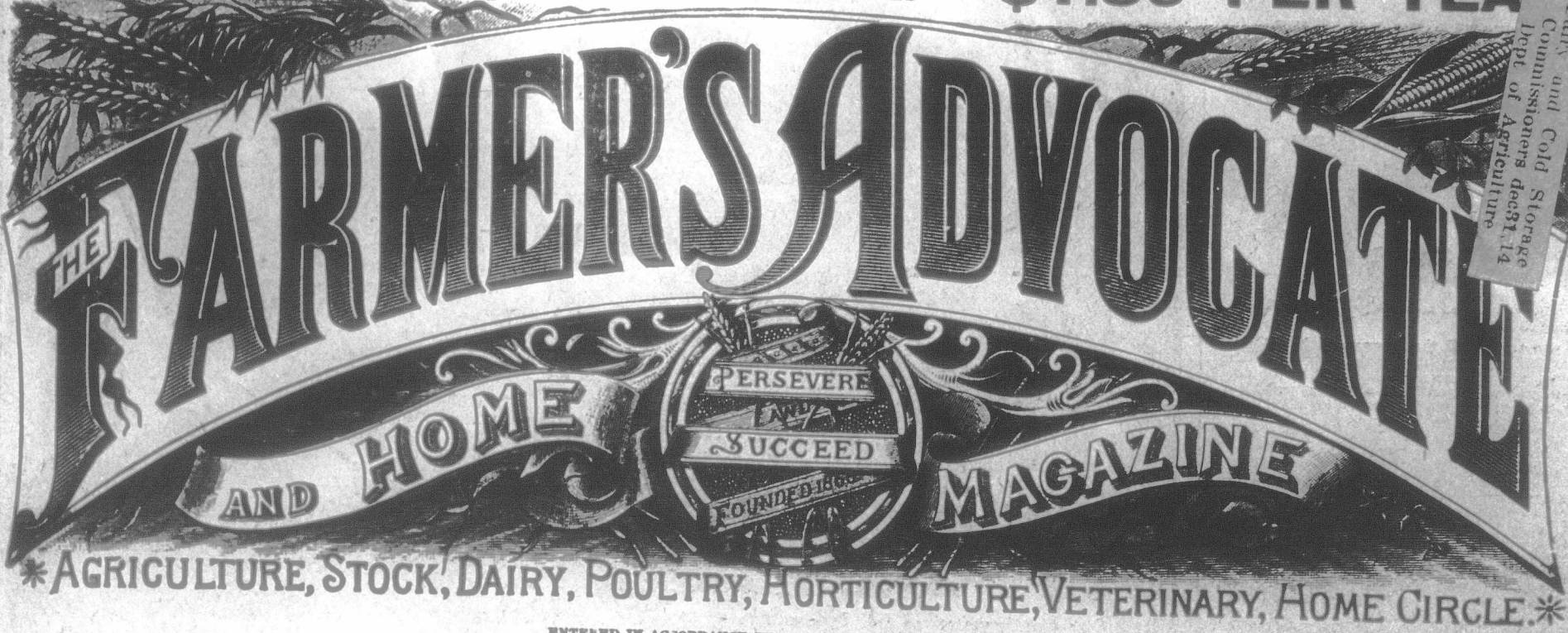


PUBLISHED EVERY WEEK. \$1.50 PER YEAR



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

Vol. XLIX.

LONDON, ONTARIO, MARCH 5, 1914.

No. 1119

Make Your Stock and Poultry Pay Better With Royal Purple

At a cost of less than a cent a day per head of stock, ROYAL PURPLE STOCK SPECIFIC will increase their value 25 per cent. Permanently cures Colic, Debility, Worms, Bots and Skin Diseases. Tones up run-down animals so that they quickly gain weight and vigor. Increases the yield of milch cows three to five pounds a day, besides enriching the quality of the milk.

ROYAL PURPLE STOCK SPECIFIC is not a food. It is a conditioner—the best ever sold. If there was any better we would be making it. It enables your stock to eat the natural food they should eat and get the most benefit from it. Here is the advice of all thorough veterinary doctors: "Feed your stock on food of your own growing," not pamper them with soft predigested mush, so that after a time they cannot digest good, wholesome feed. Feed the good food grown on your own farm—hay, oats, bran, chop, etc. You know what these things cost you and what they will do.

ROYAL PURPLE STOCK SPECIFIC is an aid to these natural foods, and if you use it as directed, we can guarantee better results than if you feed any of the concoctions offered on the market as "prepared foods."

Try It on a Poor-Conditioned Animal

If there is a run-down, poorly nourished beast on your farm, see what ROYAL PURPLE STOCK SPECIFIC will do for it. A 50-cent package lasts a cow or horse 70 days. The cost is so trifling that no farmer in Canada has any excuse for having out-of-health stock around his place. Try it on the poorest-conditioned animal you have, and we know you'll be surprised at the result of a short treatment. Cattle and hogs fatten up a month earlier than without it, which means you save a month's feed and a month's labor. You can bring six pigs to the pink of condition at the cost of \$1.50. Steers treated in the same way cost no more than \$1.00 each to put in prime state for market. ROYAL PURPLE STOCK SPECIFIC fattens and keeps well horses, mares, colts, cows, calves, steers, hogs. Sold in packages, 50c., and air-tight tins, \$1.50.

NOTE.—We have hundreds of recommendations from all parts of the country. If ROYAL PURPLE STOCK SPECIFIC does not give you better results than anything you ever used, or give you satisfaction, we will refund your money.

No matter what you may think of other preparations, we want to induce you to try ROYAL PURPLE on your stock or your poultry, or both. The benefit will be yours.

Stock Raisers in all Parts of the Country Praise

Royal Purple Stock Specific

We give below a few out of the hundreds of recommendations on file at our offices. Original letters can be seen any time. Write any of these people for further proof:

Cow Treated Gained; Others Lost.

Toledo, Ont., July 1, 1913.

I have used a part 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. J. BELLAMY.

Results in the West.

Saskatoon, Sask., Sept. 20, 1913.

Have tried your Royal Purple Stock Specific and find it to be the best conditioner we have ever used for our animals. A. MARRIOTT, Mgr. Saskatoon Nursery.

Yearling Colt Soon Got Well.

Hammondvale, N. B.

This is to certify that I have brought from pasture a yearling colt that was hide-bound, hair dry and full of worms. I fed your specific and in a week's time he showed no signs of worms, and after three weeks' and a half course of your Specific, he is a sleek-looking animal. R. PAXTON SHERWOOD.

On a combination order, amounting to \$5, we will prepay charges in Ontario and Eastern Provinces. In Western Canada these goods can be obtained from any of the Hudson's Bay stores or from Thos. Fletcher, Calgary.

STOCK AND POULTRY SPECIFICS

Try ROYAL PURPLE POULTRY SPECIFIC On Your Hens

N.B.—This is an entirely different preparation from ROYAL PURPLE STOCK SPECIFIC.

Do you know that ROYAL PURPLE POULTRY SPECIFIC makes hens lay in winter as well as in summer, and keeps them free from disease? It does, and helps them over the moult, fattens and keeps them in vigorous health. A 50c. package lasts 25 hens over 70 days. Shouldn't you try it? We have hundreds of recommendations from all parts of the country. If ROYAL PURPLE POULTRY SPECIFIC does not give you better results than anything you ever used, or give you satisfaction, we will refund your money. No matter what your opinion of other preparations, we want you to give ROYAL PURPLE POULTRY SPECIFIC a chance to show what it can do for your poultry—and a 50c. package will show you some fine results. Sold in 25c. and 50c. packages, and \$1.50 air-tight tins.

READ RESULTS OTHERS HAVE GOT! Makes Hens Lay.

Ivanhoe, Feb. 2, 1914.

This is to certify that I have used three boxes of your "Royal Purple" Poultry Specific, and there is nothing that can equal it. I purchased a box of your "Royal Purple" and started to feed my hens on the last week in November. The first two weeks in December I got three dozen eggs. The next week I got five dozen, the next week eight dozen and nine eggs. Your Poultry Specific made my hens lay well and kept them in good condition, and I would not be without it. I cannot say too much in favor of your Specific. W. REID.

Gets Eggs—Others Don't.

Port Colborne, Ont., Nov. 21, 1913.

Please find enclosed \$6 for four tins of Poultry Specific. I am well pleased with its results. I get eggs right along every day during the winter when other people who are not using the Specific are not getting any eggs, and I find it very profitable to use your Specific. C. RICHARDSON.

Royal Purple Roup Specific Costs You Little — Saves You Much

For Roup, Pin, Diphtheria, Typhoid fever, Canker, White Diarrhea, Swelled Head, etc., in Poultry. There are few poultry raisers who do not lose birds every year from roup. We print a letter from one of the most expert breeders in the country, a winner at all big shows. He finds it pays him to use ROYAL PURPLE ROUP SPECIFIC, and it will certainly pay you.

ROYAL PURPLE ROUP SPECIFIC Is Sold in 25c Tins; By Mail 30c.

766 Waterloo St., London, Ont. Sept. 30, 1912.

Please fill my order for another 25c package of your Roup Specific. I have had very gratifying results from this cure. At the time I purchased the first package I had a very sick hen. She was not a very valuable hen, but a very sick one. I asked the advice of Mr. McNeil, the well-known poultry man, and he advised me to kill her at once. It was impossible to save her life. I had your Roup Specific and I thought I had better try it on her, as I might have a more valuable hen in the same condition. She then was almost dead, just gasping for breath. The Roup Cure relieved her at once and at the end of a week's time she was completely cured. I would not be without your Roup Cure at any price. F. C. DULMAGE.

London, Canada, Jan. 5th, 1914.

I beg to state that I used your Poultry Specific and Roup Cure this Fall with remarkable success. I had a flock of about 70 Black Minorcas, that came from the country this Fall in very bad shape. (I hatched them and sent them out to be reared). They were running at the nostrils and generally out of condition. After using your Roup Cure for about ten days, they were entirely cured. T. A. FAULDS.

Crediton, Ont., Jan. 3rd, 1914.

Last fall we had a large flock of fine turkeys, when they began to die from roup and swelled heads. We lost several a day after being sick about one week. I then heard of Royal Purple Roup Cure, and procured a box from Mr. Zwicker. Several of the birds were then affected with the disease, and I expected more of the flock to die; but, to my surprise, upon using the cure according to directions, each one of them recovered and soon began to thrive and do well. We have not lost a bird since we began to use the Roup Cure. We had equally as good success using it for our hens, which were also dying in numbers. I can heartily recommend its use to anyone raising poultry. GOTTFRIED WEIN.

WE ALSO SELL

Royal Purple Cough Specific for cough and distemper. (Will cure any ordinary cough in four days.) 50c., by mail, 60c.

Royal Purple Sweat Lintment for lameness, rheumatism, sprained tendons, etc., 50c., by mail, 60c.

Royal Purple Worm Specific for animals; removes the worm, also their larvae, 25c., by mail, 30c.

Royal Purple Disinfectant, in 25c., 50c., and \$1.00 tins.

Royal Purple Lice Killer for poultry and animals, 25c. and 50c., by mail, 30c. and 60c.

Royal Purple Gall Cure for scratches, harness, scalds, open sores, etc., 25c. and 50c., by mail, 30c. and 60c.

Royal Purple Roup Specific for roup, pin, diphtheria, typhoid fever, canker, white diarrhoea, swelled head, etc., in poultry, 25c., by mail, 30c.

Free TO STOCK AND POULTRY RAISERS

We will mail for the asking our new revised 80-page book on common ailments of stock and poultry. Tells how to feed light and heavy horses, colts, mares, cows, calves, steers, hogs; also how to feed and keep poultry so that they lay winter and summer. Cover lithographed in six colors showing farm utility birds in their natural colors. This is a book that should be in every farmer's possession. IT'S FREE. Write for your copy to-day.

W. A. JENKINS MFG. CO.,

London, Canada

SELL THAT SPARE HORSE

He is simply eating his head off and in a bill of expense.

Nearly every farmer has an extra horse or two—a colt just ready to be broken in—a spare driver—or a working horse. Did you ever figure out what it costs to keep and feed such a horse, also the value of the time you spend attending to it?



If you would sell that horse and invest the proceeds in a Gilson "Goes Like Sixty" Gasoline Engine, which is as powerful as four or six horses, you would not only get a big profit on your money, but make your farm bring you bigger profits, at less labor and cost.

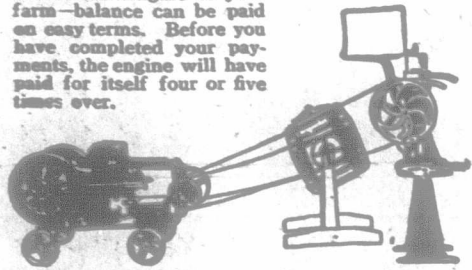
The Gilson "Goes Like Sixty" Engine will do as much work as four or five horses on your farm, yes—and a couple of hired men besides. The Gilson Engine will grind your grain, fill your silo, pump your water, cut your feed, run your cream separator, and saw your wood—in fact do one hundred or more different jobs, and do them better than you or the hired man could do them.

It is always ready for work, never gives out, and can easily be moved from one place to another. It also relieves you of drudgery, leaving you free to do other work (or to play.)

Once started to work the Gilson Engine requires no attention and when it is not working it does not take up a minute of your time, nor cost a cent.

Remember every Gilson Engine is absolutely guaranteed for one year against defective parts or workmanship. The Gilson Engine will last a lifetime.

A small payment will bring the Gilson Engine to your farm—balance can be paid on easy terms. Before you have completed your payments, the engine will have paid for itself four or five times over.



Let me tell you all about it—it will cost you nothing to know—FILL IN THE FOLLOWING COUPON AND MAIL TO-DAY.

Address me personally; E. Bareiman, Manager.
Gilson Eng. Co., Limited
2509 York Street, Guelph, Ontario

Please send me without any obligation on my part, your booklet and full information regarding Gilson Gasoline Engines and your special offer on a.....H.P. Engine.

Name.....
Address.....

No-Lopsided Stones

Every CLEVELAND GRINDSTONE is absolutely even in hardness all through, and sharpens knives, axes, hoes and cutter-bar blades exactly right. Made of the only genuine Berea stone, finest in the world. Guaranteed to do satisfactory grinding, or your money back. We are the biggest grindstone makers in America. We have experts of 50 years' experience who select stones with the right grit for farm use. Let them select for you.

CLEVELAND Grindstones

Look at the fine stone shown below! It's the CLEVELAND "EMPIRE," a sturdy grinder to run by hand or gas engine. Ball-bearing. Strong frame and trough of cast iron that won't rust out. Genuine Berea stone, mounted on steel shaft, complete with pulley. Will last a lifetime. Write for our great booklet, "The Grit that Grinds," and we'll give you the name of our nearby dealer. It will save you money. Write to

THE CLEVELAND STONE CO.
1127 LEADER-NEWS BLDG., CLEVELAND, OHIO

Corn That Will Grow

Canadian-grown seed corn. Your money back if not satisfied.
J. O. DUKE, RUTHVEN, ONT.

Build Concrete Silos

Any size with the London Adjustable Silo Carbs. Send for Catalogue. We manufacture a complete line of Concrete Machinery. Tell us your requirements. London Concrete Machinery Co's Limited, Dept. B, London, Ontario. Largest manufacturer of concrete machinery in Canada.

Seed Corn A limited quantity of carefully selected seed of White Cap, Yellow Dent and Improved Early Learning. Place your order early and get it first. S. P. Oakley, Edgar's Mills Essex Co.

THE AYLMEY BRONZE SPRAYER

Won highest award at St. Petersburg, Russia, over all Canadian, French and German Pumps. Also secured first place at Manchester (England), Toronto, Ottawa and Halifax.

SPRAYER NO. 2.—OUTFIT D

Being Outfit A, ten feet of hose, with couplings attached, two Bordeaux nozzles, one brass stopcock, one Y, one long iron extension rod, without barrel. Price.....\$15.25
Extra hose, per foot......12

For lined bamboo extension rod, in place of iron extension rod:
Add.....\$1.50
With barrel.....3.00

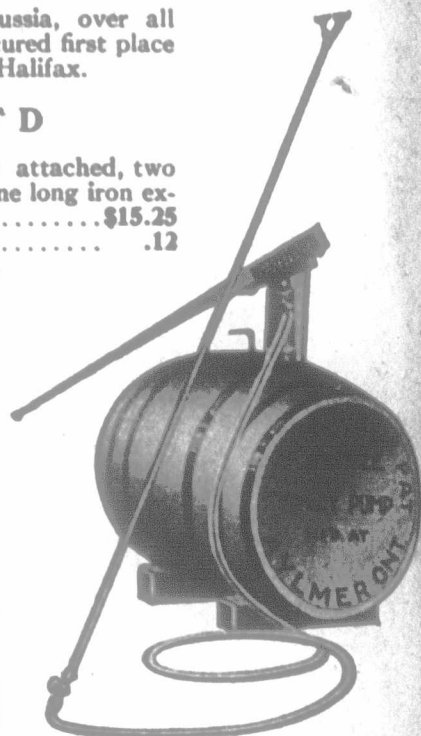
SPRAYER NO. 3.—OUTFIT E

Being Outfit A, two lines of hose, ten feet each, with couplings attached, four Bordeaux nozzles, two brass stopcocks, and two eight-foot iron extension rods, without barrel.

Price.....\$22.50
With bamboo extension rods in place of eight-foot iron. Price.....\$25.50
With barrel.....3.00



No. 2.—Outfit A



Sprayer No. 2—Outfit D

Our Catalogue gives full information as to sizes, capacity, equipment, etc. Write us for one. If your dealer can't supply you, your mail orders will receive our prompt attention.

The Aylmer Pump & Scale Company, Limited
AYLMER, ONTARIO

Be Sure Not Sorry

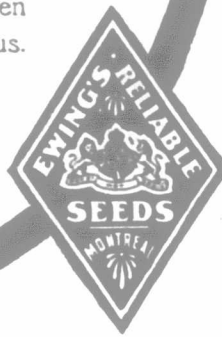
When you buy seeds you are investing not the price of the seeds only, but the value of the land for a year and the season's work as well. That makes it most important that you should buy

EWING'S Reliable Seeds

That is the first and perhaps the most important step towards a good crop. Ewing's Seeds are clean, vigorous, healthy, true to type, and sure to grow if they get any kind of a chance. For over forty years they have been making Canadian farms and gardens famous.

Write for our handsome Illustrated Catalogue, and if your dealer hasn't Ewing's Seeds buy from us direct

The William Ewing Co., Limited
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Hitch Your Engine to This Power House

Wherever there is civilization there are Patented Columbia Batteries. Universally used because universally good. Loaded with highest energy. Quarter century reputation. Cost no more; last longer. Whenever you want a battery that works, say COLUMBIA.

Made in Canada by Canadian National Carbon Co., Limited, Toronto, Ont. Fahnestock spring clip binding posts at no extra charge



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YOU can become a competent chauffeur in a very short time by taking our thorough and complete Auto Course. Our instructors are specialists in their line and our equipment is most complete. Illustrated booklet will be sent free on request.

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Toronto, Ont.



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 Co., Windsor, Ont. FREE—Our large catalogue "Engineer's Bargains"

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H. L. McConnell & Son, Grovesend, Ont.

SERVICE AT LOW COST

is the explanation in a nutshell. All users of

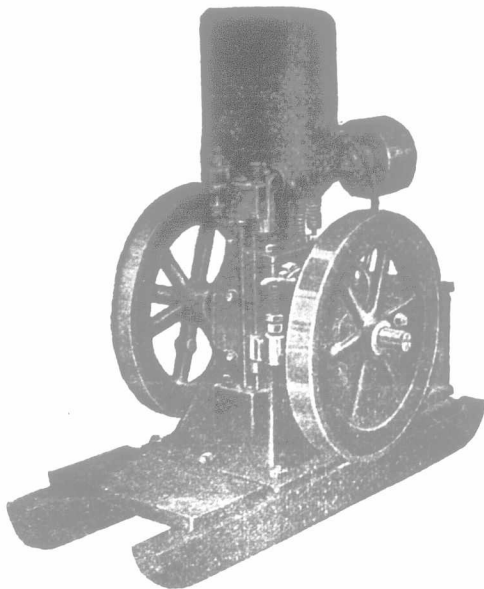
"LONDON ENGINES"

say so. Who is a better judge than yourself, at your own work? Let one prove it to you. It is "your right" and "our pleasure."

All the advantages of both water-cooled and air-cooled.

Vertical non-freeze sizes, 1½, 2½, 3½ and 4½ h.p.

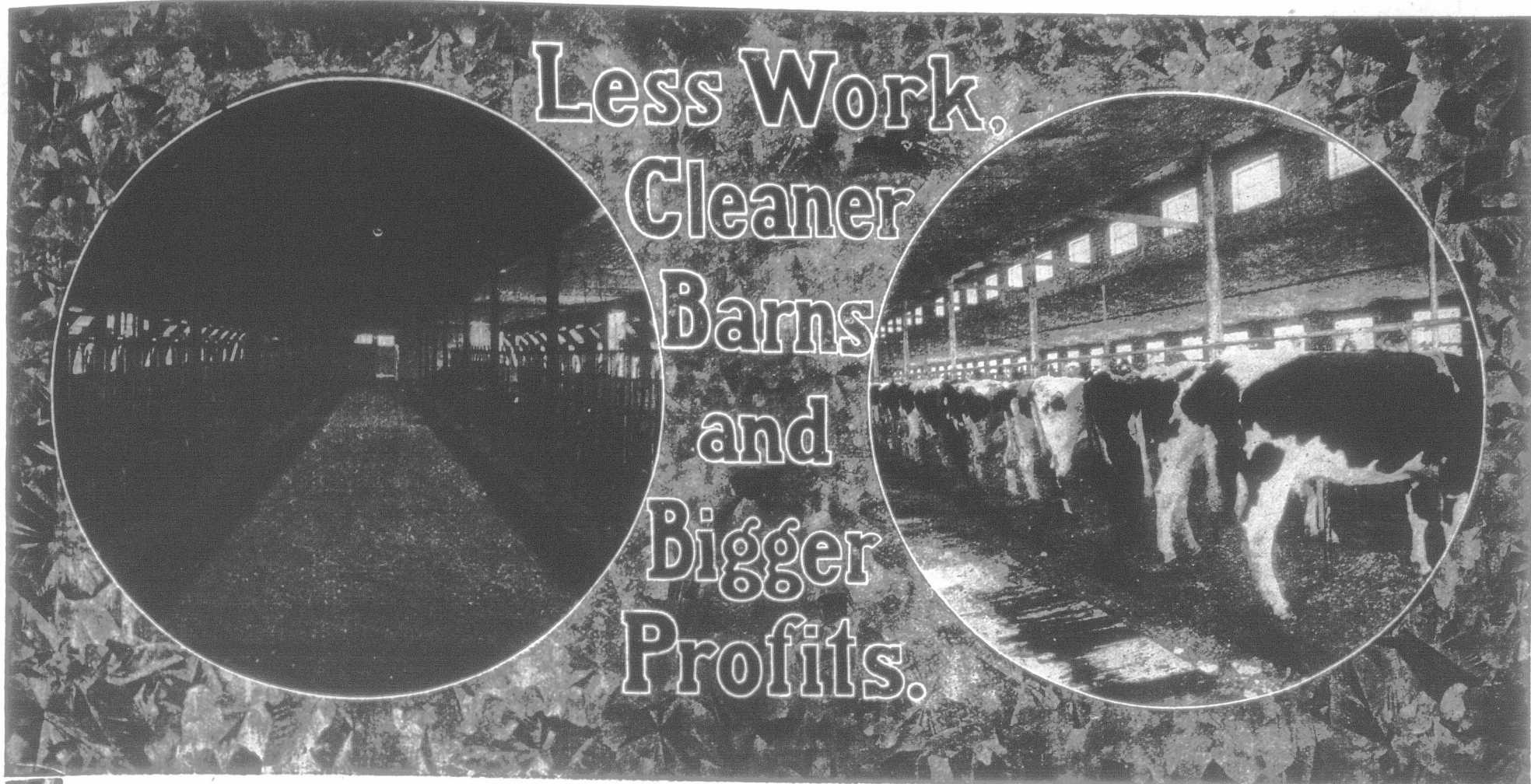
Horizontal single cylinder and double opposed, 10 to 50 h.p., and all kinds of outfits.



LONDON GAS POWER CO., Limited

London, Canada

Ask for Catalogue No. 18



Why Steel Stable Equipment Pays Best

DAIRYING is much more profitable and a hundred times more pleasant when you have a modern, sanitary, steel-equipped dairy barn to work in. Less than half the work is required to keep the stable clean and to care for the cows, and you are spared long, tedious hours of choring. Manure cannot soak into

BT Steel Stalls; this avoids the disagreeable task of removing filth from soaked and rotting boards. All the manure is kept in the gutter, whence it can easily be removed—none gets on the cattle-stand, on the bedding, or soils the flanks or udders of the cows, for the BT Aligning Steel Stanchion lines every long and short cow evenly over the gutter.

BT Galvanized Stable Equipment

BT Galvanized Steel Stalls, Stanchions, Bull Pens, Calf Pens, Steel Columns and other stable equipment enables you to get bigger profits from your stock at less cost and with less time and labor. Cows are healthier in a sanitary, steel-equipped barn; they give more and better milk, and you get better prices both for your stock and your dairy products.

No more losses from tuberculosis in a steel-equipped barn; no more heavy veterinary bills to pay. Write to-day for illustrated Stall Book No. 21, that shows many fine photos of BT Galvanized Steel Equipment in actual use in modern barns. These show better than words how the special advantages of BT Equipment increase dairymen's profits.

Learn how BT Steel Equipment saves so much time and delay and annoyance in putting in your stabling; how, by coming ready to set up from the factory, it can

all be set up in the stable in a single afternoon, ready for the cement—just a few large bolts to tighten, no expensive contractors or carpenters are needed.

Let us show you how BT Steel Equipment makes your stable EVERLASTING fireproof, indestructible, how this equipment will stand the wear as long as you live and not require a single repair.

Let us tell you how we GALVANIZE BT Steel Stalls so they are not affected by stable acids or moisture, but always look well, and how we are willing and able to supply you with these rustproof, durable, GALVANIZED Steel Stalls at no greater cost than you have to pay for painted steel stalls.

Before you build, investigate ALL the facts about BT Galvanized Steel Equipment for sanitary barns. Write to-day. Ask for Stall Book "No. 21," also valuable book, "How to Build a Dairy Barn."

Equip your stable throughout with BT Sanitary, GALVANIZED Steel Stabling. It's an investment that begins to pay big dividends from the very first day the cattle are turned into the new barn. It goes on paying profits as long as your barn lasts. This has been proved hundreds of times in all the hundreds of barns that have been equipped with BT Steel Cow Stalls during the past four years. Our Stall Book No. 21 gives a list of some of them, and shows photos of many. Send coupon for a copy. You owe it to yourself to learn all the facts about modern, galvanized steel stabling.

WHAT USERS SAY ABOUT BT GALVANIZED STEEL STABLE EQUIPMENT:

Mr. Innes, of Winnipeg, who sells milk to that city, and has a 50-cow dairy barn equipped throughout with BT Steel Stalls, says:

"Not to mention the improved appearance of my stable, and the saving in feed and labor, I might mention that I get 40c a gallon for my milk, whereas the current price is only 28c. More than this, I get the increased price for the milk, at the farm, where others have to take or send it into the city."

Mr. J. C. Colthart, of Rodney, Ont., who has 20 BT Steel Stalls in his barn, writes:

"Just a few lines of unsolicited praise in favor of your stanchions. They certainly do all and even more than you say. The greatest advantage we find so far is the big saving in bedding. We kept our cattle cleaner and in better shape this year on less than half the straw used in former years. We shall be pleased to show any person your goods at any time."

BEATTY BROS., LIMITED,
1401 Hill St., Fergus, Ont.

FREE Barn-Plan Service

Your new barn will be a permanent investment. Once erected, mistakes cannot be rectified, except at an enormous cost. And expensive mistakes are sure to be made, unless one uses carefully-made barn plans. The system of framing may be wrong, silos and posts and windows may be incorrectly placed, the general lay-out of the barn, arrangement of stalls, box stalls and feed bins, may be inconvenient for stable work. You will avoid all these errors that spoil the barn, if you will

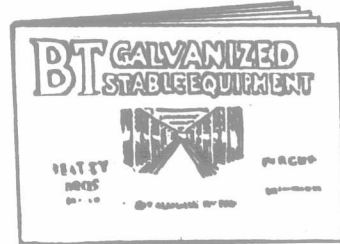
Let Beatty Bros., Help You Plan Your Barn

Our knowledge of good barns covers everything from the laying of the floors and best dimensions for gutters, cattle-stands, passages, etc., to best methods of ventilation and framing. Our service is free. Write us, tell number of stock you will keep, about what size your barn will be, and we'll make you pencil plans, showing what we think to be the very best lay-out, and will answer by personal letter any difficulties you may have. Write to-day.

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FERGUS, ONTARIO

SEND COUPON FOR THE TWO FREE BOOKS



To Beatty Bros., Limited,
1401 Hill St., Fergus, Ont.

Please send me, at once, and without any charge, your two books, "No. 21" about Galvanized Stable Equipment, and book "How to Build a Dairy Barn."

I expect to build or remodel my barn in 1914, about

I will keep cows

Your Name

P.O. Prov.

DE LAVAL

CREAM SEPARATOR the most important machine used on the farm

SOME BUYERS OF CREAM SEPARATORS do not stop to think why their purchase of the best cream separator is of greater importance than the purchase of any other implement or machine of any kind used on the farm, or for that matter anywhere else.

NEARLY EVERY PIECE OF FARM MACHINERY is only used a few weeks during the year, if that long, and when it is used simply saves time or labor over some other way, with comparatively little difference between makes of such machines except in design or size or possibly that one is better made than another and so lasts longer and probably costs more proportionately.



De Laval machine would effect but an actual waste in quantity and quality of product a De Laval machine would save.

The Cream Separator the most wasteful or most profitable

THIS IS THE VERY GREAT DIFFERENCE THAT makes the cream separator the most important of farm machines, the most wasteful or the most profitable, because used so often and involving a waste or a saving every time it is used. This is the reason why there are more De Laval separators in use than of any other kind of farm or dairy machines the world over, and more than all the other makes of cream separators combined.

NO MATTER WHETHER YOU HAVE YET TO BUY A separator or are using an inferior machine, you must be interested in what a De Laval—not a 10, 20 or 30 year old one, but a De Laval machine to-day—would do for you, and that every De Laval local agent will be glad to make plain to you by the demonstration of a machine itself.

IF YOU DON'T KNOW THE NEAREST DE LAVAL agent, simply write the nearest main office as below.

DE LAVAL DAIRY SUPPLY CO., LIMITED
MONTREAL PETERBORO WINNIPEG VANCOUVER

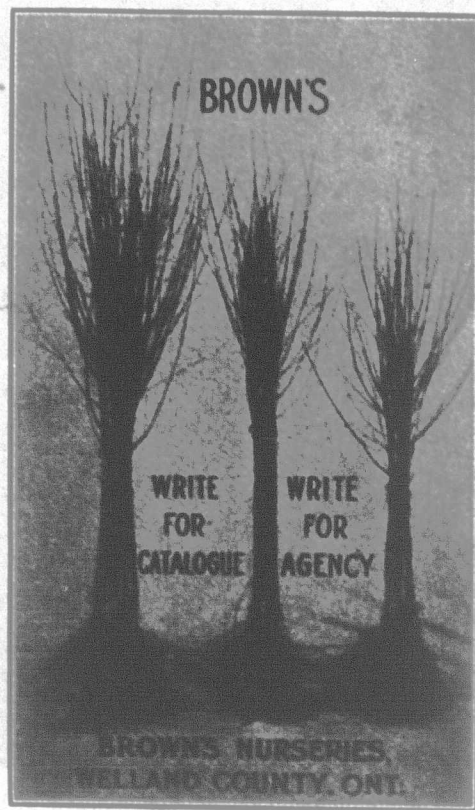
50,000 Branches and Local Agencies the World Over



Central Nurseries, St. Catharines, Ont.
Have a fine assortment of Trees, Vines, Plants, Ornaments, etc., for Spring planting. For satisfaction, plant Everbearing St. Regis and Himalaya Berries. Our prices are right and so are the trees. Send for priced catalogue if you have none, also your want list for special prices on apple trees. We can please you.
Customers talk back: Locust Hill, Ont., Nov. 11th, 1913. "Trees opened up O. K., a credit to any nursery, a larger order follows." Look over our Price List. No agents.
A. G. HULL & SON, St. Catharines, Ont.



ROOTS AND BRANCHES



The true value of a tree is based upon its root system and limb growth. Trees grown at

Brown's Nursery
Welland County
Ontario

Are famous because of these two points.

If you have land suitable for fruit or ornamental trees, send in your list for prices.

**Peach, Apple, Plum
and Cherry Trees**
are our largest
output.

"Selected Seeds" --- Government Tested

Red Clover, Standard	No. 1		\$12.00	Bush., Bags free
Red Clover, "	No. 2		\$11.50	" "
Alsike, "	No. 1		\$13.00	" "
Alsike, "	No. 2		\$12.00	" "
Alfalfa or Lucerne	No. 1 (Northern grown)		\$ 9.00	" "
Timothy 99% Pure			\$ 4.00	" "

SEED GRAIN—O.A.C. No. 27 OATS

Introduced by O.A.C., Guelph, out-yielded Banner Oats the last 5 years. Very thin hull, splendid straw and big yielder. Price per lb., 15c; 10 lbs., \$1.00; Bush., \$3.00, Bag included. Banner Oats, 60c Bush., Bags extra 25c each. Sheffield Standard, 60c Bush., Bags extra. Tartar King, 60c Bush., Bags extra. Daubenay Oats (very early), 60c Bush., Bags extra. O.A.C. No. 21 Barley, 90c Bush.; 10 Bush. lots, 85c, Bags extra.

"We make a specialty of Seed Grain"

"44 years in the Seed Business."

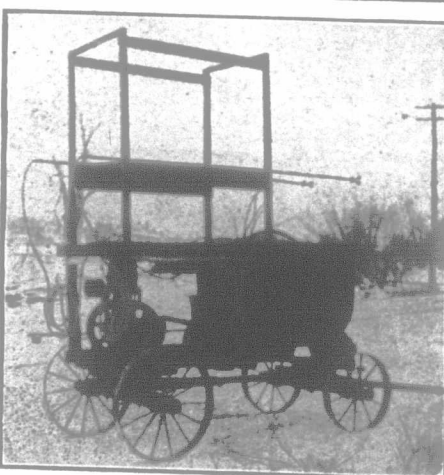
"Write us for anything in the Seed Line."

Goods not satisfactory can be returned and money refunded.

Above prices all f.o.b. Guelph.

Terms—Cash

HEWER SEED CO., 90 Macdonnell Street, East, GUELPH, ONTARIO



THE ONTARIO

Model 2-B

BUILT FOR BUSINESS

This machine represents the highest type of high pressure POWER SPRAYER embodying the best improvements of the past few years. It is simple, easy to operate, in fact all you could desire. The engine fills the tank, and may be used for other purposes without dismantling. Satisfaction guaranteed or money refunded.

Price, without truck and tower, \$250 00
Truck 28-34, steel wheel, 5" tire, 40 00
Collapsible oak tower, adjustable, 10 00

WRITE FOR ILLUSTRATED CATALOGUE on spraying and apple evaporating.

FRUIT MACHINERY CO.,
Ingersoll, Ont.

The Marlin "Pump" Action .22 Cal. REPEATING RIFLE

You can buy no better gun for target work and all small game up to 200 yards.

No. 20 rifle with plain finish, 15 or 25 shots, \$11.50.
No. 29 rifle, \$9.25.

Without change of mechanism it handles .22 short, long or long-rifle cartridges perfectly. The deep Ballard rifling develops maximum power and accuracy and adds years to the life of rifles.

The solid top is protection from defective cartridges—prevents powder and gases from being blown back. The side ejection never lets ejected shells spoil your head and allows quick, accurate repeat shots. With simple take-down construction, removable action parts,—least parts of any .22—it is the quickest and easiest to clean. Just the gun you want! Ask any gun dealer.

The 128-page Marlin catalog will help you decide what rifle best suits your individual desires. Send 3 stamps for it today.

The Marlin Firearms Co.
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Nursery
County
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VOL. XLIX.

LONDON, ONTARIO, MARCH 5, 1914.

No. 1119

EDITORIAL

It is always profitable to answer business letters promptly.

Get as much feed ready as possible before the land is ready to work and save chores during the spring rush.

When purchasing seeds for the fields do not forget the garden. No farmer can afford to be without a good garden.

It is worth while to note the change which has taken place in the relation of prices of cattle on Toronto and Buffalo markets, since last fall.

Those depending on wind for power are not often disappointed in March. Cutting feed, grinding and sawing may be done in sufficient quantity to tide over the spring rush.

Will some of our readers give others the benefit of their experience in preparing a seed bed for various crops? State the different operations and why they are considered most practicable and efficient.

Convincing proof that the West is going into mixed farming was shown on some of the large markets of the East recently when large numbers of Manitoba hogs were disposed of at good prices.

Let every product, no matter whether it comes from the farm or factory, be as good as its name implies. Let it be what its label designates it, and not an adulteration or imitation, gaining favor through its name and not through its qualities.

One week of the first month of spring has almost passed. Where is the summer's wood? In what condition is the seed grain? In what repair are the seeding implements and machines? Time goes quickly at this season.

It would be just as reasonable and just as honest business to allow oleomargarine or butterine to be labelled "dairy butter" as it would be to allow syrup mixtures containing adulterations of one kind or another to be labelled "maple." We demand nothing but pure, wholesome butter, and pure, wholesome maple products in this country.

