60,000 Inspection insures this quality in every stitch. We pay that amount in salaries to inspectors yearly. They examine each pair twice over, carefully, to see that it lacks every possible flaw. We do this to protect ourselves as well as to insure the wear to our customers. There is no better way that we know to make hosiery, and there are no better hose to be had. Don't you think that our million customers prove it?

The figures above refer to our business in both Canada and the United States.

Send the Coupon!

Send today for six pairs of these hose to try. See what they save. Note the comfort they give. Send the money in any convenient way. Mark the grade, size and colors plainly. Send the coupon below, or a post card or letter. Do it right now, while you're thinking about it. We guarantee satisfaction as well as the wear.

HOLEPROOF HOSE CO. OF CANADA, Ltd.
207 Bond Street, London, Canada

Holeproof Hosiery

Holeproof Hosiery Co. of Canada, Ltd. (417)
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Gentlemen: I enclose \$..... for which send me one box of Holeproof Hose for..... (state whether for men, women or children). Size..... Color..... Weight..... Name..... Street..... City..... Province.....

Rebecca of Sunnybrook Farm.

By Kate Douglas Wiggin.

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XXIII.

THE HILL DIFFICULTY.

The first happy year at Wareham, with its widened sky-line, its larger vision, its greater opportunity, was over and gone. Rebecca had studied during the summer vacation, and had passed, on her return in the autumn, certain examinations which would enable her, if she carried out the same programme the next season, to complete the course in three instead of four years. She came off with no flying colors,—that would have been impossible in consideration of her inadequate training; but she did wonderfully well in some of the required subjects, and so brilliantly in others, that the average was respectable. She would never have been a remarkable scholar under any circumstances, perhaps, and she was easily outstripped in mathematics and the natural sciences by a dozen girls, but in some inexplicable way she became, as the months went on, the foremost figure in the school. When she had entirely forgotten the facts which would enable her to answer a question fully and conclusively, she commonly had some original theory to expound; it was not always correct, but it was generally unique, and sometimes amusing. She was only fair in Latin or French grammar, but when it came to translation, her freedom, her choice of words, and her sympathetic understanding of the spirit of the text, made her the delight of her teachers and the despair of her rivals.

"She can be perfectly ignorant of a subject," said Miss Maxwell to Adam Ladd, "but entirely intelligent the moment she has a clue. Most of the other girls are full of information, and as stupid as sheep."

Rebecca's gifts had not been discovered save by the few, during the first year, when she was adjusting herself quietly to the situation. She was distinctly one of the poorer girls; she had no fine dresses to attract attention, no visitors, no friends in the town. She had more study hours, and less time, therefore, for the companionship of other girls, gladly as she would have welcomed the gaiety of that side of school life. Still, water will find its own level in some way, and by the spring of the second year she had naturally settled into the same sort of leadership which had been hers in the smaller community of Riverboro. She was unanimously elected assistant editor of the Wareham School Pilot, being the first girl to assume that enviable, though somewhat arduous and thankless position, and when her maiden number went to the Cobbs, uncle Jerry and aunt Sarah could hardly eat or sleep for pride.

"She'll always get votes," said Huldah Meserve, when discussing the election, "for whether she knows anything or not, she looks as if she did, and whether she's capable of filling an office or not, she looks as if she was. I only wish I was tall and dark, and had the gift of making people believe I was great things, like Rebecca Randall. There's one thing: though the boys call her handsome, you notice they don't trouble her with much attention."

It was a fact that Rebecca's attitude towards the opposite sex was still somewhat indifferent and oblivious, even for fifteen and a half! No one could look at her and doubt that she had potentialities of attraction latent within her somewhere, but that side of her nature was happy and biding its time. A human being is capable only of a certain amount of activity at a given moment, and it will inevitably satisfy first its most pressing needs, its most ardent desires, its chief ambitions. Rebecca was full of small anxieties and fears, for matters were not going well at the brick house, and were anything but hopeful at the home farm. She was overbusy and overtaxed, and her thoughts were naturally drawn towards the difficult problems of daily living.

It had seemed to her during the autumn and winter of that year as if

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☑ Adjustable Rake levels the load and assists the Beater to thoroughly pulverize the manure.

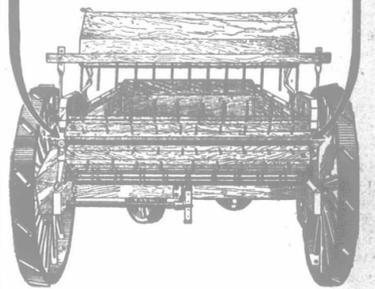
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her aunt Miranda had never been, save at the very first, so censorious and so fault-finding. One Saturday Rebecca ran up-stairs and, bursting into a flood of tears, exclaimed, "Aunt Jane, it seems as if I never could stand her continual scoldings. Nothing I can do suits aunt Miranda; she's just said it will take me my whole life to get the Randall out of me, and I'm not convinced that I want it all out, so there we are!"

Aunt Jane, never demonstrative, cried with Rebecca as she attempted to soothe her.

"You must be patient," she said, wiping first her own eyes and then Rebecca's. "I haven't told you, for it isn't fair you should be troubled when you're studying so hard, but your aunt Miranda isn't well. One Monday morning about a month ago, she had a kind of faint spell; it wasn't bad, but the doctor is afraid it was a shock, and if so, it's the beginning of the end. Seems to me she's failing right along, and that's what makes her so fretful and easy vexed. She has other troubles, too, that you don't know anything about, and if you're not kind to your aunt Miranda now, child, you'll be dreadfully sorry some time."

All the temper faded from Rebecca's face, and she stopped crying to say penitently, "Oh! the poor, dear thing! I won't mind a bit what she says now. She's just asked me for some milk toast and I was dreading to take it to her, but this will make everything different. Don't worry yet, aunt Jane, for perhaps it won't be as bad as you think."

So when she carried the toast to her aunt a little later, it was in the best gilt-edged china bowl, with a fringed napkin on the tray, and a sprig of geranium lying across the salt cellar.

"Now, aunt Miranda," she said cheerily, "I expect you to smack your lips and say this is good; it's not Randall, but Sawyer milk toast."

"You've tried all kinds on me, one time an' another," Miranda answered. "This tastes real kind o' good; but I wish you hadn't wasted that nice geranium."

"You can't tell what's wasted," said Rebecca philosophically; "perhaps that geranium has been hoping this long time it could brighten somebody's supper, so don't disappoint it by making believe you don't like it. I've seen geraniums cry,—in the very early morning!"

The mysterious trouble to which Jane had alluded was a very real one, but it was held in profound secrecy. Twenty-five hundred dollars of the small Sawyer property had been invested in the business of a friend of their father's, and had returned them a regular annual income of a hundred dollars. The family friend had been dead for some five years, but his son had succeeded to his interests, and all went on as formerly. Suddenly there came a letter saying that the firm had gone into bankruptcy, that the business had been completely wrecked, and that the Sawyer money had been swept away with everything else.

The loss of one hundred dollars a year is a very trifling matter, but it made all the difference between comfort and self-denial to the old spinsters. Their manner of life had been so rigid and careful that it was difficult to economize any further, and the blow had fallen just when it was most inconvenient, for Rebecca's school and boarding expenses, small as they were, had to be paid promptly, and in cash.

"Can we possibly go on doing it? Shan't we have to give up and tell her why?" asked Jane tearfully of the elder sister.

"We have put our hand to the plough, and we can't turn back," answered Miranda in her grimmest tone; "we've taken her away from her mother and offered her an education, and we've got to keep our word. She's Aurelia's only hope for years to come, to my way o' thinkin'." Hannah's beau takes all her time 'n' thought, and when she gits a husband her mother 'll be out o' sight and out o' mind. John, instead of farmin', thinks he must be a doctor,—as if folks wasn't gettin' unhealthy enough these days, without turnin' out more young doctors to help 'em into their graves. No, Jane; we'll skimp 'n' do without, 'n' plan to git along on our interest-money somehow, but we won't break into our principal, whatever happens."

"Breaking into the principal" was, in

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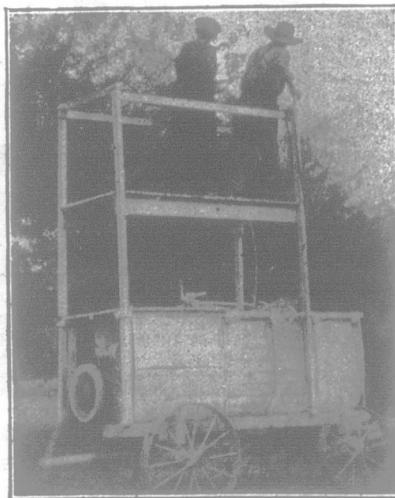
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the country they are giving protection from the winds, rains, snow and lightning for a longer term of years than any other roofing.

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the minds of most thrifty New England women, a sin only second to arson, theft, or murder; and, though the rule was occasionally carried too far for common sense,—as in this case, where two elderly women of sixty might reasonably have drawn something from their little hoard in time of special need,—it doubtless wrought more of good than evil in the community.

Rebecca, who knew nothing of their business affairs, merely saw her aunts grow more and more saving, pinching here and there, cutting off this and that relentlessly. Less meat and fish were bought; the woman who had lately been coming two days a week for washing, ironing, and scrubbing, was dismissed; the old bonnets of the season before were brushed up and retrimmed; there were no drives to Moderation, or trips to Portland. Economy was carried to its very extreme; but though Miranda was well-nigh as gloomy and uncompromising in her manner and conversation as a woman could well be, she at least never twitted her niece of being a burden; so Rebecca's share of the Sawyers' misfortunes consisted only in wearing her old dresses, hats, and jackets, without any apparent hope of a change.

There was, however, no concealing the state of things at Sunnybrook, where chapters of accidents had unfolded themselves in a sort of serial story that had run through the year. The potato crop had failed; there were no apples to speak of; the hay had been poor; Aurelia had turns of dizziness in her head; Mark had broken his ankle. As this was his

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fourth offense, Miranda inquired how many bones there were in the human body, "so 't they'd know when Mark got through breakin' 'em." The time for paying the interest on the mortgage, that incubus that had crushed all the joy out of the Randall household, had come and gone, and there was no possibility, for the first time in fourteen years, of paying the required forty-eight dollars. The only bright spot in the horizon was Hannah's engagement to Will Melville,—a young farmer whose land joined Sunnybrook, who had a good house, was alone in the world, and his own master. Hannah was so satisfied with her own unexpectedly radiant prospects that she hardly realized her mother's anxieties; for there are natures which flourish in adversity, and deteriorate when exposed to sudden prosperity. She had made a visit of a week at the brick house; and Miranda's impression, conveyed in privacy to Jane, was that Hannah was close as the bark of a tree, and considerable selfish, too; that when she'd clim' as far as she could in the world, she'd kick the ladder out from under her everlastin' quick; that, on being sounded as to her ability to be of use to the younger children in the future, she said she wasn't goin' to burden Will with her poor relations. "She's Susan Randall through and through!" ejaculated Miranda. "I was glad to see her face turned towards Temperance. If that mortgage is ever cleared from the farm, 't won't be Hannah that 'll do it; it 'll be Rebecca or me!"

(To be continued.)

SEED CORN



Photo showing strong growth.

These photos are of two germination tests of the same variety of Seed Corn, put in the germinator side by side on the same day and taken out together.

You will notice they both germinated 100%, but the one shows very strong vitality. This strong growth is entirely due to the care in harvesting and storing of the Corn. This lot that shows such strong vitality has never been touched by frost. It is fire-dried on the cob. We can supply you with this grand, strong, vigorous Corn.

WISCONSIN, No. 7, on the cob (70 lbs. to the bushel).

IMPROVED LEAMING, on the cob (70 lbs. to the bushel).

\$3.00 per Bushel, Bags Free.

The lower photograph shows the same Corn, harvested and stored in cribs, the ordinary way. You will note that the life in it is very weak and conditions would have to be most favorable to further growth.

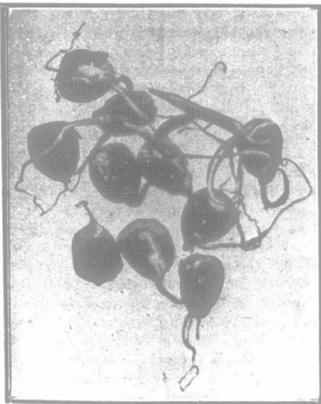


Photo showing weak growth.

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TWO HOURS OF YOUR SPARE TIME
and 25c. will get you the best \$4.00 pair of shoes for man or women ever made. Write for particulars to the Brantford Shoe Company - Brantford, Ontario

Gossip.

Attention is called to the advertisement in this issue of the Chatham Malleable and Steel Mfg. Co., Chatham, Ontario. Look into their "All-Steel Line" before purchasing stalls and stanchions.

In the report of the stock yard's consignment sale, the purchaser of the highest priced mare was given as J. Goodall, when, as Mr. Franklin informs us, it should have been Mr. J. Franklin, Joyceville.

At their barns on the market square, Chatham, Ont., on Saturday, April 5th, as advertised, McGarvin Bros. will sell at auction, registered Percheron stallions, mares in foal, colts, and fillies; also a number of grade mares and geldings. If interested, write for catalogue.

D. M. Watt, St. Louis Station, Que., breeder and importer of Ayrshire cattle, sailed from Portland, March 20th, on the Parisian, for Scotland, to make an importation of 35 head of selected Ayrshires, 6 Scotch Highland cattle, and 20 Highland sheep, for the Alta Crest Farms, Spencer, Mass.