If the farmers of this country would stand together and uphold the needs of the rural districts, would keep "dinging" these needs in the ears of their respective members and would follow them up on nomination and polling day by casting their ballots in favor of the candidate who heeds results would soon come, the inertia of party rule would cease and a rapid march forward succeed the rule of marking time.

"If one man writes a better book or preaches a better sermon, or even makes a better mouse trap than another, he may build his house in the forest and the world will soon make a pathway to his door." To this we might add, if one man grows better crops through the use of good seed or better animals from the use of the best sires, a pathway will soon be beaten to his farm or stable. Sow the best and breed the best.

The New Act and the Maple Industry.

Last November "The Farmer's Advocate" devoted considerable space to a discussion of the Maple Sugar and Maple Syrup industry. It was then thought advisable to bring the matter before the people and the legislators just previous to the opening of Parliament. Now that Parliament is in session there is a probability that the Act governing maple products will be amended and with this probability there is a possibility that the new Act will not meet with the approval of those interested in the maple industry. It seems that it is a difficult matter to get the powers behind those formulating the amendment to the Act to relinquish all claim to the word "maple." They desire to retain this misnomer, this deceiver of the public, this, their best selling advertisement, in order that other substances less costly may be sold over the counters of the country and a credulous people eat a compound, an adulteration or a mixture containing little or none of the life of the maple tree, whose good name has been used in such a spurious manner.

In the amendment it is proposed to allow a syrup when adulterated to be labelled "Maple Compound." This does not look as if such syrup would be required to contain one whit of maple sap. A vivid imagination might with difficulty be worked up to the point of fancying that the "compound" contained maple or was pure maple. If this amendment is passed it will not help matters very much. The one thing which the maple industry needs above all others is the entire elimination of the word maple from anything but the strictly pure product of the maple tree.

Canada at the present time puts out annually about 22,000,000 pounds of maple sugar and its equivalent in syrup. During recent years the industry has declined some 2,000,000 pounds, largely due to the masquerading of imitations under the good old name "maple." At the present time there are thousands upon thousands of maple groves in this country which if protected and extended would increase the industry immensely. Many young groves or woodlots are coming on and in a decade will be ready to tap. The maple sugar and syrup industry is a natural product of Canadian soil with over 50,000 farmers as producers. It is not right that any interests, no matter whether they be million-dollar glucose or cane-sugar industries, or any other monied corporations, should, by the deceitful use of the one word which should separate the products of the maple industry from all other "just-as-goods," place that industry in jeopardy. These upwards of 50,000 farmers should get the support of the remaining thousands of agriculturists and also the support of all consumers of maple products. "The Farmer's Advocate" stands for the rights of the farmers of this country and must wage war on anything which so flagrantly deceives to the disadvantage of a worthy industry which should be protected. Our Government should compel all imitations, adulterations and compounds to sail under their own colors and should make their manufacturers blot out the name "maple" from all labels and leave it unsullied for the exclusive use of those to which it rightfully belongs. Producers should interest themselves in this matter at once.

Reform at the Beginning.

There are few people in Canada who will adversely mention the system of prison reform as being carried out in the Province of Ontario as well as in European countries. The late investigation of the penitentiary at Kingston may lead to an amelioration of conditions, even if no outstanding cruelties are being perpetrated at the present time. Counties and municipalities are adopting prison farms as a means of entertaining the prisoners profitably during the time they are the guests of the municipality. It is a practical and common sense method of chastisement to make a delinquent earn his own board as well as return a small remittance to the family which is being neglected through his incarceration.

The mothers in benighted countries were casting their weakling babes into the Ganges, while England, a Christian nation, was casting her strongest manhood into dark and filthy prisons, there to eke out a wretched existence. So noxious were these confinements and so distressing were the circumstances that the unfortunate prisoners grew so like death in life that no one could recognize the hour when death finally claimed the victim.

These conditions now are changed, but only recently eight young men, between twenty-five and thirty years of age, were led in chairs through the quiet city of London to the depot en route to the Central Prison Farm. What is the cause of the continual stream of violators of our country's laws to these institutions? The "Stay-in-Ontario Campaign" as waged by our daily periodicals cannot be responsible for all of it. We must look for a hidden reason, and in the search stop to consider one incident. Not long ago, in one of our Western Ontario towns, a mother fell dead from her bed upon the body of her infant child, and under such peculiar circumstances as to cast a cloud of suspicion upon the habits and morals of the unnatural mother. There were other children in the same house, being reared by these parents, one no better than the other. A home from which thought and intellect were exiled, and all good examples dissipated. Would it be a wonder if these children eventually became delinquents in the eyes of the law? Prior to this a disgruntled youth deliberately committed homicide, and under such peculiar circumstances that he was committed to an asylum instead of to the gallows. Another instance where heredity and early training plead more eloquently for his life than all his counselors. Educated men and women often become criminals, but they do not have as good excuses, and should receive all the chastisement the law provides. The sympathy of the honest judge goes out to the offspring of unwise generations.

Charity begins at home, and there it should remain till our economic conditions become a model to those students from the so-called benighted countries who are looking for suggestions in Christian countries of the world. What an example we could present if for ten years all differences, beliefs and creeds were combined in one effort to clean up the slums of our towns and cities, and dam the streams which combine in the river of delinquency. Harping on individual rights and privileges serves a certain end, but there is a class of people who appreciate protection from the ravages of the feeble, untrained mind, and by them the laws should be adjusted.

The solution lies in education by the state combined with normal, healthy outdoor employment. Where schools and colleges are curtailed

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.

1. THE FARMER'S ADVOCATE AND HOME MAGAZINE is published every Thursday. It is impartial and independent of all cliques and parties, handsomely illustrated with original engravings, and furnishes the most practical, reliable and profitable information for farmers, dairymen, gardeners, stockmen and home-makers, of any publication in Canada.
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prison walls spring up and vice versa. A real live, industrial home located in the broad expanse of the country would economically combine education and training with employment that would make it a very light burden to the country. Who says we could not afford it when millions of dollars are being sent to other countries in a charitable way, and thousands of dollars are expended annually entertaining our home-manufactured criminals? Why not expend the same money on the child and give him a chance to avoid a future of misfortunes? The life of a city depends upon infusions of country blood to keep it healthy. Children from unnatural urban homes could be reared in the healthy environments of a country life and be returned to the city if they so desired, a stronger race and able to take their place on a level with more fortunate individuals. Fewer congested centres, larger metropolitan areas with more industrial schools for children, would check one of the most prolific sources of poverty, degeneracy and crime and erect a wall of protection around the lives and property of our countrymen.

Nature's Diary.

By A. B. Klugh, M.A.

During the thaws which occur in the latter part of winter and in the very early spring, if we take a walk beside a stream we are very apt to find, in the soft snow, tracks somewhat as shown in the figure. These reveal that a raccoon has awakened from its winter slumber and has taken a nocturnal walk. The raccoon lays on a store of fat in the fall and then usually sleeps fairly soundly during the first part of the winter, though an old one is liable to be out and about at any time. But as spring approaches, it only requires a little mild weather to bring them out of their retreats, only to retire again when another cold wave comes on. It will be noticed that the raccoon in walking leaves only the tracks of the hind feet, this being due to the fact that it places its hind feet on top of the tracks of its front ones. When it bounds or jumps along, however, it leaves the tracks of the hind feet in opposite pairs and

those of the front feet one behind the other, between and just behind those of the hind feet.

This species makes its nest in a hollow tree, or in a cavern under a ledge of rocks. The young are born in April or May, there being from three to six in a litter. The family remains together for about a year, by which time the young are full-grown. The nest is usually near a stream, for not only is the raccoon very fond of aquatic forms, such as frogs, crayfish and fish, but it has the peculiar habit of washing its food before eating it. This custom has been observed in wild raccoons, but has naturally been more closely watched in tame ones. They will take a piece of meat, carry it to their drinking-pan, dump it in and souse it well. Not until the meat is white and flabby is the raccoon content to eat it. They will often go hungry rather than eat a piece of meat which they are not able to wash.



Raccoon Tracks.

The raccoon is an omnivorous feeder, its bill of fare including practically everything that walks, swims or flies, which is small enough for it to capture, also fruits and seeds of various kinds. In its rambles among the tree-tops at night it secures squirrels and birds, it will wait patiently at the edge of a stream to scoop out fishes which come within its reach, it digs out turtles' eggs, and on the ground it hunts insects, small mammals and snakes. It also robs bees' nests in hollow trees, and digs bumblebees' and hornets' nests out of the ground, as its thick fur gives it protection from the stings of these insects. Along the coast it resorts to the seashore to feed upon oysters.

In the vegetable line its favorite food appears to be corn in the milk and wild grapes. In securing the former it often does a great deal of damage, stripping down the husks and sometimes breaking the plant.

close, says of this species: "Compared with most of our flesh-eating beasts, raccoons are regular stay-at-homes. Of course there are exceptions, and undoubtedly many of them are possessed of the wandering habit, but I believe that the majority of them return regularly at day-break, however they may have passed the night, whether peacefully gathering wild grapes or berries in the thickets or robbing the farmer's hen-roost."

The raccoon has a wide range in Canada, being found from the Atlantic to the Rockies, though it is far commoner in some localities than in others.

THE HORSE.

Indiana legislators do not even invite criticism of their Stallion Enrolment Law—they enforce it.

If the American Trotting Horse Breeders' Association carry the legislation they have under consideration the owner of a promising young speeder need not be suspicious of a "man with a watch" when he is driving his horse to water.

Horses do not require salt as an article of food, but they do relish it as a tonic. It is the referee that neutralizes the disorders in the stomach, and in the case of mares in foal it aids the nourishment of the foetus.

The American Trotting Horse Breeders' Association has a new rule up for consideration. Heretofore drivers were very careful when trying their horses or any recognized track lest they should be marked. Under the proposed rule the young animal may be given a fair speed test without his time being used against him in future races.

How shall We Get Larger Horses?

There are two ways known to stockmen whereby they may procure a heavy animal—feed and breed. There are rumblings also that a heavier animal must be offered on the market—a good horse supported on good feet and limbs, and breeders of fine quality will eventually look about to incorporate more weight with good quality. Clydesdales, Hackneys and Hunters will all stand a little more avoirdupois in their upper regions and this has been brought home to Old Country breeders by the remarks of Thomas Patterson, of Australia.

Judging from show-ring appearances, Mr. Patterson was prejudiced against some of England's most popular breeds of horses. No connoisseur of horse flesh would criticize them very severely for lack of quality, but through them all he saw where weight had been sacrificed for quality of limb and pastern, or otherwise, for show-ring points. Just how far Mr. Patterson's opinion is worthy of consideration it is hard to say, judging, as he

was, from the standpoint of the Australian horse industry. No doubt, it was valuable to a large extent, and Scotland and England cannot afford to disregard their desires altogether, for last year ten pure-bred Clydesdales were exported to that country, which shows that there is just a beginning made which may ultimately materialize into something of value to breeding countries.

In Canada he might have been able to offer the same criticism, but the quality which is here reached will never be dispensed with in order to attain weight. When weight comes about it will be in addition rather than in the place of quality which now exists. In addition to the breeding of heavy draft horses weight can be fed into them to some extent and this is not altogether



The Voice from Across the Sea.

European Farmer—"Brother, if you would escape my condition, put your foot down good and hard."

One afternoon in September I was travelling through the woods, and when beneath a tall black cherry tree I noticed cherries dropping to the ground. Now, whenever anything is falling from a tree it is worth while to investigate that tree. In this case investigation revealed a pair of raccoons up toward the top of the tree. With my field glass I was able to observe their movements closely, and what interested me most was the way in which they used their fore-paws as hands. They would reach out, grasp a cherry and convey it to their mouths, just as readily as a monkey. After a first survey they did not pay the slightest attention to me, but went on with their feeding for over half an hour, and finally I left them thus occupied.

Cram, who has studied the habits of our wild

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located in the muscle and flesh of the animal. The liberal feeding brings about a development of bone and limb as well as flesh. In one instance in the United States a farm-bred and farm-raised colt weighing 2,070 pounds at two years and four months of age was recently sold. A foal in the pasture just over the fence weighed 1,065 pounds at eight and one-half months, having gained an average of 2.94 pounds for the last ninety days. This could not in any possibility be a development of flesh. There must be a corresponding amount of bone and limb in order to carry this excessive weight, but in spite of this there must be an inbred tendency to make use of the feed and to make a proportionate development of flesh, muscle, limb and bone. What is required is, first, the right breeding, then the right care and the proper feeding ability on the part of the stockmen to combine exercise and liberal rations as to bring about the development of the draft horse which is being desired on the markets of the world.

More Army Remounts Wanted.

If the communication received by the Standard-bred Breeders, while assembled in Toronto at their annual meeting, ever materializes into financial government assistance, the light horse industry of the country should assume a more promising nature. Not that the breeders of the light horses have been undergoing a retrograde session; they have been prospering, and the automobile has been having its innings too, but conditions now augur well for a return to the horse by many of those who have had their pleasure from the machine and still hanker for the horse. Nothing would delay this return more than a lack of interest in light horse breeding. If they are still produced along most improved lines and the country is well stocked with horses of the right kind, wealthy people of the towns and cities will be quicker to pick them up for their own use, than were there only a mediocre class to be had, and their example will be copied by less prosperous people.

It will be harder for the government to bonus Standard-breds and Hackneys than it is in the case of Thoroughbreds, but if the same care and attention be exercised in this particular as has been with the Thoroughbred horses, there need be no conflict arising between bonused horses and the regular importer and breeder. The aim, however, is to breed and produce army remounts throughout Canada, and it should tend to create a demand which must be met by the breeders of light horses.

Forefall Sore Shoulders.

Spring work will soon be here with the accompanying sore necks and sore shoulders. This is customary where heavy work is done, but much of it may be forestalled by a little thought, a little care and a little preparation in early spring. The young horse may go into the collar for the first time or the old horse may go back into the old collar which has been used for several years. The stuffing may be worked out of place and the face flattened out, and in both these instances sore shoulders are likely to result. Now is the time to begin to prepare the horses' shoulders for a good long siege in the spring. If a new collar is necessary, get it now, so it will become shaped to the horse's shoulder. A new one should fit snugly against the shoulder, not on the shoulder point. It should be about as snug as it can be without hindering the breathing, and a good hard leather collar will prevent a good many nasty sores.

The horses which are most troubled are soft in nature and some are predisposed to this form of trouble, but much of it may be attributed to the lack of intelligence on the part of the driver. Procure the collar now that the horse is likely to work in during the spring. Have it fitted to the neck by doing some work in it every day and have the flesh on the shoulder become hardened, for it must first lose its original sensitive character and become hardened like a man's hand before it will stand the hard work. After the collar is taken off massage the shoulder in order to restore the circulation which has been prevented by a prolonged pressure on those parts. The hame-straps should be fastened tight on top, so the collar cannot be continually slipping down. When the horses stop lift the collar in order to let the air circulate underneath. If these few precautions do not prevent sores, have a solution of one ounce each of acetate of lead and sulphate of zinc in a quart of water ready and rub the shoulders with it daily. Every time before putting on the collar apply a little oxide of zinc ointment. Have the collar in the sun for a time in order that it may thoroughly dry out, then rub and clean it before putting it back on the horse. A few little exercises of this kind may forestall many troubles in the spring.

Indiana's Enrolment Law.

The State of Indiana now has a stallion enrolment law which goes into force this spring. According to this new law, no stallion can legally stand for service in the State before he is enrolled. Not only are the fees for such service illegal and non-collectable, but the owner of the horse lays himself liable to the penalties attached to the violation of the law. In the application for enrolment the breeding must be set forth in detail on special forms supplied for the purpose.

According to the opinion lately handed down by the Attorney-General of the State, the breeders must be very careful in the observance of this law. A correct copy of the enrolment certificate must appear on the bills, posters, postcards, circular letters or any other forms of advertising made use of by the breeder. Even the printing on letterheads is classed under this statute.

Cattle Markets Levelling Up.

At the time the United States tariff on the various classes of live stock and meats going to the United States from Canada was removed many of our far-seeing stockmen predicted that in a short time the prices on the large markets of the Republic to the south and those on the large markets in our own Dominion would practically reach the same level. Just before, and immediately after, the tariff bars were let down large numbers of stocker and feeder cattle and some of the finished product were rushed across the line and sold on Buffalo, Chicago and other markets, particularly the first mentioned. For a time the influx into these markets was large and a growing supply of cattle from this country were disposed of over there. During the past weeks, however, we noticed in our reports of the Buffalo market that there has been a gradually decreasing supply of Canadian cattle. There is a very good reason for this, because if readers will take the trouble to look up last week's market reports they will notice that the quotations on the Buffalo market are no higher, and in some particulars scarcely as high, as on our own markets of Toronto and Montreal. What our far-seeing stockmen predicted some months ago has at this early date come to pass. Our own market has risen to the level of that of the United States. True, the large numbers of cattle shipped in from this country may have had more or less of a lowering effect upon the price which would have obtained on the markets on the other side, but whether or not this is true the fact remains that at the present time our markets are just as high as the American market.

The old complaint which the United States butchers have always held against our stock crops up quite frequently in our market reports, that is that our cattle are too soft. We notice that the top prices are not always obtained by our unfinished product over there, but where Canadian cattle are in high fit and have been grain-fed they reach the highest level of the American corn-fed product and they will be almost, if not quite, as good as the latter. There is a point here for our feeders, that is, if they are going to cater to the best markets in the American Union they must produce high finish in their stock. It does not pay to sell the cattle, or in fact, any other class of stock, in a half-finished condition and be forced to take a considerable market discount. The Buffalo market, according to our last week's report, was clamoring for more Canadian high-class butcher stock from 850 to 1,000 pounds, well finished, and our correspondent pointed out that there was a keen demand at the present time for stocker and feeder cattle from Canada, but that few were coming in. We are glad to note this latter statement (that few are coming in), but we are not quite sure whether this is because our feeders have seen the folly of selling off all their unfinished cattle or whether it is because such cattle are scarce in this country; perhaps the combination of the two forms the real cause of the falling off in the export of stockers and feeders to our neighbors. Seeing that our own markets for the finished product are as high as their market, and knowing full well that the supply in Canada is very limited and that it will take some years before there will be any danger whatever of an over-production of beef in this country, our feeders would act wisely if they held fast to their good feeding and stocker cattle and did not offer them in our own market or the market in the United States.

There are a good many points brought out in market reports which are worthy of study, and those interested in the live-stock business should keep well posted on these matters. Watch carefully the reports and by a little thinking read between the lines what is likely to happen in the near future. It is impossible to prognosticate on the market situation. No man, no matter how well he may be versed in the market conditions, can tell just what is going to happen next week or the following week or any time in the future, but from a knowledge of the supply of cattle in the country and of the conditions gov-



Dunure Footprint.

First-prize aged stallion, Glasgow, 1914, and former winner of the Cawdor Cup.

LIVE STOCK.

Changes Worked by Feed and Care.

It is often a matter of surprise to note just what changes may be worked with an animal in a very short time. A few days ago we were privileged to look upon what we believe to be one of the finest Shorthorn cows in Canada. In fact we think she would compare favorably with most cows in the home of the breed. She is strictly a dual-purpose cow, but being dry at the present time she shows what believers in this type of cow claim for the dual-purpose animal, that is, well-marked beefing tendencies. However, this is not the point we wish to get at. A short time ago this same cow was seen very thin, emaciated, and what a prospective buyer deemed to be, at that time, a common cull. She was purchased by her present owner and has been given feed and care, with the result that at the present time, unless our estimate is very wide of the mark, she would easily weigh in the neighborhood of 1,600 pounds. She is almost as square as a block, and almost a perfect model of her breed. She has a very fine head and slim horn, well marked milk veins, and deep milk wells, and one does not have to go altogether from indications to say that she is a great milker, because her owner is loud in the praises of her milking propensities and does not care to part with her at any price.

On the other hand almost every reader of this paper, familiar with the live-stock business, can recall perhaps several cases where a first-class animal of some particular breed or class in high condition from good care has fallen into the hands of careless, shiftless, poor feeders, and gone down and down from a model of symmetry and type to a mere rack of bones. It doesn't take long. There is no profit in keeping poor stock, and there is less in keeping good stock poorly. The cow at first cited is easily worth, at present, double the price asked for her when in low condition. Does it pay to neglect the cattle?

erning markets, keeping in mind the time of year when a great many farmers have to make up money and to meet the situation rush their stock

on to the market, the average feeder can be aided materially in making the most out of his year's work.

The Shorthorn as a Dual-purpose Breed.

(First-prize Essay in a competition open to all America, by the American Shorthorn Breeders' Association, and won by S. H. Hopkins, O. A. C., Guelph, Ont.)

What constitutes a dual-purpose animal?

The man who is interested mainly in milk production often classes any cow that does not produce milk profitably, especially if she shows a tendency towards beefiness, as a dual-purpose cow. Other dairymen go to the other extreme and call such cows as the Holstein, dual-purpose because they have some value for beef production. As well might we call all dairy cows dual-purpose, for are they not all used for beef when their milking days are over? On the other hand, a breeder of one of the beef breeds is very liable to minimize the dairy part of the term, "dual-purpose," and call any cow of these breeds with a fair-sized udder a dual-purpose animal.

True, dual-purpose type stands midway between the extreme dairy and the extreme beef type. A dual-purpose cow is one which will yield a fair quantity of milk; which will produce heifer calves that will do likewise, and bull calves that, when steered, will be of good beef conformation and quality; and which will herself finally furnish a good beef carcass when fattened.

A dual-purpose breed is one in which these characteristics prevail generally, and are transmitted with reasonable certainty. It must not, however, be expected that a cow of such a breed will compare in milk production with the best individuals of the special dairy sorts, or that her calves will always be able to compete in beef production with those of the special beef breeds. She should produce about 250 lbs. of butter per year, and her calves make good beef animals.

Conditions in the corn belt are most favorable for dual-purpose stock, and here the type is most numerous. In this region the farmers find they cannot give the special dairy breeds the attention they require, and without which they are unsatisfactory. They also have a great deal of roughage to consume, and find that home-raised animals of the dual-purpose type will dispose of it most profitably, without much additional labor. Shorthorns best suit these conditions.

The "roast beef of Old England," has a world-wide reputation for juicy tenderness and flavor, and the Shorthorn breed has made it famous. The Shorthorn is the dairy breed of England, as well and ninety-five per cent. of the milk used in that country is furnished by Shorthorn cows. Prof. Long says:

"The milk-producing farmer has studied how to increase the flow of milk while maintaining the characteristic feeding qualities of the breed, and has succeeded. On the other hand, some of the great pedigree breeders have subordinated milk to flesh development. But here in its native land the Shorthorn is pre-eminently the best dairy cow in the best dairy country in the world."

The milking qualities of the English Shorthorn are shown in a remarkable way by the results of the tests made at the London Dairy Show. In the eleven years, from 1894-1904 inclusive, first place in both milk and fat production was won by a Shorthorn in every case, competing against all dairy breeds, commonly bred there. As regards beef qualities, the breed's record at Smithfield and at the Chicago International is sufficient. The ability of the Shorthorn to produce high-class meat is too well known to require discussion.

It is rather to the dairy characteristics of the breed that attention must be directed. The charge brought by Prof. Long "that some pedigree breeders have subordinated milk to flesh development," must be admitted in part, especially on this continent, so much so that many farmers who wish to keep the milking qualities of their Shorthorn herds unimpaired experience difficulty in obtaining bulls of the necessary type and ancestry.

Far-seeing breeders, however, have recognized the danger, and there is a movement now on foot to foster and give prominence to the dairy qualities, not at the expense of beef, but in conjunction with it. This movement began in England, and now has spread to this continent. In many herds at present the cows are milked and individual production kept. Such a movement is of immense importance, not only to the pedigree breeders, but to the thousands of farmers, especially in the butter-producing States of the Mississippi Valley who keep Shorthorn grades.

It perhaps may be stated here that the Shorthorn grade cows of England are, in the majority of cases, just as pure-bred as the pedigree animals. There, the ordinary farmer has almost invariably used pedigree bulls so long that very little difference in quality is to be observed between well-bred grade cows and pedigree ani-

mals, and in milk production the grades often capture the premier prizes at the London Dairy Show. It may also be stated that the champion steer at the Birmingham and Smithfield Stock Shows in England last year was from a five-gallon cow—a Shorthorn.

In tracing back Shorthorn history we find differing types favored from time to time. Colling, Booth, Bates, Cruickshank all had different ideals. The show-yard type has changed from time to time. At present on this continent the Cruickshank or Scotch type finds favor in the show-ring, on account of the adaptability of this type for beef production. Yet the surprising fact, that even in this extreme type milking qualities of a high order exist was shown to the writer on a recent visit to the most noted breeder of Scotch Shorthorns, Wm. Duthie, of Collynie, Scotland. It was surprising to see that many of his cows with growing calves at foot showed every sign of being deep milkers. Indeed, Mr. Duthie stated that these cows (calved two months and longer) had to be brought up and milked out every day, because the calves could not take all the milk. No nurse cows were ever used in the herd.

Among the early improvers of the breed, the man who made the Shorthorn the pre-eminent dual-purpose breed was Bates who bred for both beef and milk and achieved historic success. Many of our so-called dairy Shorthorns to-day are of Bates blood.



Dominion Swine Breeders' President.

John Flatt, Hamilton, was elected President of the Association for 1914.

The late Richard Stratton was of the same opinion as Bates, and of a great many breeders of Shorthorns in the sixties, seventies, and eighties, that a perfect Shorthorn should be a good beef and milk producer combined. From 1852 onwards for many years cattle from the Stratton herd captured more prizes at Birmingham and Smithfield than any other. At that time Mr. Stratton was milking by hand over 100 pedigreed Shorthorns, and these prizes were won in the strongest kind of competition with all the well-known beef breeds. His son, the present Richard Stratton, has followed in his father's footsteps. To offset the influence of the showing prejudice in favor of the beef type, he urged the encouragement of milk production. During his term of office in the Shorthorn Society's council, and even when President of that Society he failed to persuade the Society to give prizes for special dairy qualities. He then appealed personally to Shorthorn breeders, a committee was formed, and about two hundred pounds a year was collected and offered in ten-pound prizes at various shows, with the stipulation that the recording Society should give a second prize of five pounds.

This move proved very popular, and the Shorthorn council, realizing their mistake, soon took over the matter officially and have ever since given a considerable amount annually for the encouragement of milk production. In 1905 the Shorthorn Dairy Association was formed further to promote the dual interests of the breed, with the Earl of Northbrook as first Presi-

dent, and the Earl of Crewe and Lord Rothschild Vice-Presidents. Rules were drawn up relating to the publication of milk records and the giving of prizes at shows. Inspectors are employed by the Society to check the records kept by members, and may inspect them at any time.

These facts furnish sufficient proof of the dual-purpose character of the Shorthorn. In a treatise of this nature it would be wrong to omit the name of the late George Taylor. For over thirty years his Cranford herd stood for the milk and beef characteristics of the Shorthorn breed, and the records of this herd have attracted world-wide notice. On a recent visit to Cranford, not far from London, about 150 head were seen pasturing together in a rich English meadow. One could not help being struck with the remarkably good Shorthorn character of the entire herd. The deep, wide frames, straight tops, sappy appearance and fine carriage, together with the capacious and well-shaped udders stamped the herd as a triumph of the breeders' art. Although the giving of large quantities of milk had considerably reduced their bulk, yet the cows possessed a peculiar bloom which evidenced a propensity for the laying on of fat when the strain became less.

Last year the milk sold from Cranford averaged about 7,500 lbs. per cow, besides that consumed by over seventy calves reared. For the first week these calves suck, and after that a considerable quantity of whole milk is fed, so the amount consumed must have been considerable. At the sale in 1911, 32 cows were offered, which had to their credit an average milk yield of over 10,000 lbs., a truly fine record. One of Mr. Taylor's cows, Darlington Cranford 5th, has a record of over 10,000 lbs. of milk per year for ten years has produced 11 calves in this time. The farm itself was run on a commercial basis. Good breeding was the secret of Mr. Taylor's success, with the keeping of milk records and proper rearing of heifers.

This breeder was always a lover of the true Shorthorn type, as are all breeders of pedigreed dairy Shorthorns. Constitution was never lost sight of, and bulls of Scotch breeding were extensively used in recent years, animals of Cruickshank, Marr or Duthie blood. Beau Sabreur, a bull used for a number of years at Cranford, and the sire of many of Mr. Taylor's 10,000-lb. cows, was sired by the noted bull, Leonidas, a straight Cruickshank bull. Beau Sabreur in 1899 won second prize at Birmingham, where the largest collection of young Shorthorn bulls in England is annually shown. This should convince the most skeptical of the dual-purpose character of the Shorthorn breed.

Further proof is furnished though by the herd of Lord Rothschild at Tring Park. While the cows are not forced in any way, the average for 74 cows is over 6,000 lbs. per year. In this herd also a large amount of Scotch blood is evident. When the writer inspected this herd, some magnificent young bulls were to be seen, bulls with dairy blood, that would honor any herd of Shorthorns anywhere.

Mention should also be made of the herd of R. W. Hobbs & Sons, Kelmscott, Gloucestershire. This farm lies in the upper Thames Valley, and a large herd of 500 dairy Shorthorns supplies milk to London city. Besides capturing numerous prizes for dairy cows every year, Messrs. Hobbs also take many prizes for fat steers and baby heifers.

On the American continent interest in the dual-purpose character of the Shorthorn is increasing. Many of the Experiment Stations have small herds of which the milk records are kept. These animals have official yields averaging 6,000 lbs. per year. The milk contains from 8.6 to over four per cent. fat, and in color and size of fat globules ranks next to the Channel Island breeds, between them and the Holstein and Ayrshires.

As yet there is no provision made for making official tests by the Herd Book Association of America, but the movement is on foot in both United States and Canada. The Dairy Shorthorn Breeders' Association of America was organized in 1910, and the interest is spreading annually.

At the St. Louis World's Fair in 1904 the Shorthorns competed against Jerseys, Holsteins, and Brown Swiss. Twenty-four cows averaged 4,152 lbs. of milk, and 153 lbs. of fat in 120 days.

Some very creditable records have been made by breeders. The private records of a herd in Pennsylvania show an average for 38 cows of 9,031 lbs. of milk per year, and for 52 cows and heifers of 8,515 lbs. This herd has produced the champion dairy Shorthorn of the world, Rose of Glenside, whose record for one year is 18,075½ lbs. of milk, and 625 lbs. of butter fat.

Recently the Ontario Government imported 12 dairy Shorthorns from England. The Western Provinces of the Dominion bought a large number of dual-purpose Shorthorns in Ontario, almost buying up some herds outright. Thus the merits of the Shorthorn as a dual-purpose breed are being recognized officially.

The growing scarcity of good beef creates a need which only the Shorthorn can fill. The good

FARM.

Farm Engineering,
CONCRETE IN COLD WEATHER.

Concrete will not set while frozen, and the form boards should never be moved while the freezing continues. It is possible, however, to erect concrete work during freezing weather, and the work will be satisfactory if certain precautions are observed. Particularly where the appearance of the surface is of no great importance, as in foundation, walls, etc., can the work be carried on during wintry weather.

To be successful, one or more of the methods given below should be employed to protect the concrete from any injury, and to be sure that it will fulfill the purpose for which it was intended. One of the commonest schemes, and perhaps the cheapest, is to lower the freezing point of the water used by adding common salt. The proportions are about a pound of salt to a bag of cement. The object is to keep freezing from taking place until the set of the concrete has advanced to the stage where there is no longer water free in the mass. After a set has taken place no injury will result from freezing. The set is retarded but continues after thawing, and, although the strength of the structure is lessened, the amount is not great. It need not be figured on for most rough work around the farm, because the walls are always made much larger than need be, and only in very unusual cases are concrete farm buildings or masonry loaded to within half of their safe carrying capacity.

Still another and very satisfactory method used when large buildings are being carried on, is to heat all of the materials. The stones and sand are easily heated by passing steam over them or by imbedding in them pipes carrying steam or hot water. For small jobs, the circulating pipes for the cooling water of a gasoline engine may be buried in the stone and sand heap. The water may be heated in any way, but the best practice is not to raise the temperature very much over 135 degrees F. Water at a higher temperature than this is actually harmful to the cement. The resulting concrete as it is laid should be at about body temperature or slightly warmer. Then, after the material is in the forms use all possible care to keep frost from it until a set has taken place. This may be done by covering the work with straw, burlap, shavings or manure. If the thing is possible fires may be lighted in stoves or salamanders within the construction. Should these be used all windows should be closed with muslin screens to confine the heat.

Probably few farmers would care to undertake large jobs, such as new buildings, silos, etc., during freezing weather, but cisterns, walls, posts, and other small jobs need not be put off on account of the cold.

The matter of waterproofing the concrete also becomes of importance as the spring work is planned. Abroad within the last six months the addition of soapy water to the mixture has been quite widely adopted. It makes the concrete more dense but somewhat retards the hardening. The action is that the soap forms little gelatinous coatings in between the particles of the sand and cement, and make it impossible for these openings or pores to absorb any moisture. If a really good mixture, rich in concrete, can be used there is no need of waterproofing. The whole secret is to keep the mass free from pores. That can only be accomplished by thorough mixing with the materials, slightly wetter than is usually recommended. The more liquid the concrete is, the less danger of air bubbles or blow-holes.

Frequently it is considered cheaper to make a little poorer mixture and not take great pains in the mixing or laying, but trust entirely to a surface coating of some such substance as asphaltum or paraffine, to repel the moisture. The asphaltum can be applied like paint or even sprayed on under heavy pressure. The paraffine is usually dissolved in benzine and well brushed into the surface. If desired, of course, the paraffine may be melted and painted on.

Sometimes a portion of the work must be laid under water. In this case, obtain a quantity of bags, preferably of some rather tightly woven material, although paper will do. The bags are filled with the mixture, and carefully laid in place somewhat as you would lay stone. After a very short time small amounts of the mass ooze through the pores between the threads of the woven bags and the whole mass slowly runs together but sets in the process, making a really strong construction. If paper bags are used, the paper becomes wet, allowing the same action to take place.

N. S.

R. P. CLARKSON.

old Shorthorn cow has shown that she can fill the pail besides. She is the cow for the general farmer who wishes to produce both beef and dairy products. Such farmers are demanding pedigreed animals to improve their stock. It rests with the breeders to provide these animals of true dual-purpose type, sacrificing nothing of constitution, but endeavoring to bring the average milk production of cows up to at least 7,000 lbs. annually, and retaining that straight-topped, level-fleshed character with the gay carriage and gait so dear to the heart of every lover of Shorthorns.

Retention of the Afterbirth in Cows.

This condition is not infrequent in cows. It is met with in cows in all conditions—in pure-breds, in grades, in scrubs, in fat cows, lean cows, cows well cared for, cows neglected, in well appointed and well ventilated stables, in ill-ventilated stables, in cold stables, comfortable stables, in fact may and does occur under any and all conditions. Its cause is not known. Good care and comfortable and sanitary surroundings and care to avoid chills from exposure or from giving cold water about and for a day or two after parturition in cold weather tends to prevent it, but in some cases fails, while, on the other hand, cows exposed to all these (which may be said to be exciting) causes frequently, and we may say generally, escape the accident. The accident occurs much more frequently in cows than in other females. This may be accounted for by the manner in which the membranes (often called "the cleanings") are attached to the mucus or lining membrane of the womb. In ruminants the mucous membrane is supplied or studded with 50 or 60 little bodies called cotyledons scattered over its surface. During pregnancy these enlarge and at the time of parturition they resemble tumors with roughened surfaces varying from the size of the end of a man's thumb to that of the palm of his hand and connected with the womb by constricted necks. There are on the external surface of the foetal membranes or afterbirth a like number of roughened surfaces (called foetal cotyledons) of like size which are attached to the maternal cotyledons. The capillaries of the arteries of the foetus come in close contact with the capillaries of the internal artery in these attachments, and this forms the connection between the circulation of the dam and the foetus. In solipedes the connection between the uterus and the foetal membranes is by means of small villi scattered evenly over the surface of the latter, fitting into cavities on the surface of the former, which connection is severed more readily than that of the cotyledons of ruminants, hence the more frequent occurrence of retention of the membranes in cows.

Many cows have the unfortunate habit of eating the afterbirth. On this account many breeders claim that it is not wise to keep a cow nearing parturition in a box stall; that she should be tied in a single stall in order that she may not be able to practice this undesirable and dangerous habit. Of course, if an attendant be present a box stall is preferable, as he can remove the membranes, but if this be not the case, it is probably wise to have the cow tied. In many cases, the habit is practiced and little or no undesirable results follow, while in others the cow suffers more or less from digestive derangements and cases are not unknown where death resulted. The fibrous coats of the arteries of membranes are hard to digest and some cases appear to be practically indigestible, and after reaching the fourth compartment of the stomach become formed into a ball which reaches the pylorus (the opening from the stomach into the intestine) occludes it and causes death. Hence, while in many cases the habit is not followed by serious results, it is in some cases, and care should be taken to prevent it.

Symptoms.—In most cases the symptoms are obvious, there being a greater or less quantity of the membranes hanging out of the vulva, which may or may not cause more or less apparent inconvenience to the cow. In some cases the cotyledal attachments have been severed, but on account of closure of the neck of the womb the membranes cannot be expelled. In such cases, there is no apparent evidence of their retention, and if conditions have been such as to have rendered it possible for the cow to consume them, it is not known whether they are retained or have been expelled and eaten. A manual examination in such cases is necessary in order to ascertain the true state of affairs.

Treatment.—Opinion differs as to the advisa-

bility of interference. Some advise non-interference, claiming that even though the membranes are retained they will in time be expelled in sections and purulent matter, and it will not interfere with the health or usefulness of the cow. The experience of those who have noted the results of non-interference does not tend to agreement with this opinion. In rare cases little or no well marked evil results are noticed, but in most cases the general health of the animal and consequently the supply of milk is materially interfered with, and in some cases blood poisoning and death follow. In normal cases the membranes are expelled at or in a few hours after parturition. It is not wise to interfere too soon. Give nature a reasonable chance to operate, but if expulsion does not occur in about 24 hours after parturition in warm weather and at most 48 hours in cold weather, it is wise to interfere. The administration of medicines does no good. As before mentioned, good care and comfortable surroundings, etc., tend to hasten expulsion, but the action of medicines are practically nil. The membranes must be removed by hand. The operation is not a desirable one, but is one that any careful herdsman who understands the nature of the trouble and the anatomy of the parts and is not too particular to undertake a somewhat dirty job can successfully perform. The man who is about to operate must roll up his shirt sleeves or better, remove his shirt and put on one without sleeves. Antiseptic measures are necessary, and this is intensified if the membranes have been retained so long that they have commenced to putrify and emit a foul odor. In such cases the operator or the cow is liable to blood poisoning by the decaying material entering an abrasion on hand or arm or an abrasion in the genital organs of the patient, that may have pre-existed or be made during the operation. An antiseptic solution should be made as a four per cent. solution of creolin or zenoleum or other coal tar products in warm water, or in fact any good and nonirritant antiseptic. The operator should wash his hands and arms thoroughly, and it is also good practice to inject a little into the uterus. He should then oil hands and arms, insert the hand into the womb and separate the membranes from the maternal cotyledons, one at a time. In some cases this separation can be made quickly by steady traction, but in most cases this cannot be done; each has to be treated separately; by pinching with thumb and finger this can be accomplished, but the operator must not be in a hurry; he must take time and, if possible, not detach any of the cotyledons from the womb. If a few are detached the results are not serious, but when possible detachment should be avoided. The amateur may have difficulty at first in ascertaining whether or not the membranes are still adherent to a cotyledon, but careful manipulation will tell. If it be adherent, the surface of the cotyledon will be smooth; if not, it will be rough to the touch. As the membranes are released they should be drawn out and held by the other hand in order to get them out of the way of the operating hand. Care should be taken to remove all the membranes, but if one or more cotyledons cannot be reached the small amount of the remaining membranes will become detached and expelled in a day or two. After the operation is completed it is good practice to inject into the womb about a gallon of warm one per cent. solution of creolin or other disinfectant. In order to prevent, as far as possible, septic results following, it is good practice to give the cow 40 to 50 drops of carbolic acid in a pint of cold water as a drench or sprinkled on food three times daily until all discharge ceases.

WHIP.

A Warning to Breeders.

Editor "The Farmer's Advocate":

One of the worst mistakes that our breeders of pure-bred stock make is failing to send the pedigree certificate when promised, and some will not send them until urged on by the purchaser. Some years ago the writer bought a pure-bred male hog from one of Canada's leading breeders and settled in full before it left his piggery. He promised to send pedigree as soon as it came from the registry office. That pedigree never came.

Some breeders guard themselves against bad paying buyers by holding pedigree until settlement takes place, and this is quite proper. I think the buyer would be justified in holding back part of the price until arrival of papers. This should not be done, and promptness in issuing pedigrees and transfers should be the watchword of every progressive, honest breeder. This will help the breeders' interests, because when an amateur gets nipped he is not apt to have the same confidence again. If we as breeders have not won continental fame, let us at least be noted for honesty and promptness to the small number of customers who have purchased from our farms.

J. B. ROSS.

Peel Co., Ont.

Does it Pay?

Editor "The Farmer's Advocate":

Does it pay? Have my crops, cattle, orchard, etc., paid me this year, and how much have they paid, or am I losing money in any one of them instead of making it? This is a question which a farmer has to put to himself very often; but is it not a fact that we cannot usually make any satisfactory answer to it? For example, a man may think he is making money out of his dairy cattle, but if he were to figure up just what they were costing him in feed, labor, depreciation, interest on capital invested, rent, insurance, etc., he might be surprised to find that they were really not paying well, or as well as they might, or that some other branch of the farm was paying him better. In the business world it is just the want of information of this kind that is said to be responsible for a large percentage of the bankruptcies and failures, and farming is a business just like any other business. This matter of cost of product is very important. The up-to-date farmer is seeing more and more clearly that he has got to know what the various crops and departments of his farm are costing him, so that he can lay his finger on the weak places of his farm business, that he may be able to strengthen or remove them, and on the strong ones, that he may develop them still further. Knowledge and control of "cost" is another name for good farm management.

While many farmers admit the value of keeping cost records, however, they do not, as a matter of fact, make a practice of keeping them. Why? Bookkeeping is a nuisance. Everybody knows that, especially the farmer after a day's work. That is all right; but it is no reason why a man should be discouraged by a bug-a-boo. Part of the disinclination to keep books is imagination. It is not as bad as it looks; the use of a proper system will often remove the unnecessary part of the nuisance.

Cost of Production Records.—Farm bookkeeping naturally divides itself into two heads—one, the recording of the ordinary day by day transactions, which are chiefly buying and selling for cash or on credit, and two, the keeping of cost of production records which will show at a glance and in sufficient detail what each part of the farm operations is costing and the profit—or loss, as the case may be—that is being made in each. It is with the latter of these two heads that this article is concerned.

Farm operations, in the main, consist of two things—one, the keeping of animals, and two, the raising of crops. The form of cost sheet might be arranged suitable for any kind of animal raising (dairy cattle, beef cattle, poultry, etc.), and for crops the same form may be used by leaving out the columns for feed.

The number of hours spent on each different department or crop are entered every evening. The amounts of feeds fed are entered periodically. As regards the weighing of feeds, it does not pay, I think, to be too particular. The amounts may be estimated or actually weighed (or measured) say once a week, and the figures multiplied by seven to get the total amounts fed for the week. Once a week will usually be sufficient, even when the feeds vary in quantity from day to day, as when fattening, etc., and fairly accurate results may be gotten by fortnightly and even monthly weighings. In the case of poultry, feed fed in hoppers may be entered in the cost sheet on the day the hopper is filled, or bins or boxes of known capacity may be kept, and an entry made in the cost sheet when the box is emptied. Feed that is not raised on the farm need not be recorded at all in the cost sheet if the amount purchased during the year is known, as well as the stock of the feed on hand at the beginning and end of the year.

The price to be charged for feeds should be their commercial value f.o.b. at the farm.

The rate per hour at which to charge labor is found as follows: The total cost of the labor spent on all the departments and crops (that is exclusive of the labor spent on general chores and work not applicable to any one department) should be equal (as nearly as possible) to the total wage cost, together with the cost of board of help. For example, the total time of a certain hired man entered in the various cost sheets for the year is, say 2,300 hours, and his wages for the year are \$300, the cost of his board amounting to, say about \$150. His labor should be charged in the cost sheets at the rate of \$450.00 ÷ 2,300, or say 20c. per hour. The rate, of course, need not be found till the end of the year, but an estimate can be made at any time based on previous years' records if these are available. The rate at which the farmer's own labor should be charged is, of course, a personal matter, but it is an important item of cost. A crop which takes up a lot of the farmer's time costs more for labor than a crop which can be looked after to a greater extent by inferior help.

The total horse labor charged to all the departments for the year should be equal to the

total annual cost of keeping the horses. The rate will, of course, vary with the number of horses kept and the number of hours work they do in the year.

It will be seen that cost records kept in this manner give all the information required, and the time taken to write them up is hardly worth considering. On the general farm an average of four minutes per day is more than enough.

There are two items of cost not shown in the cost sheets and which do not come through the cash book, namely, depreciation and interest on capital. In calculating depreciation, the plan I follow is to take all the depreciable farm property which is in general use by all the departments and not by any one department in particular and divide the depreciation on this general property among the departments and crops in a regular proportion. I base this proportion on the annual cost of production of the departments, which seems the fairest plan. For example, if the dairy-cattle department cost \$1,000, and the total cost of all the departments is \$5,000, I charge 1,000 ÷ 5,000 of the depreciation on the general property to dairy cattle, and so on. Each department is charged in addition with all the depreciation on the property used only, or especially, by it.

The same plan may be followed with interest on capital, except, of course, that interest is a flat rate on the whole farm property, not only on that property which is depreciating in value. Montreal, Que. THOS. B. FAULDS.



Farm Property.]

No Occasion for Fears.

Editor "The Farmer's Advocate":

Fears have been expressed lately lest the rural free delivery of mail should be a nail in the coffin of the farmer's social life. The intellectual progenitors of these modern calamity anticipators bemoaned the modern railroad because it made travelling less sociable and deprived the traveller of his time for thinking, and condemned the modern steamboat because it gave the voyager less time to profit by the sea breezes. They further lamented the advent of the reaping machine and the self-binder as these implements did away with the social groups of the harvest field. No; no farmer who knows his business regrets any device that speeds his work or which expedites his business. Those who know the facts will be the last to regret that the gossip of the hour when the mail was distributed is passing into inglorious silence. The topics discussed at such gatherings very rarely rose to the level of profit. Frequently the very reverse of this was the unfortunate order of the hour. Arguing alleged politics or a discussion of the latest bit of news was usually the stock in trade, and this, so far from being a farmer's help, either directly or indirectly, simply took him from his real business. Every day the farmer seems to be growing busier, and every hour is becoming to be more important to him. Social life he will continue to have, but it is coming to be as much ahead of the old gossip variety as the self-bin-

der is ahead of the reaping hook. Communities with live farmers in them are demonstrating this every day.

York Co., Ont.

Water-Supply.

Editor "The Farmer's Advocate":

Water is one of the prime necessities of life, and that everybody should be provided with a pure supply is by no means the least important of the health requirements. It is a vital element of our food, and assists in the building up of our tissues, of which it constitutes one hundred in each hundred and fifty; it preserves the fluidity of our blood, aids in the excretion of effete matter, and assists in maintaining our bodies at a uniform temperature under varying conditions of heat. From whatever source our water supply may be obtained, it is dependent upon the rainfall for replenishment. From the surface of the land, rivers, lakes, and oceans, evaporation takes place through the agency of the sun's heat, and the atmosphere has the power of holding moisture, in the form of invisible vapor, in quantities varying with the temperature. The higher the temperature, the greater capacity the atmosphere has for retaining moisture in the invisible form. Should the temperature fall, a point is at length reached which is called saturation point, when the atmosphere contains as much moisture as it can possibly hold in the form of

vapor, and if the temperature should be further reduced, a portion of the moisture is condensed, into fine globules, and becomes visible as mist. Clouds are simply mist, and their apparently round and solid appearance is the result of their being viewed from a distance. By the further cooling of the atmosphere the globules of moisture gather into larger particles, until a point is reached at which, by reason of their weight, they can no longer be held in suspension, and then rain falls. If the point of saturation of the atmosphere should not be reached, that is, if condensation does not occur until the temperature is below freezing point (32 degrees F.) then snow falls. After rain has fallen, a certain portion of the water is lost by evaporation another por-

tion runs off the surface, and the remainder penetrates into the soil.

Subsoil Water.—That portion of the rainfall which penetrates the surface continues to descend until, sooner or later, it meets with an impervious stratum, where its downward course is diverted in one direction or another, in accordance with the natural fall of the stratum. This fall is usually towards the natural water outlet of the area. It must be remembered that the pace at which the subsoil water travels is very slow indeed, by reason of the obstruction offered to its progress by the soil through which it has to travel, and for this reason, it varies with the density or looseness of the soil in question. Now, it is the subsoil water which we tap in sinking what we call our surface wells. It must also be borne in mind that this has an important bearing on the dampness of a locality, and for this reason, it is important that there should be no obstacle in the way of allowing the water to run off according to its natural bent. The placing of dams along rivers or creeks should be condemned for this reason alone.

Deep Water.—Beneath the impervious stratum just mentioned, we come upon other porous strata and in them supplies of water which have percolated downwards from distant points where the strata reach the surface. By sinking deep wells into such a stratum at its lower part we tap this supply, and, if the surrounding country should be much higher than the spot selected for the well, the pressure may be so great as to raise the water to the surface at the site or even above it. Hundreds of feet may have to be

pierced to reach this source of supply, and this plan is adopted by many towns.

Springs.—These, which are outflows of water from the earth, are divided into two classes, surface springs and deep springs; the former are found mostly on the face of slopes, and their presence is dependent upon the fact that, at this point, the impervious stratum, say of clay, which supports the subsoil water, rises to the surface, and thus opposes a barrier to its onward progress. Deep springs, on the other hand, are due to the presence of an opening in the impervious stratum, which enables the water below it to rise to the surface. The fact that surface springs are liable to become dry after a long interval without rain, while deep springs are nearly always permanent, will therefore be more readily understood.

Rain water, although well aerated, is flat and insipid, owing to the absence of mineral matter, and in towns especially it absorbs so much impurity in its downward transit that it can hardly be looked upon as a satisfactory supply. Rain water is excellent for washing purposes, being soft, less soap is required. Hard water contains a large quantity of saline constituents, of such a kind as to interfere with the formation of a lather with soap. There are two kinds of hardness, temporary and permanent. The presence of salts (chiefly lime salts) that are deposited on boiling and not redissolved accounts for the first class, and the second to salts that are not deposited. In building a well, it is well to observe the following precautions. In the first place, the spot selected should be as far removed from all sources of pollution as possible—such as a barnyard, for instance; and in the opposite direction to the natural fall, so as to tap the water previous to its reaching the source of pollution and not after it has passed through it. The lining of the well must be so constructed as to be quite impervious to soakage from the surface immediately surrounding it. In place of brickwork being loosely laid around it, which is usually the practice, it ought to be set in cement to the water level, and as an additional precaution, it is well to have a layer of puddled clay around it, between the brickwork and the adjoining soil, so that any water that does get through is fairly well purified before reaching the well. There should be a good tight cover placed on top—would advocate the use of cement or large slabs of stone if obtainable. The habit of going to the back door and throwing out the contents of all utensils used in a house should be heartily condemned, more especially if the well is anywhere near. If the land is at all porous there will always be the risk of even a minimum quantity of filthy liquids entering the well. All waste water should be led to or thrown into a trap leading to a well-constructed drain, taking it in opposite direction to well, and in the direction of natural slope of land; better possibly to lead it to the cesspool also. This last item comes really under the head of drainage, which will be dealt with at an early date. There are various methods of purifying water, the first being by a filter bed. Such a filter is constructed of slabs of slate, or concrete, in rectangular shape, and filled with sand and gravel in various degrees of coarseness. The sand is placed on top, and under it is the gravel in various degrees of coarseness, getting larger towards the bottom, until, where the outlet pipes are situated, it is composed of small stones. The efficiency of this filter depends upon the time which the water takes to go through, and this, of course, is regulated by the depth of the sand, which ought to be from one and one-half feet to two feet, the gravel being about three feet. Each square foot of this filter will allow 70 to 75 gallons to pass in the 24 hours. Such filtration is chiefly mechanical, owing to the straining effect of the fine mineral, and organic deposit formed on the surface, which, on account of clogging, has to be periodically removed. This filter also removes dissolved organic matter to some extent by bacterial action in the presence of air in its interstices. For this reason, it is important that the action of filtration should be conducted slowly, and intermittently, to allow of aeration.

For the filtration of rain water it is a common thing to construct a filter underground. It should be constructed on much the same principle as the one mentioned, but as the cistern is usually underground, it will be necessary that the brickwork be made as impervious as possible, to prevent any soakage from outside. Sometimes charcoal is added to this filter, but this is not always satisfactory, for if the water has to be stored, as it usually has, charcoal imparts to the water a material, which favors the growth of organisms. Great ignorance is sometimes displayed in regard to filters. The general opinion is, that because the water comes through the filter it is all right, but this is not always so, for although most of them have the power of removing turbidity from water, they are some-

times useless as preventatives of water-borne diseases, such as enteric fever and cholera. The material most frequently used as a filtering medium in domestic filters is charcoal, or a combination of charcoal with silica (silicated carbon filters). One of the old types of filters and a very good one was composed of granules of charcoal with asbestos cloth as the straining material. One excellent and simple method of water purification on a small scale is by boiling. The effect that boiling has is to cause certain salts to be deposited and matters in suspension are carried down with them, but the all-important effect of boiling is, that the organisms of disease cannot withstand a moist temperature, even for a short period, of 212 degrees F., the boiling point of water, and thus the great danger of infection by water may be removed. To sum these points all up, viz.:

The water supply of a house should be within a convenient distance, plentiful and pure. About the minimum amount per head should be four gallons per day, not including water supply for water closets.

Water from springs and deep wells is usually good, while that from rivers and surface wells should be viewed with suspicion.

The spot selected for well should be at the highest point of site and the well should be so constructed as to be impervious to surface water and soakage. Because the water is clear, it does not necessarily follow that it is pure.

That all filters require cleansing. In this respect two filter beds are necessary, one being cleansed while the other is in use.

JOHN C. COLTHART.

Wellington Co., Ont.

bare engine, and mounted it on wheels myself and put the buzz saw on behind, which any farmer could do. The buzz saw is so arranged that it can be taken off when not in use. By mounting engine yourself you save a nice penny in buying, as I notice that engine firms charge very high for skids and trucks. I got an old set of mower wheels for the hind end, and old binder truck wheels for the front, which make a good strong truck, and the engine is hardy for moving about. With having buzz saw attached a person can often cut wood for a neighbor, and what you get out of the job will help to bear the expense of the engine. A cutting box with rakes on could be used to fill a silo when the corn was fit to cut and with less expense than if you had to pay \$1.50 an hour to some man with a bigger outfit to do it. My opinion is that the kerosene engine is going to fill the bill all right until electricity gets cheaper and more distributed.

Dufferin Co., Ont.

C. M. H.

Do Open Ditches Spread Weeds?

Three progressive farmers sat down on the edge of an open ditch in Addington County, near Centreville, Ontario, and there quite appropriately the question arose regarding open ditches. Can we dispense with most of our open ditches? Just then a tile-yard man happened to come along, and he advised them to put in tile wherever possible, stating that shallow surface ditches were of no use at all after the great rush of water had gone off in the early spring. He told them that the cost of maintenance of the open ditches for six years (in addition to the initial cost) would easily pay for the tile and work that would be required to drain the same area as it should be drained. Moreover if the field was once properly drained, it would require no more ditching and no more tilling for two or three generations to come. This tile man explained to the farmers how that open ditches break up the field into such small parts that much time and money is lost while cultivating, and while busy seeding in the spring and also while busy harvesting. The farmers told him that he was a little too anxious to sell tile.

The farmers felt that the tile man was only talking for himself. Yet the tile man was right in everything he said, only he did not say enough. Altogether aside from the cost of maintenance, and the inconvenience of open ditches, there is a point which he never mentioned at all, a point which every farmer should not forget to take into consideration when deciding whether to put in tile, renew an old filled-in ditch, or make a perfectly new ditch.

It is surprising to me to think that these farmers could sit down on the edge of an open ditch. How did they do it without sitting on sow thistles, pitchforks or burrs? In my mind it is quite possible that when these farmers sat down they could not see one another for weeds. On August 13th last, at Centreville, Ontario, I sat down on the edge of an open ditch to lace my shoe, and while sitting there, without moving out of my position in the least, without moving either foot, I snatched with my right hand 26 different plants, nearly all being weeds and some of them of the very worst kind.

I took a note book from my pocket and very carefully counted and named the following plants. I will give you the names exactly as I named them in my note book:

Knot grass, red top, poor man's pine, wild tare, alsike clover, smart weed, old witch grass, worm seed mustard, lambs quarter, timothy, wild buckwheat, deadly night shade, Kentucky blue grass, pepper mint, couch grass or quack, sow thistle, black medoc, barn-yard grass, butter-cups, worm wood, broad leaved plantain, and five unidentified.

All these weeds were picked up in a radius of three feet, with myself sitting in the centre,



Gallant Boy.

With three young jockeys up.

Power on the Farm.

Editor "The Farmer's Advocate":

The cheapest and best powers for the farmer have been discussed over and over. Of course, electricity is the best and nicest, but about the cheapness, it is rather hard to say. I will give the readers of your valuable paper a little of my experience with the power I have on the farm. I purchased some time ago a six horse-power kerosene engine from a reliable firm on condition that they take as much power from a gallon of low-grade kerosene as a gallon of gasoline, and I am satisfied that they did it and that the engine is doing it yet. This brings the fuel problem down fairly low, as you can buy low-grade kerosene for sixteen cents a gallon and gasoline is worth thirty cents a gallon. And also it is not as dangerous keeping coal oil around in large quantities as it is keeping gasoline. I run with my engine cutting box, chopper, emery wheel and buzz saw; in fact you can run many other things if you have the mind to do so, such as fanning mill, root pulper churn and washing machine, etc. Some people will say it doesn't pay to run a big engine on small or light work. I notice that my engine running on light work uses very little fuel and the cost is small while running on 16-cent kerosene.

When I purchased my engine I bought just the

probably covering up a half dozen or more. Had I chosen to take another sitting this large number might have been nearly doubled, for immediately before me, but not within reach of my right hand, I beheld a very staunch looking burdock, and beside it several curl dock, and then again directly across the ditch from where I was seated I saw wild lettuce, Canadian thistle, a Scotch thistle, chicory and many smaller weeds too numerous to mention.

Now permit me to say, that although that large number of weeds were there, this ditch, to the ordinary observer, was (not) a conspicuously weedy-looking ditch, for it was not covered with golden rod, teasel, sweet clover, berry bushes and brush willows and (what not) as some ditches are. Did you ever in your life see an old open ditch without an abundance of weeds?

Waterloo Co., Ont. R. H. CLEMENS.

A Satisfactory Silo Filler.

Editor "The Farmer's Advocate":

In your issue dated February 12th I noticed an enquiry from G. B. B. re the experience of any person having filled silo with small blower, carrier or elevator, that could be satisfactorily handled by a six or seven horse-power gasoline engine. I may say that one of my neighbors and myself were persuaded to try an elevator which was advertised in your paper last August. We got it on trial. It was very easily attached to an old cutting box I purchased at a sale for a mere trifle; after filling each of our 12-foot by 36-foot silos I have only to say that the elevator was a complete success. Although we had only a four horse-power gasoline engine we found that with only half the help we could fill the silo in about twice the time we used to with the big blower outfits. Our old cutting box gave us some trouble, but the elevator was so entirely satisfactory that we have purchased it.

Huron Co., Ont. JOHN ROWCLIFFE.

Filling Silos with Carriers.

Editor "The Farmer's Advocate":

In reply to your request for experience re filling silo with small power and carriers, we have filled our silo, thirty feet by fourteen feet, for the last three years with a carrier box and five horse-power motor, and have had no trouble whatever with the carriers. We can put a good load through in from five to seven minutes, or as fast as a good man can hand it off. Our box sits on the barn floor, therefore, we just have to raise it twenty feet and we use thirty-four feet of carrier. As regards filling silo with small power and blower, that was well tested by the Hydro people in our neighborhood last fall. They had a small blower box, so small that the bands had to be cut and every sheaf divided in two and sometimes three, and took on an average of twenty minutes to put a load through. They were using a five horse-power motor, and overloading it till it was running as high as ten horse-power sometimes.

Oxford Co., Ont.

D. W. CLARK.

Old Age.

Examples of horses at 80, 35 or 40 years of age would not be so rare if the tyranny, hard usage and maltreatment imposed upon them by unfeeling man did not aid greatly in shortening their lives.

There died just recently near Picton, in Prince Edward Co., Ont., at the farm of W. B. Scott, the oldest horse that we now have information about. This horse was of Indian Pony and Arabian descent. It was bought by Mrs. Jas. Sleightholm, of York County, who gave it to her daughter, Mrs. Thos. Farr, near Weston. The latter lady gave this beast to her daughter who shipped the animal to Picton where it has been in use ever since. During the last year this horse could not eat hay, but, as for wind and body, it died without a blemish. It has been a faithful servant of the family, having served five different generations. Had it lived until spring it would have been forty-one years of age (almost an heirloom). This demonstrates what service the dumb brutes will render mankind when they are humanely treated.

The Arabian horse of history is famed for his trustworthiness and devotion to his master, and instances are not rare where the faithful brute displayed human-like intelligence in time of peril. The most distinguished Arab blood is marked by the word "ajuz" (meaning old woman). This family descends from a mare that dropped a filly colt when on a long and hard journey, her owner being hard pressed by an enemy. The colt was left where born, and the Arab after much difficulty reached his own people. To the surprise of the camp the new-born filly arrived a few hours later, having followed its dam. The story relates that it was given into the care of an old woman of the tribe; hence the name, Keheilet Ajuz (mare of the old woman). The Indian Pony is not unlike the Arab in stamina and enduring qualities, and the combination, as blended

in the faithful brute whose obituary this treatise sets forth, has been productive of a life of service to its masters.

A Farmer Says "Don't"

Editor "The Farmer's Advocate":

The Hired Man who writes in your issue of February 19th asks some good questions. He has been in Canada for six years, working on farms at the maximum wage, and consequently has no unpleasant experience with unemployment or the H. C. O. L. In ten years he thinks he might have enough saved to take hold of a farm on his own account, but that prospect does not appeal to him. He asks whether he had not better go to the city and make money.

How will he make it? Not being a skilled worker he would naturally obtain employment as a handy man, at from ten to fifteen dollars a week. A single man living in a Canadian city may save a little out of ten dollars a week—enough to tide over an emergency but no more. With fifteen dollars a week he may put by say twenty dollars a month, but to do so he will need to be careful, self-denying, and to have a fixed habit of saving. Now, a farm worker getting from \$30.00 to \$35.00 a month and board can save \$20.00 without much trouble and self-denial. He has no temptation to spend money, whereas in the city a man is continually tempted to spend a dollar here and a quarter there—nothing very large at one time, perhaps, but the money melts away. It seems to me that if your correspondent wants to get a farm of his own he will obtain the capital much more surely where he is than as an unskilled worker in a city.

No doubt he may do better. If he has plenty of energy he may attend a technical school in the evenings and learn a trade; or he may get employment in a business house, develop qualities of salesmanship or management, and earn a salary. But even so—what proportion of business employees are getting more than \$15.00 a week? For that matter I doubt whether ten per cent. of the adult male workers of all grades are earning any more the year round. Yet on a wage of this sort it is now practically impossible for a man to marry and keep house in a city, to say nothing of bringing up a family. Once a man makes the venture he may give up all hope of accumulating capital for any purpose out of savings; he will be lucky to keep out of debt.

The problem for your correspondent, therefore, is whether he will take chances of getting a living in the city, with the bare chance of getting rich, or whether he will stick to farming which is a sure thing, and, as he says: "There is no business that can at all compare with farming to my mind!" The question seems to answer itself, and I suppose that the prospect, which does not appeal to him, is that of waiting and saving for several years more until he can get a farm of his own. Ten years is a long time for a young man to look forward, but short enough in retrospect. The average wage earner of forty, who asks himself, "What have I done in the last ten years of my life?" is very seldom able to say, "I have accumulated capital and experience, and am now in a position to go into business for myself." Far from it! More than likely he is painfully aware that he no longer feels young, that his expenses are increasing while his pay is stationary, and that his employers have very definite ideas about the advantage of employing young men in preference to those of forty and over.

I have no desire to preach, but when anyone who already has a practical knowledge of farming and a liking for the business proposes to go to the city to get rich—then common honesty compels me to say, "Don't."

Lambton Co., Ont.

W. Q. PHILLIPS.

Back from the City.

Editor "The Farmer's Advocate":

I read with interest in your February 19th number the item entitled, The City, the West or the Ontario Farm, by an Oxford County hired man. It is my wish that I may pen a few lines which may be encouraging and possibly helpful both to him and others in a similar position.

I spent my years steadily from 13 to 25 on a farm, and like my Oxford friend thought a start on a farm of my own could not be earned before I was 35 to 40, also I thought it a too dirty and laborious employment, so I went, March 6th, 1912, to Toronto to seek a cleaner, easier life, also a road to more sure and quicker riches and thereby have a home.

Now I liked it for about three months or so, then I began to see that my work as well as that of all other untrained men, was as dirty and arduous, if not more so than my life had been, and while I seemed to be drawing money quickly yet there would not be much difference in my savings account by the end of the year, also at 60, if not 15 years sooner, one's income in wages would decrease; perhaps he would lose his position, while on a farm one could contrive to have profitable employment until 70 or as long as one wished, barring the advances of ailments usually assailing elderly people.

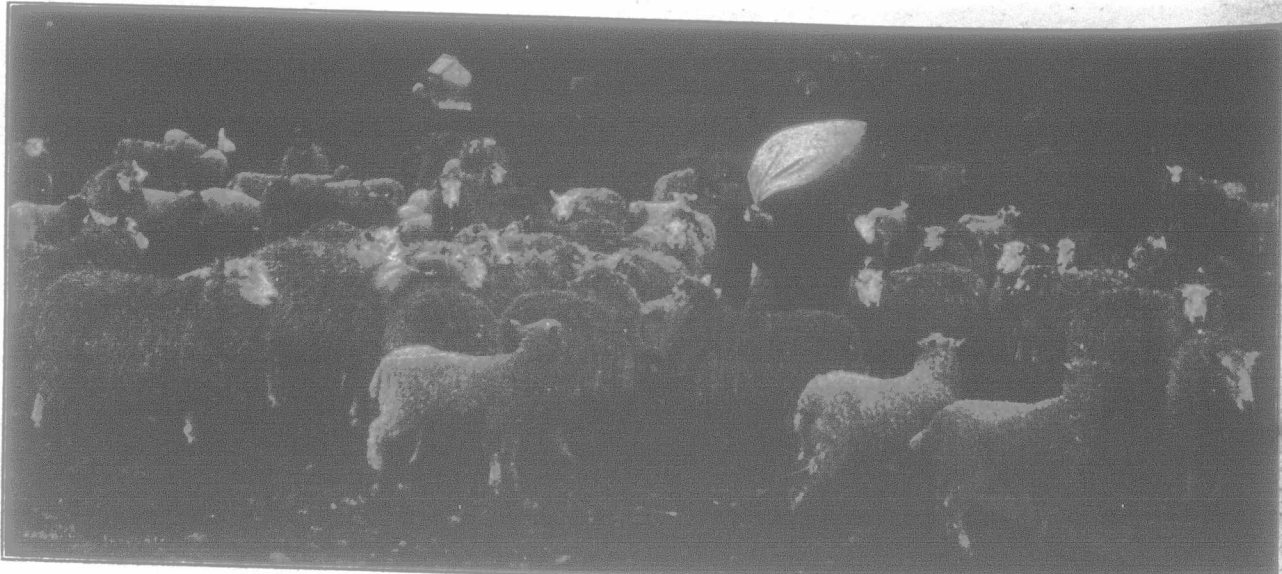
Well as time went on I began to fail in appetite and strength from confinement and possibly caused by impure food, dust-laden estables which are to be seen everywhere nearly in the city, and I said I would leave as soon as I could, and in June, 1913, I returned to the farm. I have found that the farmer has a cleaner, freer, purer and a more profitable life than I had ever dreamed of before.

From my city experience I would advise no farmer's son over 18 or 20 to ever try it, for already they are three-quarters trained for a farmer, and if one goes to the city it is get down at work that a city boy of 14 can do, and remain there for many years if not for life unless you have influential friends to help you.

Again the farmers work about 12 hours for five months and again about 14 to 16 hours for seven months and he thinks it slavery, some do at least, but I found owing to street-car rides at each end of the day that I was away from home from 6 a.m. till 7.30 p.m., and so city hours with untrained labor are as long as country hours.

Well, enough said about the city, I prefer to uphold farming a little. The Oxford man says he has worked in Canada six years, and expects he will have to work ten more to get enough to start on a farm with many years ahead of that before it is paid for. I should judge he is about 24, and, therefore, 34 is about when he hopes for a start. Already you will see I thought similarly, but let me suggest several plans for a much earlier freedom from serving others just as fully as before. Remember I put it in those words, for I have learned that all the way to end of earthly life we are serving somebody in some manner.

But for my plans of escaping too long a service as a real hired man, though from 14 to 22 perhaps one needs all those years or more for experience. First, there are many farm owners wishing managers to-day to do their best for a stated wage, on shares, etc., which I would try quickly. Also five to 40 acres are offered to rent near our cities or the fruit belt at from \$50 to \$200 a year, which devoted to vegetables, fruit, poultry or bees, would be another road one might follow with a small capital rather than hire out ten more years, and I have seen the above pay well, for I spent a year in the fruit belt myself. One man I met there, a late telegraph operator of Toronto getting \$1,200 a year then, was in poultry on six acres, and found it better for his health and more remunerative. Why should not, say, three men like my Oxford friend, club together, rent or buy if possible a



An English Shepherd and His Flock.

200-acre farm; having no wages to pay, being young, making things go, run along free men, pay their way and at the end of those ten additional otherwise years of service have from \$4,000 to \$6,000 a piece instead of each having saved \$200 a year out of usual wages?

Now this I fear is too long already I must cease, but if the Oxford man or any other in a similar situation cares to write to me, I will be pleased to tell them more of how I found the city, and also of the many open chances to make money on the farm, and at the same time lead the healthiest life to be found, and pursuing that which leads to a most restful and peaceful old age.

Dufferin Co., Ont. E. C. BETTSCHEN.

Canada's Day of Peril.

POINTS FROM "CANADA AND SEA POWER," BY CHRISTOPHER WEST.

No wise stock breeder kills his best cattle and sheep and reserves the weakest and scraggiest for breeding purposes. Degenerate sires means a degenerate herd. In a remarkable book, "The Human Harvest," Prof. David Star Jordan, of Leland Stanford University, shows how Rome and other great fighting nations perished through the drain of war, leaving the culls and degenerates to breed a race of lustful weaklings. Turkey, which has lived by the sword, has perished by the sword. What did Turkey ever contribute to art, science or religion? Nothing.

Preparing for war is the sure way into war.

The severance of trade by war between the industrial cities of Britain and Germany would in a single month reduce thousands—perhaps millions—to starvation unless fed and clothed by the State, ruinously burden the people and hasten a condition of anarchy and bankruptcy.

The greedy armament trust thrives on international distrust, hatred or jealousy, which it fosters for the sake of dividends.

The interchange of peaceful products benefits both buyer and seller. In armaments the purchasers are a group of men who at a word may take the money and resources gathered by the sweat of millions and sweep them away in a deluge of blood and destruction.

For naval and military purposes about one-half the gross revenues of Great Britain are now swallowed up. What is spent on armaments, interest on war debt and pensions wipes out 65 per cent. of the United States national income, leaving only one-third for constructive and administrative work. In Germany war preparation swallows up two-thirds of the national income and the people groan beneath the frightful burden.

The cost of living keeps going up. People helplessly watch its course and gasp. Poverty walks at large and the miseries of life increase. (Toronto papers are appealing wildly for help for starving multitudes, but throw up their hats for a blatant militarism). Call off the official war dogs.

British armament makers supply about 75 per cent. of the naval equipment of other nations and then utilize war scares at home and drive Britain into further waste and naval expenditures to defend themselves against the means of warfare which they supply. Even ministers of the gospel of peace draw dividends from the armament trust and blind the people to the truth about militarism. Is Canada to be dragged into such a vortex as this?

A vast proportion of the production of armaments is waste to the extent that vessels, guns, etc., become obsolete almost as fast as made. But what care the war lords? The people foot the bills! We can fool them again.

Is Canada to tolerate the creation of an octopus that will, as elsewhere, become powerful enough to strangle the Government and shape foreign policies for its own aggrandizement?

Force is the constantly diminishing factor; co-operation and trade the increasing bond.

A naval propaganda in Canada will add burdens of taxation on the Canadian people, create alleged vested interests in war "industries" which are an impost on the toilers and products of the peaceful necessities of mankind, and increasing the political power of those behind mili-

tary establishments. Now is the time to head them off. To-morrow it may be too late.

In proportion as Canada is a non-participant in militarism and insane naval projects just so far will she offer an effective protest against the British armament business and aid in promoting the world's peace and the interests of the people.

Contributing to the naval and military propaganda will be of no avail; it doesn't reach the seat of the disease, but rather aggravates it, like putting a blister to one's leg to cure a diseased liver.

The armament trust supplies Japan with naval power and the people of an over-seas Dominion revolt against the "yellow peril." The white (or black) peril of armaments is what they should protest against.

"If Canada can afford \$35,000,000 for dreadnoughts, she can afford another \$35,000,000 to spend in missions to Germany, France and Great Britain for the special purpose of promoting international good will."

"Canada and the United States have lived side by side for a hundred years and the great fresh water seas that unite or divide them have swarmed many years with vessels of commerce. . . . Yet there are no dreadnoughts here, nor have any millions been spent in fortifications of the great emporiums of commerce on either side of these lakes." Some fool enthusiast has been proposing a Canadian naval motor fleet and naval training boats on the lakes. Then there would be a rival U. S. outfit. Some day a fanatic would throw a torch and start the catastrophe of waste and blood. What we have had is an object lesson to the world. Let it be preserved inviolate.

To-day is the supreme hour for Canada to call off the dogs of war on land or sea. The armament trust is at the door. Shut it fast.

The Call for Millions.

Millions for dreadnoughts, nothing for poverty!
Millions for poverty, nothing for slaves!
To princeling, exploiter, surrender earth's property;
Millions for nothing—to sink in the waves!

Halt not to reason why, yield up your treasures;
Reason would break the spell holding you fast;
Jingoists call for blood, offer hell's pleasures;
Give your life, give your all, give to the last.