A 212-acre farm of rich clay, with 200 acres under good cultivation, with 11-room brick house, a 60 x 90 hip-roof barn, with basement stables, situated alongside the corporation of the town of Bradford, Ont., a station forty miles north of Toronto, on the G. T. R., is advertised in this issue for sale. Address, Drawer 276, Bradford, Ont.

Dr. F. Torrance, V. S., Veterinary Director General, informs "The Farmer's Advocate" that the Ministerial Order of December 24th, 1912, prohibiting the importation of hay, straw fodder, feedstuffs or litter accompanying horses from Great Britain, has been renewed for a further period of three months from March 24th.

The Farmers' Feed Co., Ltd., Toronto, Ontario, have a large advertisement on another page, which is worthy of attention of all those interested in the feeding of dairy cattle and horses. Pro-fat Molasses Meal has been given a thorough test by the manufacturers on some well-known farms. See this firm's great trial offer in the ad. in another column.

W. B. Annett, Alvinston, Ont., importer and breeder of Clydesdale and Shire horses, and Welsh ponies, reports the recent sale to D. L. Thomson, St. Mary's, Ont., the good breeding stallion, Sir Edmund (11192) (imp.), a son of Sir Everard, the sire of the renowned Baron's Pride, and his dam was by Prince of Albion, by Prince of Wales (673). Sir Edmund is described as a very fine, big specimen of a Clydesdale draft horse, weighing considerably over a ton, standing on the best of feet and pasterns, and had proved himself a very sure foal-getter, and an extra good breeder. The breeders in St. Mary's district may consider themselves fortunate in having the opportunity of breeding to such a high-class horse.

Boys are not alone in their spirit of bragging about the distinguished qualities of "Dah." A number of little girls were boasting of the ranks of their respective families. They had passed from clothes to personal appearance, then to interior furnishings, and finally came to paternal dignity. The minister's little girl boasted:
"Every package that comes for my papa is marked D. D."
"And every package that comes for my papa is marked M. D.," retorted the daughter of the physician.
"This was followed by a look of contempt from the youngest of the party. "Huh!" she exclaimed, with nice disdain. "Every package that comes to our house is marked C. O. D!"

Pro-fat Molasses Meal

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The wonderful results obtained by the large dairies and dairymen around Toronto by feeding our Pro-fat dairy feed has led this company after many requests from dairymen to add 25 pounds of pure Cane Molasses to each 75 pounds of Pro-fat. The result being a molasses meal without an equal, as the following guaranteed analysis will show:—Protein 20%, Fat 5%, Fibre 13%. Compare this with other molasses meals offered to the public and it will leave no doubt in your mind as to the truth of our claim. After a test at the T. Eaton Company's Farm, Georgetown and other Dairy Centres, we have decided (in order to introduce this meal) to make the following proposition to Dairymen throughout the province:—

30 Days' Trial

We will ship on thirty days' trial, freight paid, one ton of Pro-fat Molasses Meal to any responsible dairyman in the Province of Ontario with an absolute guarantee (fed pound for pound in place of other meal or concentrates) to produce more and richer milk for less money. If it fails to do this there will be no charge for the meal. If it is all we claim for it, the charge will be \$1.40 per hundred or \$28.00 for the ton. Dairymen who have recognised the value of Cane Molasses for dairy herds have an opportunity here of trying a genuine molasses meal of real merit without running any risk whatever. It is the only molasses meal endorsed by the authorities of the O. A. College Guelph. Send your orders in or write to us for more particulars if you have any doubt about this offer. This meal is equally good for horses, no dairyman can afford to be without it. Write for list of dairymen who have already used it.

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The Shorthorn Herd of the Maitland Bank Stock Farm being one of the oldest Shorthorn Herds of milking strains in Western Ontario consisting of Bulls, Cows and Young Heifers, 32 head from the following families, viz.: Campbell Bessie; Campbell Rose Buds; Campbell Clarets; Marr's Beauties and Marr Rachels will be sold by Public Auction on

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Commencing at 12 o'clock noon

TERMS: All sums under \$10 cash, over that amount nine months' credit on approved Joint Notes; Five per cent. off for cash.

Sale positively without reserve.

Auctioneers—S. F. Scott & Capt. T. E. Robson.
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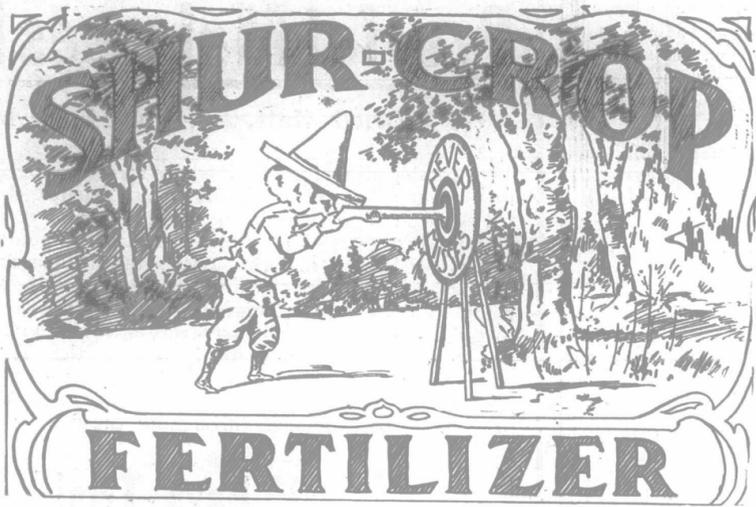
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On Saturday, April 5th

Messrs. McGARVIN BROS. will sell at auction, registered Percherons, consisting of Stallions, from weanlings to horses ready for service; and Mares, from weanlings to some in foal. Also a number of grade mares and geldings.

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Dairy testing feed, calf meal, baby chick feed, poultry mash, scratch feed and groatine will give results.

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Write for our price list on oats, barley, wheat, peas, and buckwheat for seed. We also handle all kinds of commercial fertilizers.

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GUARANTEED ANALYSIS:

PROTEIN	20 per cent.
FAT	8 " "
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Save \$15.00 to \$20.00 per ton on your calf feed. Write for booklet and prices.

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Highly productive prizewinning strains of the best standard varieties at moderate prices. Well cared for. Strong growing seed. Shipped on ten-day approval. Returnable at our expense. Send for samples and circular.

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Seed Corn for Sale High germination test white cap yellow dent, grown on our own farm. **TISDELLE BROS.,** Tilbury, Ont. Essex County.

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Farm Davies Way—the Profitable Way—the Only Way

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Davies fertilizers furnish the various "plant foods" in varying degrees of availability and thus your crop is fed throughout its whole growing period. You have also some excess fertility left at the end of the season to "build up" your soil for the next crop.

Demand Davies "Mixed Brands" from your dealer. There are twenty-five (25) of them—varying in analysis to meet the requirements of your particular soil.

We sell "Potash Salts," "Nitrate of Soda" and all "Raw Materials" only to meet the demand from those who have never used our "Mixed Brands" and who can only be persuaded of the disadvantages of "Home Mixing" by hard-earned experience—we always consider them future customers for our "Factory Mixed Goods."

Do not waste time in this matter—buy "Davies Mixed Brands" in the first place and be among the thousands of satisfied customers who are using them.

Our booklet "FARM DAVIES WAY" contains valuable information regarding Fertilizer in general and "Davies in particular. It is yours for the asking.

Patronize our Agents.

The William Davies Co., Ltd.

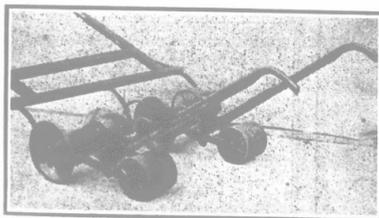
Dept. F.A. Commercial Fertilizer Dept.
West Toronto, Ontario.

R. Innes, B.S.A., Manager.



THE CHAMPION TURNIP SEEDER

A Strong, Handy Implement



This Seeder is made both single and double, and in either form is without an equal as a compact handy implement. The seed-box is run by a friction gear, and can be stopped and started instantly without stopping the horse. It can be regulated to sow any desired quantity of turnip, mangold or carrot seed.

Write for catalogue, fuller information and price list to

BRUCE AGRICULTURAL WORKS, Teeswater, Ontario

BEST RESULTS ARE OBTAINED FROM ADVOCATE ADVERTISEMENTS

Gossip. CORRECTION.

The date of the auction sale of the entire excellent Shorthorn herd of David Milne, Ethel, Ont., was inadvertently announced in our last week's issue as March 28th, whereas it should have read April 1st, as stated in the advertisement on page 601, in this issue. This herd is of more than thirty years' standing, and is richly bred, comprising representatives of such noted Scottish strains as Campbell Bessies, Rosebuds and Clarets, Marr Beauties and Rachels, imported, or from imported cows, and most of the others sired by Broadhooks Prince (imp.) =55002=, the heifers by Royal Blossom =75442=, a Cargill-bred son of the great Duthie-bred Broadhooks bull, Blood Royal (imp.) =68199=, while the calves have been sired by Broadhooks Model =79755=. Included in the sale is a complete set of the Canadian Shorthorn Herdbooks, 1 to 28. Ethel is a station on the G. T. R., Palmerston-to-Kincardine branch, twenty-two miles from Palmerston.

F. E. Pettit, Burgessville, Ont., gives the following description of the Holstein bulls he advertises for sale: The bull, Aggie's Pontiac, 12 months old, has for dam Aggie's Mayblossom, R. of M. 22½ lbs. butter in seven days; milk test, 4.05 per cent., on the average; sire's dam and grandam have an average of 29 lbs. butter in seven days, R. of M. average test, 4.11 per cent. Mayblossom's Pontiac and Mayblossom's Favorite Pontiac, are bulls from each of two daughters of Aggie's Mayblossom, and the same sire as the first bull, 10 and 11 months, respectively. These daughters have not been tested, but are great milkers, and have for sire Sir Mercena Favorite, whose dam and sire's dam average 24.6 lbs. of butter in seven day test. The fourth bull, Queen Annie Favorite 2nd, is from Queen Annie Posch, 18½ lbs. butter at three years. This is a very promising cow, a persistent milker, and has for sire Sir Mercena Favorite. See record above. These bulls are all in first-class order, and fit for service.

Kyle Bros., Ayr, Ont., write: The young Shorthorn bulls we are offering in our advertisement are a very choice lot, to two of which especially we would like to draw attention. They are both roan, sired by the great breeding bull, Scottish Pride (imp.) =36106=. Their dams are by the well-known Bapton Chancellor (imp.) =40359=, and are of the very best breeding, one a Village Maid, the other an English Lady. We have made some very good sales from our herd in the last few months, to some of the best breeders in Canada, a few of which were: To H. L. Emmert, Oak Bluff, Man., the yearling heifer, Spring Valley Buckingham, which stood second in a class of sixteen at the Canadian National; to J. H. Melick, Edmonton, Alta., the senior heifer calf, Village Maid 35th, which won third at the Canadian National in one of the strongest classes of heifer calves ever seen at Toronto; to J. A. Watt, Salem, Ont., the yearling heifer, Jealousy 4th, reserve for championship in the pure-bred classes at the Union Stockyards Show, Toronto; to L. Fried, Roseville, Ont., the good senior bull calf, Golden Pride; to James Paxton, Drumbo, Ont., one of the best bull calves we bred last season, and undoubtedly one of the best bred English Lady bulls living; to H. Chamney, Fordyce, the junior bull calf which won fourth at Toronto. We would be pleased to have intending purchasers write, or come and see what we have, as we have a lot of just such cattle as we sold.

Trade Topic.

The Grimsby Spring Tooth Cultivator advertised on another page by The Hall, Zyd Foundry Co., Hespeler, Ont., is highly commended by farmers who have had experience with it, for pulverizing the soil, for hoeing corn, roots, berry bushes, or strawberry plants, or for breaking up a quack-grass sod. See the advertisement, and write for particulars.

Gossip.

Clydesdales for Canada were shipped in the first week of March, consigned to Anderson & Forsyth, Alberta; R. P. Hetherington, Saskatchewan; Nelson Bros., Alberta; Alex Mitchell, Alberta; John King, Saskatchewan; J. G. & A. Kennedy, Saskatchewan; Wm. Hallum, Alberta, and Hugh Miller, Saskatchewan.

At an auction sale of Percherons, by Brown & Robinson, at Kansas City, Mo., March 5th, 41 head sold for an average of \$535, 24 stallions averaging \$594, and 17 mares averaging \$452. The highest price realized for a stallion was \$1,005, for the three-year-old Jans, and the highest for a mare was \$685, the latter price being twice reached.

A Roscommon ewe, belonging to James Morrison, County Armagh, Ireland, is reported to have given birth to four lambs on February 27th, all of which are strong and healthy. In the year 1911, the same ewe had three lambs, and in the previous year she had four. All of these, with two exceptions, lived and thrived well.

Israel Groff, Elmira, Ont., breeder of Shorthorns and Berkshires, writes: The demand for Shorthorns has been better this winter than for a long time. I have still for sale a good, strong, fleshy bull, of excellent breeding, and some females that have calves at foot, of such noted families as Miss Ramsden, Jealousy, Lady Fanny, Mina, Nonpareil, and Duchess of Gloster. Breeding sows are going like hot cakes.

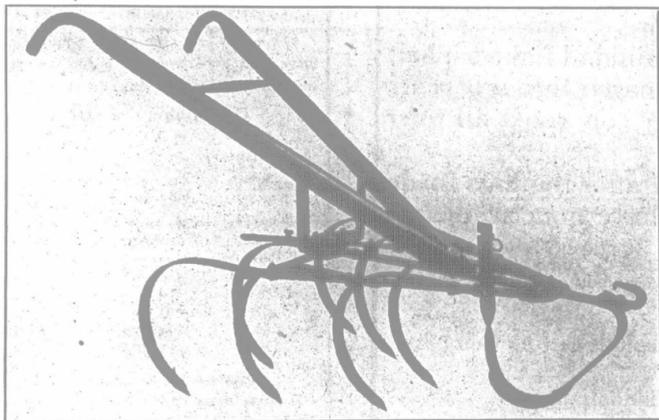
John Elder, of Hensall, Ont., writes: "I wish you would stop my advertisement of Siberian oats, as I will be sold out in a few days. I have been deluged with enquiries, and received many orders. Continue my advertisement for seed barley. I have recently sold to Solomon Reist, Elmer, Ont., a very fine roan Shorthorn bull; another to Mr. Faulder, McGillivray; another to Mr. Young, of Corbett, and have three left.

BIRMINGHAM SHORTHORN SALE.

At the annual Birmingham Spring Show and Sale of Shorthorns, March 5th to 7th, there was an entry of 422 head, which was 71 less than the previous year, being drawn from about 150 herds. In the class of bulls over 30 months old, first prize went to J. W. Barnes' four-year-old Gainford Chief, sold for 67 guineas. The second winner, Joseph Humphrey's Hindley Augustus, by Scottish Prince, sold for 155 guineas. Messrs. Garne's Musical Mac was first in class for bulls between 21 and 30 months, and was sold for South America, at 82 guineas. Mr. Reid's second-prize winner, Proud Gwynne, by Pride of Garbity, went for 65 guineas. Bulls between 10 and 21 months, brought the highest prices. The winner in this class was the Earl of Manvers' Pierrepont Peer, a descendant of the Royal winner, Duke of Kingston II., after brisk competition, went to D. MacLennan, for South America, at 1,450 guineas. The same buyer took the second winner, Ascott Yeoman, by Colynie Monarch, at 200 guineas. The best price for bulls between 15 and 18 months, was 100 guineas, for the third-prize winner, Perdoin, consigned by Messrs. Chivers & Sons.

"EASTLAKE" METALLIC SHINGLES FOR YOUR HOME ROOF. "Eastlake" Metallic Shingles. Have been used for many years in preference to wooden shingles, and they are now rapidly replacing slate roofing. Why? Because "EASTLAKE" METALLIC SHINGLES will not split, crack or wear out, neither can they warp or swell, and are not affected in any way by weather conditions. They do not require heavy timbers to support them, thus lessen the weight of the roof to a considerable extent. Barns and public buildings covered twenty-six years ago with "EASTLAKE" METALLIC SHINGLES are as good as new to-day. We will tell you the cost, if you will send the measurements of barn, house or building to be roofed. Let us send you our free booklet. THE METALLIC ROOFING CO. LIMITED MANUFACTURERS - TORONTO & WINNIPEG

Grimsby Spring Tooth Cultivator



Found Nothing to Equal the Grimsby Spring Tooth

Have used a great many cultivators of different makes and styles, but have found nothing to equal the Grimsby Spring Tooth. It leaves the ground perfectly smooth and pulverised, can run within half an inch of a hill of corn, or a strawberry plant and break up the ground all around it, thus saving a man's wages in hoeing, one man does the hoeing and the cultivating at the same time. By shifting the handles to one side you can run close under the berry bushes and do splendid work without breaking them down, which is a great advantage over the ordinary cultivator. It has also proved a great success in taking the brush out of the berry bushes or bunching up grape vines. One man can do more work and better work with a Spring Tooth in an hour, than he can do with a fork in ten hours. By hitching up a team and setting it to run close it makes an excellent potato digger and there is no machine on earth equal to it for breaking up a quack grass sod. It works well in hard or soft ground and no up-to-date fruit grower or farmer can afford to be without one or two of them. There are twenty-one good points about this cultivator, seven of them are on the end of the teeth, the others you can soon discover by using one. Yours truly, JAS. MARLOW, Grimsby, Ont.

If there is no agent in your locality handling the Grimsby Spring Tooth Cultivator, kindly write us direct, and we will be pleased to give you prices, etc.

The Hall, Zryd Foundry Co., Ltd., Hespeler, Ont. Makers of Pilot Stoves, Ranges and Furnaces.

PEERLESS - PERFECTION



THE FENCE THAT'S STRONG--YET SPRINGY AS A BED SPRING!

Animals can't break through it no matter how hard their attacks. It simply can't be broken. Just springs back in shape like a bed spring. It's made of heavy Open Hearth steel galvanized wire with all the impurities taken out and all the strength and toughness left in. Will not corrode or rust. Top and bottom wires are extra heavy. Will not sag. Requires less posts than ordinary fence. Absolutely guaranteed.

Here's Proof of Our Statements

Read These Letters. Gentlemen--I have handled your fence for four years and had it a good, strong, durable fence, and that the galvanizing is first-class. In referring to this I have a fence that I put on four years ago across a gully and the water is as high as the second wire and it is not rusted nor broken yet. I had a team of heavy horses that ran into your fence last summer and did not break or damage it in the least, and I am glad to say that in the four years I have handled your wire I have had no complaints about it. I remain, Yours truly, DAVID CUMMINGS, Bowesville, Ont. Madford, Man. W. MADDER. These are but a few of the strong testimonial letters we have received from our thousands of satisfied customers. Maybe we have some from your vicinity. Ask us for them. We also make poultry fence, farm gates and ornamental gates. Remember our products are all absolutely guaranteed. Send for catalog today. Agencies nearly everywhere. Agents wanted in open territory.

BANWELL-HOXIE WIRE FENCE CO., Ltd., Winnipeg, Man., Hamilton, Ont.

This FREE Book

"WHEN POULTRY PAYS"

is worth dollars to any farmer's wife in Canada.

How to succeed with poultry without capital. Plain talk, solid facts, proofs. Sent for the asking.

LEE MANUFACTURING CO., Ltd. 13 Pembroke Street, Pembroke, Ont.

OUR Stallion Policies, covering against loss by **Death through Accident or Disease**, are more liberal and afford more protection to owners than any issued by Competing Company. They contain no vexatious clauses, having been drafted to cover the **special conditions** met with in this Country. They cover the horse no matter where he might be and not merely in his own stable, as certain Companies do. This is very important during

All kinds of live stock insurance transacted.

THE GENERAL ANIMALS INSURANCE CO. OF CANADA,

the Breeding Season as the horse might die while being on the road. Do not take any chances by insuring with others, **insure with us;**

The insurance premium represents only a small proportion of the service fees earned. Better risk the **loss of the premium** than the **purchase price** of your beast if it dies without insurance.

Better have and not need than need and not have.

Write for particulars and address of nearest agent.

Head Office: 71a ST. JAMES STREET, MONTREAL, Que.

STALLION INSURANCE

Genasco

THE TRINIDAD-LAKE-ASPHALT Ready Roofing

Genasco is made of Trinidad Lake asphalt—Nature's everlasting waterproofer that gives it life to resist rain, sun, wind, snow, heat, cold, and fire.

The natural oils of Trinidad Lake asphalt preserve this life in Genasco through years of all kinds of weather, on roofs all over the world.

It continues to resist after roofings made of artificial "asphalts" have gone to pieces.

Get Genasco of your dealer. Mineral or smooth surface—several weights. The **Kant-leak Kleet** for smooth surface roofing makes the seams absolutely watertight without cement and prevents nail-leaks. Write us for the Good Roof Guide Book and samples, free.



The Barber Asphalt Paving Company

Largest producers of asphalt, and largest manufacturers of ready roofing in the world.

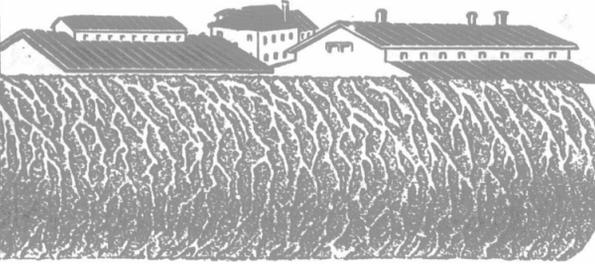
Philadelphia

New York

San Francisco

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D. H. Howden & Co., Ltd., 200 York St., London, Ont.
The Canadian Asphalt Company, Ltd., Winnipeg, Man.



"Bumper" Barley Crops

are easily obtained by the intelligent application and use of Nitrate.

CHILEAN

Nitrate of Soda

gives plants a good start, carries them along to proper development and maturity, and provides a "bumper crop."

Clean—uniform—odorless—cheap. Its results are astonishing and convincing. 100% immediately available.

Be sure and write today for our booklet—FREE.

"Fertilizers for Corn and Cereals."

Dr. WILLIAM S. MYERS

Director Chilean Nitrate Propaganda

17-Madison Ave., New York

No Branch Offices

Questions and Answers.

Miscellaneous.

Alfalfa for Seed.

Which cutting of alfalfa would you prefer for seed? R. N.

Ans.—The second.

Printed Matter by Mail.

Will one cent carry printed matter through the post office since the last Act of Parliament? S. C.

Ans.—Printed matter goes by weight. One cent will carry up to two ounces in weight.

Mink Farming.

Would you kindly let me know, through your valuable paper, where I could get information as to raising mink for profit? W. H.

Ans.—Any of our correspondents who have had experience in mink farming are invited to answer this question.

Ornithology--Sparrows.

1. Where could I procure a good book on ornithology?

2. What is the most effective way of exterminating sparrows? W. S. T.

Ans.—1. "Bird Neighbors," by Neltje Blanchan, with colored plates, may be had through this office, at \$1.50, post-paid. The Department of Mines, Parliament Buildings, Ottawa, some time ago, got out a helpful bulletin on the subject, which may be had on application.

2. Plenty of powder and shot.

Obstructing Public Way.

I have lived here for a number of years on the shore of a lake, which shore has always been used for a public road. I have used this lake for watering my stock summer and winter, also for bathing and boating. Has a mill-owner the right to use any part of this road as dumping-ground for his logs, or to boom his logs across my landing and watering place, hindering me from using it? A. S. Ontario.

Ans.—We think not.

Continuous Oestrus.

Heifer that calved on December 10th, and came in heat on February 1st, and was served, has remained in heat ever since. What can I do for her, or is there anything that can be done? She is well fed, and very thrifty-looking, but has dropped off in milk of late? D. M.

Ans.—This indicates a diseased condition of one or both ovaries, and if such is the case nothing can be done. Try breeding her again a few times, and if she does not conceive, sell to the butcher.

Roup.

Hens have had roup, and some had what seemed to be cholera. They are better of the roup, but some have one eye closed. Will this get better? Could those hens be fitted for the market? Is it wise to set eggs from this flock? M. W. P.

Ans.—The hens seem to be on the road to recovery. Thoroughly disinfect all houses in which the birds have been kept. Treatment for roup is generally unsatisfactory. If the hens recover perfect health, they would be all right for marketing purposes, and their eggs should be all right for hatching, but if the birds are emaciated from disease, they should not be sold, nor should their eggs be used for incubation.

FARMERS, FRUIT, AND VEGETABLE GROWERS



WHY ARE YOU IMPORTING PHOSPHATE AND AMMONIA WHICH IS A BY-PRODUCT OF YOUR FARMS OF WHICH YOU ARE EXPORTING MANY THOUSAND TONS ANNUALLY TO THE U.S. AND WHICH CONTAIN LARGE QUANTITIES OF PHOSPHORIC ACID AND AMMONIA

KINDLY ANSWER THE ABOVE

PURE BONE MEAL IS THE CHEAPEST FERTILIZER THIS PLANT FOOD IS A MUST FOR OUR CANADIAN SOILS AND SHOULD BE USED BACK SEND FOR PRICES ETC.

THE W. A. FREEMAN CO. LIMITED HAMILTON CANADA

Send your Raw FURS to John Hallam

FREE

Hallam's 96 Page Trapper's Guide and Game Laws. Write for it to-day

I can pay you higher prices than you ever got. Send me your shipments at once and get top prices. We remit same day furs are received and pay express charges. Largest and oldest dealers in Canada.

John Hallam Limited Mail Dept. 227 111 Front St. East TORONTO

Veterinary Drugs Pharmacy

Any kind of VETERINARY DRUGS

If you need any, write at once, when we will quote very low and reasonable prices.

Consultation by letter FREE of charge, with our

diplomed veterinary doctor. For any diseases, write and consult him now. NATIONAL STOCK FOOD COMPANY Ottawa, Ontario.

THICK, SWOLLEN GLANDS

that make a horse Wheeze, Roar, have Thick Wind or Choke-down, can be removed with

ABSORBINE

Also any Bunch or Swelling. No blister, no hair gone, and horse kept at work. \$2 per bottle, delivered. Book \$1 free. ABSORBINE, E. J. L., Liniment for manking, Reduces Gout, Tumors, Wens, Painful, Knotted, Varicose Veins, Ulcers. \$1.00 and \$2.00 a bottle at Dealers or delivered. Book with testimonials free. W. F. YOUNG, F.D.F., 25 Lyman's Bldg., Montreal, Can.