Turn from the paths of peace, think of war's glory;
Widows and orphans weep for the slain;
Ignorant feuds shall need bayonets gory;
Plutocrats urge it; your loss their gain.

Millions for dreadnoughts, nothing for poverty!
Millions for Moloch, for missions a cent!
Heed not a praying world, license its robbery;
In the whirlwind of nations find time to repent.
—BEN. COSMAN.

Carriers Instead of Blower.

Editor "The Farmer's Advocate":

In answer to G. B. B. of Feb. 12th issue re filling silo with carriers from cutting box, I would say that I filled mine for 12 years in that way and liked it very much better than the blower for the following reasons: First, it took far less help to run it, and if there came bad weather, as is often the case in the fall, we went at other work until the weather was favorable, and when we got the silo full we just left the machine sit there for about a week and re-filled. By doing that we got more corn in. The way we have been doing lately, the machine goes round the neighborhood one-half or one day in a place, according to size of silo, and there is no chance to get it to refill, and filling a silo so fast it has no time to settle while filling and when it is done settling it is about three-quarters full.

I used a special cutting box with 24 feet of carriers and ran it with a horse-power and three horses. We would run it all day with ease and have filled a 12 by 25-foot silo in one day. The carriers worked on the same principle as the elevators of our grain threshers. It shoved the corn up a box and came down on top, instead of under, like the old-fashioned straw carriers, and when working out of doors we covered them over so as to keep the wind from blowing the leaves off.

Grey Co., Ont.

Chats.

Editor "The Farmer's Advocate":

I am an agriculturist, and as such am deeply interested in everything pertaining to agriculture in its varied phases. To one there is something peculiarly fascinating in observing the many and intricate problems which are worked out so thoroughly and systematically in the realm of nature. I like to study her laws as they present themselves in connection with my farming operations, wherein I am continually discovering the need of a broad and liberal knowledge and an all round mental equipment to enable me to cope with the difficulties and understand the demands of this profession. And while endeavoring to wrestle with the problems and study the situations as they present themselves within my own fields, I am always eagerly looking for the viewpoints of others upon the same questions. Even though the idea of the other fellow does not exactly meet my need, it sets in motion a train of thought that ultimately leads up to the proper goal, and so I think that in this I may pay tribute to the value of these pages as a medium for bringing together the gleanings from many minds, and through which the bright ideas, the mature judgments and the rich experiences may be passed along and disseminated throughout the land.

I was interested in several articles and enquiries appearing in "The Advocate's" issue of Feb. 12th. Among them was an article by B. N. F., of Wellington Co., on Crows in Relation to Corn. The mention of crows strikes a familiar chord. From earliest recollections the name of crow has suggested a corn field, and to those of us who have been privileged to see the old-time method used to protect the fields from the depredations of the crows, it was an interesting sight. In the middle of the field, and perhaps at either end, would be placed a hideous and awful scarecrow, dressed up in a style all its own and one which would put the latest Parisian effect to shame. Or perhaps a considerable number of stakes would be posted around the field, having bright pieces of tin dangling from their topmost ends. Again, I have seen long strips of basswood bark suspended between two stakes placed here and there among the corn. And yet in spite of all man's ingenuity in this respect, have we not seen the old black rogue walking in and out among the various offensive and defensive machines with the most utter contempt for them all? And how the corn did suffer!

The method employed by B. N. F. in delaying his sowing, and especially in harrowing his corn after seeding, was doubtless a good one, but I am impressed with the thought after an intimate knowledge of their habits, born of bitter experiences, that the crows of our locality are either possessed with a larger amount of gray matter in their wise old heads, or are blessed with more perseverance than those to which B. N. F. refers, as we find that nothing but tarring the corn before planting will stop their ravages with us.

Another article which sent my thoughts spinning along was that of Peter McArthur's on Direct and Indirect Benefits. His article was pungent and very much to the point, and gave me the key to another idea that had been struggling in my mind for recognition. It is, that we, as farmers, are making the least use of our power as the greatest body of the country, and are getting the least benefit, either direct or indirect, in proportion to our strength, from the legislation of the country, of any class within its borders. It seems to me that if we were united in our demands, if we would organize as do the manufacturers, the trusts, the big interests, that we could demand and command recognition and by the strength of our franchise we could get that for which we asked. But we have never done so as yet, and why is it? Is it that we have not learned the advantage of placing interest before party? We believe in a certain policy, but when the testing time comes we fall down before party principles, and we get off just where we got on. I notice that the manufacturers and the large companies pursue a different policy. I have seen them going from one side of the pole to the other as their interests were affected and they have generally in the past received what they were after. We hope that the future may hold wondrous possibilities in the organization of agricultural interests.

In conclusion, let me answer a query of G. B. B.'s in regard to filling silos with a six or seven horse-power gas engine. I might say that I am running one of the large-sized cutting boxes with blower with a six-horse gasoline engine cutting dry corn stalks. I can cut them faster than a man can pull the corn off the wagon, and that without speeding the engine above normal speed. I do not expect to have any difficulty in filling my silo next year, judging from my experience thus far. In any case it will operate carriers with ease.

Middlesex Co., Ont.

MAC.

The Young Men.

By Peter McArthur.

Honestly, I was not feeling a bit cranky when I read the letter that came this afternoon. It was a good letter, a meaty letter, full of comfort and good cheer and sound opinions and here I am sitting down to make some comments on it that will be just about opposite to what the writer of the letter will expect. He made a statement with which ninety-nine per cent. of the readers of "The Advocate" who are over forty will agree at once, but I am moved to protest in a cheerful, but nevertheless determined manner. Here is the statement:

"I fear that owing to the changed conditions of country life we are breeding a much softer class of young men."

As I read that I began to hum a tag from an old song:

"In the days of old Ramesis
That story had paresis."

One of the oldest documents in the world is a letter written by an Egyptian priest, more centuries ago than it is safe to guess at, and from the beginning to the end it is filled with lamentations about the degeneracy of the rising generation. All literature, both sacred and profane, is full of mournfulness about the falling off of the race. And yet the world continues to go around and in spite of a steady decline since the dawn of history it still managed to produce the wonderful present generation, the one to which we belong. To adapt Job to our case, "No doubt but we are the people and wisdom shall die with us." But at the present moment I am not so sure about it. It strikes me that we are not such wonders after all. It has been in our time that some of the worst things we are complaining about have been developed. We were right here while most of the privileged classes in the country were becoming entrenched. We stood around in admiring and open mouthed wonder while Trusts and Mergers were being formed and looked on enviously when millionaires began to sprout like mushrooms. And now that we have learned by experience that these great things are far from being for our good it hardly becomes us to mourn because the younger generation does not look strong enough to grapple with the monsters that we allowed to grow up and develop their appetites. I, for one, do not feel that the present generation has any call to snub the generation that is rising. We do not amount to so very much ourselves.

It may be quite true that the young men of to-day are of a softer texture than their fathers, but that does not cause me any concern. They may not be able to toss the caber and throw the sledge like their fathers, but they can "sign their names without biting their tongues and wiggling their toes." They have strength of another kind and it is of a kind that will count in the coming struggle. Let it not be forgotten that the great things of history were not all done by heroes who ate raw meat and wiped their mouths with the backs of their hands. Alcibiades was a dude and the conquering Julius Caesar was railed at for his effeminacy. Yet they bulked large in the history of two of the greatest nations of the world. The young men of this generation do not need heavy muscles and big bones. The hard work of clearing the land and bringing it under cultivation has been done and there is excellent machinery for doing every kind of heavy labor that is needed now. What they need is an inquiring mind and a proper grasp of the great truth that their rights are just as big as any other man's. If they learn how to use their votes they will do more for human freedom by properly marking little slips of paper on election day than their ancestors did with broadswords and battle-axes and repeating rifles and big cannon on all the battlefields of the world. Moreover, the masterful pirates of our generation are no longer in "the wayward of their youth" and some of our silkiest young men are beginning to ask: "Where did you get it?" and also: "Why should you have it?" I am looking for great things from some of these "softer" young men.

For some time past I have been impressed by the fact that there is a new thing under the sun—a new thing that is going to make no end of trouble for governments and for the captains of industry. We have reached the third generation of compulsory education and that means that all the people are educated as never before. The discontent that is growing in the world is educated discontent and that is something new and perhaps something terrible. The discontent that has shaken monarchies in the past has been largely ignorant. The French revolution had a few educated leaders, but the mass of the people felt their miseries and resented them like brute

beasts. At no time in history have rulers had to do with educated discontent. The Greeks were perhaps the best educated people of antiquity, but even in the Golden Age, under Pericles, they were a fairly ignorant lot. Education was by no means so diffused and accessible as it is to-day. And now that the boy on the farm is as well educated as the son of the millionaire and can get the best books with which to continue and perfect his education his brain will become a more forceful instrument than any he could wield with his hands. And just because he is "softer" he will feel his wrongs more keenly, and his trained brain will teach him how these wrongs are to be righted. He will not be so likely to jump up in the air and yell and talk fight as his father was and he will not have himself clubbed into submission by a policeman representing the ruling powers, but he will be much more likely to understand that his vote was not meant to be something held in trust for a political party. He will realize that it represents his power of sovereignty as a citizen and he will use it with discretion and good sense. The young men of the present day may have more education than muscle, but I am not entirely convinced of that. Every once in a while I see a college man with a pair of shoulders that suggest "an ugly hand in a row," and I doubt if their brains are any softer than those of the older generation. I think it was Van Ranke who asserted that since the dawn of history the world had been just as much civilized in one age as in another, though in a different way. We must not make the mistake of confusing skill and address with softness and degeneracy. It will take a great deal to convince me that the young men of to-day are not capable of grappling with the problems that we are leaving for them.

The educated discontent to which I have referred to is by no means confined to the young men on the farms. The young men of the cities are full of it too. They are finding that matters have reached a pass in this young democratic land where "every door is barred with gold and opens to a golden key," and they want to know why they should endure such conditions. Though we have been complaining that the business of the country is under the control of about twenty men, this only simplifies matters for the educated young men who are coming up. The twenty strong men who control at present have only twenty votes and already they hear the feet of the young men who are going to hurl them from their high places. With the well educated young men of both the city and the country realizing that they are deprived of their just opportunities, it will not be long until they quietly set matters right. I pin my faith to the young men.

Plowshares Instead of Swords.

Editor "The Farmer's Advocate":

Your most excellent editorial on militarism in the issue of February 5th is worthy of great commendation, and will win the admiration of every reader who has the best interests of the nation at heart. It is very timely, and proclaims a propaganda of which every Canadian may well be proud.

Surely "the country has better use for men and money," and it should be thoroughly understood that the development of the nation's resources in peace is the only road to prosperity; that expenditure for military purposes makes its people poor, crushing them with taxes and crippling their progress in industry and the useful arts.

Important service may be rendered to the cause of peace by communicating and enforcing just and elevated sentiments in relation to the nation's honor. Let us teach that the prosperity, not the extent is the measure of the nation's glory; that militarism and brute force are infinitely inferior to the wisdom, justice and beneficence which make a people happy. Let us teach that the honor of the nation consists not in the habiliments of war and all their accoutrements, but in equal laws and free institutions; in cultivated fields and prosperous cities; in the development of intellectual and moral power; in the diffusion of knowledge; in magnanimity and justice; in the virtues and blessings of peace. Let us never be weary of reprobating that infernal spirit by which a nation becomes the terror and abhorrence of other nations, and inevitably prepares a tomb—a very costly tomb—for its own liberties and prosperity.

Nations have imagined themselves great and glorious on the ground of their military prowess, while really loaded with chains. This monstrous delusion should be scattered and our nation should be persuaded that true greatness consists in wise legislation and internal improvements in the spirit of liberty and humanity. There are three elements in a nation's greatness which I wish briefly to set forth. The first is justice. A government to deserve respect must lay down the maxim as the foundation of its intercourse

with other nations, that justice—a strict regard for the rights of others—shall take first rank in its interests. The voice of justice must not be drowned by the importunity of selfish interests. A nation strictly just has an honor independent of any gained by "the far-fung battle line"; purer and more enduring than that of a thousand victories. Let not him who prefers the renown of military spirit to justice talk of zeal for his nation's greatness. He does not know the meaning of the word, but belongs to a barbarous age, and desires for his nation no higher praise than has been gained by many a savage horde. To abstain from giving injuries and to make ample and hasty reparation when any has been made, will dispel the need of all military pageant.

The second element in a nation's greatness is philanthropy. A people ought to regard itself as a member of the human family, and as bound to bear a part in the work of human improvement and happiness. The obligations to benevolence belonging to individuals belongs also to nations. Hence we have no right to foster any spirit tending to set man against his fellows and thus destroy human life. The brotherhood of man is an eternal duty based on far higher authority than militarism, and cannot be neglected by a nation seeking the greatest good of its citizens. Every expenditure for military pomp tends to create distrust and suspicion, and is detrimental to the spirit of philanthropy. "Man's inhumanity to man makes countless thousands mourn."

The third essential element in the nation's greatness is the existence of institutions which tend to elevate all classes of its citizens. As it is the improved character of its people which alone gives it an honorable place in the world, its dignity is to be measured chiefly by the extent and efficiency of its provision for national improvement—for spreading education far and wide; for purifying morals and refining manners; for enlightening the ignorant and succoring the miserable; for building up intellectual and moral power and breathing the spirit of true religion. The degree of aid given the individual for unfolding his best powers determines the rank of a nation. Neither wealth nor war provender adds to the nation's glory. It is the moral and intellectual progress of the people to which the patriot should devote himself as the only dignity and safeguard of the State.

We Canadians have more need of plowshares than of swords, than of pruning hooks than of spears, and I cannot see why these needed implements should be diverted into such needless channels.

Elgin Co., Ont.

W. G. CHARLTON.

THE DAIRY.

Aim High.

An individual farmer can live and farm without exerting himself to any great extent in the direction of improving or building up his stock, but where a number of unfortunates are gathered together as guests of the state or municipality, it becomes necessary for those in charge to put forth all their efforts and intelligence to produce food and clothing for them as cheaply as possible. This has led in Canada to the development of some remarkably good institutions which are being developed more and more each year. At the Northern Hospital Farm in South Dakota a similar condition existed, and the management set about to improve their herd and if possible maintain the inmates at much less expense. The Hoard's Dairyman, in the February 27th number, attributes much of this success to Dr. Kutniewsky who is on charge of the institution.

In 1907 the institution procured 13 head of registered Holsteins at a cost of \$1,440. To-day the herd is valued at \$20,000, and since that time only 14 cows and heifers have been bought and five have been sold. The first operation was that of "weeding." During the year ending July 1st, 1911, 24 cows and nine heifers produced an average of 4,995 pounds of milk for each cow and heifer, but by eliminating the unprofitable individuals and retaining only those who showed themselves to be worthy of retention the record was raised to an average of 10,792 pounds of milk for 13 cows and 10 heifers, and it is the ambition of those in charge to raise the record to 18,000 pounds per year.

One commendable feature which is noticeable in the herd is their large size and strong rugged appearance. The result of this weeding operation has been that now mature cows may be seen in the herd which weigh in the vicinity of 1,600 pounds. This has been brought about partly by allowing the heifers to obtain good development and some age before they drop their first calf.

The foundation stock is made up of such high producing individuals as Lily Beechwood de Kol Burke, a cow with a year's record of 18,700 pounds of milk, and a winner at the State Fair in 1913. At the head of the herd is Sir Korn-dyke Hengerveld de Kol 26, who has an ancestry noted for sons and daughters in the A. R. O. in great numbers. This is the emphasis that has

been placed on the breeding, and this strong bull which weighs a little over 2,000 pounds in ordinary conditions mated with the rugged females has produced a herd worthy of mention.

The feeding of these animals has been no wise neglected. Years ago Dr. Kutnewsky suffered considerable opposition and ridicule when he intimated to the management that they should have a silo. However, he carried his point and to-day they have two silos, one capable of holding 200 tons, the other 140 tons, and a third silo will be ready for use in the spring. Corn silage has constituted an important part of the roughage ration, but in addition to this they are fed alfalfa, corn fodder and oat straw. Roots also have given good results. The grain ration consists of ground oats, bran and about two pounds of oil meal per cow per day, and each cow is fed according to her individual requirements. The management of the institute has demonstrated that it is necessary to "weed" "breed" and "feed" in order to obtain the best results. Each one of them is commendable in itself, but the three are required in order to rear high profitable producing cows. These combined with a desire to obtain the strong, rugged, heavy-feeding, heavy-producing cow would be good doctrine for all people to preach and all to observe.

Two T's -- Type and Testing as Applied to Dairy Cows.

Editor "The Farmer's Advocate":

The burden of a number of addresses and articles recently has been that dairy-cow breeders of pure-bred stock must pay more attention to Type and less to Testing or Records. This advice is doubtless based on the axiom, "No man can serve two masters," which life's experiences prove to be but a partial truth, as all men, and not a few women, serve not only two, but many masters, albeit indifferently.

As one who had considerable to do with the starting of the testing propaganda among cow owners some twenty years ago, which observation I may be allowed to make without appearing to be thrasonical, may I observe further, that there is no reason why breeders of pure-bred dairy cows should not have "typy" cows, and at the same time cows which are creditable testers, or which have good Records of Merit or creditable Records of Performance? These two are not antagonistic, as some seem to suppose. It is possible to serve these two masters, or what is probably more correct and more difficult, to master these two servants. As examples, we may mention the Canadian-bred Ayrshire cow, Jean Armour, which has a year record of over 20,000 pounds of milk. When this cow was sold at Rice's sale she was a typical Ayrshire in everything except the modern demand for light coloring. The Holstein cow, Banostine Belle De Kol, with a record of over 27,000 pounds milk and over 1,000 pounds milk fat in one year, is a typical cow of her breed, if her photo does her justice, although some might consider her rather light in body for a representative of a breed noted for their large size, as are Holstein cattle. The O. A. C. cow, Boutsje, recently deceased, was not only a typical Holstein, a good worker for a year, but has a record for seven consecutive years of over 14,000 pounds milk per year, disproving the commonly accepted theory that once a cow makes a "record" she is forever after "no good."

Several Jersey cows with good records are also "typy" cows. And the same may be said of Guernseys, French-Canadian and Brown Swiss cattle.

Looking at the matter from all sides, the writer can see no good reason why breeders of dairy cattle may not combine type and testing, form and perform, or whatever terms may be used to designate these two qualities of dairy stock.

In order to do this, it will be necessary to have clearly in the mind what is meant by type and testing. With reference to the former (type) nearly every breeder, up to the present, has been a law unto himself. It is true that the various cattle associations have standards or scales of points to guide breeders, but very little attention is paid to these standards, and we are safe in saying that the majority of breeders know very little about their particular standards or how to apply them in selecting males or females when purchasing or breeding. Then, too, these scales need revising.

As an example, we find that the Ayrshire, Holstein and French-Canadian scales allow points for "escutcheon," while the Jersey scale eliminates, and rightly, any points or reference to escutcheon. Again, all four scales allow points for "milk veins," "milk wells," "orifices," "extensions," etc. These are survivals of that superstitious age when men considered that the escutcheon, or milk mirror, mammary veins, long tail, prominent back bone, etc., were sure indications of milking capacity in a dairy cow. We

know now that there is just one way to determine milking qualities and that is by weighing and testing the milk from the individual cows in the herd.

And this leads us to answer the question, What is Testing?

The correct answer to this question is found by weighing each and every milking from all cows and taking samples from the same for testing throughout the lactation period or periods. Composite samples may be tested once a month for fat, fat and casein, or total solids, but usually for milk fat only. This will enable the owner to compare the relative values of cows in the herd, and also enable him to breed and weed intelligently. Modifications of this plan may be followed, such as weighing and sampling once in ten days, or three consecutive days in each month, and in other forms, but daily weighings are easily made on the farm, and should not be neglected by the wise dairymen. If not practicable to sample each milking, tests made, say three times during a lactation, once early in the first month and in the fourth or fifth month and once during the last month of the milking period will be near enough for all practical purposes.

When breeders of dairy cattle intelligently combine Type or Standard, and Testing or Record, we shall have made another distinct advance step in perfecting dairy cows. This step is just as important as the one taken about 25 years ago, when men of foresight broke away from reliance on form alone as a guide in breeding and selecting dairy cows. H. H. DEAN.

POULTRY.

What One Flock Has Done.

When readers are perusing results of apiarists, poultrymen or horticulturists, they should consider that sometimes exceptional cases are cited, and if an average were struck, it would be surprisingly low. We are not all constituted alike, but what one can accomplish another can aim at and in most cases attain. In this particular instance we have the results of a flock of hens on the "Braeside Farm," Morewood, Ont., which, in our estimation, have done exceedingly well. This is not a poultry ranch, for dairying is the long suit. The result of the poultry yard is attributed to the ingenuity and intelligent care of Mrs. Robt. Rainey, Jr., the proprietor's wife, who has paid particular attention to the improvement of the poultry kept on the farm by culling breeding stock closely, getting rid of the drones and using none but the best males. This, accompanied by the proper attention to the housing and feeding, has certainly proved that results will follow, as the report which is herewith submitted will substantially prove.

The estimates, operations and equipment for the year from Jan. 1st, 1913, to Jan. 1st, 1914, should be interesting to readers. The year was begun with 92 hens and pullets from which 40 were sold off on the first day of June. During the hatching season 35 hens were used for this purpose and 15 of them reared chickens. During September, October and November 60 early 1913 pullets began laying.

The laying hens were kept in curtain-front houses in winter and confined to yards during the summer. The hens and pullets were housed in separate houses.

The young stock had free range from August until November. Some of the chickens were taken out to the stubble field seeded to clover.

With the exception of a few dozens sold for hatching all the eggs were shipped to Montreal. Average price per dozen, 30c.; highest price obtained, 53c.; lowest, 21c. All the surplus chickens were crate-fed and sold for 18c. to 20c. per pound. The following table gives the egg-

laying record for the twelve months of the year: January, 1,354; February, 1,573; March, 1,935; April, 1,902; May, 1,442; June, 937; July, 713; August, 723; September, 684; October, 656; November, 885; December, 1,357; total, 14,166.

A detailed account of the expenditures was recorded and sums up as follows:

Wheat, \$95.38; corn, \$9.75; oats, \$21.65; barley meal, \$16.25; bran and middlings, \$25.95; grit and shell, \$5.85; beef scrap, \$4.75; skim milk, \$8.00; roots, \$3.00; linseed meal, \$2.00; coal oil, \$2.00; sulphur, 50c.; egg cases, \$2.50; leg bands, \$1.10; paid for chickens, \$92.00; eggs for hatching, \$13.20; express on poultry, \$7.00; total, \$250.88.

The money invested in buildings and stock ranges from \$250 to \$300.

Receipts:

Eggs sold and used, 1,180.5 dozen at 30c. \$354.15
Poultry used and sold, live and dressed ... 236.48
Value of extra stock on hand 60.00

Total \$650.63
Expenses 250.88

Profit \$399.75

During the first month of January, 1914, with 96 hens and pullets laying, 160.5 dozens of eggs were produced, or an average of 22 eggs per bird. The average price received was 40c. per dozen which gave a return of \$64.20.

Leg-banding of the pullets in the fall of the year as they began to lay and then using for breeding purposes in the spring those birds which began laying first in the spring is the practice which has been followed by Mrs. Rainey on this farm. An incubator is used for hatching, but hens are also used. What has been done on this particular farm can be done by others who are not at present making this branch of the farm operations pay. Select some breed or other, whatever one appeals to the owner, and then by persistent endeavors improve that breed or strain by proper selection and mating. This followed by the use of a house which is dry, free from drafts and well ventilated, accompanied by judicious feeding, will not fail to bring to the breeder results equal to those which have been stated above.

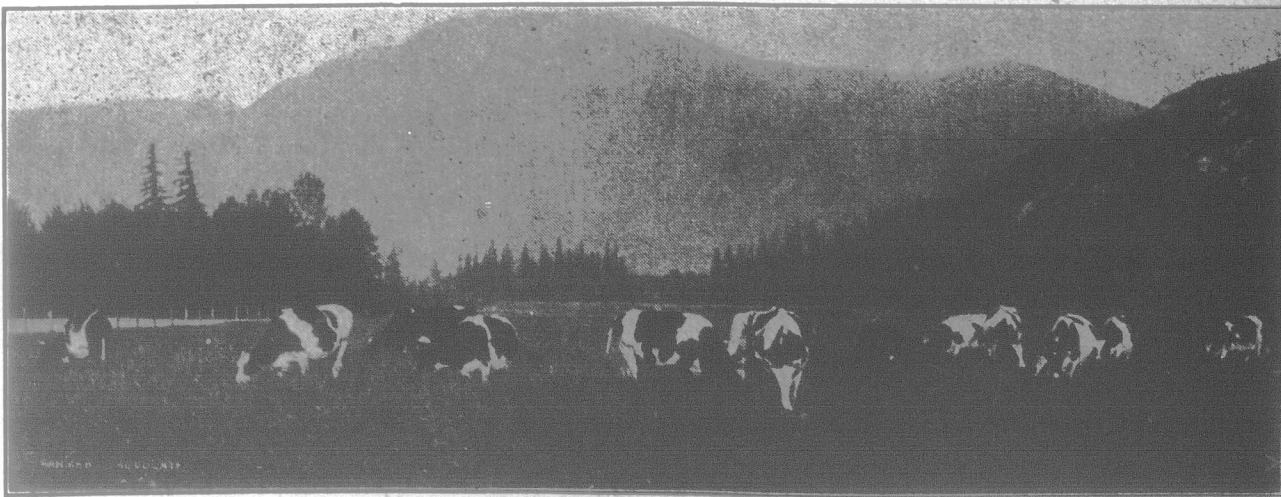
To think that such a snug little income, approaching \$400, can be added to the revenue of the farm through poultry, should encourage many, who think that the hens are a nuisance, to seriously consider that end of the farm operations and see if they have not been a little negligent or a little ignorant of what has been going on in the hen house.

A Successful Fumigation.

Editor "The Farmer's Advocate":

Last summer my flock of hens, composed mostly of Barred Plymouth Rocks and Rhode Island Reds, were taken with some disease. They became pale around the head, moped around for several days, or sometimes even weeks, usually stood with the tail drooping, and the head almost buried in the feathers, but apparently always ready for food when it was offered. The droppings were light yellow in color, and when examined after death I found them terribly emaciated, while the liver was about twice its usual size and covered with little yellow spots. I was pretty sure the trouble was tuberculosis, and although I tried a good many remedies that were recommended to me, among them being muriatic acid, nothing did any good, and the hens continued to die, until out of a flock of between forty and fifty there were less than twenty left.

Our hen-house, although a good one as far as it goes, is too small for the number of hens we wished to keep and we had planned all summer to build an addition to it, but with the rush of other work it had not been done, and when we



Prosperity.

A herd of Holsteins grazing in a fertile valley in British Columbia.

lost so many hens we had about decided to get rid of the whole bunch, tear down the hen-house and plough up the ground under and around it and build over again. I had raised about a hundred chickens, which had been kept while small in coops in the orchard. When they got big enough to roost they went to the hen-house and were not there very long when they began to die, and when several of these half-grown chicks had died in the same way as the hens, I was about disgusted with the whole business.

One day, in the late fall, the thought struck me that I would burn some sulphur in the hen-house, and as I thought it could do no harm and might do some good I acted on the impulse. I chased the hens all outside, and filling an old iron pot with coals from the kitchen stove, I set it in the hen-house and on top of the coals I dumped about ten cents worth of sulphur, then went out quickly and closed the house up tight. This was about half past three in the afternoon, and I kept the hen-house closed until it was almost dark. The hens were huddled in a heap at the door, for the afternoon was chilly, and as soon as I opened the door they all ran in pell mell; such coughing and sneezing you never heard. Of course I opened up all the windows and doors, and the fumes were soon blown out. From that day to this (February 23rd) we have not lost one hen, and our flock of sixty, about forty of which are pullets, and the remainder what was left of the year-old hens are fine and healthy and are laying splendidly. Since they have had no other treatment am I not safe in saying that burning the sulphur or else the fumes of it which they inhaled when they ran in, were the means of ridding my flock of disease?

Wellington Co., Ont.

MRS. J. WILKIN.

HORTICULTURE.

The Farm Hotbed.

Editor "The Farmer's Advocate":

As spring approaches farmers naturally turn their thoughts to the garden, which is the first spring work. Every person who has a garden should have a hotbed of a size to suit his needs. Two or three standard-sized sashes, which are six feet by three, are plenty for the average farmer's hotbed, with a cold frame for transplanting the young plants. There are many different ways to build a hotbed, but anyone who can handle a saw and hatchet can make one and the lumber used can be that available on most farms. A hotbed should face the south with protection at the north. Where cedar logs are plentiful, a splendid cold resisting frame can be made after the fashion of a log house, letting the logs in front down into the ground to give the proper slant for the sashes, but inch lumber and two by four scantling will make a good frame, having a four-inch sawdust-stuffed wall and banking with soil to the top to conserve the heat. The sides of the hotbed should extend above the ground about one foot in front and nearly two feet at the back, to carry off the rain water. The ground inside of the hotbed frame should be excavated eighteen inches deep, and if the subsoil is not of a loose porous nature an underdrain should be put in to carry off the water. The bottom of the hotbed should have nearly two feet of horse manure with four inches of soil on top. Before putting in the soil tramp the manure solid and water with hot water to start heating.

Soil for a hotbed should be rich, light loam, well filled with humus and free from weed seeds. The top of the frame must be bevelled to the slope of the sides so that the sashes will fit down smoothly, overlapping an inch all around.

Cold frames can be made much more cheaply than hotbeds, a single wall being sufficient and cotton sash for covering at nights, but cold frames should be at least twice as large as the hotbed. In this climate, from the middle of March to the first of April is early enough to sow the seeds of the following vegetables and flowers: Cabbage, cauliflowers, celery, tomato, lettuce, and asters, stocks, balsams, verbenas, phlox or any other vegetables and flowers that can be transplanted. Cucumbers and water-melons may be started in the hotbed in paper pots and in transplanting remove the bottom of the pot. The most important things in the management of a hotbed are proper ventilation and watering. Always water as early as possible in the morning of a bright day, and give ventilation so as the top of the soil will be dry by night. It is not necessary to water every day and water should be applied with a very fine nozzle sprinkling can to prevent washing or making the soil muddy. Have a thermometer in the hotbed and regulate the temperature. To keep away insects sprinkle the soil with wood ashes and slack lime and a little black pepper. In about three or four weeks after sowing the seed the young plants will be large enough to transplant into the cold frame. They should be planted about four inches apart each way. The

advantages of the cold frame are: You can have the plants strong and stalky before setting them out in the open and the insects are more easily destroyed than in the open garden. After the plants have taken root in the cold frame, "keep them on the dry side." This will make them grow a good root and when they are removed into the open garden, in about two or three weeks hence, the plants will start without drooping.

When the hotbed is empty it can be put to other uses, such as growing mushrooms or radishes and lettuce. I think if farmers would once try a hotbed they would never be without one again.

THOS. SOMERTON, JR.
Lanark Co., Ont.

Conditions Governing Apple Scab.

Editor "The Farmer's Advocate":

Since the appearance of the article "The Prevalence of Apple Scab in Ontario" in 1913 by Lawson Caesar, we have been led to think a great deal as to the applicability of the reason therein set forth to the conditions which have come under observation in 1913. We do not presume to place any opinions we may have against the conclusions of as careful an investigator as Mr. Caesar, but the results of spraying have been so variable in 1913 that it would appear that local conditions in many localities, if not predisposing causes, were at least accentuating causes of the virulence of the attack of this fungus on the crop. Among these conditions aside from thoroughness of spraying may be elevation of orchards, drainage, exposure to effects of frosts, etc. Why the defects in such a large percentage of apples as the russetting of the Calyx and particularly in Baldwins and Greenings? Why the unsightly defacements on the sides of many, not the ordinary black scab (*fusicladium*) but a dried, rusty, hardened surface producing misshapen, lop-sided apples, due to a fungus apparently not unrelated to the scab.

May I submit below my record of general weather conditions in this locality attendant on spraying periods in 1912 and 1913.

1912.

First spraying:

April 18, day cloudy and chilly.
April 19, fair and cool.
Intermediate days between 1st and 2nd spraying.
April 20, 21 and half of 22, fair and even temperature.
Part of 22, cloudy, followed by rain.
23, 24 and 25, fine and springlike.
26, cloudy with some rain.
27, fair and cool.
28, fair in forenoon, rain towards evening and at night.
30 to May 5, fine even temperature.
May 6, humid; 7, thunder showers.
May 8, 9 and 10, fine.
May 11 and 12, cloudy and cool.
May 13, snowing most of day.
Second spraying, early apples May 14th.
Second spraying, later apples May 19th.
May 15 to 18, wet.
May 19, fair.
May 20 and 21, hot and sultry; very humid.
May 22 to 27, fine and warm.
May 28, cloudy and warm.
May 29, cloudy and cool.
May 30, fine.
Third spraying: May 29 and 30.

1913.

First Spraying: Monday and Tuesday, April 14 and 15. Fine and even temperature till Friday 18, then cool, continuing cooler, and terminating in frost on the 21st.
In the intermediate period to May 5 and 6, when the 2nd spraying was given, there were 13 days fine weather; three fair and cool; two cool and clearing after rain, and two cloudy and wet, but cold.
May 5, fine.
May 6, fine but cool and continuing cooler till the 9th, when a heavy frost occurred, followed on the 10th by another frost producing one-quarter inch of ice.
May 11, cool.
May 12 and 13, partly fair, becoming cloudy with rain on 13th.
14, fair and cool.
15, easterly wind, cloudy with thunder showers in evening.
16 to 22, mostly cloudy with rains and variable temperatures.
Third spraying: early apples, May 22nd.
Later apples, May 28th.
Weather clearing after 28th.
May 23, 24 and 25, fair.
22, 26 and 27, cloudy with rain on last date.

Now, while this record bears out the condition to which Mr. Caesar attributes the prevalence of the scab in 1913, there were also some conditions similar in 1912, for from May 15th to 18th and also May 20th and 21st were wet, the latter two dates showing very humid weather, but followed by a period of fine, warm weather

until May 28th. There was no frost in this period in 1912.

The second spraying was due here on May 3rd and 4th. Peter McArthur, my neighbor sprayed on the 3rd, sprayed thoroughly, and was much disappointed with the results, which he feels convinced were due to the frost. The fourth of May was Sunday, and so rapidly did the blossoms expand that by Tuesday, the 6th, the corollas were almost ready to spread. This may have had some effect in preventing the spray solution from doing as effective work in some orchards as if applied earlier, and yet in some of these orchards were cleaner apples than or some sprayed on the third or earlier. On the night of May 8th a severe frost accompanied by a strong westerly wind occurred. On the morning of the tenth over one-fourth inch of ice was found on many water surfaces. Mr. Caesar says in his article that in Peel County sprayed orchards were almost entirely free from scab, and only ten to 40 per cent. of unsprayed fruit was attacked by the disease. I have no record of weather conditions in Peel County, but Dr. H.G. Reed, of Brampton, informed me on May 29th that no frost had appeared in their locality on the date above referred to. The other weather conditions may or may not have been the same, but it is hard for us to dissociate the frost from those conditions which made the scab so prevalent here. If not a contributing cause of the growth of the scab fungus, may it not have produced a weakened condition of the foliage or embryo fruit that may have permitted an easier development of that fungus during the humid weather of the 16th to 22nd, or may it not have had some physical effect on the spray as it adhered to the foliage and blossoms which would produce opportunity for scab spores to develop? Together with the later frosts of June 8th and 9th which in this locality cut off our corn and potatoes; may it not have had some material part in producing the russetting and unsightly deformities on many of our best apples? The percentage of No. 1 apples in our Association was so small we are almost ashamed to publish it, but it varied from 3.2 per cent. to 33 and one-third per cent. Another noticeable feature in the several orchards was that on orchards which had been thoroughly sprayed in previous years the percentage of good fruit was smaller than on some which had not been sprayed before 1913. Whether this is a mere incident or otherwise we cannot say, but it is a fact.

The great question is, what is the remedy for overcoming defects due to conditions such as obtain in seasons such as 1913? When the blossoms remain on the trees for such lengthened periods and spores have opportunity to develop what can we do? Has science no remedy? When the stamens of the blossoms have performed their functions and the corolla still adheres and promises because of weather conditions to adhere for twice the normal period as in 1913, would it destroy bees to give a third spraying at this time? Does the nectar continue to be present when the stamens have performed their functions?

Then are we always getting brands of arsenate of lead on which we can depend? This may be a factor prejudicial to the production of good apples.

The season has shown us how little we know in practice and our dependence on the scientist. How much farther can he take us in the solution of these difficulties?

Middlesex Co., Ont.

CHAS. M. MACFIE.

THE APIARY.

A Simple Device for Melting Cappings.

Editor "The Farmer's Advocate":

This article describes a simple appliance for melting cappings within the reach of everybody and beneficial to all, leaving honey as good or equal in quality to any known method, and at the same time preparing wax fit and ready for the market.

My plan requires an oil stove with two or three burners, four or five large bread pans for melting the wax, enough crocks or containers to hold the quantity required to melt, several squares of cheesecloth, a bottomless box, and a strainer consisting of a square wooden frame with small nails placed in such a manner that one is able to hook on a piece of cheesecloth a little larger than the frame, the corners of which should project two or three inches. Taking for granted that all have gone to the trouble to have their cappings well drained and stored for time of melting, we commence our work by placing two or more large pans heaped with cappings on the stove with fire at full blast, first adding a quarter of a cup of water to each pan to prevent scorching and to allow for evaporation of the honey. It is necessary for one to do nothing else but watch the pans and, as the wax commences to boil, turn off the heat a little, so it

will not scorch. Then continually move the fragments of wax to the heated portion of the liquid. As the wax becomes hotter, lower the fire until all the wax becomes thoroughly melted.