Shires and Shorthorns

In Shire stallions and fillies, from the best studs in England, we are offering some rare animals at rare prices. Scotch Shorthorns of either sex or age, of highest breeding and quality. John Gardhouse & Son, Highfield, Ont. L. D. Phone.

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
 Falls, 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 satisfaction. Price \$1.50
 per bottle. Sold by druggists, or sent by ex-
 press, charges paid, with full directions for
 its use. Send for descriptive circulars,
 testimonials, etc. Address
The Lawrence-Williams Co., Toronto, Ont.

DR. PAGE'S ENGLISH
SPAVIN CURE



For the cure of Spavins, Ringbones, Curbs,
 Splints, Windgalls, Capped Hocks, Strains or
 Bruises, Thick Neck from Distemper, Ring-
 worm on cattle, and to
 remove all un-
 natural enlarge-
 ments.

This prepara-
 tion, unlike
 others, acts
 by absorbing
 rather than
 blistering. This
 is the only
 preparation
 in the world
 guaranteed to kill a Ringbone or any Spavin, or
 money refunded, and will not kill the hair.
 Manufactured by Dr. Frederick A. Page &
 Son, 7 and 9 Yorkshire R.oad, London, E. C.
 Mailed to any ad-ress upon receipt of price,
 \$1.00. Canadian agents:
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171 King St., E. TORONTO, ONT.

GET RID OF
Worms and Bots



You can remove every one
 of them. We guarantee to
 kill and bring from the body, dead, in
 from 18 to 24 hours, all pin worms and
 bots, with the safe and sure remedy.

NEWVERMIFUGE
 Absolutely harmless. Can be given to mares
 in foal before the eighth month. Horse owners
 write us that Newvermifuge has removed from
 500 to 800 bots and worms from a single horse.
 An animal that is wormy can't help but be ugly
 and thin. If your horses are troubled with
 worms send us your order today.
 6 Capsules \$1.25. 12 for \$2.00. Postage paid.
Farmer's Horse Remedy Company, Dept. C2
582 7th Street, Milwaukee, Wis.

DUNHAMS' PERCHERONS
 are today as for the past
 forty-seven years the
-B-E-S-T-
 Fresh importation. Cat-
 alogue FREE.



DUNHAMS, Wayne, Du Page County, Ill.

NOTICE TO HORSE IMPORTERS
GERALD POWELL,
 Commission Agent and Interpreter,
NOGENT LE RETROU, FRANCE

Will meet importers at any port in France or
 Belgium, and assist them to buy Percherons, Bel-
 gians, French Coach horses. All information
 about shipping, banking and pedigrees. Many
 years' experience; best references. Correspond-
 ence solicited.

CLYDESDALES FOR SALE.
 Present offering. King of Fountain Park
 (10220) a choice three-year-old stallion.
 Mertens's Duchess (23701), a beautiful two-
 year-old filly. D. Hill, Staffa, Seaforth, G. T. R.

DR. BELL'S Veterinary Medical Won-
 der. 10,000 \$1.00 bottles
FREE to horsemen who will give The Wonder a
 fair trial. Guaranteed to cure Inflammation,
 Colic, Coughs, Colds, Distemper, Fevers, etc.
 Agents wanted. **DR. BELL, V.S., Kingston, Ont.**

Questions and Answers.
Miscellaneous.

Grade Stallions.
Are grade horses allowed to travel for stud purposes in any parts of Ontario?
E. H.

Ans.—At the present time, yes.

Lump on Cow's Udder.
I have a cow which has had, for the past two years, a lump between teats. It has been growing larger lately, but does not seem sore to touch, and can be moved with the skin. Please tell me if I can get anything to take lump away.
T. W.

Ans.—A veterinarian might be able, by operation, to successfully remove it. It might be possible to reduce it by applications of iodine.

Countermanding Order.
I bought some fruit trees last fall. A month later I gave the company notice to cancel the order. They wrote saying the order was not subject to countermand. Can they compel me to accept the trees?
Ontario.

Ans.—It is probable that, after tender to you of the trees in accordance with the terms of the contract, they could compel you to pay for them.

Breeding Filly.
1. I have a young Clydesdale mare rising two years old, pretty good size; would weigh 1,100 lbs. Would she be too young to breed?
2. Would it be advisable to use a Percheron stallion on a Clydesdale, as I rather prefer the Percheron horses?
F. S. M.

Ans.—1. She should be a little larger, but it might not injure her. Breed her a little late in the season.
2. Do not cross. If you prefer Percherons, get Percheron mares.

Railway Ballast.
I have a gravel-bed about one mile from the ——— railroad. Two years ago the said company advertised at different places along the road for gravel or ballast, and I wrote them, with the result that the company sent men to test the ballast, and it was pronounced good stuff. Have the company any right of claim on such gravel at such a distance, other than buying it at my price? I am told they have.
Ontario.

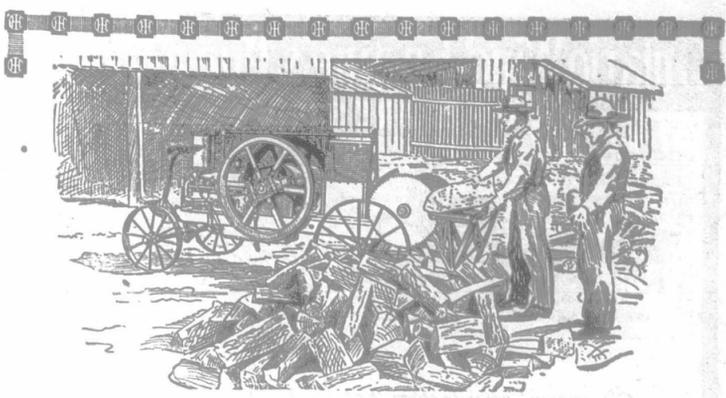
Ans.—Yes.—see the Railway Act, Revised Statutes of Canada, 1906, Chap. 37, and especially Sec. 180.

Deceit.
I took colt to auction sale. The colt was knocked down at \$75. This man wanted to get home early, so he went down to the house where a man was busy filling out notes. He said he wanted to sign his note and go home; but the man told him they had not the book, as the sale was not over. He said he would give them the amount. So he said he bought the colt for \$70. He should have said \$75. I saw him the next day, and he would not make it right. I have several witnesses that he bought the colt at \$75. What proceedings should I take to have him make it right?
Ontario.

Ans.—Sue him in the Division Court.

Grass Pastured Off.
Last spring I seeded down my orchard with a mixture of grasses, clover pre-dominating, and the adjoining three acres with lucerne. The seed made a splendid showing, but my neighbor's stock got in and pastured the whole bare. They did the same thing to another field of timothy, which, however, was three years old.
E. L.

Ans.—About all you can do is to wait and see whether or not the grass comes through the winter. Once in a while, grass so pastured off comes in the spring after a favorable winter. If it does not, why, of course, it will be necessary, if you wish the land seeded down, to re-seed, and see that the cattle are kept off the land.



Buy an Engine with Reserve Power

FARM power needs are seldom the same for any two days together. You never can tell when extra power will be needed. For this reason it is best to buy an engine a little larger than you ordinarily need. The engine with ten to twenty per cent of reserve power will often save enough to pay for itself just by its capacity for carrying you through emergencies.

I H C Oil and Gas Engines

are large for their rated capacity. They are designed to run at the lowest possible speed to develop their power because that increases the durability of the engine. A speed changing mechanism enables you to vary the speed at will. Any I H C engine will develop from ten to twenty per cent more than its rated horse power. You can use it to run your feed grinder, pump, grindstone, repair shop tools, cream separator or any farm machine to which power can be applied. I H C engines are built vertical, horizontal, stationary, portable, skidded, air cooled—in 1 to 50-horse power sizes. They operate on gas, gasoline, kerosene, naphtha, distillate or alcohol. I H C tractors in sizes from 12 to 60-horse power. See the I H C local agent. Get catalogues from him, or, address the nearest branch house.

International Harvester Company of Canada, Ltd
 BRANCH HOUSES
 At Brandon, Calgary, Edmonton, Estevan, Hamilton, Lethbridge, London, Montreal, N. Battleford, Ottawa, Quebec, Regina, Saskatoon, St. John, Winnipeg, Yorkton



FREE STYLE BOOK FOR 1913 OF
"Quality Line"
VEHICLES AND HARNESS
 NINETEENTH YEAR OF SELLING
 DIRECT TO THE USER.



Our Catalogue will help you to choose just the Vehicle or Harness you require, and SAVE YOU MONEY. It describes and pictures many styles, gives prices, FREIGHT PREPAID, and fully explains our method of Selling Direct and saving you the Middlemen's Profit. Remember, we pay the freight in Ontario and Eastern Canada. The Catalogue is Free, for the asking. Send for it To-day.

INTERNATIONAL CARRIAGE COMPANY
 Dept. "A," Brighton, Ontario.

To Buyers Looking for a Good Stallion
 I am the oldest importer of Percheron Stallions in Canada. I have on hand **CHOICE**
Percheron Stallions
 Four to six years old, weighing 1,900 to 2,100 lbs.; no better in Canada. All good, sound horses, clean, hard, flinty bone, sure breeders; horses that will make you money; and a few extra good Clydes, 4 to 7 years old, weighing 1,750 to 1,900 lbs. Come and see them; it won't take long or cost much. I can save you \$200 to \$500 on a stallion.
JOHN HAWTHORNE, SIMCOE, ONTARIO

Prize-winning **Clydesdales, Imported** Stallions and Fillies. Our record at the late Guelph Show, showed a one or more winners in every class. We have now prize-winning Stallions and Fillies with breeding and quality unsurpassed—All are for sale.
JOHN A. BOAG & SON, QUEENSVILLE, ONT.

IMPORTED CLYDESDALES.
 A few choice young stallions always on hand and for sale. Frequent importations maintain a high standard. Prices and terms to suit.
BARBER BROS., Gatineau Pt., Que., near Ottawa.

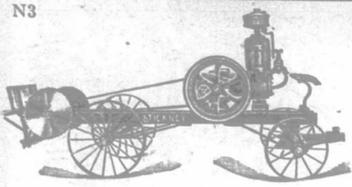
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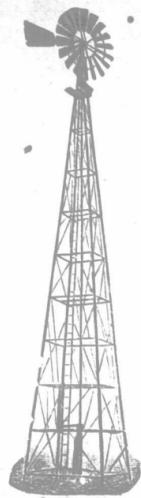


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Statistics show that the corn belt is moving North about 20 miles a year. This is due to the elements.

Government records show that the Ontario Wind Engine & Pump Co. have encircled the Earth with their goods in the past ten years. This is made possible by the integrity, brains and intelligence of the men behind it, and the quality and superiority of the goods which they have produced.

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Imported Percheron Stallions

FROM 2 TO 4 YEARS OF AGE. BOTH BLACKS AND GREYS. WEIGHTS FROM 1,800 TO 2,100 POUNDS

Every stallion we offer for sale is Government inspected and approved, and a guaranteed foal getter. Imported Percheron mares from two to five years of age, some of them safe in foal to the leading sires of France. Also a few choice imported Clydesdale fillies. Our terms and prices are the best obtainable.

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To our past customers and intending purchasers, we wish to say that we can show you something really worth while in Canadian-bred and imported Clydesdale stallions and mares. Our aim is to please you.

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Phone connections. Stations: Ottawa G.T.R. and C.N.R., Brooklin G.T.R., Myrtle C.P.R.

Clydesdales and Percherons

Thirty stallions of the above-mentioned breeds to choose from. All are government-inspected and approved. A large number of them have won high honors at the leading shows of Scotland, France and Canada. All are for sale at reasonable prices and the best of terms.

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Clydesdales in Quantity and Quality

ORMSBY GRANGE STOCK FARM, Ormstown, P. Que.
As I am feeding no steers this winter I have filled my stables with imported fillies, selected personally in Scotland; many in foal to such sires as Hiawatha, Sir Hugo, King's Champion, Sir Rudolph, etc. Fourteen have been sold, eighteen of the best are still on hand—the selections being made more on account of price than superiority. There are no culls in the lot. Send for pedigrees and particulars before buying elsewhere. Inspection invited. **D. MCEACHRAN.**

CLYDESDALES OF CANADA'S STANDARD
They have arrived—my third importation for 1912, stallions and fillies. I have now the biggest selection in Canada, and a few toppers in stallions. High-class breeding and high-class quality and low prices. **G. A. BRODIE, Newmarket P.O.**

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I have a big importation of Clyde stallions and fillies just landed; a lot that cannot be duplicated to-day in Scotland and never was in Canada. Let me know your wants. **ROBT. BEITH, Bowmanville, Ont.**

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IMP. CLYDESDALE STALLIONS AND FILLIES
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CLYDESDALES—A NEW IMPORTATION
We have lately landed a shipment of Clyde stallions and fillies, several Scotch winners among them. Their breeding is unsurpassed. Comparison with any others in the country will make you a buyer from us. Our prices are as low as the lowest. L.D. Phone. **GOODFELLOW BROS., R.R. No. 3, Bolton, Ont., Bolton Stn., C.P.R.**

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When in want of a high-class Clyde stallion or filly, or something that has won and can win again in Hackney stallions or fillies, visit our barns at Hudson Heights, Que. **T. B. MACAULAY, Proprietor. E. WATSON, Manager, Hudson Heights, Que.**

Questions and Answers.

Miscellaneous.

Cement For Approach.

Would you please advise me, through your valuable columns, how much material it will take to build cement approach to barn, covering a space of 16 x 12 feet? How thick will it need to be, and what percentage cement and gravel? Will four railroad rails reinforce it? **W. E. D.**

Ans.—Cover nine inches thick. Mix 1 of cement to 5 or 6 good, sharp gravel. Four rails would hold it, but it would be better to place strong, woven wire, over the rails, also. It would require about 7 barrels of cement and 1 1/2 cords of gravel.

Eggs for Hatching—Feather Pulling.

1. I wish to have parties set my pure-bred eggs, I to receive a pullet in the fall for so many eggs supplied. What would be a fair number, or what is customary?

2. Hens are apparently eating feathers. Some are stripped on vent and crop badly. What is the cause and cure? **J. S. L.**

Ans.—1. Surely you can come to a decision by placing a value on a setting of eggs and on a pullet. If you value the eggs at \$1, a pullet ought to repay you, that is, a pullet for a dozen eggs.

2. This may be due to a lack of meat food, or the hens may be lousy. Sometimes a few individual birds get this habit and do considerable damage. If these birds can be caught, it is often wise to kill them. Rub all bare places on injured hens with carbolated vaseline. As spring approaches, give the hens free range, and likely the trouble will cease.

Feeding Chicks, etc.

1. What quantity of feed would you give about 150 little chicks the first week, and what kind is the best?

2. Can you give me any advice as to how to keep turkeys at home, so they won't lay astray? I have trouble with them every year. Is it right to shut them up in small quarters where there is no grass?

3. I have a large yard around my house. How could I make it look nice without too much cost? There are no trees, and it looks so bare.

3. I wish to start keeping bees. What is the right time to buy them? **G. L. C.**

Ans.—1. Feed nothing for 24 hours. Give grit. Give all skim milk they will drink. Feed cracked wheat or wheat screenings, and a little cracked corn. You can safely give all they will eat.

2. Can anyone give advice on this question?

3. Make a nice lawn and plant trees, both evergreen and deciduous.

4. Any time.

Miscellaneous Queries.

1. Beans are 18-lb. pickers, i. e., 18 lbs. of dirt, split, and colored beans, to bushel; the balance are not very bright. Would you advise one to sell these at feed price, and buy No. 1 seed? Will these beans be fit for seed?

2. Horse had pneumonia last spring. He has a cough yet. He is seven years old. If he gets on grass, and he has not developed heaves by that time, will he probably get all right?

3. Neighbor's hens get dumpy and die. Turkeys die the same way. Lost twenty in first two days. Are falling dead off roost yet. No diarrhea. Are Plymouth Rocks, and are housed close, but clean.

4. In securing a flock of hens for laying purposes, is the breed an important consideration? **R. R.**

Ans.—1. Sell the beans and buy good seed.

2. He may. In the meantime, dampen all his hay with lime water, feed lightly on hay, and liberally on oats. Avoid all musty or inferior feed.

3. Not enough symptoms given. If the hens are too closely housed, as, for instance, roosting behind curtains in very close quarters, sometimes causes death from suffocation. Over-fat hens often drop from the roost dead, of apoplexy. Get more fresh air into the pen, clean the house, see that the hens are free from lice, and disinfect the premises.

4. To some extent, yes, but the strain of the breed is more important still.

Makes Lamé Horses Sound

Cures All Kinds of Lameness, Quickly, Positively, Permanently.

Mack's \$1,000 Spavin Remedy is absolutely guaranteed to cure Bone or Bog Spavin, Ringbone, Thoroughpin, Curb, Capped Hock, Shoe Boil, Sprung Knee, Lacerated and Ruptured Tendons, Sweeny and all other forms of lameness affecting a horse, or your



money back in a jiffy. It's a powerful remedy that goes right to the bottom of the trouble and cures the lameness in just a few days, and the animal may be worked as usual. Contains nothing that can injure the horse and heals without leaving scar, blemish or loss of hair.

Ask your druggist for Mack's \$1,000 Spavin Remedy—if he cannot supply you, write direct to us. Ask for our valuable Free Book, "Horse Sense" No. 3. If you are not positive as to the cause of your horse's lameness, mark on horse above where lameness occurs and tell us how it affects his gait, also tell age of animal. Our graduate veterinarian will diagnose the trouble and tell you how to cure it. This service is free.

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Best wash ever used for horses. All winter no scratches, no snow poisoning. All summer no sores, no flies on sores. Not a patent medicine—an all-round skin healer. Bolls, sores, abrasions, galls, cracks, corns—all amenable to

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Draft horses are high, and feed slow; imported horses bought well are easily the best value for money that can be bought in horse flesh. Write us for full particulars. We can give highest references, many being to entire strangers who have dealt with us by correspondence only.

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2 young bulls and 2 young cows (to calve soon) for sale. Best of stock.

Write at once
FORSTER FARM, OAKVILLE, ONT.

Aberdeen-Angus of Show Form and Quality. For this season my offering in young bulls and heifers, are toppers, every one. Show-ring form and quality, and bred from show winners. **T. B. BROADFOOT, Fergus, Ont., G. T. R. and C. P. R.**

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Have now a choice lot of young bulls to offer; also with something nice in heifers. Catalogue of herd and list of young animals on application.

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Our present offering in Shorthorn heifers and young bulls are modern in type and of richest Scotch breeding, and the prices are low; Cotswold Ewe and Ram lambs of high quality.

WM. SMITH & SON, COLUMBUS, ONT.
L. D. Phone

Shorthorns, Cotswolds, Berkshires

For sale: 10 bulls, from 7 to 10 months; also cows, heifers and heifer calves. Would sell a few young Cotswold ewes. No Berkshires to offer at present.

CHAS. E. BONNYCASTLE
P.O. and Station, Campbellford, Ontario

Woodholme Shorthorns

I have for sale a number of choice young bulls, from 8 to 14 months old (pure Scotch); also a number of heifers, 1 to 2 years old, of this level type, and richest breeding.

G. M. FORSYTH,
North Claremont, Ont.

Shorthorn Bulls and Heifers—I have a choice lot of young bulls and heifers in calf now to offer. Former sires, Joy of Morning (imp.) = 32070 = and Benachie (imp.) = 69954 =. Present stock bull, Royal Bruce (imp.) = 55038 = (89900) 273853.

GEORGE D. FLETCHER, R. R. No. 2, Erin, Ont.

Oakland—50 Shorthorns.

Offering for winter and spring trade, is six excellent bulls from ten months to two years old. Out of fine dual purpose dams and sired by our noted Scotch Grey Bull 72692. He is a beautiful roan and all quality, he is also for sale or exchange.

John Elder & Sons, Hensall, Ont.
Station and P. O.

1854 Maple Lodge Stock Farm 1913

Am offering a very fine lot of young Shorthorn bulls just now. Excellent breeding and most from splendid milking dams. The kind that is needed.

House is one mile from Lucan Crossing, G. T. R.

A. W. SMITH, Maple Lodge P. O., Ont.

Spring Valley Shorthorns

A few of the best young bull prospects we ever had. They will please you. Will sell females too. Visit the herd; we think we can suit you. Particulars on application.

KYLE BROS., AYR, ONT.

ATHELSTANE SHORTHORNS

For sale: Five choice young bulls, sired by Roan Chief (imp.) = 60685 =. They are a choicely-bred lot, and will be priced right; also a few heifers. They are of good milking dams.

WM. WALDIE, R. R. No. 2, Stratford, L.-D., phone.

CEDARDALE SHORTHORNS—To make room for newcomers, I am now offering some rare value in Scotch-bred cows and heifers, beautifully bred and high-class in type; also 1 yearling bull.

Dr. T. S. Sproule, Markdale, Ont.

Clover Dell Shorthorns

Choice young stock of both sexes. Dual-purpose a specialty. Herd headed by (imp.) Ivanhoe, L. A.

WAKELY, BOLTON, ONT.

Spruce Lodge Shorthorns & Leicesters

Present offering: Young bulls and heifers from grand milking dams. Also a choice lot of Leicester rams and ewe lambs, and ewes of all ages bred to Imp. rams.

W. A. Douglas, Tuscarora, Ont.

SHORTHORN BULL FOR SALE

Roan Admiral (imp.) (100298), 6 years old; as active and sure as a 2 year old. Only reason for selling—we have so many heifers sired by him, a chance is necessary. Address: **HAFFEY BROS., Mono Mills, Ont.**

Questions and Answers.

Miscellaneous.

Yellow-eye Beans.

What variety of bean is the enclosed? Is it a good bean for a field crop in the Maritime Provinces, where the season is short? Has it been tried at the Experimental Stations? If so, how does it compare in yield with other varieties? In sowing it for a field crop, how much seed would you use per acre? What distance would you allow between the rows?

G. McF.

Ans.—This appears to be the Yellow-Eye variety, for which there is usually a limited market, though generally at good prices. The beans you sent had less yellow than is normal for the variety, but an experienced grower tells us he finds many with similar markings, where they are harvested very green and ripen in the mow. It yields well if sown at the rate of a bushel per acre, in rows far enough apart to cultivate between, say, 30 to 36 inches. We grew a few of them last year, and find that they are not quite so subject to injury by bad weather at harvesting as are some other kinds. Would suggest trying a few beans of this variety, and also a few pea beans.

Lime.

A quarrymaster whose lime kiln adjoins my farm, gave me two carloads of lime on account of it containing too much grit when slaked. I have read something about the treatment of sour land, and whitewashed everything in sight. Will you advise me what valuable use I could put such a quantity to, if any, such as spreading it over the fields, if it has any virtues as a fertilizer? If so, how would you apply it, water or air slaked, or unslaked? I would like to have an article from you on the many uses of lime. I see it used so extensively on the poultry-house, painting fruit trees, stone fences, posts, etc. Also a good recipe for outside whitewash.

A. K.

Ans.—Lime is not a direct fertilizer, but may often be used to advantage as a stimulant, or to counteract acidity in sour soils, to sow on alfalfa or clover, and sometimes on a heavy soil. Sow about 200 lbs. per acre, broadcast, air slaked. For whitewashing outside, slake one-half bushel of lime with warm water, cover it to keep in steam, strain the liquid, add a peck of salt, dissolved in warm water, three pounds of ground rice boiled to a thin paste, and stir in boiling hot, half a pound of powdered Spanish whiting, and a pound of glue dissolved over a slow fire, and add five gallons of hot water to the mixture. Stir well, and let stand for a few days. Apply hot.

Feeding Sheep.

1. What is the relative value of white beans and oats, for feeding sheep?
 2. What amount of each can safely be fed to bred ewes, daily, at this season?
 3. Is it good practice to mix beans with oats rather than feed them alone?
 4. Are beans that are discolored and musty (damaged by rain), safe to feed pregnant ewes, or rams? If so, about what quantity per day?
 5. Is it sufficient to feed bran to ewes when nursing lambs, or should it be fed for one or more months before, and, if so, about how much?
 6. Is it better to feed bran with whole oats or beans, or is the grain fed alone just as well?
 7. Are potatoes damaged by rot safe to feed breeding ewes, or to other stock?
- "JERRY."

Ans.—1. Oats would be preferable, because the sheep would relish them better.

2. A pound or pound and a half per day, is enough oats, if roots and good clover hay are being fed. If they are gradually accustomed to the beans, and will eat them, the same amount might do no harm.

3. It should be, but the sheep might eat the oats and leave the beans, if possible.

4. Do not feed musty beans.

5. Bran is all right a little before lambing, but is not absolutely necessary.

6. Feed the bran mixed with oats.

7. We would not advise feeding them to sheep. Give them to the pigs.



FEED THEM 'MAPLE LEAF' OIL CAKE MEAL

then the cows will give more and richer milk—the beef cattle will fatten faster and make juicier beef of finer flavor.

"Maple Leaf" Oil Cake Meal will put quality into both beef and dairy products. And for quality the old world clamors more and more. For indoor feeding "Maple Leaf" Oil Cake Meal fits every condition. It can be mixed with any other kind of feed on hand, and is very economical. And its fertilizing or manurial value must also be remembered. It enriches everything with which it comes in contact.

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The Auld Herd AND PLEASANT VALLEY Shorthorns

We have females of all ages and of the best Scotch families for sale. Those interested should come and see us. Correspondence invited.

BELL 'PHONE. Guelph or Rockwood Stations. **A. F. & G. Auld, Eden Mills, Ont.**

15 SHORTHORN BULLS 15

We have been breeding Shorthorns on this farm for over 60 years, and I never saw a better lot of young bulls for sale than I have at the present time. Nearly all of the best Scotch breeding reds and roans, from 10 to 20 months old. Also a few females and several registered Clyde fillies. Prices within the reach of all. Will quote prices, freight paid to your nearest station.

Claremont Stn., C.P.R., 3 miles. **JOHN MILLER, Brougham, Ont.**
Pickering Stn., G.T.R., 7 miles.

Willow Bank Stock Farm—Shorthorn Herd Established 1855. The grand imported Butterfly bull, Roan Chief = 60865 =, heads the herd. Young cows and heifers bred to him; also an exceedingly good lot of young bulls on hand, fit for service and at very reasonable prices. Some from imp. dams.

JAMES DOUGLAS, Caledonia, Ont.

I STILL HAVE FOUR YOUNG BULLS FOR SALE AND MORE COMING ON

Several heifers that are bred right and that will make great cows; some of them in calf now to my great breeding sire, Superb Sultana—75413—perhaps the greatest son of the great Whitehall Sultan—55049—that was imported by me and used so long in Mr. Harding's herd. I sell nothing but high-class cattle, but the price is within the reach of all. A few Clydesdales, Shropshires and Cotswolds always on offer. Local and Long Distance Telephone.