At this period remove the pans, having two or three others ready to take their place. Allow the melted wax to settle from three to five minutes. Now take the strainer and place it over the container, resting it on the sides of the bottomless box, which is used for the purpose of keeping the cheesecloth out of the liquid, and also that the amount of liquid in the container is at all times visible. When pouring the wax you will find the liquid quite separated from the sediment and by placing a knife at the lower corner of the pan in such a way as to stop the sediment you will find the liquid will run off readily. A ten-pound crock makes a good-sized container, but a larger container is liable to spoil the cake of wax.

The liquid being now poured off, pour the sediment off also. By slowly moving sediment to a little mound in the centre of the cheesecloth it becomes quite well drained, and after sitting for a few minutes dump the refuse into a container to be rendered by the wax press. If refuse is not removed too soon, the cheesecloth is fit for use for three or four times. Having two frames in use will keep one man steadily straining. When letting the liquid stand place a paper and blanket over each container if the weather is at all cool. By so doing you allow the wax to thoroughly gather into a perfect solid, free from refuse.

On separating the honey from the wax after it becomes cool have container ready for the honey and allow your wax to drop into a separate container, as some sediment is likely to drain off of the very bottom of the wax. By slightly heating the honey once more the sediment is readily separated. Now place the cap of wax in a tube of water to free all honey and remove to dry. With this method I use from 100 to 200 pounds. Fewer appliances would do for a smaller amount.

If the honey has not been overheated it will be a dark amber, very little flavored by the heating, a little thicker than the ordinary product, and finds a much better sale for confectionery purposes than any of our spring honey.

Middlesex Co., Ont. W. F. ABBOTT.

Saving Wax in the Apiary.

Editor "The Farmer's Advocate":

When we think of the vast amount of money that has been made during the past from the production of honey, we often wonder how much more might have been made by the saving of the waste wax around the shop and bee-yard. It is hardly necessary for one to say that wax is a secretion from the glands of the abdomen of the bee and while its production is largely voluntary, it requires the consumption of large quantities of honey to produce it. We have various estimates by scientific men, ranging from six to sixteen pounds of honey to produce one of wax. The larger amount of honey consumed in its production, combined with its various uses, makes it one of the valuable by-products of the apiary. It has many uses in the commercial world where no other material can be substituted, and in our own calling other substitutes have been used but have failed. Nothing takes the place for comb foundation of the pure beeswax and at present wax is in good demand on the market from 32 to 35 cents per pound.

The cappings from extracted honey are perhaps the greatest source of production, as they are nearly pure wax, and when carefully rendered produce the purest and best quality of wax. Old combs that for one reason or other have become undesirable for further use and patches of drone comb cut from the corners of the regular brood comb furnish a large amount of wax. Ten Langstroth frames will, when properly rendered, produce from two and a half to three and a half pounds of wax, or equal to 20 or 25 full sheets of medium brood foundation. Chemical analysis would show that there ought to be nearly four pounds. For this reason, there is no economy in using old crooked or broken combs and it will generally be found advisable to change's one supply of combs every eight or ten years, discarding one out of every eight or ten every year. The wax will pay for the rendering and the new foundation, and he will be able to produce a better, clearer grade of honey, and in an infected locality will be less subject to disease.

Another source of accumulation is the scrapings from hives and frames. The burr combs and top bars should be cleaned off every spring, and one would be surprised at the amount of wax that would be gathered together and thus save wax.

One would be surprised as he goes in and out among the beekeepers the amount of wax that goes to waste in the shop and in the bee-yard. I don't suppose one could estimate the amount

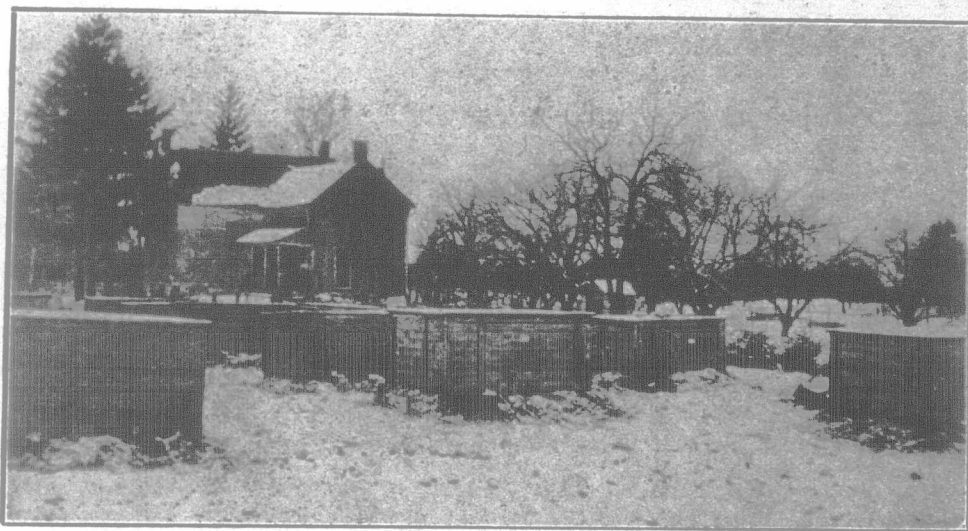
that goes to waste every year in the Province of Ontario. There are certainly big wages in saving our waste wax from year to year, but do not try to save wax by scrimping in the use of comb foundation, because for every cent you save in the cost of foundation you lose ten in the amount of honey secured and frequently more than that in crooked combs and inferior sections.

Now, as to a few hints on melting and clarifying wax. No bee-yard is complete without some kind of a solar or sun extractor set in a convenient place to drop the odds and ends into. Where there are large quantities of cappings other ways would be quicker, such as steam-heated vats, allowing the wax to raise to the top and be dipped off into pails, etc., or melting in large tins with water around it, but never allow it to boil. As regards old combs, I think there is only one proper way, and that is the use of a wax press of some description. I would not like to say which was best. There is big money in the use of a press. Use lots of hot water, and after the pressure has been applied, relax the pressure and press again and again till all the wax is out. It is also a good thing to break up the old combs and soak them in water, as when the cocoons are filled with water they will not absorb the wax before melting for pressing.

A word as to remelting would be timely. Wax must be gradually melted and never be allowed to boil, and cooled very slowly to have it clear. The mealy substance often found on the bottom of the wax cakes is caused by overheating, thus taking the oily substance from the wax. Never use iron vessels for setting the wax, as it discolors it.

Oxford Co., Ont.

JNO. NEWTON.



Winter Quarters.

The bees are wintered outside in W. F. Abbott's apiary.

FARM BULLETIN.

Poor Sires Useless.

We recently read in a leading dairy journal of a man who wished to purchase twenty head of registered Jersey cows. In the letter of enquiry he stated that these cows must have an average production of fifty pounds of milk each per day. He was right in setting a high standard. This may have been a little too high, but the ridiculous part of the proposed transaction was that to mate with these cows he asked for a bull to head the herd, said bull to be "a cheap bull." What a man with a herd of such high standing would do with a cheap bull no good dairyman could understand. It would cost a nice sum of money to purchase twenty cows of any breed that would average fifty pounds of milk each per day and it would certainly be the height of folly to buy a scrub sire, because as the sire is generally half the herd, it is more than likely that heifers from the mating would not produce more than thirty pounds daily and possibly the second generation would run down to twenty pounds.

Spending a large amount of money for females and then spoiling the whole outlook by purchasing inferior male animals is one of the worst forms of business the dairyman can try. Far better would it be to buy a few expensive females and spend extra money in the sire, looking to improvement through breeding and keeping the good heifers, than to spend a very large sum in a large herd of high-producing females and ruining all chances, of raising the standard of the herd by selecting a "cheap," nondescript cull, from which it would not be advisable to keep females for breeding purposes, and it would do more damage in the herd in one year than could be repaired in several of judicious breeding thereafter. Many men starting in the dairy business operate upon a basis much like this man. It means greater expense to them and smaller returns in the end. By all means get the good

cow, but never, whether the herd is large or small, or composed of the gilt-edged, high-producing females of the more common class, purchase an inferior sire. Look to him more than to the females for improvement.

New Zealand's Progress in Dairying.

The New Zealand Dairyman, the largest dairy journal published there, recently made reference to what Canadians thought of the rapid increase in cheese making in that country. The reason Canadians doubt the figures given in this increase, they give as the fact that we in this country must stable our cattle, at least, six months out of the twelve. The increase in cheese production in New Zealand has been astounding. The output, according to the journal named, has increased by 770 per cent. in the last seven years, and no man seems able to foretell how much this may increase during the next seven. In New Zealand the soil is very fertile and the cattle remain outside the year round, but they do not give these two reasons as being the only ones affecting cheese production. Dairy men in that country have for years foreseen the inroads which the margarine trade was likely to make on the butter demand, and during the last few years, and at the present time, factories proposed have been nearly all cheese factories, and very few butter factories.

Dairy men in that country look for a wider market, and a greater increase in the demand for cheese than for butter. Right here we might mention that this is another good indication of what would happen in this country if Oleo and butterine were permitted to enter here or manufacturing concerns get the right to put this product on the market. For the safety of our butter industry this imitation product should never be allowed in this country.

Judging from the figures on the increase and the rapid strides cheese production is making in New Zealand and also from conditions in this country where the cheese factory is being gradually driven out of business, it would seem that our dairy men must turn their attention strongly to butter. Of course, a good deal of cheese will still be made,

and perhaps in a few years when people have been educated to eat more cheese, there will be a greater demand, as the New Zealand producers believe. But for the present the butter business seems to be gaining favor, seeing that it leaves the dairyman skim milk for his calves or hogs which he is beginning to see is a very important consideration in the general welfare of his farm.

If firms in this country depend more largely than heretofore upon the butter end of the business, it is doubly necessary that all imitation products be excluded. Competition in dairy products is already keen, and from the fact that such countries as New Zealand and Australia are rapidly developing their dairy industries and the climatic conditions in those countries make it possible to turn out a cheaper product at a profit, it is readily seen that our dairy men and the heads of dairy industries in this country must be wide awake, doing their best to keep the Canadian dairy industry one of the leading industries of this country, and second to that of no other country.

Many people who run separators find that there is more or less loss of fat in the skim-milk upon certain occasions. Prof. C. E. Lee gives six causes for their loss. First among which he says, the separator may not be standing level and upon a firm foundation. Secondly, the bowl may be out of balance and vibrating too much in operation. The third reason, he gives, is one which we believe is quite common, the bowl may not be operating at full speed. It must be kept up to the speed indicated in the directions which come with the separator. The fourth cause of loss he believes is skimming milk that is too cold. To get all the fat it should be separated after each milking. In some cases loss results from the cream outlet being partially clogged, due to improper cleaning, and the sixth cause he names as the bowl being either too high or too low. When too low it is due to the parts being partially worn or to defects in readjusting.

Those operating separators should make it a point to see that all these conditions are kept right with their machines.

He Would Shun the City.

Editor "The Farmer's Advocate":

In a recent issue there appeared two very interesting articles; one by "A Hired Man," the other by Mrs. Hopkins. The first asks a question; the latter's purpose is to "knock" and find fault with men. One would like to reply to both, but after consideration I believe it is best to let Mrs. Hopkins "knock" away and try to answer the one who sincerely desires help.

The hired man is debating whether or not to go to the city, and some of our farmer friends are urging him to go. Truly the city does look fair to those who have never lived there. "Far away hills look green." When one visits Toronto and sees the fine residences in Rosedale, Parkdale and the beautiful parts, he must not forget that while these are mansions a few blocks away may be seen much different conditions. One may put this down as a fact that only capitalists can live in luxury, and only one in a thousand is a capitalist.

Again it is said that farmers work such long hours. A few farms have adopted the eight-hour day; some have adopted the nine-hour day, but a large majority force their employees to work for ten hours each day. To get to work at 7 a.m., a man must be up at 5.30 a.m. Some may not have to be around quite so early, but generally the workman lives at a distance from the factory. He stops work at 6 p.m., but it is 7 p.m. or after before the toiler is at home and ready for his evening meal. This is for every day in the year, while the farmer takes his ease some parts of the year. Farmers certainly work hard during haying and harvest, but aside from that they only work enough to keep in good health. And before passing let me remind all our farmer friends that the city man leads a humdrum existence, the same job and the same place day in and day out, while we in the country have a great variety; our shop changes from season to season, day by day, and we have a different job nearly every day.

A hired man quotes an instance of one man who went to the city and became wealthy in five years, "One swallow never makes a summer." How many city people never become even fairly well off! How many live poor all their days, slaving to make enough to keep soul and body together!

It is said that there are so many more chances to reach the top in the city than in the country. Can this be proven? A man starts to work in a factory with one hundred or more other men. He may work for many years before his gang boss or foreman is either promoted, resigns or dies, to leave a vacancy. Even then there will be many applicants for the position, and even the best man does not receive promotion. There is a lot of red tape in factories as well as in politics. Many are the aspirants but few attain highest positions.

The city worker has to choose between two evils. Either to take a cold lunch to work or go to a restaurant. Most men cannot walk home and back to work again in the noon hour, and they cannot afford too many car tickets. So some take a lunch, and others go to a cafe. Farmers ought to be grateful that they have a clean, hot, nourishing meal at noon, while many of their fellows are munching cold sandwiches or having soup made of the day-before's scraps.
Perth Co., Ont. "SUBURBANITE."

Power for Cutting Wood.

A few days ago we met one of our old subscribers and in a short talk with him he told us that he was in the city getting some repairs with which to make his engine ready for the business of sawing wood for summer. A short time ago a group of farmers in his neighborhood clubbed together and purchased a steam engine with which they do their own silo filling and other work requiring considerable power. The mention of the wood pile brought back vivid recollections of a large pile of dry limbs and an old buck saw to the writer. Getting summer wood cut the old way is no "snap," to use the hired man's expression, and working up the wood pile is one of the best reasons why a farmer should have some kind of power. These men in the locality mentioned change work and cut the wood for the neighborhood in a short time and with less expense in the long run and surely with much less back-aching. There are so many classes of work on the farm which require considerable power that it would pay in many cases outfits and be prepared to do all kinds of heavy for neighborhoods to band together, purchase work quickly, easily and efficiently. Think of this when cutting the summer's wood, when grinding or cutting feed to tide over the rush of spring work, when waiting for the outfit to fill silos next fall, and at dozens of other times during the year. Power farmers must have.

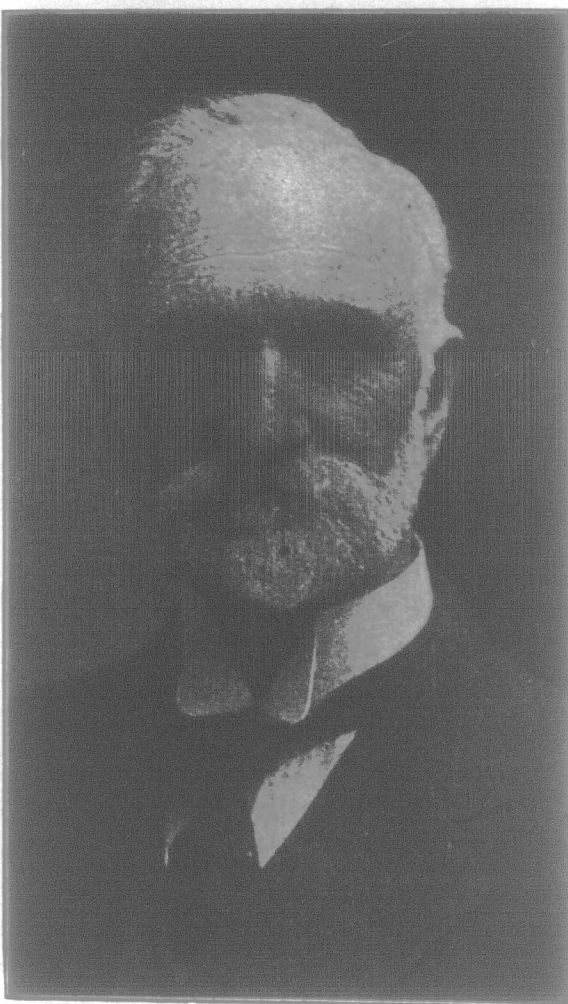
Manitoba Legislates for Horse Breeders.

The Stallion Enrolment Law as on the statute books in the Province of Ontario has led, during the last season, to considerable discussion and controversy, which in some cases was somewhat animated. However, other Provinces have not been intimidated by this little flurry of objection on the part of stallion owners, for Manitoba has just adopted a law which in itself is more stringent than that now in vogue in Ontario. This law comes into effect on the first day of January, 1915.

The State of Indiana is not the first State of the Union to adopt a stallion law. Their's became effective only recently, but other States of the Union have had laws pertaining to horse breeding upon their statute books for a number of years.

With reference to the law as adopted in the Province of Manitoba, the clauses embodied in the Act are quite similar to those which are incorporated in the Ontario Stallion Enrolment Act. The inspection is to be carried out by one or more official veterinary inspectors appointed by the Minister of Agriculture, and such examination shall be made at the owner's stable or at stated points.

The veterinary inspector shall, after the examination of any stallion, make a report on the prescribed form to the Department for the sub-



S. J. Lyons.

President of the Jersey Cattle Club.

sequent transmission to the board of registration. Such report shall deal with the health, general breed, conformation, etc., of the horse examined, and the desirability of having such stallion used as a sire.

The complaint often arises in the Province of Ontario that the decision of the judges as appointed by the management of the Stallion Enrolment Board is sometimes not correct, and that the owners of certain horses suffer sometimes owing to the lack of competence or ability of these men to impartially judge their horses. In the laws adopted in Manitoba the following protection is held out to the owner of the horse to be examined:

"Whenever a stallion has been rejected by the registration board, and the owner is not satisfied with the decision of such board, he may file a notice of protest with the Department against such decision; the said protest shall be accompanied by a deposit in the sum of twenty-five dollars and verified by the affidavit or statutory declaration of the owner, setting forth that, to the best of his knowledge and belief, the stallion in question is eligible and should be granted a certificate of enrolment, whereupon the examination of said stallion shall be made by an arbitration board, consisting of three experts, one ap-

pointed by the Department, one by the owner, and a third to be mutually agreed upon by the two first appointed. Such three experts to be duly qualified veterinary surgeons practising their profession in Manitoba, and registered members of the Manitoba Veterinary Association. In case all three or any two of said experts declare that the stallion in question is eligible to be enrolled under the provisions of this Act, then all the expenses of such arbitration shall be paid by the Department and the said deposit returned to the owner so protesting. In case all three or any two of the said experts declare that the said stallion is not eligible under the provisions of this Act all the expenses of such arbitration shall be forthwith paid by the person making the protest, out of the twenty-five dollars deposited; if there be any residue, it shall be returned to said protestant. In case the said deposit of twenty-five dollars is not sufficient to defray the expense of arbitration the person protesting shall pay any such further amount, not to exceed thirty-five dollars, within ten days after notification thereof; if he fails to do so he shall be deemed guilty of a violation of this Act, and the same proceeding may be taken as in the case of violation of any of the other provisions of this Act."

The Department of Agriculture consider the Act necessary and efficient, as all stallions purchased for public service in Manitoba shall be required to have the Department's certificate of enrolment.

For the purpose of the Act the following diseases are considered as hereditary unsoundness: Bog spavin, thoroughpin, curb, sidebone (when such unsoundness is due to defective conformation or structural weakness), also bone spavin, ringbone, cataract, periodic ophthalmia, roaring and chorea (springhalt).

The owner of any stallion standing for public service in Manitoba shall post and keep affixed during the entire breeding season, copies of the certificate of enrolment of such stallion, issued under the provisions of the Act, in a conspicuous place, on the inside and outside of the main door leading into every stable or building where the said stallion stands for public service. Such copies shall be printed in bold, conspicuous type, not smaller than pica. Two copies of such bill, poster or advertisement shall be sent by registered mail to the Department by the owner of the stallion so advertised, within ten days from the receipt of same from the printer, and nothing on such bill, poster or advertisement shall be of an untruthful or misleading character.

Upon the recommendation of the Board of Registration the Department shall issue a certificate of enrolment in three forms, according to schedules A., B. and C., which set forth the different breeding and qualifications of the animal as enrolled. A fee not exceeding \$2.00 shall be paid to the Department for first enrolment and a renewal certificate shall be issued annually on the surrender of the preceding one, for which there shall be paid to the Department a fee of 50 cents.

No person travelling an unenrolled stallion shall have route bills or breeding cards printed or posted, nor shall he charge or collect any service fees.

A New Director at Vineland.

As we go to press we are informed that F. M. Clement, B. S. A., has been appointed Director of the Provincial Government Horticultural Experiment Station at Vineland, in succession to A. D. Harkness, who has recently resigned. Mr. Clement is a graduate of the Ontario Agricultural College, where he specialized in Horticulture. He afterwards acted as District Representative for some few years in Elgin County, distinguishing himself in this capacity, and especially in reference to his attention to the horticultural branch of the work. Over a year ago he was appointed assistant in the Horticultural Department of Macdonald College, at Ste. Anne de Bellevue, which position he now holds. He will assume his new duties as soon as arrangements are made for his successor at Ste. Anne, which will probably be about the first of April. His whole training, taken together with the fact that he was born and brought up in the Niagara district, make him especially well fitted for his new duties.

Mr. Harkness in his letter of resignation announces his intention of going into fruit growing on his own account in the Niagara district, and this necessitates severing his connection with the institution with which he has been identified for the past three years. During that time very considerable progress has been made in the extension of the orchards, the setting out of new orchards and vineyards, carrying out of several experiments and getting many new experiments started, in addition to the installation of a Skinner irrigation system and many improvements in the grounds and buildings. He leaves the farm in splendid condition for the work for which it is intended, which is of a particularly detailed nature.

Cropping Systems and Fertility.

In discussing rotation of crops a writer in the *Journal of the Board of Agriculture* points out the fact that left to itself without change land in course of time gathers a fresh stock of fertility, but seeing that in many cases land in the beginning is exhausted from continuous wheat growing, crop rotations must be followed in order to maintain fertility and to bring worn-out soil up to a productive standard. It is said that the Romans introduced a rotation into Great Britain, being a three-course succession of wheat, beans and a bare fallow. This lasted in Great Britain until the beginning of the eighteenth century, when clover, turnips and other crops gave rise to what is now commonly known as the Norfolk four-course rotation, which consists of: First year, turnips; second year, barley; third year, clover; fourth year, wheat. A rotation something similar to this forms the basis of all British systems of arable farming, with the exception of very heavy soils.

The writer pointed out that the main reason for growing a series of crops is that the requirements of the various classes of crops grown on the farm vary greatly in their capacity to extract and utilize the various materials known as plant food. Some crops require much of certain classes of this, while others demand large quantities of food of another class. Some are shallow-rooted, some are deep-rooted and some occupy the land for a much longer period than others, that is, they have a longer growing season. All these things must be taken into consideration when working out a rotation. No matter how rich the land is in the beginning continuous cropping with one kind of crop sooner or later exhausts certain elements of plant food which the crop grown requires in largest quantities.

Permanent pasture is an example of continuous cropping, which many people rely on to build up soil and when a large number of stock is kept on this land it is generally possible to increase the fertility of the land to a very marked extent, but we must remember that in a pasture down for a large number of years the herbage constantly undergoes a change. This may be noticed in almost any field which is seeded down with a certain pasture mixture where other classes gradually work in to take the place of those originally sown. In the best rotations for the general farm one crop follows another in quick succession and where the rotations are worked out to best advantage labor may be employed with fewer rough seasons and fewer slack periods than when the major part of the farm is devoted to one particular crop.

In choosing rotation there are several determining factors of soil, climate, elevation, etc., and one must also keep in mind methods of farming practiced in the district and the distance from and demand of the markets. One of the most important considerations also is the production of feed for live stock. At the present time no farmer, unless he is specializing in some of the branches, like market gardening or fruit growing, can afford to lightly consider the importance of live stock in his work.

To those going into new districts it is generally wise to find out as much as possible about the style of farming carried on in these districts. If it is a progressive section of the country it is more than likely that some of the best farmers have worked out a system which suits the soil, climate and general character of the locality far better than one which could be devised on the spur of the moment by the newcomer. It would not be advisable to take everything as being the best practice, but it would seem probable that some very good ideas on the requirements of the soil in the way of cultivation and rotation could be learned from a talk with a few of the best neighbors in the locality. An old established custom may not be the best, but there must be some reason for its being retained and right here it might be well to say that a good deal more might be learned by most men through a little discussion of the farming situation in their respective localities and on their respective farms. If your neighbor gets good results from certain practice and it seems to fit in well with local conditions why not try it out?

The spring season is upon us and cultivators are keeping in mind which fields are going to be sowed to certain crops. If a suitable rotation has not already been established on the farm it is a good time to begin now. Plan the seeding operations this spring and follow out the system in the future, shifting the crops from field to field and making the shortest possible rotation with the kind of farming carried on. Three, four or five-year rotations are all good and from these three nearly all classes of general farming may be handled to advantage.

Tax Motors and Abolish Statute Labor.

The glowing embers which represent good roads throughout the Province of Ontario were again stirred into a flame by the meetings of the Ontario Good Roads Association held in Toronto last week. Many of the complaints which have been brought before the Highways Commission and many of the suggestions as well were repeated at these meetings. The automobile and heavy truck came in for a very large share of condemnation in connection with the destruction of the roads, but there were those as well who held that the small, narrow tires of the farm wagon were as instrumental in destroying the surface of the country roads as are the automobiles and trucks.

The County Engineer for York, E. A. James, did not think that roads should be classified, but that everybody should try and make every road the best for the general travelling public. The financing of the scheme was the problem which presented itself to the mind of Mr. James, but another condition which is equally difficult to overcome is that it is impossible to foretell the directions which the bulk of the country traffic will assume. Good roads are often constructed in the direction which the traffic at that time indicates to be the proper way, while in a short time the traffic is so much diverted that the roads are either built in the wrong place or else they are so over-burdened with traffic that they are inadequate to stand the strain.

The building of concrete highways was advocated by W. D. Flatt, of Hamilton, who dealt with trunk roads and believed them a factor in the solution of the rural transportation question. The motor truck presents itself to the mind of Mr. Flatt as the solution of transportation throughout the country and it is only the good concrete road that will continue complete under the heavy traction of the motor truck.

That good old-fashioned implement of older times, namely, the Statute Labor, was attacked and condemned by W. A. McLean, Chief Engineer of the Highways Department, and when the committee on resolutions brought in their report it presented the resolution "That the convention place itself on record as being in favor of the abolition or commutation of Statute Labor in organized townships." The following resolutions were also presented:

"That the Municipal Act and the Highways Improvement Act should be amended so that moneys raised by debentures for highway improvement purposes and the amount received from the Provincial Treasurer on account of expenditures under the Highway Improvements Act shall form a special fund to provide for expenditures under the Act.

"That the Government be asked to extend the provisions of the Highways Improvements Act to organized townships and have abolished or commuted Statute Labor and established a good organization for construction and maintenance.

"That we approve of the recommendation of the executive for an increase in cost of motor vehicle licenses and taxation of railways to form a fund for highway improvement purposes."

The following officers were unanimously elected for the ensuing year: President, J. A. Sanderson; First Vice-President, S. G. Squires; Second Vice-President, K. W. Mackay; Secretary-Treasurer, Geo. S. Henry, M.P.P.; Executive Committee, F. A. Senecal, T. E. Allen, R. H. Lush, J. J. Parsons, W. H. Pugsley, C. R. Wheelock.

Fire Underwriters' Convention.

Fifty mutual companies were represented last week in Toronto at the Mutual Fire Underwriters Association, which met at the Grand Union Hotel. It seems necessary that Ontario should have a fire marshal and the hope was expressed that the Government would see fit to make the appointment this season. The President, J. C. Dance, referred briefly to the amendment to the Railway Act, which made it unnecessary for a road to pay losses covered by insurance on property destroyed by fire resulting from sparks from a locomotive and declared that this was a most important question for the convention to discuss. V. G. Chisholm, of Lochiel, stated that an enforcement of the amendment to the Railway Act had cost the Glangarry Farmers' Mutual \$2,100 during the last year and claimed that it would tend to make the roads careless in operating and predicted that it would result in companies refusing to take any risks where buildings were situated along railroads.

The proper installation of ventilation shafts and the rodding of buildings were commended by the different speakers, and Prof. W. H. Day, of Guelph, predicted that it would not be long before companies would discriminate between rodded and unrodded buildings in this country and very much in favor of the rodded buildings.

Plum Culture.

The small amount of plums entering into the export trade of Canada and the desire of the consuming public to procure fruit of the best quality have led W. T. Macoun, Dominion Horticulturist, to prepare an exhaustive work known as "Plum Culture." The experiences of growers throughout Canada, as well as the results of the Central Experimental Farm, are incorporated into one comprehensive discussion of the whole industry, making it a book of rare value for horticulturists.

The appearance of this bulletin is timely indeed, as many of the subjects treated therein are based upon operations that will commence within the next few weeks. There is one thought brought out which might redound to the advantage of the fruit grower should he adopt such a system. This is the home nursery, where young trees may be developed and transplanted at any time. It is often more convenient to buy trees from the professional nurserymen, yet he who propagates plum trees by root grafting, crown grafting or budding for his own use should have a nursery in which to grow them until they are ready for the orchard. A good sandy loam soil, which does not bake, and is well drained, is best suited for this purpose and will grow the strong, healthy trees which are desired. The ground should be thoroughly prepared and the young trees planted about twelve inches apart in rows three feet apart. Cultivation should be thorough up to about the middle of July, when it should cease, as in colder climates especially, it is very desirable that the wood ripen well, and late cultivation would encourage late growth. It will be necessary the first year to cut off branches, if more than one develop from the graft, and at the end of the first year they may be transplanted into the orchard, if one-year-old stock is to be used.

The majority of plums as now planted are at least two years old and trees with proper care in this home nursery should be admirably adapted for transplanting into the regular orchard at this age.

The most convenient grafting season will not be here for a few weeks yet, but it is not too early to cut scions and be prepared for the bright warm days during the latter part of March and the first of April.

It is not wise to cut scions in too cold weather, as there is less sap in them at that time, and thus the chance of them drying out is greater than if they were cut in the autumn or later in the spring. Scions should be taken from healthy bearing trees. The wood of old trees is liable to be diseased, and if diseased wood is used it is likely to produce a diseased tree when grafted. The scions should be cut from the wood which grew during the season of 1913, that is when the scions are to be cut this spring. Older wood is not satisfactory. They may be kept in good condition in moss, sawdust, sand or forest leaves. These materials should be slightly moist, but not wet, the object being to keep the scions fresh and plump without their being in danger of rotting. They should be kept in a cool cellar which is not too dry and should remain dormant until ready for use.

The pruning of plum trees is not as important a factor as in the production of other kinds of fruit. It is better to err on the side of too little than too much pruning, as sometimes plum trees never recover from severe pruning. When the tree is young it should be pruned to a symmetrical top, with the main branches so disposed that there will be no bad crotches, after which very little pruning is necessary. The Japanese varieties are rampant growers and require more pruning than the Europeans or the Americans.

The varieties as best adapted for the different Provinces and different localities are so diversified that it would be an impossibility to discuss them in so short a space, but the author has made an exhaustive study of local conditions of all the different Provinces and fruit belts and the results are set forth in great length with the varieties thoroughly discussed. The bulletin may be procured free of charge by writing to the Publication Branch, Department of Agriculture, Parliament Buildings, Ottawa.

Grade Dairy Cow Sale.

People have faith in dairying for the coming season and in the dairy cow, if one may judge by the way grade cows of a good type are selling in the milk-producing sections. In Middlesex County, Ont., lately at auction sales they have been going from \$60 for farish cows up to \$100 for extra good animals. One North Dorchester Township lot of 18 head was sold by private deal for \$1,700, and a Westminster bunch of 13 cows brought \$1,200. The majority of these animals were grade Holsteins.

THE ROYAL BANK OF CANADA

Capital Authorized - \$ 25,000,000
Capital Paid Up - 11,560,000
Reserve Funds - 13,000,000
Total Assets - 130,000,000

HEAD OFFICE: MONTREAL
Branches throughout every Province of the Dominion of Canada.

Accounts of Farmers invited.
Sale Notes Collected.

Savings Department at all Branches.

36c. per dozen, selected eggs being lower, at 32c. to 33c.; No. 1 candled, 30c. to 31c.; No. 2 candled, 24c. to 25c.

Butter.—Now that Lent is here, the price of butter is apt to hold firm. Choice creamery was 27½c. to 28c. per lb., wholesale; fine, 26½c. to 27c., while second grades were 25c. to 26c. Dairy butter was firm, at 23c. to 24c. per lb. for Ontarios, and 22c. to 23c. for Manitobas.

Grain.—Oats were higher all round. No. 2 Western Canada oats were quoted at 44c. per bushel, ex store, in car lots; No. 3, 43c. to 43½c., and No. 2 feed at 42½c. No. 3 American yellow corn, 72c. to 72½c.

Flour.—Manitoba first-patent flour was quoted at \$5.40 per barrel, in bags; seconds being \$4.90, and strong bakers', \$4.70. Ontario winter-wheat flour was firmer, at \$5 to \$5.25 for patents, and \$4.50 to \$4.75 per barrel for straight rollers.

Millfeed.—The market for millfeed was unchanged. Bran sold at \$23 per ton, and shorts at \$25 in bags, while middlings were \$28, including bags. Mouille was \$30 to \$32 per ton for pure, and \$28 to \$29 for mixed.

Hay.—Prices were about steady. No. 1 pressed hay, car lots, Montreal, on track, was \$16 to \$16.50 per ton, while No. 2 extra good was \$15 to \$15.50, and No. 2, \$13.50 to \$14.

Seeds.—The seed market was steady. Dealers bid 4c. to 7c. per lb. for timothy, at country points. Alsike is about the same as a year ago, being \$7.50 to \$9.50 per bushel of 60 lbs. Red clover was lower, at \$8 to \$9.50 per bushel.

Hides.—The market for hides was up all the way round. Quality was quite poor. Beef hides, 13c., 14c. and 15c. per lb., for Nos. 3, 2 and 1, respectively. Calf skins, 17c. and 19c. for Nos. 2 and 1, and lamb skins, \$1.20 to \$1.25 each, with horse hides ranging from \$1.75 for No. 2, to \$2.50 each for No. 1. Tal- low sold at 1½c. to 3c. for rough, and 5c. to 6½c. for rendered.

Buffalo.

Cattle.—Excessive run last week, there being an especially large supply of medium kinds of shipping steers, causing the trade to decline from 15c. to 25c., and, in some cases, on steers averaging from 1,100 to 1,200 lbs., on the plain order, more. Approximately 50 loads of steers suitable for Eastern demand were on the market the opening day of the week, and these steers were taken mainly by Swift, Armour, Morris, and Sulzberger & Son, for New York delivery. Best load on offer was a car of Canadian steers, averaging better than 1,400 lbs., bought on the Toronto market, and given a sixty-day grain feed, selling at \$9. Other steers on the good order ranged from \$8.75 to \$8.90. Best handy butchering steers sold from \$7.85 to \$8.35, there being few that were good enough to sell above \$8. Most of the steers coming now are on the warmed-up, half-fat order, and are being discriminated against. The feeder is in a dilemma, the question being whether it would prove profitable to keep these half-fed steers back and finish them up to the prime point, or let them come, with present prices, which are considered by some high yet. Next month the range cattle from the South-west—Texas more especially—will begin to move marketward, and these grass

steers will come in competition with the half-fat natives, with the result that the natives are drawn down to a lower level. Reports from Texas this year are that they had a mild winter, and that already there are plenty of pretty fat steers to come from the southern part of the State, down near San Antonio. Opinions are universal, however, that the real prime kinds will sell to much better advantage than the grass ones, and some believe that, notwithstanding corn is comparatively high, it will pay to put shipping steers on long feed, and have them finished up right by the latter part of May or first part of June. Then, again, some authorities contend that heavy steers are not so popular during the hot months, handy cuts being given the preference, and it is a question which sellers are passing up to feeders to act on their own judgment. All grades of butchering cattle, with the possible exception of fat cows, sold lower last week, and these eased off during the latter part of the week, showing a dime to fifteen cents decline from Monday, when they sold about steady with the week before. Heifers generally sold steady, the light, cheap kinds being in pretty good demand from the smaller killers. Very few stockers and feeders coming, and good quality 700 to 800 lb. feeders, are in strong demand, decent kinds of stockers selling very satisfactorily. Bulls are selling higher, in comparison, than any other kinds, these bringing steady values right along, and ranging from \$7.25 to \$7.50 for the fancy, heavy ones, the general range on sausage grades being from \$6.50 to \$7. Milkers and springers have been in light demand, and are selling weak, on account of the very cold weather. Week's receipts were 250 cars. Quotations:

Best 1,350 to 1,450 lb. steers, natives, \$8.75 to \$9.25; best 1,200 to 1,300 lb. steers, native, \$8.35 to \$8.75; best 1,100 to 1,200 lb. steers, native, \$8.25 to \$8.40; coarse and plain, weighty steers, native, \$7.75 to \$8; fancy yearlings, baby beef, \$8.25 to \$8.50; medium to good, \$7.50 to \$7.75; best Canada steers, 1,350 to 1,450 lbs., \$8.25 to \$8.50; best Canada steers, 1,150 to 1,250 lbs., \$7.50 to \$8.25; choice handy steers, 900 to 1,100 lbs., \$7.75 to \$8.35; fair to good steers, 1,000 to 1,100 lbs., \$7.50 to \$7.65; extra good cows, \$6.75 to \$7.25; best cows, \$6 to \$6.50; butcher cows, \$5 to \$5.50; cutters, \$4.35 to \$5.75; trimmers, \$4 to \$4.25; very common, old rims, \$3 to \$3.50; best heifers, \$7.35 to \$7.65; medium butcher heifers, \$6.15 to \$7; light butcher heifers, \$6.25 to \$6.50; stock heifers, \$5.75 to \$6.25; best feeding steers, dehorned, \$7 to \$7.25; fair to good steers, \$6.50 to \$7; fancy stock steers, \$6.75 to \$7; best stock steers, \$6.25 to \$6.50; common, light, stock steers, \$5.50 to \$6; extra good bulls, \$7.25 to \$7.50; bologna bulls, \$6.50 to \$7; stock bulls, common to good, \$5 to \$6; best milkers and springers, \$75 to \$90; medium to good, \$45 to \$50; common, \$30 to \$40.