ROBERT MILLER, STOUFFVILLE, ONT.

DAIRY-BRED SHORTHORNS

We have for sale Scotch and English-bred Shorthorns. A few bulls of improved breeding on big milking lines; also others pure Scotch and heifers of both breed lines.

L.-D. 'Phone. **G. E. MORDEN & SON, Oakville, Ont.**

10 SHORTHORN BULLS 10

If in need of a bull those that we are offering should interest you. They range from 8 to 14 months old, and are nearly all bred direct from imported stock. We also have females of all ages.

Bell 'phone. Burlington Junction, G. T. R. **W. G. PETTIT & SONS, Freeman, Ontario.**

Springhurst Shorthorns

Four of the first-prize Shorthorns at the late Guelph show, including the champion and grand champion fat heifer, were all sired by bulls of my breeding. I have now for sale ten young herd headers of this champion-producing breeding.

HARRY SMITH, HAY P. O., ONT. Exeter Station. Long-distance 'phone.

Shorthorns—Records show that cattle bought from the

Salem herd won numerous ribbons the past season. We have others. Several young bulls are priced reasonably.

Elora G. T. R. and C. P. R. J. A. WATT, Salem, Ont.

MEADOW LAWN SHORTHORNS of richest and most fashionable Scotch breeding, and of high-class type and condition. I can supply young bulls and heifers—Clarets, Roan Ladies, Mildreds, Stamfords, etc.

F. W. EWING,
R. R. No. 1, ELORA, ONT.

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One High-class Imported yearling bull. 10 bull calves, from 7 to 16 months old. 40 heifers and young cows, all by imported sires. Also some Imp. yearling heifers.

MITCHELL BROS., BURLINGTON, ONT. Farm ¼-mile from Burlington Junction.

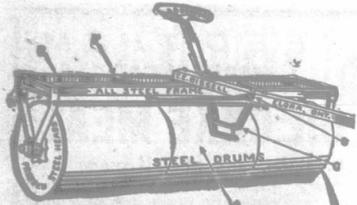
5 Shorthorn Bulls 5

We have for sale at moderate prices five Scotch Shorthorn bulls, including one of our herd bulls. Also a number of high-class heifers and heifer calves.

A. J. HOWDEN & CO., Columbus, Ont.
Myrtle G. T. R. & C. P. R. Long-distance 'phone

SHORTHORNS of breeding and quality. Our present offering: One grand young cow with calf at foot; also heifers, old enough to breed, got by Mildred's Royal. No bull to breed to. Will sell cheap.

Geo. Gier & Son, Waldemar P. O., Ontario.



BISSELL LAND ROLLERS

are all steel except the Pole. They are braced and stayed to stand all kinds of hard work and wear well. The entire frame, bottom and all, is built of steel. The (18) anti-friction Roller Bearings make light draught. The Draw Bracket and low hitch do away with neck weight. The Axle revolves with the drums and there is no squeaking or grinding. The Cages holding the anti-friction rollers are the best yet; they're MADE OF MALLEABLE ALL IN ONE PIECE—no twisting or binding of the bearings on the axle of the "Bissell" Roller. The Seat Spring is reinforced and is DOUBLED AT THE HEEL. These good features are not all of the advantages of the "Bissell" Roller. Many more good points are built into them, making a Land Roller that is "built for business," that stands up against lots of hard work. Ask Dept W for free catalogue.

T. E. BISSELL CO. LTD. ELORA, ONT.

HERD BULL for sale. Count of Lakeview (0076); calved March 28, 1910. Bred by Lakeview Stock Farm, Bronte, Ont. A splendid stock-getter. Over 80 per cent of his get are females. Must sell him as I have a number of heifers from him of breeding age. He is quiet and sure. Also two young bulls now ready for service, sired by Count of Lakeview whose dams are granddaughters of Johanna Rhue 4th Lad. Straight and nicely marked. Will sell a few cows due to freshen this month. Bell Phone, Fenwick Str. C. V. ROBBINS RIVER BEND, ONT.

Hawthorne Glen Holstein Herd Offers young bulls ready for service, one from Calamity Houwtje, winner of 1st prize in cow class at Guelph, 1912; also a half-brother to Pontiac Jessie, sweepstakes heifer under 36 months; also a few females. Prices reasonable. Write for particulars, or come and make your choice. MARTIN McDOWELL Eastwood Sta., G. T. R. Oxford Centre, Ont.

PURE-BRED REGISTERED Holstein Cattle The most profitable dairy breed, greatest in size, milk, butter-fat and in vitality. Send for FREE illustrated descriptive booklets. HOLSTEIN - FRIESIAN ASSOCIATION, P. L. Houghton, Sec., Box 127, Battleboro, Vt.

Dale View Holstein Farm Bull calves for sale, and a limited number of heifers and heifer calves, sired by a brother of Pet Posch De Kol, 38.58 lbs. of butter in 7 days. Champion weekly record Cow of Canada, and grandson of Mercedes Julp's Pictette Paul, sire of 63 A.R.C. daughters and 15 proven sons. F. S. FERGUSON, INVERARY, ONTARIO Frontenac Co. Long Distance Phone

Holstein Heifer Calves from heavy-unregistered dams, sired by the great bull, Cornelius De Kol. Price, \$12 each. GLENORO STOCK FARM, Rodney, Ontario

Glenwood Stock Farm 5 BULL CALVES fit for service, out of big milking strains, at low figure for quick sale. THOS. B. CARLAW & SON, WARKWORTH, ONT. Campbellford Sta.

PLEASE MENTION THE ADVOCATE.

Questions and Answers. Miscellaneous.

Lactation Period.

Is it possible to keep a heavy-producing Holstein cow at her best, and give her from four to six weeks' rest each year, or does she require more, and if so, how much longer? W. J. H.
Ans.—Such a cow should be dry from six weeks to two months between lactation periods.

Spavin.

I have a mare of the Coach breed, and she travels as if she was spavined. You cannot see any enlargement, but she is lame when I take her out of the stable for a little while, and then she seems all right. Her mother had a bone spavin. Can you give a blister that will kill the spavin and not kill the hair or disfigure the leg? I will have to work her when spring work starts. G. S.
Ans.—Enlargements from bone spavin cannot be removed. Where the animal is lame, get a competent veterinarian to fire and blister, and give the animal at least two months' rest—longer if possible.

Bloody Milk--Polish for Piano--Icing on Cake.

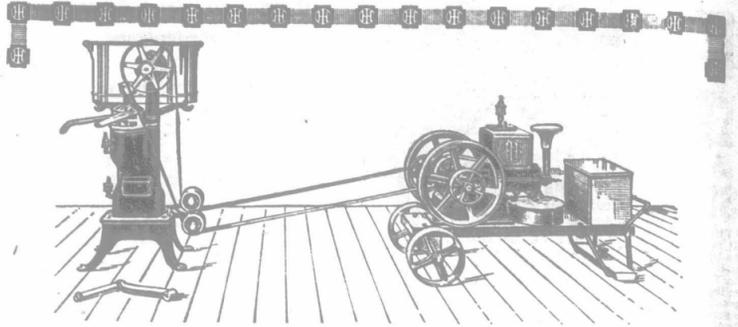
1. I have a cow which gave bloody milk last year. She will soon freshen again. Would like to know whether anything could be done to avoid the same trouble again?
2. Could you tell me what would make a good polish for a piano?
3. What is the cause of the icing breaking and falling off a cake?
A CONSTANT READER.

Ans.—We know of nothing of any value that could be done, to prevent this occurring. It is due to a congenital weakness of the blood vessels of the udder.
2. A Conservatory of Music teacher informs us that nothing is better for restoring the polish of a piano than simply washing it well, little by little, with Castile soap and soft water, rubbing each cleaned portion to a gloss at once with soft cloths and chamois. There are piano polishes, which are sold by most piano firms, if one prefers to use them.
3. Icings that are too hard often crack and fall off. Try a different recipe.

Hens and Eggs.

1. Hens have diarrhea; feed them shorts, oats and corn; there are no drafts. Can you tell me what causes this?
2. Hens are lame. I had six of them, and they would stay down on the floor nights and could not walk. After three or four days they started to get better. What is it?
3. How long after a turkey mates does she begin to lay?
4. Are fried oats good for hens?
5. How many eggs would you prefer to put under a Plymouth Rock hen?
6. Is an empty egg, filled with mustard, good for hen eaters?
7. What makes young cattle die when put out to pasture in the spring? I have two or three die every spring.
8. How many eggs does a hen lay before she sits? J. W. N.

Ans.—1. Do they get plenty of grit and meat food, also green feed?
2. Probably rheumatism. Hens suffering from tuberculosis often go lame. Are you sure your pen is not damp or ill-ventilated?
3. A turkey will lay without mating at all. Mating and laying are not dependent one upon the other.
4. Never tried them.
5. Thirteen to fifteen.
6. What connection there would be between a "hen" eater and an egg filled with mustard we scarcely see. If "egg" eaters are meant, it might have some value, but would not likely prove very effective.
7. Who knows? Symptoms must be given before we can give intelligent answers.
8. Maybe two or three, or 150 or 200. There is no average number. Hens of the non-sitting breeds will often lay a full season without showing a desire to incubate; others, of the heavier breeds, and especially old hens, lay only a few eggs.



Cream Separator Savings

AN IHC cream separator saves money for you in more ways than most people know. It saves cream because it skims practically all the butter fat out of the milk. It saves on the feed bills. Calves and pigs thrive on the sweet, warm skim milk that comes fresh from the separator. It saves fertility. The dairyman who feeds the skim milk to animals parts with a very small amount of fertility. The man who sells whole milk loses close to \$4.80 per cow per year in fertilizing matter. These three savings, while not all that a cream separator makes, are important enough to warrant the most thoughtful consideration.

IHC Cream Separators Dairymaid and Bluebell

are also furnished as complete power outfits, as illustrated above. The engine is a one-horse power, back geared, hopper-cooled, IHC engine which can be detached and used to run any small machine. The separators are built for long life and skimming efficiency. They have heavy phosphor bronze bushings for bearings; a never-failing splash oiling system; trouble proof bowl spindle bearings; dirt and milk proof spiral gears which are easily accessible for cleaning. There are four convenient sizes of each style. Ask the IHC local agents who handle these machines for demonstration. Get a catalogue and full information from them, or, write the nearest branch house.



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SERVICE BULLS AND BULL CALVES FROM A. R. C. DAMS. Sons of Johanna Concordia Champion, No. 60575, one of the richest bred and best individual bulls of the breed. His granddams, Colantha 4th's Johanna 35.22 per cent. butter, fat 4.32 per cent., and Johanna Colantha 2nd 32.90 per cent. butter, fat 5.02 per cent. Average butter in 7 days 34.06 per cent. Average fat 4.67 per cent. If you want to increase the butter-fat in your herd, let me sell you one of these bulls. I can spare a few good cows and heifers bred to the "Champion." Write me your wants and I will try and please you. MAPLE AVENUE STOCK FARM, L. E. CONNELL, Prop., FAYETTE, FULTON CO., OHIO, U. S. A.

FAIRVIEW FARM'S HERD OFFERS sons of Pontiac Koradyke 25983, the greatest sire that ever lived, and the only bull that ever sired 19 daughters that have made 7-day records above 30 pounds each. Do you want your next bull to be a brother to such cows as Pontiac Lady Koradyke (38.63), Pontiac Pet (37.67), Pontiac Clothilde De Kol 2nd (37.21), Sadie Vale Koradyke (36.20), and eight others above 30 pounds? If you do, write me for price on a son of Pontiac Koradyke. I also have sons of Rag Apple Koradyke and Sir Johanna Colantha Gladi. E. H. DOLLAR, HEUVELTON, NEW YORK. Near Prescott.

LAKEVIEW HOLSTEINS We are now testing some of the daughters of Count Hengerveld Fayne De Kol, and they are running from 16½ lbs. with first calf to 20 lbs. with second calf. There are still a few young bulls from these heifers that we are offering at half their value, in order to make room. They are sired by Dutchland Colantha Sir Mona. Come to the farm and see the dams of these bulls and their dams. E. F. OSLER, BRONTE ONTARIO

Summer Hill Holsteins Would you like your next bull to be from the same sire as the heifer that holds the world's record for yearly work, and the same sire as the Champion Cow of Canada in the seven day work, and the same sire as the Champion four-year-old of Canada in the thirty day work? We have bulls heifers bred to our junior herd bull whose dam has a record of 34.60 lbs. butter in seven days and 111 lbs. milk a day. Yorksires of all ages. D. C. FLATT & SON, R. R. No. 2, Hamilton, Ont.

Woodbine Holsteins Herd headed by King Segis Pontiac Lad, whose sire's dam is the champion cow of the world. Sire's sire is the only bull that has sired five three-year-olds that average 30 lbs. each. Dam's sire is the bull that has sired two 30-lb. three-year-olds. His two great grand sires are the only bulls in the world that have sired two 37-lb. cows. Bulls and bull calves for sale. A. KENNEDY, AYR, ONT.

Evergreen Stock Farm High-class Registered Holsteins For sale: A few choice young bull calves and females, all ages; good enough for foundation stock

\$150.00 buys a 2-year-old HOLSTEIN heifer just freshened. Have also for sale some Yorkshire pigs just weaned. A. E. HULET, Norwich, Ontario. R. R. No. 1. A. WATSON & SONS St. Thomas, Ont.