Hogs.—Receipts of hogs the past week were 32,320, against 29,920 for the previous week, and 29,600 head a year ago. Prices the past week struck the highest level of the year, \$9.50 being paid for some light hogs about the middle of the week, packers paying up to \$9.40 for their weights. Saturday was the low day, packers getting the bulk at \$9.15.

Sheep and Lambs.—Lambs were stronger here the past week. Friday, one load of choice reached \$8.60, and the balance of the week tops sold from \$8.25 to \$8.50, with culls \$7.75 down. Sheep and yearlings were scarce and stronger, yearlings reaching \$7.60, while handy wether sheep brought up to \$6.60 to \$6.65, with ewes \$5.50 to \$6. Receipts for the week totaled 36,000, as against 33,800 for the previous week, and 21,200 head for the corresponding week last year.

Calves.—Top veals were \$13 the fore part of the week, and the last day prices dropped down to \$12 for tops. Culls mostly \$10 down, and fed calves \$5 to \$6.50. Receipts numbered 1,525, as against 1,515 the previous week, and 1,925 for the same week last year.

The Shorthorn sale to be held by Walter Pullen, R. R. No. 1, Beachville, Ont., promises to draw a large crowd looking for high-producing dual-purpose cattle. The sale is at 1 o'clock, March 10th. Look up the advertisement.

Questions and Answers. Veterinary.

Incontinence of Urine.

Young pregnant mare voids urine very often in very small quantities. This has scalded her between her legs.

W. J. H.

Ans.—This inability to retain the urine is due to a want of tone of the sphincter muscle of the neck of the bladder. Treatment consists in purging, injecting cold water into the rectum frequently, and giving 2 drams nux vomica three times daily. As your mare is pregnant, it would be unwise to purge her or use the cold water. Give the nux vomica, and she will probably recover, but there may not be any noted improvement until she gets on grass after foaling.

Miscellaneous.

Feeding Mixtures.

We have been feeding one of oil cake, one of cotton-seed meal, and two of bran, to milch cows. Do you think it advisable to substitute oats for bran at present prices; bran at \$22 per ton, and oats at 85c. per bushel?

D. W. C.

Ans.—If this signifies one pound of each of these materials, we would add a few pounds of oats without cutting down any of the grain ration fed. If it represents the proportions, we would replace half the bran with oats. Not knowing the kind of hay used, or whether roots and silage form a part, it is rather hard to say, but it appears that the protein-rich foods are rather high proportionately, and an additional amount of oats might render the ration more economical.

Cedar Posts -- Steel Silos.

1. Do you know the address of anyone who handles cedar posts? That is, anyone who is in the shipping business. I want a carload.

2. What is your opinion of steel silos? How long will they last? Will the acid of the silage injure the steel? How does the price compare with cement or wood?

R. A. S.

Ans.—1. Reliable agents are advertising in our columns. Write them, and get their prices on cedar posts.

2. We have had no experience on Weldwood farm with steel silos. Complaints have arisen that they freeze considerably, and corrode to some extent. The wood and cement silo predominates throughout the country, and steel silos do not seem to get a very strong foothold. A 12x30 foot straight cement silo, should cost one less than \$200. A stave silo will cost between \$125 and \$150, counting labor, material, and all. We cannot give you prices on steel silos, but you might be able to procure them from any firm or agent who is selling them. We ask our readers who have had experience with steel silos to express their opinions in these columns for the benefit of those who wish to construct silos.

An Economical Ration.

My cows are soon to freshen. They have been fed well all winter on roots, cut straw, and silage, with about one gallon of barley and oat chop per day. I have the following feed on hand, and I want to know what else I would require to make a good, balanced ration, to produce milk, at reasonable cost: Clover hay, alfalfa hay, corn silage, limited quantity; turnips, limited. Also chop; barley, 4 parts; oats, 5 parts; wheat, 1 part. I grew this mixture, and I find it yields well and makes a good meal. I can buy bran at \$24 per ton, and oil cake at \$2 per hundredweight.

F. J. E.

Ans.—If you had sufficient of these articles of food which you set forth in your question, it would not be profitable to purchase very much outside fodder. If you could feed 40 pounds of silage and 20 or 30 pounds of roots a day, another pound of oil cake, and a pound of bran added to about 5 pounds of chop, along with your clover and alfalfa hay, would make a very good ration indeed. It might be safe, however, to say that a pound of oil cake and a pound of bran added to your chop would be economical feeding, and as the roots and corn silage become scarcer, add another pound or two of bran. This, along with the alfalfa and clover hay in liberal quantities, especially of alfalfa, should make a good mixture.

Gossip.

R. C. Grandy, of Ida, Ont., writes that he sailed from St. John, N. B., February 19th, for Glasgow, Scotland, for a new importation.

It has been decided by the Directors of the Canadian Pony Society to publish Volume 1 of their Studbook this year. All owners of ponies not yet recorded are requested to send in their registrations at once if they wish them to appear in this volume. G. de W. Green, Parliament Buildings, Toronto, is Secretary.

G. de W. Green, Secretary of the Canadian Shire Horse Association, writes: "It has been decided by the Directors of the Canadian Shire Horse Association to publish Volume 3 of their Studbook this year. All owners of Shires not yet recorded are requested to send in their registrations at once if they wish them to appear in this volume."

Volume 31, of the Hackney Studbook of Great Britain and Ireland, has been issued from the press, and a copy received at this office, by courtesy of the Secretary of the Society, Frank F. Euren, whose address is 12 Hanover Square, London, W. The entries in this volume number 808, being 305 stallions and 503 mares, as compared with 893 in Volume 30. The alphabetical record of stallions' numbers from 12240 to 12544, and of mares from 22907 to 23409. The volume is, as usual, illustrated with photogravures of the champion Hackney and Pony stallion and mare of 1913.

Volume 16, of the Holstein-Friesian Herdbook of Canada, has been issued from the press, and a copy received at this office, by courtesy of the Secretary and Editor, W. A. Clemons, St. George, Ont. This volume contains pedigrees of bulls numbering from 12937 to 15725, and cows numbering from 18962 to 233000; also Record of Merit Vol. 12, for bulls and cows, and record of performance of cows and heifers that have qualified in the Canadian Record of Performance test from Feb. 1st, 1913, to Feb. 1st, 1913, numbering from 206 to 311. A record of performance index is also provided.

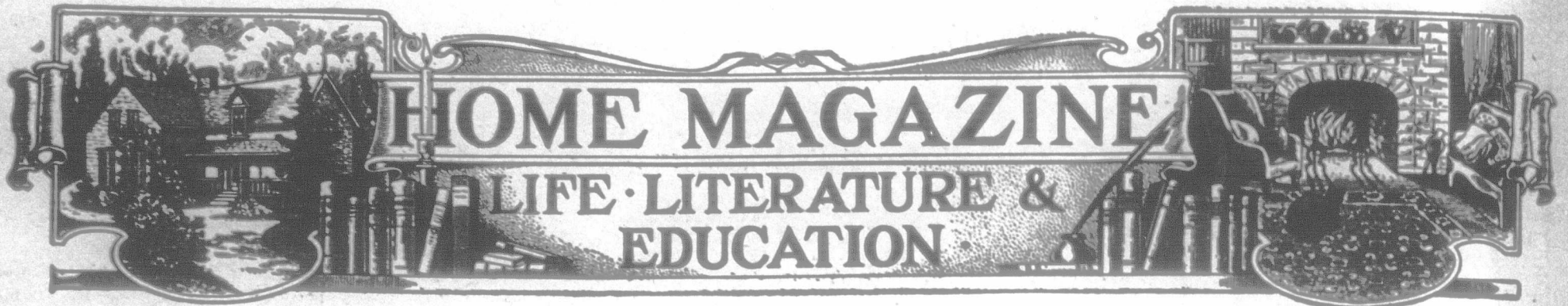
The Norfolk Holstein-Friesian Breeders' Club are offering sixty head of exceptionally good individuals in their sale in Simcoe, on Tuesday, March 10, 1914. Included in these sixty head of Holsteins are two-year-olds with seven-day records up to 22.07 pounds butter, and thirty-day records up to 89.65 pounds butter (Canadian record). Also three-year-olds with yearly records up to 19,611 pounds milk, and with butter records of 748 pounds. It is the object of this breeders' club to win the confidence of buyers throughout the country by offering individuals with good uniformity of breeding and high official records, as well as free from disease or any other undesirable characters. Write to J. Alex. Wallace, Secretary, Simcoe, Ont., and get full particulars in their illustrated catalogue.

A REMARKABLE DISCOVERY.

The efficacy of the old-fashioned household duties as means of physical development is again hinted at by this bit from Success:

"Physical culture, father is perfectly lovely!" exclaimed an enthusiastic young miss just home from college. "Look! To develop the arms I grasp the rod by one end and move it slowly from right to left.

"Well, well!" exclaimed her father. "What won't science discover next! If that rod had straw at the other end, you'd be sweeping."—Duluth Corn Journal.



Afterward.

There is one thing, O God,
I ask . . . When I am dead,
And high above my narrow home,
The clouds float overhead.

Let me not then forget
In dreamless hours of ease,
In immemorial years of sleep,
Earth's ancient symphonies.

I would remember still
The silver pomp of spring,
And all the rush of leaf and bloom,
The songs the wild birds sing.

Yea, and I would recall,
However bleak they seem,
The little sorrows of the world
In a long, lovely dream:

The old hopes that I lost,
The griefs that were like rain,
And the hushed anguish of my heart
When it was torn with pain.

Death may be dear, O God,
But Life is dearer yet. . . .
When I am dumb beneath the sod,
Ah! let me not forget.
—Charles Hanson Towne, in Harper's
Magazine.

Little Trips Among the Eminent.

LA SALLE.—(Concluded.)

Last week we left the men and women of La Salle's expedition huddled among their effects on the shore of the Gulf of Mexico. Here conclusions were quickly reached. It was agreed that Beaujeu should sail away with the "Joly," to France, and that immediately a search should be made along the shore for the triple mouths of the Mississippi. Defensive measures were also to be taken at once, for the Indians of the neighborhood promised to be, not only thievish, but hostile; the sick were to be nursed, and the problems of the new country to be grappled with. Already some of the company had died of disease, and one by snake-bite.

Realizing that the sooner the people were set to work the better, also that to find the Colbert (Mississippi) might require considerable time, La Salle established a new camp at a higher point, on what is now known as the Lavaca River, and called it by his favorite name, Fort St. Louis. Here the site was much better, and the journals tell of buffalo and birds to be had for the killing, and oysters for the gathering.

For a month he kept the company busy at cultivating the ground, but for some reason, "either because they were damaged by the salt water," as Father Le Clerq tells in his journal, "or because, as was afterward remarked, it was not the right season, neither the grain nor the vegetables sprouted."

Wood had to be hauled from a distance, too, so that a few of the Frenchmen were picked off by the Indians, but more serious was the distress caused by the diseases contracted at St. Domingo. A hundred of the men, we are told, died in a few days.

Finally things were somewhat in order, and on the last day of October, 1685, La Salle set out with fifty men to find the lost mouth of the river. At Fort St. Louis were left 34 persons, including the women and girls, a few hogs, two goats, a cock and hen, and a store of smoked buffalo meat.

Wearily at Fort St. Louis the months dragged through, then at the end of March a ragged company was seen slowly making way towards the fort. Upon

the air came the well-known call, then men, women and children rushed to meet the returning company, laden with meat, but sadly lacking in all else.

Pitiful as were the resources of Fort St. Louis, the spot must have been a haven of rest to the weary travellers, but a dark enough future had to be faced. It was absolutely necessary to secure supplies, and now La Salle formed the desperate resolution to go by way of the Mississippi and the Illinois to Canada (New France) to find them. No other plan was possible. The last vessel, the "Belle," had been wrecked, all her sailors drowned but six, and her cargo, consisting of 36 barrels of flour, clothing, and most of the tools, lost.

Twenty men were chosen, including La Salle's brother, his nephew, and Friar Douay, and a sorrowful enough preparation was made. "Each man," we are told, "labored with needle and awl to patch his failing garments, or supply their place with buffalo or deer skins. On the 22nd of April (1686), after mass and prayers in the chapel, the forlorn hope issued from the gate, each bearing his pack and his weapons, some with kettles slung at their backs, some with axes, some with gifts for the Indians."

Again there were adventures "by flood and field." Father Douay tells in his journal the whole story: of Indians who were hostile; of others who "wept for fifteen minutes in greeting" on seeing the Frenchmen; of narrow escapes in rapids; of the narrow escape of Nika, La Salle's faithful Indian, who was bitten by a snake, but saved by scarifying and drugs; of fine plains, rivers, herds of wild cattle, and fields of hemp and corn and cotton; of days passed, as the powder sup-

ply remained at Fort St. Louis, exploring the neighboring country, trying to cheer the dejected company, which, from 180 colonists, had dwindled to less than 45; then, once more he resolved on a last attempt to reach Canada, to secure the desperately needed assistance.

The sails of the wrecked Belle were cut up to make coats for the adventurers. Christmas was solemnly observed, and midnight mass was held in the chapel. When Twelfth Night came, all assembled in the hall and made a pitiful attempt to make merry, then when day dawned the five horses and the twenty men filed slowly down the hill and disappeared from sight. About twenty in all, including seven women and girls, were left at Fort St. Louis.

Not like conquerors went forth the tattered, strangely-arrayed party, chief among whom may be mentioned Abbe Jean Cavalier (La Salle's brother); his nephews, Moranget and Cavalier, a mere lad of seventeen; the good soldier Joutel; the Friar Douay; Nika, the faithful Shawanoe hunter who had been given to La Salle years before at Otinawatawa (near Hamilton) and had twice crossed the ocean with him. . . . Of different calibre from these men were the perfidious Duhaut; the surgeon Liotot, and three others whose names only live because of their ignominy.

Journals that you may still read, if you will, tell of the hardships of the journey, because of foul weather and suffering for want of shoes, but chiefly because of bickerings within the party itself.

A very foolish and trivial dispute appears to have brought matters to a

climax, a dispute over some buffalo meat precipitated by La Salle's somewhat hot-headed nephew, Moranget.

Together the disaffected plotted, and when the party for some reason separated for a time, Moranget, Saget (La Salle's valet), and Nika, were killed with an axe, in the dead of night, by the infamous surgeon, Liotot.

THE END OF SIEUR DE LA SALLE.

At his own camp, six miles away, La Salle awaited anxiously the return of the belated party. A presentiment of evil appears to have taken possession of him, for at last, too uneasy to wait longer, he set out with an Indian guide and the Friar Douay. "All the way," writes the friar, "he spoke to me of nothing but matters of piety, grace and predestina-

tion, enlarging on the debt he owed to God, who had saved him from so many perils during more than twenty years of travel in America. Suddenly I saw him overwhelmed with a profound sadness for which he himself could not account."

At last Duhaut's camp was neared, but when within sight of it the brave adventurer was shot by Duhaut and Liotot, who, crouching among the reeds, awaited him.

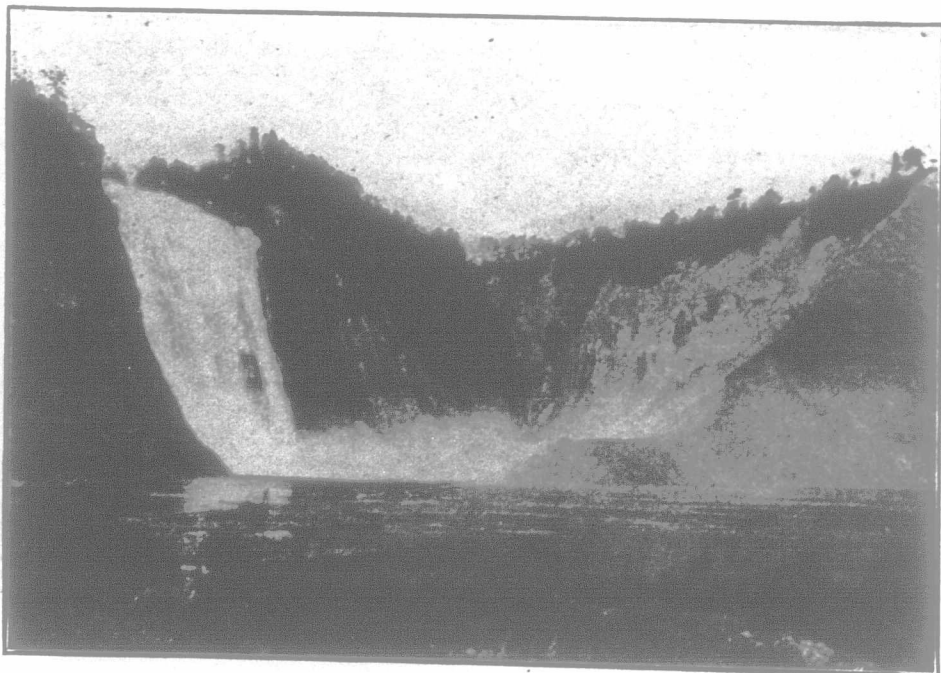
So, at the early age of forty-three, on the 19th of March, 1687, perished Rene Robert Cavalier, Sieur de la Salle, most remarkable of all the explorers whose names live in the history of America.

Like Cartier and Champlain, La Salle was a blazer of trails, a leader upon whose track should follow civilization and the uplift of a continent. His successes, which for the most part looked like colossal failures, measured against the almost unequalled obstacles which he had to face, were great, and yet, perhaps, even many of those obstacles were a little of his own making, or at least due to his strange, and, in some ways, unfortunate personality. At home with the Indians, he could make himself their friend or their great chief; with civilized men he was, as a contemporary said of him, a "sealed book," reserved, haughty, sometimes pitiless, at all times "demanding implicit deference, heeding no counsel but his own." A dreamer ever ready to attempt the impossible, restless, serious, ambitious, intrepid almost above all others, unconquerable as proud, never sparing himself, never sparing others,—and yet,—when one reads the letters of the man, and especially that one in which he expresses his distressful consciousness of his own shyness, the utter impossibility to him of speaking of the things within his soul, one realizes the humanness of the man, one understands why, sometimes, he failed where he might have succeeded. He could not inspire enthusiasm as did Champlain. He lacked somewhere the faculty to manage men.

When no news of La Salle was heard for so long, the brave Tonti left Michillimackinac on the 30th of October, 1685, to go to the mouth of the Mississippi in search of him, taking with him, at his own expense, forty men in canoes. In Holy Week the party reached the Gulf, but finding no trace of La Salle were obliged to return, nor did Tonti hear more of his beloved leader (to Tonti and a few others La Salle was ever a warm friend) until 1689, when two Arkansas Indians who came to Fort St. Louis on the Illinois, brought the sad news. "Such," exclaims Tonti in his journal, "was the end one of the greatest men of the age." "A man of vast intellect," adds Father Zenobius, "brought up for literary pursuits, capable and learned in every branch, especially in mathematics, naturally enterprising, prudent, and moral."

"His lonely and shadowed nature," says another biographer, "needed the mellowing sunshine of success, and his whole life was a fight with adversity."

Of La Salle's murderers and their traitorous associates, it is sufficient to say that nearly all perished miserably, murdered or killed during altercations among themselves. His few faithful followers—the Abbe Cavalier, Douay, Joutel, Tessier, and young Cavalier—who managed to escape, went on to Canada, arrived at Quebec on the 29th of July, 1688, and so took ship for France to tell the tragic story. Two years after La Salle's death, a Spanish ship discovered the Texas fort, but all was silent. Climbing curiously up the hill and entering the stockade, the Spaniards



Beauty Spots in Canada—Montmorency Falls, near the City of Quebec.

ply began to fail, absolutely without food. Some of the party, he records, deserted to the Ceniz Indians, who lived in dome-shaped houses forty feet high; one man was carried off by an alligator; then La Salle fell ill, and it was determined to return. Once more, on the 17th of October (August? It is not clear), 1686, the decimated party straggled a second time into Fort St. Louis.

A LAST ATTEMPT.

"It would be difficult to find in history," says Father Douay, "courage more intrepid or more invincible than that of the Sieur de la Salle; in adversity he was never cast down, and always hoped with the help of heaven to succeed in his enterprises, despite all the obstacles that rose against him."

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came upon as sad a sight as the world has seen. Dead bodies were everywhere, and each told its pitiful story of long wasting by smallpox, and final massacre by Indians. The entire camp had been riddled of everything that could be made use of. So passed into oblivion St. Louis on the Lavaca.

Skim Milk.

By Evelyn Endon.

Skim milk, buttermilk, and sour milk, are proved to be of very great value in the feeding of hens and pigs, but I wonder how many farmers' wives realize its value in the diet of the family. Of course, small children should have a good deal of milk until three and four years of age, and they also need the whole milk, and either additional cream or egg yolk or bacon fat, to supply the fat which is so very necessary. But for the average human being, milk is of great value, even without the cream, as an adult can get the necessary fat in a much cheaper form than in cream—in his beef or pork, and so on. Milk contains proteid, that valuable substance which we all need to mend our ever-wearing-away bodies, and recent experiments have proved that where milk is added in quantity to the meals, there is a natural lessening in the amount of meat eaten. The experiments were conducted in a large boarding-house, and skim milk was given to drink, and milk dishes were added to the meals. This result is important from two standpoints, the less cost of the food, and the greater variety introduced.

Milk may be added to the meals easily in vegetables, soups, and in milk puddings. Both are easily made, and are cheap, and can be varied to such an extent. Celery, onion, and tomato, on account of their high flavor, are preferred for soups, though all can be combined with potato or with each other. Tapioca, sago, rice, and bread, all can be made into attractive puddings, with varied flavorings. These latter can be cooked entirely with milk if one has plenty of separated milk—milk soups are so easily made. A white sauce is made with milk and flour, allowing a half tablespoon of flour to the total amount of liquid used. If an equal amount of well-cooked vegetable and vegetable water is used, is better to add a little butter or bacon fat or cream to make the soup richer, but if only a small amount of thick vegetable is used, and the rest milk, one scarcely needs the fat. It is usual to put the vegetable through a coarse sieve, but if the vegetable is finely chopped, this is not necessary. In fact, some prefer the vegetable left in pieces. Of course, one must season well—pepper, salt, and even whole spices. The water a vegetable is cooked in; may have some second vegetable stewed in it for the next meal's soup. These soups make excellent hot-supper dishes for school-children.

But buttermilk, we are just beginning to appreciate. Many who cannot drink ordinary milk, can drink quantities of buttermilk, both because it is more easily digested, and because of its flavor. It is recommended now for tuberculosis patients, and for all patients who need building up, while it is supposed to be the cure-all for intestinal diseases, the healthy, lactic acid germs crowding out all undesirable bacteria. Fortunately, many restaurants are now selling it. It has about equal food value with skim milk, which means that it has about an equal amount of that precious building material, proteid, as whole milk.

Sour milk is of similar value, and can be used in all cooking where its flavor does not annoy. With a little soda added, it can even be used for milk soups, especially tomato soup. Both sour and sweet milk can be used as the liquid of pastry to raise the food value. For flour mixtures, such as cakes and biscuits, sour milk and soda can replace usually about half the baking powder, and give very light results. Use half a level teaspoon of soda to a cup of milk, unless the milk is very sour.

An article appeared in one of our prominent papers speaking of "Skim-milk Farmers," but it is my humble opinion that skim milk is not nearly as much used on the average farm as it should be.

Hope's Quiet Hour.

Clothed with Humility.

Be clothed with humility: for God resisteth the proud, and giveth grace to the humble.—1 St. Peter, v: 5.

For many are crowned as saints by God, Whose graves unheeding feet have trod; Man judges by the outer life, God by the inner strife.

—F. S. Scott.

The wise man knew what was best when he said: "A man's pride shall bring him low; but honor shall uphold the humble in spirit"; and God has told us, through His Incarnate Word, that "who-soever exalteth himself shall be abased; and he that humbleth himself shall be exalted."

Real humility is as rare as it is beautiful. St. Peter tells us to be clothed with humility—as if it were a robe of honor—and St. Paul tells us to "put on" humbleness of mind.

Sometimes people do not even want to be humble, fancying that it involves a loss of self-respect and a refusal to recognize one's own powers. But that is certainly a mistake. When our Lord was filled with the consciousness of power—"knowing that the Father had given all things into His hands, and that He was come from God, and went to God"—He claimed the right of the Greatest to do the lowliest duty, and suddenly rose from the seat of the Master of the feast to wash the feet of His disciples. Then He quietly declared Himself to be their Master and Lord, and told them to do unto others as He had done to them.

We can see the glory of humility sometimes. We are filled with admiration when we hear of Dr. Grenfell's self-sacrificing work among the poor people of Labrador. He does not think it is a waste of his powers to leave the world of refinement and culture, in order to minister to ignorant fishermen. He does not hesitate to risk his life in order to save the life of a poor woman or a little child. He never considers any such ministry beneath his dignity.

God sees to it that Dr. Grenfell does not lose his reward, even in this life. Listen to the gallant doctor's own testimony. He says: "For enjoyment of life, body, soul, and spirit, I can only say each field of life I go into seems more delightful than the last. . . . I don't for a moment believe God intends His servants to have long faces, and if their work is a misery to them they ought to get out of it. For it cannot be where they are intended to be."

Let us not be content with admiring such men, let us try to copy them, rejoicing when we have the chance to serve others. This life is so short, why should we waste it in the attempt to exalt ourselves? Self-glorification is very apt to spoil the quality of our service. We are willing to work and give—if only people will pay us well, in money or in praise. We get discouraged if our work or gifts are unnoticed. We are hungry for advancement and the praise of men. There is little humility or beauty of spirit when our motive-power is boastful selfishness.

Thank God, it is not always so. I know, by experience, that there are many of the readers of this Quiet Hour who lay their gifts of love at the feet of Christ, without seeking any return of human praise. As a result of their kindness, many needy families and sick people have been cheered and helped. During the last week I received donations for the needy from four of our readers—two gifts of \$2 each; one of \$5, and one of \$1—for which I heartily thank the givers, and will lay the money out as wisely as I can.

Let us try to do good without claiming the reward of praise. Let us not only admire humility, but also make a real effort to obtain it. It is not an easy grace to win, and we must be willing to make sacrifices in order to secure this pearl of great price.

Let us consider some of the ways in which we may gain a little humility.

Perhaps we have been arguing about something and find ourselves in the wrong, but are too proud to confess it. This is one of the cases when he that

humbleth himself shall be exalted. I remember one occasion when I was in the right in an argument, and my neighbor followed me into a store one day on purpose to tell me that he had found out his mistake. I have respected him more ever since he showed himself humble enough to admit that he was mistaken. We all make mistakes, but some of us are afraid to own it.

Then there is the difficult work of taking the second place in any undertaking, and taking it pleasantly. We don't like to do anything unless we can outshine other people. Why are choirs noted for their crankiness? Is it not because each member thinks he deserves special praise? Two or three are singled out for the most important parts, and the others are jealous and dissatisfied. How poor an offering of song to send up with the songs of angels to God on High! If the singing is to be really beautiful, it must be humble—not spoiled by self-admiration.

E. T. Fowler, in one of her books, describes a woman as one of the rare people who are proficient on that useful instrument called the "second fiddle." She says that it is a great gift, and "the women who are content to play second fiddle, and make the best of it, give much sweet music to the world: there are no more essential performers in the orchestra of life than they. Do we not all know them and the soothing harmonies which they make—patient spinsters, kindly stepmothers, comfortable second wives: humbly and cheerfully taking the part allotted to them by the Great Conductor, and never struggling or straining after the first place. Are not all our lives richer for their music? And can we doubt that these blessed musicians shall take one day a leading part in that chorus which shall stand on the shores of the sea of glass striking the harps of God."

That is the secret of humility—taking the part allotted to each of us as a gift of love. Some are called to be leaders. It is not true humility to shrink back, as Moses did at first, pleading want, of eloquence. God, Who has called each one to his special task, is able to provide the necessary power. It is folly to be conceited because God has bestowed strength of body or mind, money, leisure, education, or high birth. These are talents, placed in a man's hand to be used for the service of God and man. They may be withdrawn at any moment, and may be recognized at their full value without any loss of humility, if they are known to be God's property.

We are very apt to put ourselves first, to feel that our personal success in the world is of prime importance. John the Baptist was satisfied to be only a voice declaring God's message, if only Christ were honored as the Messiah. "He must increase," said the desert-prophet of his great Kinsman, "but I must decrease." How hard it is to accept cheerfully a decrease in influence and popularity. How hard it is to be satisfied with a narrow life-like John the Baptist in his dungeon—if others are carrying on the work. It is not easy to forget one's own advantage and glory, putting Christ always first.

An artist once painted a picture of the Last Supper, and invited his friends to see it. They expressed great admiration for the chalice he had painted in the hands of Christ. The artist blotted out the beautiful cup, distressed that it distracted attention from the Face of the Lord. That was the natural humility of real love. If his work drew the attention of others away from his Master, it must be sacrificed.

It is so easy to be self-deceived. The public man, fancying he is working for the public good, may be really seeking popularity and selfish power. The preacher, forgetting God and sin-sick souls, may be eagerly desirous of being thought eloquent and good. We are apt to measure success by the world's standard, when we might better rejoice in an obscurity less perilous to our souls, praying daily: "From the unhappy desire of being great, good Lord, deliver us."

At our best, we are only instruments in the hand of God. Shall a stenographer, privileged to write down God's messages, try to steal the honor which belongs to Him only, or complain if another is chosen to transcribe the Master's words, and he is bidden to stand aside?

"Well, I, like you, should like to do a deed That men would speak of, and, not only that, That men would profit by. We cannot tell! Often we needs must grope within the dark. God lights us when He needs us."

DORA FARNCOMB.

Reflections of a Recluse.

By Sister M. Fields.

The morning was cuttingly cold; the windless, ice-fraught air, keen as a Damascus blade, swished straight to the marrow of the bone. A tortoise-shell cat lay stretched out frozen and dead on the snow. Thus, then, had been silenced those terrible cries which had arisen from time to time during the preceding night and at which I had shuddered and grown sick at heart. Cold, so cold was the night with its big hungry stars; and the cries seemed to come from far away—somewhere out in the snow; and a thousand frost-breathing excuses kept me safe and warm where I lay, and so I covered my ears to shut out the sounds and dozed and dreamed and seemed not to hear; but I heard.

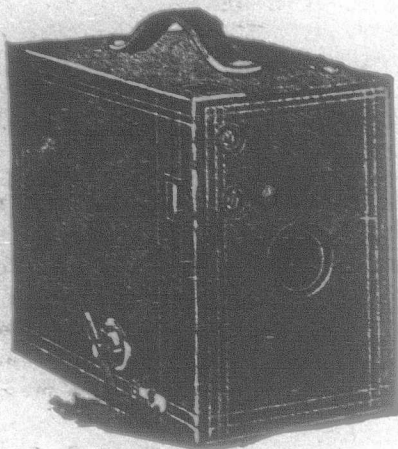
I'm sorry for it all, old cat; sorry for the negligence by which you were locked out from your warm home last night; sorry for the selfishness that heeded not your death-cries; sorry for the bitter death on the snow.

The milkman drove up to the door that bitterly cold morning. He alighted briskly from the wagon; he was warmly clad, a heavy fur cap with ear-flaps protected his head and most of his face from the cold: he slapped himself vigorously across the breast four or five times, and then proceeded to take in the cans of milk. Some little time elapsed before he reappeared, evidently he was getting thoroughly warm at the kitchen fire; perhaps, too, the maid offered him a cup of hot coffee. Glad, indeed, if she did; but I couldn't help wishing he would hurry out and start the horse. Unblanketed it stood, and moveless as a horse of bronze. If only it could have said, "Cover me before you go"; if only it could have called, "For mercy's sake don't stay so long, so very, very long. I'm freezing." But no! it waited in motionless silence. Perhaps it looked with weary envy at the dead cat; perhaps it desperately cursed the author of its waiting woe; perhaps, in dumb submission, harnessed, blinkered, custom-taught, it just stood still and suffered, knowing nothing better behind or beyond; but whatever "perhaps" may have dully gleaned within the mysterious citadel of life while the freezing creature waited, no slightest intimation thereof was made known when at last the clatter of cans and the breezy "Get 'em" of the driver brought the relief of action.

Perhaps suffering is inseparable from life as we know it, whether of man or of beast. But it is certain that much of the suffering endured by dumb creatures comes from the thoughtlessness, selfishness, greed, or cruelty of man.

Every structure is secure in proportion to the security of its foundation. And that society which towers aloft into the realm of the beautiful, the sentimental, the aesthetic, and yet lacks the basal qualities of justice and kindness must, sooner or later, totter and tumble and fall. And whatever justice and kindness may mean among mortals, surely in the sight of the Lord and Giver of all life, they must mean essentially the non-abuse of the power of the higher over the lower; the capable over the incapable; the eloquent over the dumb; they must mean reverence for life from the highest even down to and inclusive of the lowest; and they must mean that chastity of right and gentleness which regards even more the claims of those who cannot speak for themselves than of those who can.—Our Dumb Animals.

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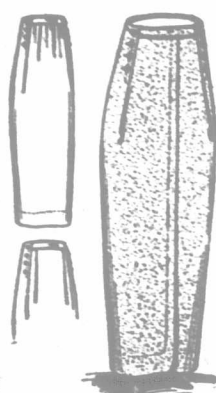
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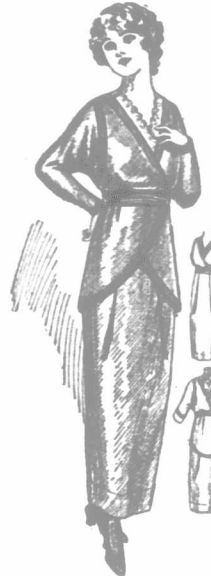
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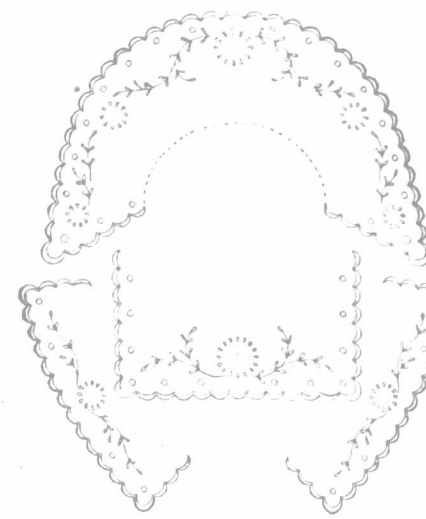
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Greenwood, B.C., Dec. 1, 1913.
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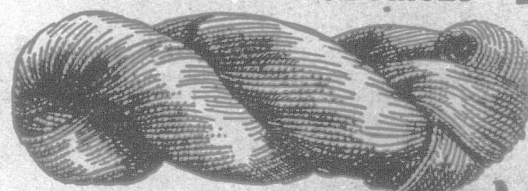
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74-A14. Here's a great buying chance in Women's Vests, made of heavy fleeced-lined cotton, high neck, and front opening trimmed with crochet edge; tape & raw string; long sleeves. Sizes 32 to 38. This is an unusually big value, and the price given is close to half regular value. Each 29¢
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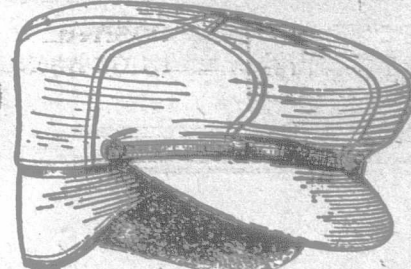
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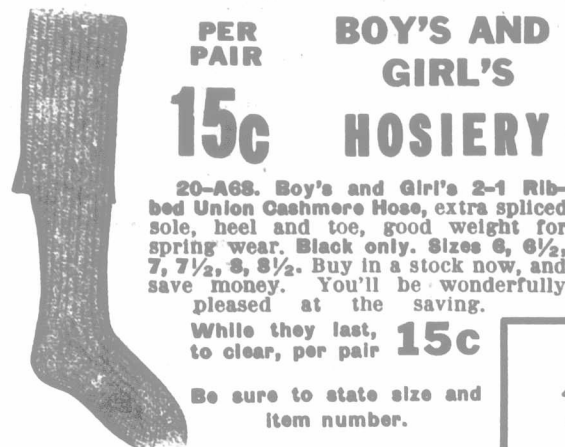
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The plates are the correct shape. They cut, turn and pulverize the soil where others

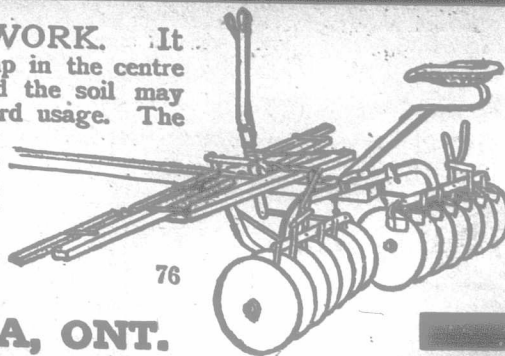
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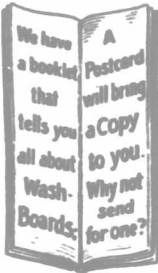
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New 2½ bushel cotton bags 30c each extra.