For Sale: Choice Bull Calves FOUR MONTHS AND under, from high-testing dams, and sired by our great stock getter, Grace
Fayne 2nd Sir Colantha; also young females. Satisfaction guaranteed. M. L. HALEY and M. H. HALEY, Springford, Ontario

Maple Hill Holstein-Friesians Special offering: Bulls from 1 to 15 months old. The growthy kind that will give good service. One from a son of Evergreen March, and all from Record of Merit dams. Write for particulars. G. W. CLEMONS, St. George, Ont. Bell telephone

The Maples Holsteins I am now offering for sale 10 young bulls, official record backing on both sire's and dam's side. They are old enough for service, and my prices should soon sell them. WALBURN RIVERS, Foldens, Ont. Phone. Oxford County

When writing please mention The Advocate

15.95 AND UPWARD

AMERICAN SEPARATOR

THIS OFFER IS NO CATCH. It is a solid proposition to send, on trial, fully guaranteed, a new, well made, easy running separator for \$15.95. Skims hot or cold milk; making heavy or light cream. Designed especially for small dairies, hotels and private families. Different from this picture, which illustrates our large capacity machine. The bowl is a sanitary marvel, easily cleaned. Shipment made promptly from **WINNIPEG, MAN., TORONTO, ONT., and ST. JOHN, N. B.** Whether your dairy is large or small, write us and obtain our handsome free catalog. Address: **AMERICAN SEPARATOR CO.** Box 1200, SAINSBIDGE, N.Y.



Calves Without Milk

BLATCHFORD'S CALF MEAL

The Complete Milk Substitute

The result of over 100 years' experience with calf-feeding. The only Calf Meal made in an exclusive Calf Meal Factory. As rich as new milk at less than half the cost. Makes rapid growth. Stops scouring. Three calves can be raised on it at the cost of one. Get Bulletin, "How to Raise Calves Cheaply and Successfully Without Milk," by sending a post card to **STEELE, BRIGGS SEED COMPANY**, Toronto, Ont.



Bone Spavin

No matter how old the blemish, how lame the horse, or how many doctors have tried and failed, use **Fleming's Spavin and Ringbone Paste**. Use it under our guarantee—your money refunded if it doesn't make the horse go sound. Most cases cured by a single application—occasionally two required. Cures Bone Spavin, Ringbone and Hebernia, new and old cases alike. Write for detailed information and a free copy of **Fleming's Vest-Pocket Veterinary Adviser**. Fifty-six pages, durably bound, indexed and illustrated. Covers over one hundred veterinary subjects. Read this book before you treat any kind of lameness in horses. **FLEMING BROS., Chemists, 75 Church Street, Toronto, Ont.**

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Size	Price doz.	Fifty tags
Cattle.....	75c.	\$2.00
Light Cattle.....	60c.	1.50
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No postage or duty to pay. Cattle sizes with name and address and numbers; sheep or hog size, name and numbers. Get your neighbors to order with you and get better rate. Circular and sample mailed free. **F. G. JAMES, Bowmanville, Ont.**

DQN JERSEY HERD

Offers young bulls and heifers for sale; heifers bred to Eminent Royal Fern. **D. DUNCAN, DON, ONTARIO** Phone L.-D. Agincourt. Duncan Stn., C. N. R.

For Sale—Jersey cows and heifers and bulls for exportation. All pedigree and Herd-book stock. For further particulars apply to **A. T. SPRINGATE, Breeder and Exporter** Gorey, Jersey, Europe.

Balaphorene Farm Jerseys Present offerings: Choice bull calves from three to sixteen months, at very reasonable prices for quick sale. **JOSEPH SEABROOK, Havelock, Ontario.**

High-class Ayrshires—If you are wanting a young bull out of a 50-lb. a day and over cow, imported or Canadian-bred dam and sire, write me. Females all ages. Prices are easy. **D. A. MACFARLANE, Kelso, Que.**

LINCOLN OATS from prize-winning field. Won first at Guelph 1910 and 1912. Also first at Central Fair Ottawa, 1910, 1911 and 1912. 85c. per bus. **W. G. RENNIE, Ellesmere, Ont.**

Questions and Answers.
Miscellaneous.

Four Horses Abreast on Plows.
Can you give a contrivance to work four horses abreast on a two-furrow plow, so that none walk on plowed ground?
J. H. C.

Ans.—With one two-furrow plow we purchased an evener designed to allow the off horse to walk in the furrow, but we do not like it, and are getting a longer one made, designed to enable the off horse to walk on the plowed ground. Our evener is 58 inches from center to center of the two doubletree holes. The doubletrees are attached to the evener by rear clevises, each 29 inches from center to center of the whiffletree holes. The whiffletrees are each about 27 inches long. The trouble with this evener is that the horses are crowded together too closely, and all but the one in the furrow walk with a slight side draft, especially the first and second horses on the left. Another objection is that the whiffletrees are too short, and occasionally chafe the flanks of the latter two horses in turning.

Feeding Pigs—Poem—Insects.

1. What is the feeding value of cooked beans for hogs?
2. Some time ago you had a few verses giving directions for tending age of horses by teeth. Would you kindly repeat them?
3. I have noticed little white specks on top limbs of apple trees. Under shells were red lice of some kind. The shells were about the size of a grain of wheat. What are they?
4. What would be a balanced ration for hogs, from 75 to 150 lbs.?

B. W. W.

Ans.—1. Cooked beans, being unusually high in protein, have a high feeding value. They should be mixed with some feed rich in carbohydrates, as alone they produce a soft pork. Mix with corn, barley, or oats.

2. The poem referred to was published in our issue of October 31st, 1912, page 1882. We cannot repeat it so soon.

3. Likely red spiders.

4. Feed a mixture of one-third oats, one-third barley, and one-third peas or corn. Skim milk used for drink would be good. There are other grains which might be used, and, in fact, two of these are often used without the third. The main thing is to feed liberally, and not overdo it. Give a few roots.

Butter-walker.
Can you, or any of "The Farmer's Advocate" readers, tell me where I can get a butter-walker?

DAIRY MAID.

Ans.—Butter-walkers are advertised by certain firms in these columns. If you have the time, and are handy with tools, a very satisfactory worker may be made at home. Get some strips of hard wood, maple preferred. Fashion the pieces into a wide, shallow trough, tapering at one end to about four inches. Set the trough on three legs, two under the wide end and one under the narrow. Make a roller out of a piece of the same material, four inches square, and one foot longer than the body of the worker. A very good length for a medium-sized dairy would be thirty inches for the body part, and forty-two inches for the roller. Cut with a fine-tooth saw one inch deep on each side of the stick at a point twelve inches from one end. This extra twelve inches is for a handle, and should be dressed down round and smooth to about two inches, so that it is easy to grasp by the operator. The remaining three feet must be made tapering, the small end (that opposite to the handle) being not more than an inch in diameter. Dress the wood square, then cut off the four corners to make it octagonal in shape. In the narrow end of the trough drive an ordinary, iron staple, and in the small end of the roller, a short, heavy, cut-iron nail (not a wire nail, which would be likely to bend). The nail should project about an inch. This fits into the staple holding the roller in place, and completes about as effective a butter-walker as anyone need ask for.

DE LAVAL Dairy Equipment
Insures a Better Product

THE De Laval Line of Dairy, Creamery and Farm Supplies insures a higher grade product, more economical operation, and better prices.



VICTOR CHURNS

Milk dealers, creamery men, cheese makers and dairy farmers must have modern equipment of the very best grade in order to operate to the best advantage and secure the greatest margin of profit.



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LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA
Exclusive Canadian distributors of the "World Standard" De Laval Cream Separators
PETERBORO MONTREAL WINNIPEG VANCOUVER

BRAMPTON JERSEYS The spring trade is on; we are doing the largest business we ever did, chiefly with our old customers; young bulls and heifers from sires with tested daughters.
Several imported cows and bulls for sale. **B. H. Bull & Son, Brampton, Ont.**
Canada's Greatest Jersey Herd.

75 Hillcrest Ayrshires Our Ayrshires are selected and bred for big production and show-ring quality. Many of the heifers we are offering are grand-daughters of the two Ex-World's Champions, Jean Armour, Rec. 30174 lbs., and Primrose of Tanglewyld, Rec. 16195 lbs. **F. H. HARRIS, Mount Elgin P.O. & Stn.**

Ayrshires and Yorkshires—We now offer at bargain bull calves dropped in July, 1912. All bred from (Imp.) sire and from other dams with good records, or their daughters either imported or home-bred. Some choice February pigs; also young pigs. **Alex Hume & Co., Menie, Ont.**

Stonehouse Ayrshires Of choicest imported stock and with Imp. sires and dams. I am offering young cows, 3, 4 and 5 years of age; a grand bunch of Imp. yearling heifers, and a particularly good pair of young bulls. **L.-D. Phone. HECTOR GORDON, Howick, Que.**

City View Ayrshires—Three young bulls fit for service; females from 3 months to 9 years; all young stock 3 years and under from R. O. F. ancestors. Always something for sale. Bell phone connections; 1 1/2 miles from 5 railroad stations. **JAMES BEGG & SON, R. R. 1, St. Thomas, Ont.**

ALLOWAY LODGE STOCK FARM
SOUTH DOWNS ANGUS COLLIES
The best in their respective breeds. Write for information to: **ROBT. McEWEN, Byron, Ont.** R.R. Stn. and Tel. Office, London.

The "STAY THERE" Aluminum Ear Markers
are the best. Being made of aluminum they are brighter, lighter, stronger and more durable than any other. Fit any part of the ear. Nothing to catch on feed trough or other obstacle. Your name, address and any series of numbers on each tag. Sample tag, catalogue and prices mailed free. Ask for them. Address: **WILCOX & HARVEY 270, 280, Dept. D, 525 Dearborn St., Chicago, Ill.**

MAPLE VILLA OXFORD DOWNS AND YORKSHIRES
This fall I have the best lot of lambs I ever bred. I have plenty of show material, bred from the best stock procurable in England. Order early if you want the best. Ram lambs, shearlings and ewe lambs. Yorkshires of all ages. **J. A. Gerswell, Bond Head P. O., Ontario** Bradford or Weston stations. Long-distance phone.

Oxford Down Sheep, Shorthorn Cattle, Yorkshire Hogs—Present offering: Lambs of either sex. For prices, etc., write to **John Cousins & Sons, Buena Vista Farm, Harriston, Ont.**

Quality Oxford Downs Winners, bred from Imp. and prize-winning stock. 1 and 2 shear rams and ewes, ram and ewe lambs; many winners among them, the highest types of the breed. **E. BARBOUR, Erin P.O. & Stn. L.D. Phone.**

Shropshire and Cotswold Ewes at greatly reduced prices. They are all registered and in lamb to good rams. Are going to be sold; whoever gets order in first will get the choice. **John Miller, Jr., Blairgowrie Farm, Ashburn**

There's a right way

to protect your 'barn and its valuable contents—and a wrong way!

Perhaps you have the right kind of a roof; possibly you have put a metal roof on your barn.

But if you haven't, let us explain why you should; how you can save money by doing so; and just how you ought to go about it in order to ensure the best results.

We have important information for every farmer on this important subject of barns. If you will write us, we'll send this information free—together with samples, catalogues and plans, showing in the simplest possible form the process of roofing your barn with Galt Steel Shingles.

A little investigation now may save you hundreds of dollars later on. Possibly you've been "putting off" the "putting on" of that new roof because you thought it would cost too much to do it right.

Don't believe that until you know it's so. It will only cost you the price of a post card to find out definitely what it will cost, and to gain an accurate idea of the ultimate saving to you of putting on the right kind of a roof right now.

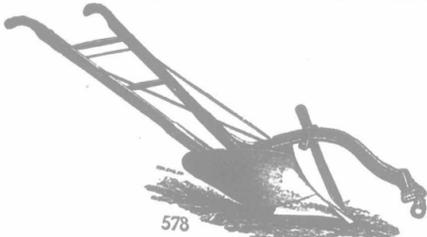
So send that post card to-day to

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Flcury's Original No. 21, "Dandy," No. 13, No. 15A (one-horse)



Light draught. Ease for horses. Smooth running. Easy to hold. Finest quality of work in the field. The highest quality of soft centre steel mould-boards. First-class materials throughout, combined with good workmanship, produce

THE BEST PLOWS IN CANADA

We are the manufacturers of the Original No. 21 and Dandy Plows.

TAKE NO IMITATIONS

THERE ARE NO PLOWS LIKE FLEURY'S

J. FLEURY'S SONS, Aurora, Ontario
Medals and Diplomas, World's Fairs, Chicago and Paris

Woodburn Berkshires

are founded on the famous old Sally tribe, noted for big size, length of body and strength of bone. We can supply pairs and trios not akin. Show stock a specialty. Also high-class Cotswolds, ram and ewe lambs, shearings.

E. BRIEN & SON,

RIDGETOWN, ONTARIO



Large White Yorkshires

Have a choice lot of sows in pig. Boars ready for service and young pigs of both sexes supplied not akin, at reasonable prices. All breeding stock imported, or from imported stock from the best British herds. Write or call on **H. J. DAVIS, Woodstock, Ont. C.P.R. and G.T.R. Long-distance 'phone.**

Pine Grove Yorkshires

Bred from prizewinning 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.