Prices of above postpaid, 1 lb. 30c, 2 lbs. 55c, 3 lbs. 80c, 4 lbs. 95c, 5 lbs. \$1.10, 6 lbs. \$1.25.

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The New Public Health.

"The Farmer's Advocate" Bureau of Public Health Information.

QUESTIONS, ANSWERS, AND COMMENTS.

Conducted by the Institute of Public Health.—The Public Health Faculty of Western University, London, Ontario.)

Established and maintained by the Ontario Provincial Government.

[Questions should be addressed: "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 or diagnosis for individual cases cannot be prescribed.]

Pigs or Children?

Ques.—In "The Farmer's Advocate" of February 5, I read a most interesting answer to "Pat's" question on "Pigs and Tuberculosis," and I would advise everyone to read it. It seems a remarkable fact that the sale of skim milk, for feeding swine, is forbidden unless it is sterilized: for children, the same law is not in force—we are sacrificing pearls, and saving the swine. I noticed, too, that you said tuberculosis is transmitted to the children almost wholly through the use of raw milk from tuberculous cows, not by eating the meat of such animals. What are we to understand by that? I suppose, the meat being cooked, the germs are killed, and the raw milk which contains germs should not be given to children unless it is sterilized or boiled? Then, in the matter of meat inspection, it is the tuberculous cow that does the harm, and ought to be killed, and the milk condemned that comes from tuberculous cows if it is not boiled or sterilized.

PATRICIA.

TUBERCULOUS COW.

Ans.—The tuberculous cow is the origin of all the trouble. You are right in this, but it is not necessary to kill them to get rid of the disease, although this is the shortest way out of it.

The cow with tuberculosis swallows the germs which a human would spit up—you never saw a cow breaking the anti-spitting ordinance!

THE MILK COW IS NOT THE ONLY GUILTY ONE.

Not only the cow, of course, but the bull and steer, and all other varieties of the bovine race, do the same thing. The result is easy to see. Wherever the manure of the tuberculous cow, or the tuberculous bull, or the tuberculous steer goes, there may go the germs of tuberculosis.

PIGS AND HUMANS THE SUFFERERS

They affect pigs, because pigs root in the manure. They affect milk-drinkers, both pigs and humans (if they drink the milk raw), because the manure gets into the milk more or less. Sometimes they get into the milk direct, but usually only if the cow who gives the milk has tuberculosis of the udder. In the case of manure, it does not matter so much whether the cow that yields her milk or some other cows in the same herd or bulls or steers in the same yard or barn have the disease, for it is not only the manure of the cow that yields the milk which gets into the milk; the manure of the other animals does also. How? By the milk-cow lying in the manure, and then, when it is dry, shaking it off into the milk; by the milkman handling the manure, getting it on his hands, and milking without washing his hands; and so on, and so on.

HOW HUMANS ESCAPE.

Why does not everybody on the farm get bovine tuberculosis also? Because, for reasons we don't understand, those humans who are over sixteen are practically immune; and because those under sixteen do not have so much to do with cattle, milking, etc., as adults have. Finally, because the principal route of infection is, after all, the milk, and the milk is sent to the creamery or into town, not used raw on the farm much.

HOW TO PRESERVE TUBERCULOUS STOCK.

Isolate all the "reactors" (that is, keep by themselves all the animals that give a tuberculin test). Then breed from those, using either a tuberculous bull who runs with the herd, or a non-tuberculous bull who is not allowed to run with it. The instant the calves are born, take them away to the non-tuberculous herd, raising them by hand, or possibly through non-tuberculous cows.

A CONTAGIOUS HOSPITAL FOR CATTLE.

This makes the farm conduct a sort of contagious hospital for the tuberculous animals. Pigs must not be allowed on the isolated premises, and other non-tuberculous cattle must be carefully excluded from the tuberculous, at all times, even as to the use of the same pasture lands at the same time.

CONDEMNING CATTLE.

Cattle showing a tuberculin test may be killed and used for food, if the disease is not generalised; that is, if it is confined to a few glands or internal organs. Otherwise, the carcass is rendered and made into fertilizer, or similarly disposed of. The milk from any herd containing reactors, whether the milk cows themselves are reactors or not, should be condemned, or if sold, it should be sold only for pasteurization.

MEAT FROM TUBERCULOUS CATTLE NOT A GREAT SOURCE OF DANGER.

1. Why? Because meat from tuberculous cattle seldom shows germs of tuberculosis, since these germs rarely grow in the muscles; almost always they are confined to glands and other organs which are not eaten to anything like the same extent.

2. Even raw tuberculous meat does not convey the disease to animals experimentally fed with it, half so readily as tuberculous milk would produce it in the same animals.

3. Meat is generally cooked before eating, and even tuberculous milk is made harmless by pasteurizing.

The argument that tuberculous meat is dangerous because, before it is cooked, the mother handles it, cuts it, and may take the germs on her hands or on the knife, and so transfer them to her own mouth, her children's mouths, or at least their food, is met first by the facts given above in No. 1 and No. 2; also by the further fact that mothers usually wash their hands and the knife after handling or cutting raw meat, the red blood-stains calling attention to the need for washing; but chiefly it is offset by the simple truth that fussing about the theoretical dangers through meat is absolute foolishness, so long as we continue to drink raw milk. Straining at the gnat and swallowing the camel is nothing to this. To allow tuberculous animals to infect milk through their manure for several years (the milk being used raw, remember), and then to object to the cooked meat, or even the raw meat of that animal used once, is a curious illustration of total lack of perspective in Public Health.

H. W. HILL.

Good Humor in the Home.

Women who ask how to make themselves charming can be given no better advice than to cultivate good humor, which is more than anything else the chief cornerstone of adaptability. The world is a mirror which reflects the aspect you present to it. True, it may not always give smile for smile, but it unfailingly returns frown for frown. Among all the recipes, however, suggested for beautifying, the simple one of a good temper is left out, and yet there is nothing, short of actual deformity, so ugly and repulsive in a woman as a bad temper freely displayed.

In a man's eyes, bad temper is the unpardonable sin, and wisely so, since nothing so quickly creates and insures an unhappy home. Let the women who take such pains to cultivate beauty remember that the expression of a face counts for as much as does any feature thereof, and when they are willing to do and bear so much for the attainment of the power of beauty, brilliancy, or charm, it is surely worth while to give up one's own way for the acquirement of so great and lasting a charm as the merry heart which doeth good like a medicine.—Onward.

The Ingle Nook.

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

The Spring Fashions.

In looking over the spring fashion books, one is surely in a quandary to know what to choose—not because all the styles are so beautiful; oh, dear, no!—but because so very few of them seem suitable for ordinary "workaday" folk, such as the most of us are. One would think all the gowns were designed for actresses, and society women, who can afford to look as freaky as they choose for a short time, and who have never to think of making things serve a long while.

For some reason, "Japanesy," or "Chinesy," effects seem to have struck the popular fancy, but so distorted and added to that it would be hard to recognize them as such were it not for the almond eyes that the fashion artists have seen fit to bestow upon their "ladies."

Kimona sleeves are back again in full force—and one has no quarrel with them. When they are not used, the armholes are so large that the whole waist has a baggy look in consequence; but indeed, bagginess and general slouchiness seem to spell the height of fashion this season. Sometimes, too, the sleeves appear to run quite to the neck in a sort of Raglan effect. As summer approaches elbow length will be again in favor.

A marked innovation is the Japanese collar, rolled and projecting out from the back of the neck, while sashes, often tied in large, soft bows at the back, will be everywhere seen. Pretty enough, these are, for young girls, but older women will do well to avoid them. . . . As an offset to the Japanese collar, the Medici collar of lace, wired upright at the back of the neck, will hold a place of its own.

Skirts are quite as narrow as ever about the feet, but show a tendency to develop to voluminous proportions about the hips, a mode introduced by the now well-known "peg-top" skirt. There is even a rumor, persistent and threatening, that bustles are to swoop upon us—soft bustles, however, and "different."—They would need to be.

At all events, drapery is steadily moving towards the back. In the meantime, "minaret" skirts, which look more like skirts topped off with lampshades, one, two, or three, are still appearing in all of the fashion books.

There is one saving note in the situation at least,—that natural-waist measures have at last come to their own. The tightly-laced woman to-day is one who is as much out of style as though she belonged to the antediluvian ages.

It is a pleasure to turn from the shapes of the dresses to the materials from which they are to be evolved. Even now the stores are filled with lovely, new things, silky and crepey, and soft and diaphanous, for the most part,—never were lovelier in either texture or color. Soft taffeta silk is very much to the fore, but Madame Economical must pass it by, for it can seldom be depended upon to wear very well. . . . Better is the shower-proof foulard, which comes in better patterns and prettier colorings than ever before.

Silk crepe de chines and silk-and-wool poplins are very pretty and serviceable; while in cottons, corded effects, especially a new material called "golfine," a sort of glorified corduroy, will be much in favor for one-piece dresses and suits. Ratine is also back, but in a different weave, while there are cotton voiles, ginghams and muslins to no end, many of the voiles and muslins being flowered.

In color, white, cream, and all the pale shades, will be in much demand for the thinnest gowns, with Japanese blue, shades of purple and lavender, peculiar shades of tan and brown, and even black, for thicker materials and cool-day dresses. "Tango-red" is also seen, but the wise will use it only in touches. For early spring, one-piece dresses and

separate skirts, plaids, in somewhat "invisible" weave, will be much liked.

Spring coats are very short, especially in front, where they are often cut sharply away, but it is quite safe to foretell that when fall comes they will be long again, so that she who is wise will choose a fair length.

Hats for the spring, also, will be very small, very simple, and just as pretty or just as extreme and "queer" as one chooses; all sorts will be shown. Later in the summer, of course, the broad-brimmed sunshade hats will come back, as they always do, with June and the roses.

.....

Upon the whole, it seems that this year, as never before, the wise woman will have to "adapt" from the fashion books, taking a touch here and a touch there, eliminating and simplifying to suit her own taste and her own sense of suitability. And as she does so she may be just a little bit thankful that a few plain styles are always shown for house-dresses, shirtwaists and outing clothes. It would be dreadful if one had to "adapt" for everything.

COLORING BRAID.

Dear Junia,—Can you tell me of any preparation that will color (fast) white mohair millinery braid, navy-blue or black preferred? Have tried ordinary dyes, but the result was not satisfactory. Would it require a different process to ordinary dyeing? Thanking you in advance, I remain, yours, sincerely,
YORK CO., ONT. DIANA.

There are several preparations to be bought that color hat braid very well indeed. "Hat Enamel" and "Maypole Hat Stain," may both be bought at any good drug store, and both are very easily applied with a brush. Indeed everything seems to be had for the asking nowadays. It is as though we went about with a veritable Aladdin's lamp in our hands. You need something? Ask for it. You are sure to be able to find it somewhere all ready for use.

SUN-SPOTTED MIRROR—COOKING LIVER.

In reply to "Farmer's Wife," who asks what to do with a mirror that has become badly sun-spotted, I quote from "Scientific American," but even the "Scientific American" notes that while "the job sounds easy," it is not very easy for an amateur to accomplish: Place the mirror face downward, and with a bit of cotton clean off the spot to be silvered very carefully. Now spread over the spot a piece of tinfoil a little larger than the area to be repaired, and after spreading it out smoothly, let fall on the center of it a drop of metallic mercury, and with a bit of chamois rub the foil until it becomes brilliant. Now place over the new amalgam a sheet of smooth writing-paper, and on it pile books or weights and leave over night. Just enough weight is needed to keep the amalgam in close contact with the glass. About three drachms of mercury will be needed for each square foot to be silvered.

The following are some recipes kindly sent by "Farmer's Wife":
"Take a medium-sized pig's liver and wash clean. Cut the slices nearly an inch thick, lay evenly over the bottom of a sheet-iron roast-pan, then slice onions all over liver, then plenty of salt and pepper, and two large tablespoons pork fat dotted in small lumps all over. Lastly, one tablespoon flour stirred in one pint cold water is poured over all. Bake in medium oven for two hours. If there does not seem enough gravy when done, put in a cup or two of hot water. When taken from oven, stir it through a little and turn out on a hot platter, and you will say the best ever!"

PAINT FOR CEILING, ETC.

Dear Junia,—Will you kindly tell, in "The Farmer's Advocate," what color would be nice to paint a dining-room ceiling and a parlor ceiling when the wall is plastered, and what color to paint the window-facings and the doors inside?
Quebec. MRS. P. Mc.

Usually cream or ivory-white is the best color for a ceiling. The woodwork of the room may be stained or painted to harmonize with the leading color-tone

The Music Master Says:

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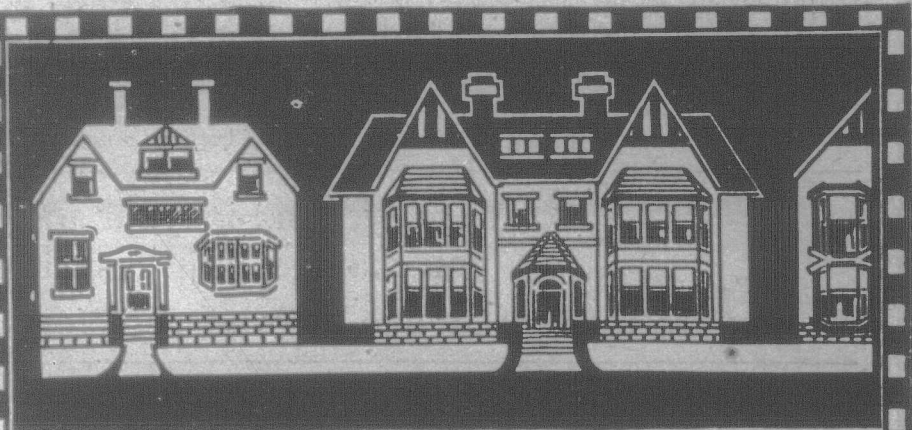


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is a clean, white, pure powder that has no disagreeable smell, won't scratch and will not injure the hands. Buy Panshine. You'll be glad you did.

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To keep your traces in best condition, use Eureka Harness Oil

It sinks into the leather and keeps it soft and strong. Free from acid.

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SOLVE THIS
PROBLEM!

FREE

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A Beautiful Doherty Upright Piano
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6		
	9	
		12

- Fourth Award**
A Beautiful Violin, complete with case
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- And 88 additional awards to the next 88 nearest correct solutions

DIRECTIONS:—Take the numbers from 5 to 13 inclusive, and place them in the squares so that when added together vertically, horizontally and diagonally, the total will be TWENTY-SEVEN. No number can be used twice. Use this on a separate piece of paper or other material.

The gentlemen who have consented to act as Judges are a guarantee that the awards will be distributed to those who are entitled to them.

In case of a tie, the Judges being unable to decide between any two solutions, each will receive equal awards.

Don't delay, send in your solution quickly,
you may get this beautiful piano

All answers must be in our store on or before Thursday, March 12th, 1914

Mail or bring your Solution to Department A

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HAPPY
HOMES

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The greatest labor saver, the best conservator of health, strength and cheerfulness is the "Playtime" Washer. It takes the tired feeling out of wash-day. It is an efficient helpful servant that never tires and is always ready. As a power machine it is specially adapted for the country where gas, gasoline, steam engine or windmill power is available.

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chosen for the walls and rugs of the room. Oak stains (in light or "weathered"), walnut stain, mahogany stain, are all good, and for some rooms cream or white enamel paints are excellent.

The Scrap Bag.
SCOURING BALLS.

Scouring balls for dry-cleaning curtains, etc., when it is not desired to wash them, may be made as follows: Make a very strong suds of Castile soap, and add Fuller's earth to make into a stiff paste. Form into balls and let dry. To use the balls, sponge the curtains, then rub all over with the ball. Hang the curtains away for a day or two, then brush thoroughly.

TO CLEAN BRUSHES.

Dip the bristles up and down in cold or tepid borax water. Ammonia will clean the bristles splendidly, but is rather hard on the backs.

CLEANING FLUID.

Heat together 1 lb. sal-soda and 1 quart water. Let cool and bottle. Add 1 tablespoonful to the boiler of water when boiling clothes that need whitening. A little added to the water in which the kitchen towels are boiled will help to keep them a good color. The fluid is also useful for cleaning vessels of tin and iron, the sink, etc.

CHLORIDE OF LIME FOR RATS.

Chloride of lime put in rat holes will help to drive the rodents away. Fill up the holes with mortar.

FOR BURNS.

Mix 1 gill lime water with 1 gill sweet oil; bottle, and keep for putting on in case of burns or scalds

Eggs and Fish.

Boiled Eggs.—To boil eggs perfectly, use 2 quarts boiling water for 6 eggs. Put the saucepan on the very back edge of the range, or in any warm place, put in the eggs, cover closely, and let stand for 10 minutes.

Curried Eggs.—Cook six eggs in boiling water until hard, remove shells, cut into quarters, and arrange on a warm dish. Pour over them the following sauce: Rub the bottom of a small frying-pan with onion, pour in 1 cup stock and place over fire. Mix 1 teaspoon corn-starch and 1/4 teaspoon curry powder with 1 cup milk and stir in. Season with salt, pepper and butter.

Egg Toast.—Toast 1 slice of bread, moisten the edges in hot water and butter nicely. Separate the yolks and whites of two eggs. Drop the yolks gently into boiling, salted water, for a minute, and then remove and place them without breaking on the toast. Beat the whites stiff, spread over the toast and yolks, season with salt and pepper, and brown quickly in the oven.

Eggs with Cream.—Melt 1 tablespoon butter, stir in 1 cup thin cream, and when hot slip carefully in 4 eggs. Season with salt, pepper, and cayenne. When the whites are almost done, sprinkle with cheese, finish cooking, and serve on buttered toast, very hot. Delicious and nourishing.

Baked White Fish.—Stuff with buttered and seasoned crumbs, and lay in a baking-pan with plenty of butter, rolled in flour. Add 1/2 cup hot water or stock, and bake 1 1/2 hours. Add water to the gravy, and more flour if necessary, season and serve.

Canned Salmon.—Make a good, white sauce, with thin cream or rich milk and flour; add the salmon to it, heat thoroughly, and serve.

Codfish and Potatoes.—Pick fine and freshen in cold water 1 cup salt codfish. Drain, mix with 2 cups mashed potatoes, 1 pint cream or milk, 2 beaten eggs, 1/2 cup butter, salt and pepper to taste. Bake in an earthen dish 20 or 25 minutes.

Creamed Codfish.—Pick 1 1/2 cups salt codfish and leave in cold water for three hours, changing the water three times. Heat 1 1/2 cups milk in a double boiler, add the codfish, well drained, and cook for ten minutes. Mix 1 tablespoon butter with 1/2 tablespoon flour, then stir it

into the milk. When cooked until smooth and creamy, take the dish off the fire, add a beaten egg, stir well, and serve very hot with a dash of pepper or paprika.

Through the Heart of the Storm.

By Murial. in The Australasian.

Perched on the windy heights overlooking the great Southern Ocean, Harrison's farm was suitably named Marathon, for, on all sides except where the purple hills looked down from the east spread a vast panorama of ever-changing sea. The coast scenery was of the grandest description, with its spires of splintered rock, inaccessible ledges of green turf, miles of sparkling blue sea, and here and there little coves of yellow sand, bound in towering granite walls.

Straight from the South Pole the winds blew, for the farm was on the rocky coast of Victoria, and no land stretched between it and the frozen antarctic.

At the farm lived Harrison, his two sons, his daughter Eira, and his niece Lucile. His youngest son was an apprentice on one of the famous clipper vessels renowned for their smart passages to Australia, via the Cape, and their equally record runs home round the Horn. Some time previously Alec, the sailor boy, had brought home on a visit the second mate of the Loch Argyle, and in a very short time Leslie Meredith had fallen captive to the charms of pretty dark-eyed Lucile. There was no actual engagement between them, for Lucile was very young, only just nineteen, and Meredith had little beside his pay, but there was an understanding that when the Loch Argyle next came to Melbourne, everything would be satisfactorily arranged.

Lucile had never been one to do much in the house, or on the farm where there was plenty of work for all. From her earliest childhood she had been accustomed to being sheltered and petted by everyone. First by her mother, then by her uncle and sturdy cousins, and lastly by Meredith.

Eira, who was in reality only four years her cousin's senior, seemed at least ten years older in sense and capability. But a young man seldom stops to consider common sense when a pretty face is by, and Meredith was fascinated by Lucile, though he found Eira a more sympathetic and satisfying companion. Eira had felt strangely attracted by the young man, but when she saw how Lucile's beauty held him, she quietly put her own feelings in the background, and with a dull ache in her heart, went about her usual work, which seemed more monotonous than ever now.

Day after day Lucile would stand watching the sun-sparkles on the waves and dreaming of her lover. It was early September and the weather was perfect. The old ocean heaved gently at her feet, its fierce roaring subdued to the faintest whisper. Even the Shelf, the cruel, jagged reef where so many good ships had gone to their doom, seemed harmless as the tide gradually receded from its saw-like sides. Lucile had never seen a vessel wrecked on the reef but her cousins had; and the Government had installed a life-line and rocket apparatus at the farm by means of which the Harrisons had saved many a life in times past.

Reluctantly Lucile dragged herself away from the lovely scene and entered the farm-house kitchen, where Eira was just lifting a batch of loaves from the oven. She was very warm and tired, for she had risen before five to see off her father and brothers, who had started for town with a mob of cattle.

"I think you might help me a little, Lucile," she said sharply, "you have been dreaming on the cliff all the morning, and I have been so busy."

Lucile looked very pathetic. "How

can you say I have been dreaming?" she asked reproachfully. "I have been thinking of my dear Leslie. If you cared about him as I do, you would understand how anxious I am about him."

Eira turned away with a throb of pain. If she cared? Little did Lucile know how many a stormy night she prayed for the young man's safety, while Lucile herself lay calmly sleeping, or else waking to grumble impatiently that the noise of the sea would not let her sleep.

"I don't think you need be anxious about Leslie," Eira said after a pause. "This is ideal weather."

"It is so perfect, I must be out in the sunshine all day," Lucile answered, dancing out again, leaving her cousin to get on as best she could.

A change came in the night. Early in the morning Eira was awakened by the hoarse roar of the breakers dashing against the rockbound coast. Hurrying to the window, she could see the great foam-tipped monsters rushing and hurrying onwards, and casting themselves on the rocks with a crash that sent the spray flying high above the cliffs.

"The equinoctial gales," she thought. "If only the Loch Argyle had arrived in Melbourne I should not care so much. But I'm sure she hasn't. She only left Adelaide on Saturday. She must be somewhere in this storm."

Eira was too busy that day to have much time for reflection. She had to do the men's work as well as her own, for the boy who came each day to help with the milking did the very least that could be expected of him. Lucile, too, had to take her share, at which she grumbled incessantly all the time as she reluctantly performed her tasks.

As the day wore on the storm increased in violence. The thunder of the breakers was deafening, and the spume-flakes drifted inland with every crash that echoed and re-echoed at the foot of the cliffs. Late in the afternoon Eira snatched a moment to gaze at the scene, which lay in awful grandeur at her feet. From all directions purple-black clouds rode past in the lowering sky. Fast as they were their places were immediately taken by others, so that they seemed like a mighty army sweeping menacingly onwards to deal death and destruction to all in their path. Beneath them foamed the mighty ocean. Tossing and rearing like a mettlesome steed, ceaseless in its activity, relentless in its awakened ferocity, it rushed on to its goal. Time after time it hurled itself fiercely against the unyielding cliffs, to be driven back, and to return again with undaunted energy. Where were now the coves of yellow sands, the rippling pools, the green ledges of turf? Gone, as if they had never been, and in their place this mighty monster, seeming more than human in its implacable tenacity.

Marathon stood back from a small cove which went by the sinister name of "Hell's Gates." This was because the towering cliffs for ever shut out the sun's rays, so that even when the tide was out the rocks and sands were never dry. It was a most depressing place, and at the extreme right lay the Shelf, the curiously-shaped reef, where a ship would lie firmly wedged while the great waves battered her life out.

Eira had seen it all many a time before, but never before had such a feeling of despondency crept over her. It seemed almost like a presentiment of evil, and, endeavoring to shake off the strange feeling, she returned to the house.

Her father and brothers would not be back till the next afternoon, and it seemed very lonely that evening to the two girls. The wind roared round the house, making every window rattle, and every door creak. The trees bent their tall heads to the gale, and crashed their boughs together; but, high above all rose the mighty roar of the ocean, lifting its voice in the notes of the storm.

The girls went to bed early, but Eira, with a vague foreboding of which she was scarcely conscious, only partially undressed. She looked out of her window, but the moon had not yet risen, and she caught only a glimpse of dark water as she drew down the blind. For long she lay awake listening and shuddering as the wind tore round the house shrieking in fury. At last she slept. She was awakened by a dull roar which

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pierced through the voice of the storm. She sat upright, trembling in every limb, with her heart throbbing painfully, waiting for a repetition of the sound. Again it came. She sprang to the window and tried to look out, but a curtain of blackness shut out all view of the sea. Again came the roar, and this time she had a faint vision of a shower of falling sparks. At that same moment the moon sailed out from behind a bank of clouds, and she had an instantaneous sight of a ship jammed hard and fast on the rocks, while all around the furious sea foamed and broke.

"Lucile!" she cried, shaking her cousin vigorously. "Lucile, get up! There's a ship on the Shelf, and we must fetch help." Lucile grumbled at being awakened, and turned fretfully away.

"I'm tired, we can't do anything," she mutters; "leave me alone." But when she saw her cousin rapidly dressing, she sat up and said plaintively:

"What are you going to do, Eira? What's the use of dressing?"

"I must fetch help from McGregors," Eira answered; "we must try to get the life-line across."

Lucile uttered a cry of terror. "Go to McGregors! You can't. It's miles and miles, and I won't stay here alone. I'm frightened, and you mustn't leave me."

"Listen, Lucile," said Eira, speaking in a voice her cousin had never heard before, "what if that ship is the Loch Argyle? Would you leave my brother and—and your lover to die out there in the storm?"

At that Lucile burst into tears. "You are cruel," she sobbed, "how do you know that it is the Loch Argyle? Why do you frighten me so?"

"Whatever ship it is I'm going to McGregors," Eira returned firmly, "get up and dress quickly. Try to start the fire again. We shall need it if we get any men ashore."

She turned away, and as Lucile saw she was really going, she sprang hastily out of bed. "Wait! Let me come too," she cried, but Eira had no time to waste. McGregors', the nearest farm, was three miles off, and unless she speedily got help for the men on the wreck, there would be no need for help at all. She hurried to the stable, bending her head to the furious blast, and with trembling fingers undid the bolts.

Her own pony, Prince, greeted her with a whinny of surprise, and she patted his neck gently. "Come, old boy," she said, "you've hard work before you to-night," and the intelligent animal seemed to understand, for he stood perfectly still as she saddled him.

Ever and again she had heard the signals from the helpless vessel. How she pitied those who were in such deadly peril. But why were they signalling on that barren coast, where they should surely know there was no chance of succour? Then her heart almost stood still as the truth flashed home. It must be the Loch Argyle that was foundering there. Alec would know, Leslie Meredith would know of the life-saving apparatus, and they were signalling for the help that might never come. What would they think if they were left to perish unaided? Goaded by the thought, she sprang on the pony's back and urged him on.

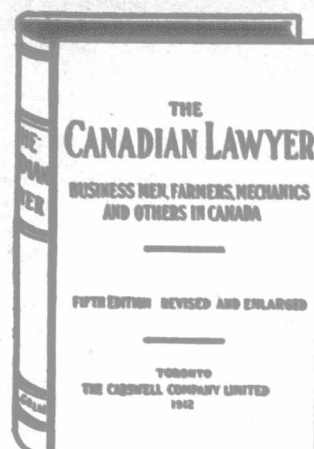
When they reached the gate she had to fumble for the latch while Prince snorted and trembled at the terrific roar of the storm. At last the gate was open and they passed through. Prince was plunging and rearing as they got out into the road which wound for some distance along the cliffs. The flying spray met them and flung its chilling embrace round them. The wind was like a solid wall of resistance to bar their progress, and the girl gasped for breath as it swept against her as if it would tear her from her saddle.

"God! let me be in time!" was her voiceless prayer as Prince with difficulty kept his feet against a savage onslaught. The road now turned inland between trees and bushes. In the fitful moonlight she saw the boughs waving wildly in the breeze, and groaning and creaking as the wind soughed mournfully through them. Here they were sheltered from the worst fury of the storm, and Prince galloped along the red road while his rider found in the wild melancholy of the night, an echo of her despairing heart.

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McGregors' at last, and a sigh of relief broke from her as she saw a light burning in the kitchen. Some one was awake then, and very little time would be wasted, for the McGregors' were four silent, but practical and unemotional brothers. She slipped from Prince's back, and hammered at the door with both fists.

It was opened immediately by Ian McGregor, the eldest brother, whose usually impassive face wore a surprised look at the apparition presented to him.

"Well, what's awa?" he said kindly. "Is anyone ill. Eira lassie? Come rest in."

Eira leaned panting against the door, and shook her head.

"There's a ship ashore on the Shelf," she gasped; "our boys are all away. Oh, do come, Ian."

Without a word he turned on his heel and she knew he was rousing his brothers. In a very short time they driving along the road while Eira, feeling faint and exhausted, told her tale.

As they came out of the comparative shelter of the trees, they met the full breath of that wild roaring, and were drenched with a shower of salt sea spray that came hurtling and hissing at them as if it had been waiting for them splattered on the rocks below like bullets. It tore them like a demon as though it knew they were bent on rescuing those whom it had caused to be hurled to their doom. It was all the horses could do to proceed at a walk, as, on the wind-swept cliffs, they were exposed to the full force of the raging storm.

It was less than an hour since Eira first woke when they drew rein at Marathon. On hearing the sound of horses' hoofs Lucile ran out, and clung to her cousin in a state bordering on hysteria. "Oh, Eira, how could you leave me?" she wailed. "I have been so frightened, and the wind has been dreadful, and the signals from the wreck have been awful. Is it the Loch Argyle?"

"It is the Loch Argyle," Eira said, as she found the key to the life-station.

"How do you know? Oh, you are cruel to me. Don't leave me; don't leave me!" she fairly shrieked, as she saw Eira turning away again.

"Listen Lucile," Eira said, very gently and gravely, "which will help Leslie and Alec most? That I should stay here with you, or go with the men to work the ropes?"

Something in Eira's voice struck through the mantle of selfishness in which Lucile was enveloped. "Go, Oh, go, then! But let me come too," she cried, and Eira, though conscious her presence would only be a hindrance, did not refuse.

The McGregors had already kindled a fire on the cliff top, and were busy at the shed hauling out the life-saving apparatus. That men still lived on the ill-fated vessel they knew, for rockets still shot up at intervals, and now and again, when the moon sailed out from behind a bank of clouds, they caught sight of the wreck. The tearing seas had lifted her high on the Shelf, where she lay as if in a cradle, while each incoming breaker pounded and wrenched at her sides as if it would drag her to the depths below. It was evident she could not last long, and Ian's face was grave and troubled as he calculated the distance.

They were standing at the very extremity of Hell's Gates, with the wind roaring round them like all the fiends from the pit, and the sea booming and thundering at their feet, while the spray, whipped from the breaking waves, smote them with its icy caress.

Lucile, white-faced and terrified, clung shuddering to her cousin, occasionally lifting her eyes to send a fearful glance around, but more often hiding her face in her hands, as if to shut out the sight. Eira, pale too, but calm and steady, held the lantern for the men as they sent up the first rocket. It soared upwards and outwards, but the wind caught it in its flight, and it fell short by yards. Again and again they tried, but, exposed as they were, their aim could not be accurate.

"I'm afraid we no can do it, lass," said Ian after the fifth failure, shaking his head sadly. "there's only one more rocket left. We mun wait tae morn."

"We must do it, we shall," Eira answered. "Ian, what must they be feel-

ing out there? They can see us, and if we give up they will know we have abandoned them. Could you deliberately let these men drown? Go, then!" she continued in a thrilling voice, "but give me the rocket. I can reach them."

"Let her try, said Jock, the second brother, "she can do no waur than we have."

Ian stepped aside, and Eira took his place. Well she knew every minute was precious, and if the line were not fixed soon there would be no need of it at all. And up lifting all her soul in prayer, while Lucile wept and wrung her hands, Eira, aiming well to the right, sent up her rocket. She knew it was the last in the box, but her hands did not tremble, and the men stood by in breathless silence as the thin line whizzed through the air.

Then a shout burst from them, for clear in the moonlight, they could see the line had been caught by one of those on the Loch Argyle. Then again darkness veiled the scene, but they knew the line was fast. Then they sent a tailed block with an endless fall rove through it. Afterwards the rocket line was unbent from the whip, and a hawser was bent on, and the connection was complete.

The second mate of the Loch Argyle cast a knowing glance round the horizon as he paused in his walk on the poop.

"Bit of a blow coming up," he soliloquised. "Guess the old girl can stand it, though."

The vessel was going along under her royals, for the skipper was famous for his smart passages, and carried on when many another man would have snuggled down under his topsails. The decks were glistening for she was heeling well over, at an angle that would have made a landsman's heart stand still. The second mate paused to speak to young Alec Harrison, who was a great chum of his.

"Well, son, this is a fair wind," he said, "Looking forward to getting home, eh?"

"Oh, rather, sir, I know every bit of coast about here, and we're not far from the farm now."

"I hope we are," Meredith rejoined, for he well knew the reputation of the coast about Marathon.

"Oh, we're a long way out," Alec said, confidently; "it would be funny though, wouldn't it, to get ashore just near home?"

"Thanks, I'd rather not for our chance of getting ashore at all would be a very poor one. Here, look to the binnacle-light, boy, and stop gassing." This being for the benefit of the old man, who at that moment appeared on deck. He squinted aloft, cast a glance round, and then turned to the second mate, who was watching him attentively.

"Nice breeze. Mr. Meredith," he said, complacently; "she's doing a good ten knots, I should say."

"Yes, sir," said the mate; "she's doing well."

"Bit of a blow coming up, though."

"Yes, sir. Shall I take in the royals?"

"No!" snapped the old man, abruptly; "keep her as she is. We want to get into port this week; not next year."

Meredith shrugged his shoulders. He knew and the old man knew, too, that the Loch Argyle should be under topsails, as it was a storm of no common dimensions that was bearing down on them. But the skipper was jealous for his reputation, and obstinate withal, so the Loch Argyle plunged along her way, cataracts of water rushing over her decks, as she heeled over with the weight of the pressure aloft.

The storm burst on them at nightfall, a raging, tearing gale that tore the sails from their belts before they could be sheeted home. It was only by dint of the most tremendous exertions by both watches that cro'jack was furled, and after that she fled on her way like a frightened creature. Well might she be terrified, too, for the following furies would have made short work of her had they once overtaken her. But two men were fighting with the wheel to keep her head up, and, battling gamely on, she still held her own.

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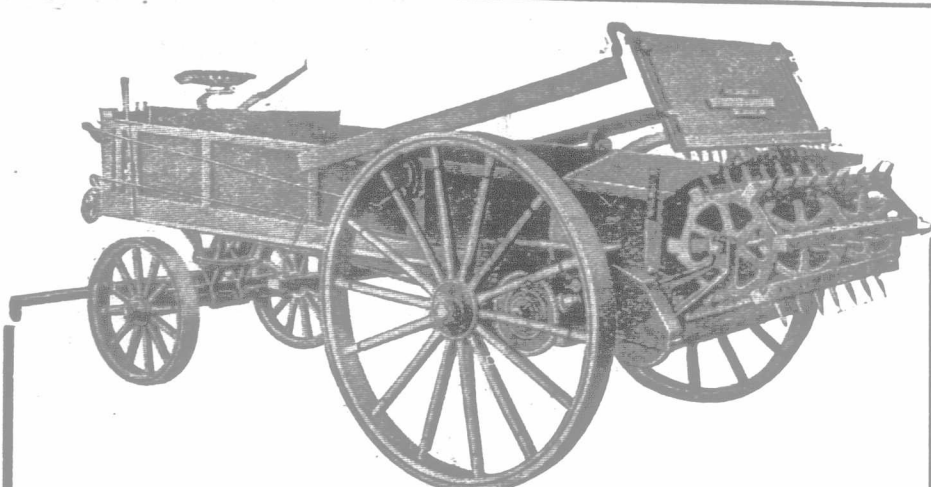


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It was an evil wind. First it blew from one quarter, then from another, and sometimes it would come all ways at once. The night was of a blackness so thick it could almost be felt, while ever and again the pale rays of a waning moon made the darkness visible.

It was in a comparative lull of the storm that Meredith fancied he heard a faint far-off sound, a sound that once heard could never be forgotten, a sound of breakers on a lee shore.

He joined the old man and the mate, who were standing in a listening attitude which confirmed his fears. And in between the fitful gusts the sound came from the land, the sound of the trampling waves ravaging and tearing at the coast.

Then he heard the skipper shouting orders to the men at the wheel as the vessel gathered sternway, and gradually she paid off, her nose coming slowly round. Meredith, looking at the foaming line of breakers, thought how perilously close they were.

The struggle was at once gigantic and piteous—on one side the men fighting for the ship and their lives, and on the other the mighty rollers sweeping on to their prey in a never-ceasing procession. Now the roar of the breaking waves filled the air. The air seemed full of seething spray and hissing water and the salty intoxication of seaweed. The fight was over for the crew. Their efforts were useless, and as the Loch Argyle reared herself in a dying effort, they made a rush for the rigging.