ELMHURST LARGE ENGLISH BERKSHIRES

Present offering: Select sows. Choice boars ready for service; also younger stock, the get of Duke of Somerset, imp. and out of imported dams. Satisfaction and safe delivery guaranteed. **H. M. VANDERLIP, Breeder and Importer, CAINSVILLE P.O. Langford station, Brantford and Hamilton, Canada.**

Duroc Jersey Swine AND JERSEY CATTLE
Grand stock, either sex, constantly for sale. Price reasonable. **MAC CAMPBELL & SONS,** Northwood, Ontario.

Cloverdale Berkshires—Present offering: Sows bred and others ready to breed; also younger stock of both sexes. Prices reasonable. **C. J. LANG, Hampton, Ont. Durham Co.**

Questions and Answers.

Miscellaneous.

Cement Paint.

I think I saw an article in your paper some time ago about mixing cement with red paint for painting barn. Would be very much pleased to receive any information through your paper, as I intend rebuilding my barn next spring.

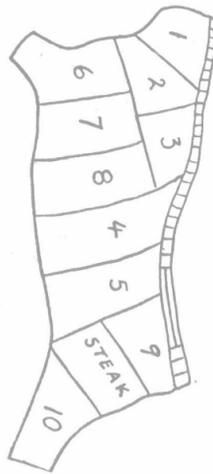
L. D.

Ans.—Take any quantity of Portland cement and put in suitable can or pail and add enough coloring to make it the desired shade. Stir well so as to get color thoroughly mixed with cement, then add enough milk (whole milk preferred) to make the cement of the consistency of thick cream, and apply with an ordinary paint brush.

Beef Ring Chart.

Would you kindly publish, through "The Farmer's Advocate," a chart of a 20-share beef-ring?

J. S.



Ans.—This is an illustration of one side of the beef, cut, as shown, into ten shares. The other ten will be exactly the same on the other side.

Estimating Hay, Silage and Grain.

Please give rules for computing (a) the quantity of hay in a mow; (b) the quantity of silage in a silo that had been filled to a depth of eighteen feet, and has now about fifteen feet in it; (c) the number of bushels of grain in a bin.

Ans.—For computing the quantity of hay in a mow, the rule that applies ranges from a cube of seven feet up to a cube of eight. Multiplied out, this means from 343 to 512 cubic feet per ton. Even of settled timothy, it usually takes more than 350 cubic feet for a ton, while of clover mixture the figures would run up towards 450, or higher.

A cubic foot of average silage in a silo of, say, 30 feet in depth, is supposed to weigh about 40 pounds, though nowadays when the corn is ensiled in a less sappy condition than formerly, a cubic foot in a silo of that depth would scarcely weigh 40 pounds. King gives a table in which the average weight per cubic foot two days after filling is thus estimated:

In a silo 13 feet deep, a cubic foot weighs 28.3 lbs.

In a silo 14 feet deep, a cubic foot weighs 29.1 lbs.

In a silo 15 feet deep, a cubic foot weighs 29.8 lbs.

In a silo 16 feet deep, a cubic foot weighs 30.5 lbs.

In a silo 17 feet deep, a cubic foot weighs 31.2 lbs.

In a silo 18 feet deep, a cubic foot weighs 31.9 lbs.

In a silo 19 feet deep, a cubic foot weighs 32.6 lbs.

In a silo 20 feet deep, a cubic foot weighs 33.3 lbs.

To find the number of cubic feet, of course, one multiplies the radius by itself, then by 22/7, and then by the height. Thus, a silo 14 feet in diameter and 20 feet deep, would contain $7 \times 7 \times 22/7 \times 20 = 3,080$ cubic feet.

In calculating the capacity of a bin of grain, allow 2,218.2 cubic inches per bushel, and make variable allowance for settling, according to judgment.



He Feels Better With a Hair Cut

Just the same as you do. How would you like to still wear your winter coat when spring work begins? If you want your horses to keep well, last longer and give you better service in every way take off the heavy coat that holds the wet sweat and dirt. Don't buy any thing but

The Stewart Ball Bearing Clipping Machine

the only machine that will clip horses, cows and mules without any change whatever. Has all file hard cut steel gears, enclosed safe from dust and dirt and running in oil. Has 6 feet of new style, light, easy running flexible shaft and the Stewart single tension clipping head, highest grade. Clips easier and faster than any other and lasts longer. Every machine fully guaranteed. Get one from your dealer or send us to us and we will **PRICE** ship C. O. D. **\$975** for balance.

GET ALL HIS WOOL

You lose \$1 on every six sheep by shearing the old way. You know how many you've got. Figure out how much more money for you if you get more and longer, better quality of wool, that will bring a higher price. Use a **Stewart No. 9 Ball Bearing Shearing Machine**

It's the most perfect hand operated shearing machine ever devised. Has ball bearings in every part where friction or wear occurs. Has a ball bearing shearing head of the latest improved Stewart pattern. Comes complete, including 4 combs and 4 cutters of the celebrated Stewart quality. **PRICE \$1575** Get one from your dealer, or send \$2.00 and we will ship C. O. D. for balance. **CHICAGO FLEXIBLE SHAFT CO.** 110 LaSalle Ave. CHICAGO

SWINE OF ALL BREEDS FOR SALE.

Yorkshires, Tamworths, Berkshires, Hampshires, Chester Whites, Poland-Chinas, and Duroc-Jerseys. I have constantly in hand both sexes of all ages. Show stock a specialty. **JOHN HARVEY, Frelighsburg, Que.**

Prize Chester White Swine—Winners.

High-class in type and quality, bred from winners and champions. Young stock, both sexes, any age; reasonable prices. **W. E. Wright & Son, Gleanworth P.O., Ont.**

REG. POLAND CHINAS

I am offering for sale, boar, 10 months, and sow, same age; bred from imported stock. For quick sale, write Box N, Farmer's Advocate, London.

MORRISTON TAMWORTHS AND SHORTHORNS

Bred from the Prize-winning herds of England; have a choice lot of young pigs, both sexes, pairs not akin; and also the dual-purpose Shorthorns. Satisfaction guaranteed. **C. Currie, Morriston.**

The Scottish Farmer reports the case of a Border Leicester yearling ewe having this spring presented her owner with five lambs at a birth, four males and one female. The latter died shortly after birth, but the other four are doing well. The same journal also reports a remarkable case of endurance of two sheep on a grazing in Strathbraan district, which had been embedded in a snowdrift from January 11th, for seven weeks, succeeding in coming out themselves, and, though in a rather emaciated state after their long imprisonment, are not only alive, but are actually thriving.

YOUR WIFE WILL

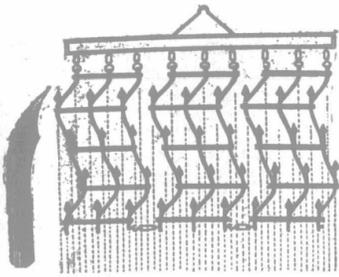
appreciate it when you bring home a can of SNAP. For cleaning her hands, after filling the lamps, milking the cows, peeling the potatoes and onions, there is nothing to equal

SNAP

It leaves the skin smooth and soft. Order from your dealer to-day.

Snap Company, Limited, Montreal.





Eric Lance Tooth Harrow

Is the finest and most useful article that can be placed on a farm. The teeth are so shaped that they tear rough ground, and cultivate and make the finest seed bed possible. Once used on a farm, it will be the last implement parted with. Made strong and adapted to the roughest usage. 3-section set, \$10.00; 3-section set, \$15.00; 4-section set, \$20.00. Each section covers 3 feet of ground in width.

Eric Iron Works, Limited
MAKERS
St. Thomas, Ont.

TO FARMERS' CLUBS

Cunard Line, Canadian Service

Have opened up an

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WILL BE SUPPLIED FREE OF CHARGE TO A LIMITED NUMBER OF ONTARIO FARMERS.

We have resolved that the merits of Basic Slag as a fertilizer in the renovation of old worn out pastures on stiff clay or sour soils, shall this season become known in every agricultural district in Ontario.

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ALFALFA or LUCERNE.—\$11 per bush.
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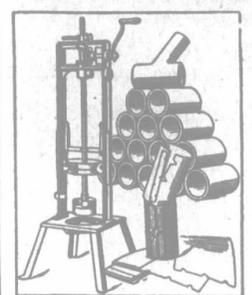


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On a Saturday evening when you pull out that old wash tub to take your bath, and the only part of your body which you can get in it is your feet, have you not thought of that nice bath of your friends in the city and wished you had it in your home, where you could sit right down and splash the water around you? BUY ONE OF OUR FOLDING BATH TUBS and you have it for \$7.50, delivered to any part of Ontario. Inside measurements of our bath tub are 5ft. long, 2ft. wide, 18 inches deep and weighing 15 lbs. Two pails of water are all that are required to give one a proper bath, as the bottom rests on the floor, permitting the water to come to the body. This bath tub can be taken to the kitchen range for your bath and when finished with it, rolled up and set away in a corner.

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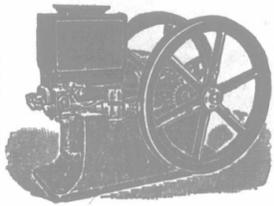
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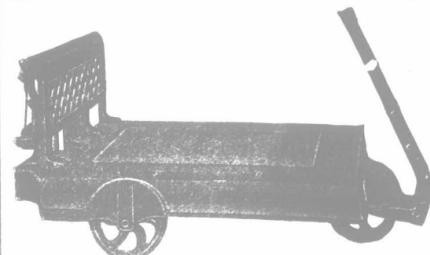


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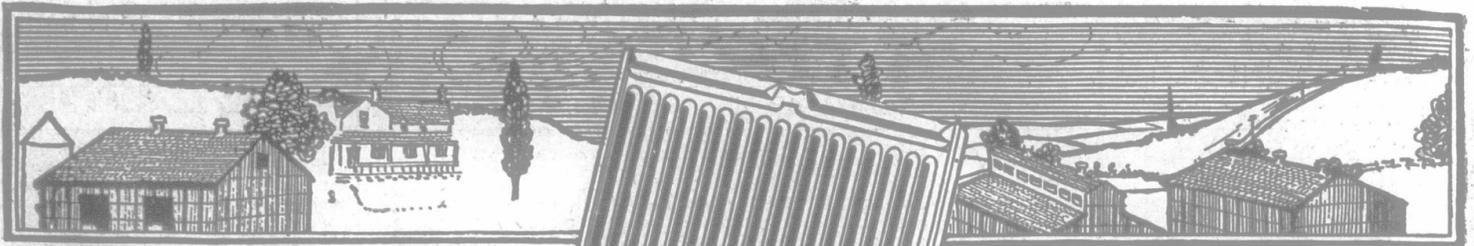
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MY son, George H. Pedlar, Jr., invented this big shingle, just before he died. He planned a big shingle for big roofs, to lay in one-tenth the labor time needed for cedar. We made up and tested them for three years. I recommend the 24 x 24 inch 'George' shingle for good-size barns. It costs the same as my 16 x 20 'Oshawa' shingle per square. Both are in 100-year metal and are fireproof, lightning-proof and sunproof. These two shingles are the triumphant result of 50 years of labor in making good barn roofs."



I HAVE been making metal shingle for farm barns for half a century. I found recently a hundred-year metal for my shingle. It surpasses and outclasses anything else in the world that a man can use for a barn roof. You want a 100-year roof on your barn, at about the cost of cedar shingle, don't you? Of course you do."

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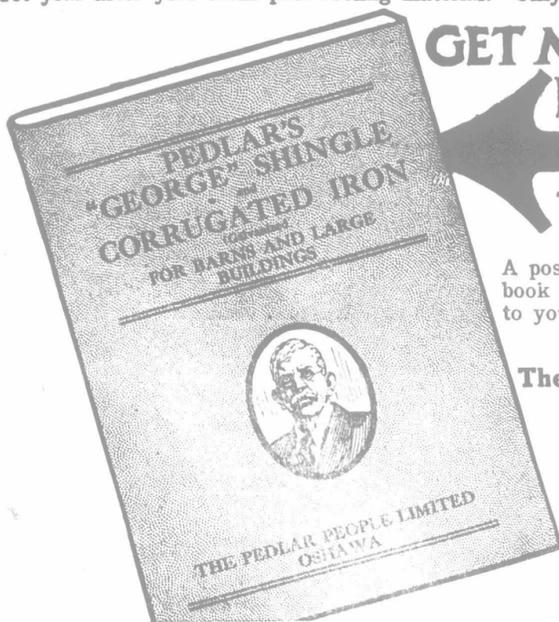
"A barn built without my shingle is going to cost you more in actual dollars to-day, and next year, and every year, than you need to spend. It is going to be a leaky barn sooner or later. You will pay higher fire insurance. You will take bigger fire risk. You will either pay out money for roof repairs, or see your hay and grain rot year after year from poor roofing material. Only my shingle in

metal will stop these troubles from the beginning. It will give service for one hundred years. Besides, you actually pay out less money for my roof, when laid, than for a cedar-shingle roof laid and painted properly."

"But that is not all in lowering barn cost. The time has come to stop using lumber sidewalls. Labor and lumber is too expensive. Use my galvanized, corrugated iron for the walls. It is fireproof and strong. It is applied swiftly in 8-ft. sheets, saving days and days of wages. Besides cutting out painting, every sheet of my iron in a brace, that strengthens your barn framing against sagging and wind pressure. A barn with my shingle and my sidewalls in metal costs less than the same barn with cedar shingles or roll roofing and lumber walls, when you figure in labor and paint. Use my corrugated iron for your barn walls, and my metal shingle for your roof—save money, get a lightning-proof barn, and get a longer-lasting barn than any other way."

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