She struck where the fleece-covered rocks looked soft and yielding as snow but, with a crash that shook her from stem to stern, the granite guardians of the coast gored her defenceless sides. Once more she lifted herself, then settled down gently in her rocky bed as the waiting waves dashed at her.

"How long will this last, sir?" a voice shouted in Meredith's ear. He turned to see Alec lashed beside him.

"Can't say. Not long. It it were only light now, we might have a chance but as it is—"

"I know where we are," Alec interrupted, his teeth chattering with cold. "we're on the Shelf and—our farm is just over there," and his voice broke in a half sob.

"The farm! are you sure?"

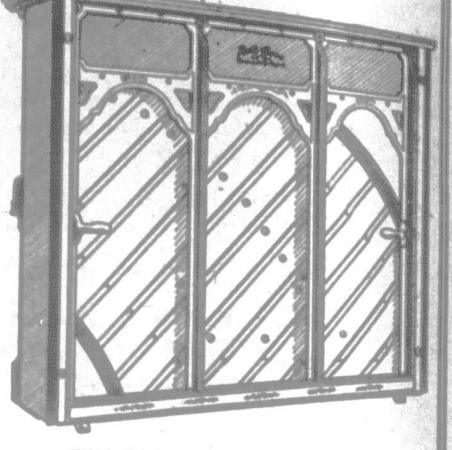
"Yes, this is the Shelf. I've seen ships wrecked here many times, but I never thought my turn would come. There's the life-saving station, though sir. If they only knew they might try to get us off."

Meredith, too, remembered the life-saving station. If this were indeed the Shelf, then they might manage to attract the attention of those at the farm, but it was a very frail hope. Well he knew the difficulties there would be in getting a line across in that storm, and they could not wait till morning. The Loch Argyle would be pounded to pieces long before, and it was now or never.

With great caution, and at the risk of considerable danger from the breaking waves, he gained the slippery deck, and crawled aft to the chart-house. He did not know how many of the crew had survived for it was almost impossible to see in the blackness, and the thunder of the waves upon the shore drowned all other sounds. Yet there was a faint chance for each man that remained on the Loch Argyle if once he could send up a rocket to show there were men in desperate need of assistance.

If this were not the Shelf, then there would be no chance at all for any of them, but he felt sure that Alec was right. He secured the rocket and, watching his time, dashed along the deck to the main rigging. Her starboard bulwarks were gone now, torn clean away by the pounding waves, and through the gaps poured cascades of menacing grey water. Already the Loch Argyle was feeling the strain, and her decks were near to bursting. She would not last long, so quickly he sent up the first rocket. It shot up with a roar and a cheering shower of sparks that showed the faces of the men about him. There were ten in the main rigging, but not the skipper nor the mate. If there were any in the fore he could not see, as the darkness once more closed round them. But Alec uttered a shout. "It is the Shelf," he cried, "we're at the very end

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Stewart Hartshorn

of Hell's Gates. Oh, we must be saved. It would be too cruel to die here."

After a few minutes Meredith sent up another rocket, and, after an interval, another. The men, who at first had watched him with strained and anxious glances, now seemed sunk in an apathy of despair. "It's no good, sir" roared one of them to the second mate, "this be a lee shore, and we're done. There ain't no one to hear us."

Meredith sent up another rocket, and then leaning towards the man, shouted out, "There's a life-saving station here. Young Harrison knows these parts well and he thinks we have a chance yet."

"Then why don't they come? If there's men there they ought to hear us; and they'll have to be mighty quick, too," he added as the Loch Argyle gave a long, sickening heave.

"Yes, why don't they come!" Alec cried despairingly. "Send up another, sir."

An hour crept slowly by. To the men hovering there between life and death it seemed an eternity. Meredith had abandoned all hope of rescue, and sent up no more rockets. Either the family at the farm were all away or else they had realized they could do nothing while the gale raged. That was not like Eira, though. She was always so thoughtful and considerate. She would not let any one go to such a fearful death without making an effort to save him. Why was he thinking of Eira? Lucile should have filled his thoughts. But then he could not think of Lucile in connection with this awful storm. Lucile would be frightened. She was such a little thing, so clinging and soft. He had asked Eira to take care of her when he left the farm. Eira was so capable and trustworthy.

Alec moaned and leant heavily against him. "Why don't they come," he muttered. "Eira was always the first to be about. I can't stand this much longer."

Meredith put his arm round the boy and tried to shelter him from the cutting wind and clinging spray. He was Eira's brother and also Lucile's cousin, only 17, and much too young to die. To die before his own home! And Meredith himself would die at the foot of the cliffs where stood his sweetheart's home. How would she feel if she saw him lying on the damp sand of Hell's Gates, crushed and battered out of all recognition? She would shriek and faint, he supposed. She had done both one day when they had made the gruesome discovery of a corpse among the rocks. Eira had gone up to the poor, pitiful form that had once been full of strong, healthy life and covered the unrecognizable features with her handkerchief. Eira had written to the drowned man's mother, whose address they had found on some papers he carried, a letter so sorrowful and yet so comforting, while Lucile lay still and shuddered violently at each mention of the poor unfortunate.

Meredith felt that he would like to think Eira would cover his face too if she should find him among the rocks. She would not shriek nor faint, yet he thought she would be very sorry. Yes, he hoped Eira would find him, not Lucile, who would tremble and turn pale and be so frightened.

A shout from one of the men roused him. High up on the cliff they saw a lantern moving. Close and still closer it came till it stopped abreast of them. It was only a solitary waving light, and yet how cheered they felt. It showed they were not left alone to die—that some one was near and was trying to aid them. Then suddenly there shot up the warm blaze of a fire, and, gazing across the seething maelstrom of broken water, where the surges boiled and foamed at the rocky bases, the shipwrecked men could see several figures moving to and fro.

A cheer broke from them all, and those who had been ready to lose their hold through sheer despair took on a fresh lease of life. But Meredith, looking upwards, saw it would be a hazardous task to fix a connection between shore and ship. With the furious gale that was then blowing it was almost impossible that the line could reach the Loch Argyle. The men on the cliff would probably decide to wait till daylight.

The Loch Argyle gave another long heave. Ah, there would be no daylight

for them then. The rising of the sun would, perhaps, see the ruins of the vessel, but her crew would not be there. Swish! They heard the hissing sound as the line swung through the air, only to fall short by yards. A cry of despair broke from the men as the darkness once again enveloped them.

"Cheer up," said Meredith encouragingly, "that was only the first shot. Better luck next time."

Straining their eyes through the gloom they could see little but the scudding spray. Then again the friendly light of the fire shone out to them, and again the clouds rolled back from the moon. Swish came another rocket, and again fell short. There was a long interval, and then another failure, and yet another.

The Loch Argyle was groaning in her death agony now. The planks were opening, and she was parting amidships. Each incoming wave thundered heavily across her, and the backwash of each swept back in a relentless flood. The men were silent in the grip of despair, which had grown deeper with each succeeding failure.

Meredith's heart was heavy too. Was Lucile watching them, he wondered. Poor little Lucile! She would never know that her sailor lover had died so close to her. Eira would take care of her. Eira and Lucile! They were on the cliff, and he was dying almost at their feet.

A wild shout, a shriek of joy. The heavy line had fallen right across them, and the men were frantically hauling it in, cold and weariness forgotten. Then came a rope, and then another one—a 4in. one this time; then came a bo'sun's chair, and the connection was made.

"Now, son," said Meredith to Alec, "off you go. Tell your sister we're coming."

It was a perilous journey between sky and water, with the hungry waves leaping round, but Alec reached the summit of the cliff in safety; in a few seconds the chair was back again.

One by one the half-frozen crew were hauled through the snarling surf up to the cliff-top. Last came Meredith. As he took his place in the chair, the Loch Argyle was heaving ominously. Her time on the shelf was over, and she was settling down stern foremost. Nothing could now be seen of her decks, and the second mate was almost blinded with the fighting torrents as he gave the signal to haul in. Then he, too, commenced his journey. As if furious at the loss of their intended victims, and determined to take their revenge on him, a blinding avalanche of waves fell upon him as he started on his journey. The irresistible forces drove upon him hissing and roaring, and he saw, as in a mist, the tortured white surface through which a ghastly green light seemed trying to penetrate. Tossed and driven sideways, now up, now down, gasping for breath, bruised and shaken by the mighty blows he received, he at last felt himself hauled over the cliff side. Still, as in a dream, he seemed to hear a voice saying his name, "Leslie! Leslie!" and, as in a dream, he heard himself answering, "Eira, I have come to you."

After that all was darkness till he opened his eyes, to find himself in bed with the sunshine streaming into the room. Outside he could hear the murmuring of the sea—subdued now after its fury of the night. He was so stiff and bruised he could not move without great pain, and as he lay there slowly the events of the night came back to him. And with them came before him a mirror, as it were, of his own mind, and in that mirror he saw, for the first time, his true feelings. It was Eira who had been his real lodestar, but she seemed indifferent to him, and he had turned to Lucile's pliable and more easily-understood nature. Yet, unless he dreamed, it was Eira who had called his name, in a voice with the love-note in it.

There was a knock at the door, and Alec entered. "How are you, sir?" he said. "Eira sent me to see. Are you fit to get up?"

"I'm afraid not," Meredith answered ruefully. "I can't move a finger without aching all over. I tell you, Alec, ours was a marvellous escape. Had we struck anywhere but on the Shelf there

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Connor Machine Company GRAIN GRINDER

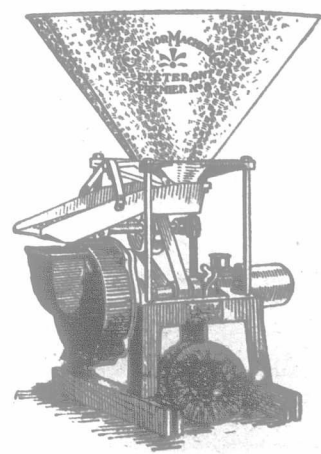
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would not have been the slightest chance."

"It was Eira who did it," said Alec, who had had the story from Ian McGregor. "She fetched the men in time, and she fired the line when the others couldn't."

Meredith listened in silence as the boy talked on, and through all his thoughts ran the one word, "Eira!" and, again, "Eira!" When he was able to get about, Lucile greeted him shyly. There was a change in her since the night of the storm. She looked pale and subdued, but in her face was to be seen a higher and sweeter look, the look of a girl who has found her womanhood, and found it with tears and sorrow. An awkward silence fell between them after the first few words, and it was Lucile who first broke it.

"Leslie," she said uncertainly, and yet with some spirit. "I've something to say to you. You know it was Eira who saved you all. If she had not gone for help, you would have been dashed to pieces—as the others were."

"I know it," Meredith nodded gravely. "we owe our lives to her."

"And I was of no use, no use at all. I was only in the way."

"It was enough to frighten anyone," said Meredith lamely.

"And do you know what gave Eira strength to do what she did?" Lucile bosom heaving. "It was because she loves you. I couldn't help seeing it that night."

"She loves me!" he said, in great wonder at this thing.

"Yes, and you love her, too."

The suddenness of the attack caught him unprepared, and she was too quick for his attempted denial. "I know it," she continued rapidly, as if afraid of interruption. "You are meant for each other. I am a poor creature, not fit to be a sailor's wife, and Eira is a heroine. I am going—right away—to some friends. Don't ask her till I am gone, but—after that—I give you to her."

"Lucile!" he cried, but she waved him aside.

"You know I am right. Don't think about me. Only wait till I go away."

Which he did, to Eira's great perplexity who could understand neither his behavior nor that of her cousin. There, the evening after Lucile had driven away on a long visit to some friends in the town, he came upon Eira on the cliff, watching a wonderful sunset.

The radiance of the burnished reds and golds lit up her face in a far greater glory than that of mere beauty, and as he gazed he wondered how he could ever have passed by this steadfast heart. And he trembled lest after all the prize should not be for him, and, stepping close to her, he cried in a voice of passionate longing, "Eira, oh, my beloved!"

She turned and saw the light of true love shining in her eyes. Then the look was quickly replaced by one of pain and shame, and, raising her hands to ward him off, she said,

"What do you mean? What of Lucile?"

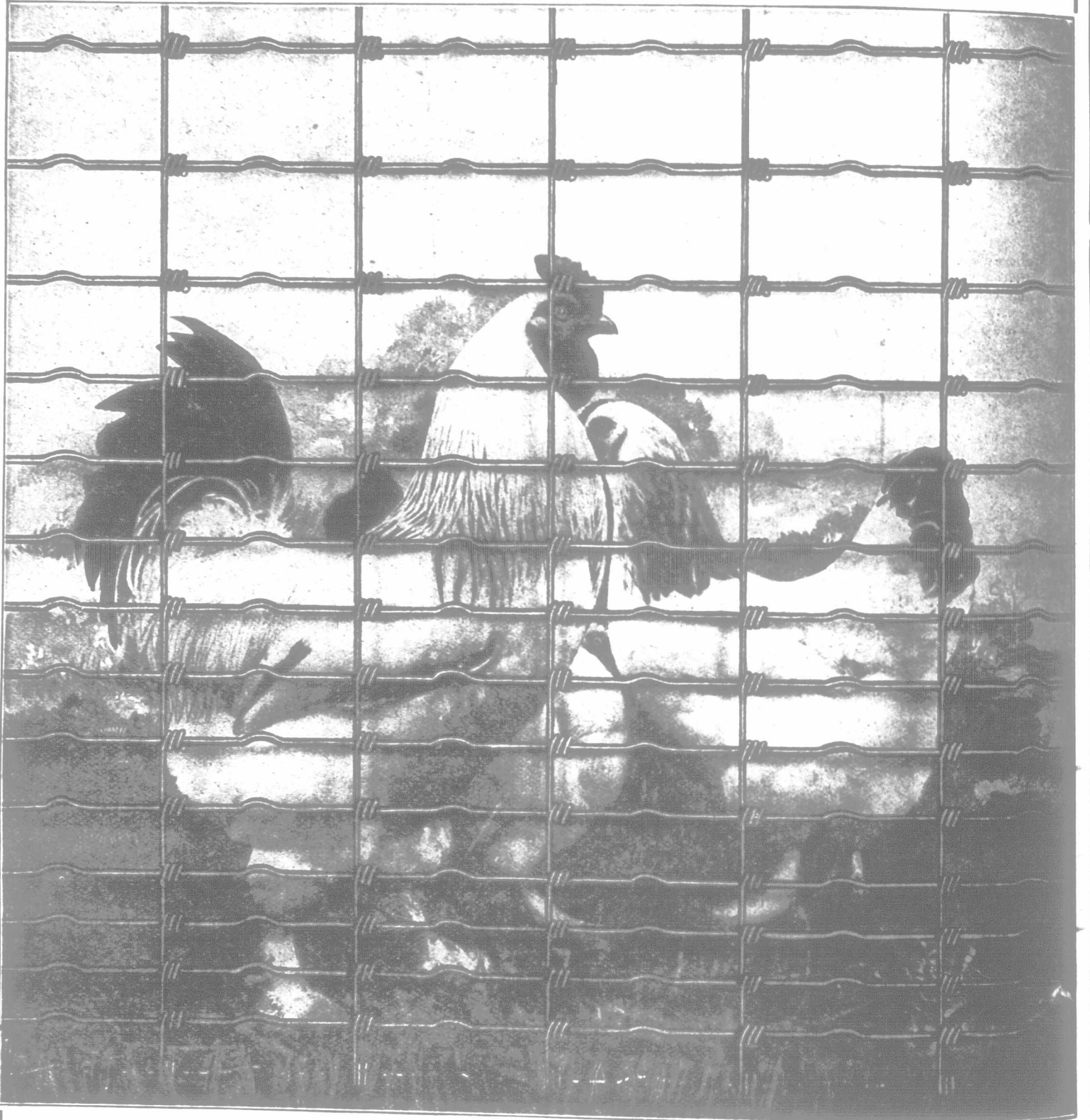
"She has given me to you," he cried joyously, taking her hands in his, "if you will accept the gift. I am yours already, for but for you I should not be here. Will you take me?"

So there on the cliff which had witnessed so many scenes of disaster and death they read each other's hearts.

And Lucile, in the distant township, was working out her own salvation of pain and sorrow, was still endeavoring to get the line through the storm.

At a gathering of the people of Manchester it was a story of the present which was the subject of Dr. Watson's speech. The story was told in a way which must have been a revelation to the people of the district. The doctor, in his way, had been a great help. And the people were very glad. "More than..."

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MARCH

The

[For a Continuation]

Two great A lot of And then

A happy The best The one

A bunch A Teddy A squeal

A lot of A wish for My gram

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Always by 9, y multiply product.

Now, yourself.

Sen

Dear Circle ev I am q old enou was rej girls, bu papers r boys an men an taken since I old frie stories more th zines. Lake Sp ous to look in pretty s view of when th roads a winter about r We de people, giving people t in our that m

The Beaver Circle

[For all pupils from Senior Third to Continuation Classes, inclusive.]

The Family.

Two great, strong arms; a merry way.
A lot of business all the day;
And then an evening frolic gay.

That's Father.
A happy face and sunny hair,
The best of sweetest smiles to spare;
The one you know is always there.

That's Mother.
A bunch of lace and ruffy frocks;
A Teddy-bear, a rattle-box;
A squeal, some very wee, pink socks.

That's Baby.
A lot of noise; a suit awry;
A wish for candy, cake, and pie.
My grammar may be wrong, but, my —

That's me!
—Woman's Home Companion.

Funnies.

The smallest boy in the class reads haltingly: "I see—a man—flyin'."
"Don't forget the 'g', Danny," reminded the teacher, so Danny read again: "Gee, I see a man flyin'."

SHE KNEW.

"If there were four flies on a table and I killed one, how many would be left?" inquired the teacher.
"One," answered a bright little girl—"the dead one."—Sacred Heart Review.

Mother—"I gave each of you boys an orange. Charles, you said you wouldn't eat yours till after dinner, and you, Jack, said the same. Have you deceived me?"
Charlie—"No, mother, we didn't eat our oranges. I ate Jack's, an' he ate mine."

A Trick.

Boys and girls, here is a good trick for you to try. Put down on a paper the following:

1 2 3 4 5 6 7 9

Be sure to leave out the 8. Now, ask someone what figure he dislikes making. Suppose he says 7. Now, multiply 7 by 9, giving 63, and set him to multiplying the figures by 63, thus:

1 2 3 4 5 6 7 9 x 63.

Just watch his face as he finishes the work, and you will have a good laugh,—that is, if he has multiplied right.

If he says he dislikes making 5, multiply 5 by 9, giving 45, and set the question thus:

1 2 3 4 5 6 7 9 x 45.

Always multiply the figure "disliked" by 9, you see, and have your friend multiply the row of figures by the product.

Now, I hope this is clear. Try it yourself.

Senior Beavers' Letter Box.

Dear Puck,—I have been reading your Circle ever since I was a little girl, and I am quite a reader, too. I was not old enough to read when Cousin Dorothy was reigning in the corner for boys and girls, but I sometimes pull out the old papers and read the letters of the little boys and girls that are probably young men and women now. My father has taken "The Farmer's Advocate" ever since I can remember. It is like an old friend in our house. The serial stories are always good, and that is more than I can say for many magazines. I live on a beautiful farm near Lake Simcoe (those of you who are curious to know where that is, if you will look in the map of Ontario you are pretty sure to find it). We have a lovely view of the lake from our windows, and when the atmosphere is clear, can see the roads and houses across the lake. This winter we had grand skating on it for about a week, then snow came.

We deliver milk around to the village people, and just now the cows are not giving as much milk, so we poor farm people have to do without milk or cream in our cakes or pies, and use "Crisco," that much advertised vegetable com-

ound. The result is that our things are not nearly so nice. I tell my aunt that, though "Crisco" is so much talked about as being good and cream never, I believe cream "has it." Don't you, Puck?

I am not going to school this year, as I am staying home two years to learn housework and music before I go to High School, so I thought it would be just the right year for me to go in the Garden Contest. May I have a place? I will try hard, and if I do not win a prize, I know my health will be a lot better for working in the open, and I hope I will have some flowers and vegetables to show for my work.

I saw another little "Joy" in the Beaver Circle. I have forgotten her last name and where she lives, but I wish her much joy in her name, and may she visit the Circle again to keep up the family name, as they say. I was called Joy because I happened to come after five boys, so my father called me that.

Mother, aunt and I, are doing our work in turns, and I can hardly decide which is the most work, dishwashing or cooking. Our work is divided into three parts—cooking, up-stairs work, and dishwashing. It is lots more fun than having to peg at dishes all the time. Though the boys talk about my week of cooking a little bit, I guess they are just joking. One of my brothers tries to help me by making "gems." We had fun all supper-time when he made his first batch.

I remember, Puck, the time you said you did not want us to tell how many head of cows, horses, pigs, etc., we had, but I am going to tell you how many I, myself, own. I own one little horse called Gypsy, and a sheep (that I have not named yet, but I will in time). I owned some chickens once, but sold them, sad to relate. I had a little missionary pig named "O, Kio," but that's another story.

I saw my cousin, Willie King's, letter in the Circle, and I want to congratulate him on it. It was rather good. I guess he understands farming all right.

Well, Puck, I guess you have thought I have written long enough for the first time, so with best wishes to all the Beavers, I will take leave of you all. Hoping that my letter will escape that gloating old monster, the w.-p. b., goodbye.
JOY MARRETT.
Keswick, Ont. (14 years old.)

Dear Puck and Beavers,—This is my first letter to the Beaver Circle, and I hope it may escape the w.-p. b. My Canadian papa has taken "The Farmer's Advocate" for four or five years, and we love to get our paper, it is so interesting. Even little brother Erwell says he needs papa's "Advocate." I am a little Scotch girl from the old sod; have a twin sister in Canada with me. We came across the sea to the Brockville home when not ten years old, and were both given a home at Mr. Emerson Mooney's. From here, my twin sister, Isabelle, went to live at Yarm, with Mr. Mac Janette, my Canadian mother's parents.

We had a delightful trip over to Canada, and I love this country.

I am in Fourth Grade at school; have three little brothers in my new home, and one dear little brother in heaven.

We have tame rabbits here, and it is nice to see them jump and play these moonlight nights.

I am fond of reading, and am learning to do all kinds of work. I can help with all but to bake now, but will soon learn that, too.

My teacher's name is Miss K. Horgan, of Carleton Place. She has taught here now three years, and does her best to make us all learn.

I must close in case I tire you. Would like some of the little Beavers to write to me. Wishing you all oceans of joy and happiness this year, I am one of your little Scotch lassies.

HENRIETTA BARCLAY (age 13).
Onslow Cor., Que.

Dear Puck and Beavers,—I wrote you a letter last summer, and was pleased to see it in print.

Say, Beavers, I promised to tell you about the seed corn called Wisconsin No. 7, that the Canadian Seed-growers' Association sent to about a dozen of boys



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In the great San Joaquin Valley, California, are chances to-day for money-making in fruit-growing, in dairying, in poultry-raising, that appeal to the man who wants to make his effort count for most.

Your markets are unlimited. There are the hungry big cities of the Pacific Coast, two of which are to have great expositions next year. Thousands of mines and lumber camps never get enough farm products. The rest of the world is glad to pay good prices for California fruit.

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Ambitious, progressive farmers are wanted to settle this wonderful valley. I know where the opportunities are, and I will gladly point them out. I can save you time and travel, because you need not duplicate the investigations my staff has made.

Our books, "San Joaquin Valley," "Dairying" and "Poultry," will give you a great deal of information. Then if you will write me what more you would like to know, I will tell you. The books are free. So is all the assistance and information which I can give you.

Santa Fe agricultural demonstrators will assist new settlers in selecting the right crops to get best results. One of these men will help you if you wish.

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Get More Money for your wool. You not only scar and disfigure your sheep but lose a dollar on every six you shear the old way. Figure how much more money you'll get if you use a Stewart 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 latest improved Stewart pattern. Price complete, including 4 combs and 4 cutters of the celebrated Stewart quality is \$15.75. Get one from your dealer, or send \$2.00 and we will ship C. O. D. for balance. Money back if not satisfied.

Quickly — Good Long Wool

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Write for FREE Fertilizer booklet and prices.

THE HARRIS ABATTOIR CO., LIMITED
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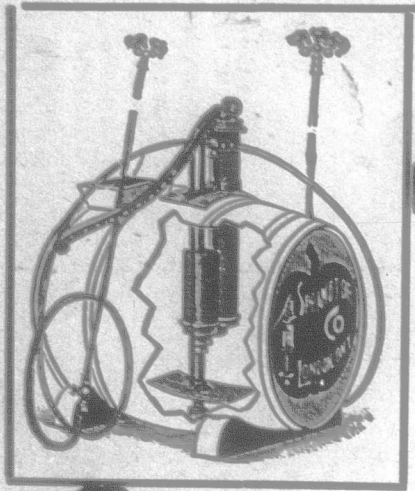
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An up-to-date High Grade Bicycle, fitted with Koller Chain, New Depature Coaster Brake and Hubs, Enamelled Wood Rims, Detachable Tyres, high grade equipment including Mudguards Pump and Tools. **\$22.50**

Send for FREE 1914 Catalogue, 90 pages of Bicycles, Sundries and Repair Material. You can buy your supplies from us at Wholesale Prices.

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27 Notre Dame St. West, Montreal.

Please mention "The Farmer's Advocate."



Bigger Crops of Better Quality? That's What A Spramotor Will Get For You

Compared with what it will do for you, year after year, a Spramotor's initial cost is trifling indeed.

We can prove to your complete satisfaction that you can increase fruit yields fully 80 per cent. with a Spramotor. Also that it has brought 400 bushels of potatoes to the acre, from land that formerly yielded practically nothing.

There is a big difference between the Spramotor and any other spraying machine made. We have been over twenty years in this one line, to the exclusion of everything else. Over twenty patents have been granted covering tested features that you can get on no other machine made. During our long experience, we have discovered what to use, and what to avoid in the manufacture of Spramotors. We have also overcome some seemingly impossible obstacles, and found the solution of many difficult problems. To-day, the man who buys a Spramotor, gets the utmost in spraying efficiency.

These are the reasons why Spramotors have won over a hundred First Awards and Gold Medals, in different parts of the world, and why the Canadian Government, the State and Federal Governments of the United States, and the leading Agricultural Colleges and Universities in America use our machine.

You owe to yourself, to know all about the Spramotor, before investing in any spraying machine. We cannot tell all its points of superiority in one advertisement, or in twenty. Take advantage of the following offer.

FREE Write us a short letter, giving us some idea of your spraying needs, and we will send you a copy free of our valuable, illustrated work on Crop Diseases, also full particulars of Spramotor, that will do your work to best advantage, at lowest cost:

B. H. HEARD, SPRAMOTOR
1735 KING STREET : : LONDON, CANADA

"Ideal" Fence
Is Stronger Than The Strongest

The Weak Exist; But The Strong Live

Strength is what you want in a fence. You want a fence that will live; a fence that will last; a fence that possesses great strength in every wire.

To get strength you must get weight. The heaviest fence contains the most strength. Weigh "Ideal". Compare its weight with any other fence you can buy.

No small weak wires in "Ideal". From top to bottom it's all the same—all No. 9, all hard steel wire and every wire full of strength and properly galvanized to protect and preserve that strength.

Strong unruly animals can look through but not break through "Ideal". It's stronger than the strongest.

Why not buy the fence that possesses the greatest strength—that weighs the heaviest, that contains the most real genuine value. "Ideal" is the cheapest for you in the end.

Our "Ideal" representative, in your section, will gladly tell you more about this strong "Ideal" fence. If you do not know him drop us a card. Also ask for catalogue 121

The McGregor Banwell Fence Co. Ltd.

Walkerville, Ontario.
16



in our neighborhood. Here is the way I worked mine.

About the 17th of May I planted my corn with a hand planter, twenty rows, one ear to the row, and fifty hills long, and same distance as the ordinary corn apart. I hoed it three times, and cultivated five times.

The Association sent out inspectors. My father took them around in his auto to inspect the plots.

After I had it cut, shocked and husked, I picked out about twelve bushels of the best corn. Out of this I picked twelve ears and took to the school fair. I got third prize on it, and second on White Cap, in class of any variety.

I have my corn up to dry in this fashion: Standing boards on end, and driving ten-penny finishing nails close enough, a cob on each nail, so that the ears would not touch.

I enclose a picture of my corn as it is. I intend to sell it for seed this out to plant another plot this year. My address is Bert Hopper, Thamesville, Ont., R. R. No. 1.

[We were much interested in the picture of your corn, Bert, but it was not quite clear enough to make a "cut" from. We think your corn plot a fine idea.]

Dear Puck,—Thank you very much for the nice prize you sent me, I was so pleased with it, as I am fond of sewing. I should like to have seen the other little dresses. I expect, altogether, they made a nice show, but I am sorry there were not enough dresses for all the little girls at the home. I hope they had something for Christmas. Santa Claus brought my sister and me a big dolly for Christmas, so now we are busy dressing it. We are having great fun on the snow at present. We are living in a lovely part, with the Huron Mountains within reach of seven miles, and our house is on the banks of the river. We are the only English-speaking children here. I will close now. From your loving Beaver,

DOROTHY FARLEY.

(Age 12, Class IV.)

Les Hurons, Rouville Co., Que.

A GARDEN COMPETITION LETTER.

Dear Puck,—My plot of ground was 12 x 16 feet. After I dug and raked it, I marked off the beds ready for the seed. I had two beds of flowers. The seeds were sown about the middle of May. I weeded my garden every week. It was very dry here, so I had to water it every night. The names of the flowers I had in my garden were sweet peas, morning-glory, petunias, asters, nasturtiums, sweet alysum, candytuft. The vegetables were lettuce, beets, carrots, parsnips, and beans. If I had not watered them they would not have grown very big. I raked and pulled the weeds so that they would not smother the flowers and vegetables. The sweet peas were very pretty. I had a lot of nice bouquets.

We had "Rally Day" at our Sunday school, and I took a lot of the flowers up to decorate the Sunday school with. I always had a few bouquets in the house, for I picked them every night. The first time I planted the beans they got all yellow in the leaves after they came up. I took a potato fork and dug them up, then planted some more. We used the first of the lettuce about the middle of June.

When I got the photo of my garden taken, the flowers were all out in bloom.

I did not see birds or toads in my garden, as they were scarce around here. I saw a "bumble bee" in my garden. It was flying from one flower to the other. The parsnips that I had in my two-foot square did not grow at all. The candytuft I had grew, but it was not nearly as big as the other I had. The morning-glories grew higher than the wire they had to climb on, then they started creeping along the top of it. Where they were you could not see the wire, for they were so close and big. When I saw them coming up I did not know it was they. I thought they were young maple trees coming up. Whenever any of the children around here would come, they always wanted a bouquet of flowers, and I always gave them some. The soil was loamy. Nearly all the flower seeds were brown, and some were round, oval-shaped, cone-shaped, and wedge-shape. Some of them were so small that I had to take a magnifying-

glass to be able to tell what color or shape they were. I saw thousands of little earth worms when I was digging my garden.

MARGARET SORLEY.

Cummings Bridge, Ont.

Little Beavers who intend to enter the Garden Competition this year, see about getting your seed catalogues now. It will soon be time to start some of the earliest seeds.

Mark Twain used sometimes to visit Harriet Beecher Stowe in a rather negligee costume. One morning Mrs. Clemens met him with this exclamation: "There, Sam, you've been over to the Stoves again without a necktie. It is disgraceful." Soon after Mrs. Stowe received a small box containing a black silk necktie and this note: "Here is a necktie. Take it out and look at it, I think I stayed half an hour this morning. At the end of that time will you kindly return it, as it is the only one I have? Mark Twain."—Short Stories.

An English Tourist was sightseeing in Ireland and the guide had pointed out the Devil's Gap, the Devil's Peak and the Devil's Leap to him. "Pat," he said (all English tourists call Irish peasants "Pat," just as they call little boys "Tommy"), "The devil seems to have a great deal of property in this district!"

"He has, sir," replied the guide, "but sure, he's like all the landlords—he lives in England."

IDEAL STOCK FOOD

will surely give you good results. We guarantee them or refund your money. You can raise young calves on IDEAL FOOD without milk, by using our Food you will surely make money. Try it on any animal. We appeal to dairymen to use IDEAL FOOD and see how your milk production increases in every way. We hold the highest analysis of any food made, and for its purity we challenge a test with any other food or so-called medicine concoctions. We are satisfied after you use IDEAL FOOD you will use no other.

IDEAL POULTRY FOOD

will keep your fowls healthy, it does not have to take a back seat for egg production. Our foods are guaranteed free from poisonous drugs. Ponder this fact, then you will realize its meaning. Manufactured at

92 John St. S.
HAMILTON ONTARIO

Farm for Sale

About \$60 per acre—150 acres, about 6 miles from Sarnia; natural gas fuel; house, stone foundation, cement cellar; open and tied cattle stables; cement silo, etc.; barns, implement and other buildings complete; weigh scales house; plan of 100 acres underdrainage; alfalfa; good soil; well fenced; excellent road; telephone and rural mail.

G. G. MONCRIEFF Petrolia, Ontario

Plow Sale

We have quit making plows. From last year's stock we have a number of Waterloo Twin Gang Steel Plows; the No. 13 General Purpose Walking Plows; the No. 21 General Purpose Walking Plows. They will be sold at a sacrifice. Get your order in now.

The Exeter Mfg. Company Ltd., Exeter, Ont.

Cream Wanted

We pay express charges on cream from any express office within 200 miles of Ottawa. We also supply cans. Sweet or sour cream accepted. Write for particulars to

Valley Creamery of Ottawa, Limited
Ottawa, Ontario

SEED CORN FOR SALE

High germination test. White Cap Yellow Dent. Grown on our own farm. Write

TISDELLE BROS., Tilbury, Essex Co., Ont.

MONEY IN YOUR SPARE MOMENTS TANNING AT HOME

\$5.00 pays for full instructions in tanning calf, sheep, dog hides, etc., as well as large animals. J. A. JACKSON, COTTAM, ONTARIO.

None-Such WHITE CAP YELLOW Carefully selected and dried. Reduction on farmer's club orders. R. A. JACKSON, COTTAM, ONTARIO.

Give Me a Chance to Prove My Flour

IT is our intention to make Cream of the West Flour the best known and most used flour in Ontario. With this in view we make

Special Prices Direct

to the farmers of Ontario. We want you to try this flour. When you do so we believe you will always use Cream of the West Flour and no other. In order to make it well worth your while to give this splendid flour a trial we make it easy for you to buy our flour and feed products direct from the mills at special prices. Read this list.

FLOURS	Per 98-lb. bag.
Cream of the West (for bread) . . .	\$2 80
Queen City (Blended for all purposes) 2	40
Monarch (makes delicious pastry) . .	2 35



YES, madam, I am the Cream of the West miller. I know what a strong flour is. I say you ought to know the extra breadmaking qualities of

Cream of the West Flour

The hard wheat flour that is guaranteed for bread

FEEDS	Per 100-lb. bag.
"Bullrush" Bran	\$1 30
"Bullrush" Middlings	1 40
Extra White Middlings	1 50
"Tower" Feed Flour	1 60
"Gem" Feed Flour	1 75
Whole Manitoba Oats	1 50
"Bullrush" Crushed Oats	1 55
Whole Corn	1 45
Feed Cornmeal	1 50
Cracked Corn	1 55
"Geneva" Coarse Feed	1 60
Manitoba Feed Barley	1 40
Barley Meal	1 45
Oil Cake Meal (old process)	1 70

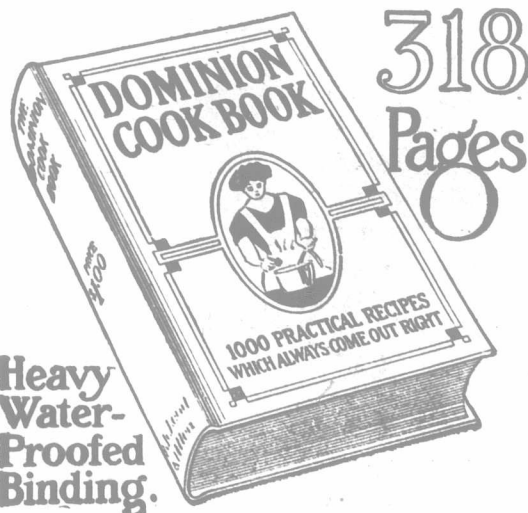
TERMS

Cash with Order

Orders may be assorted as desired. On shipments up to 5 bags buyer pays freight charges. On shipments over 5 bags we will prepay freight to any station in Ontario, east of Sudbury and south of North Bay. West of Sudbury add to above prices 10 cents per bag; to points on T. & N. O. line add 15 cents per bag to cover extra freight charges. Make remittances by express or post office money order, payable at par at Toronto. Prices subject to market changes.

Special Prices on Carlots
Correspondence with
Farmers' Clubs Solicited

The loaves will be the biggest and most wholesome you ever baked with the same amount of flour. Everyone who bakes bread should know about my Cream of the West Flour. That is why I have induced the Campbell Flour Mills Company to make special prices direct to the farmers, and also to offer the splendid household book illustrated below.



Heavy Water-Proofed Binding.

NOTE.—If you have already secured the book illustrated above, write us for list of books by Ralph Connor, Marion Keith, J. J. Bell and other Canadian authors, from which you can make further free selections in buying flour.

THE book illustrated below is one of the most complete household books of its kind ever prepared. Every home in Ontario should have this splendid household help and guide.

Household Book Free

For the purpose of making Cream of the West Flour better known throughout the Province we make you a very special offer by which you can get this household book free.

The household book contains 1,000 recipes—the most practical collection ever brought together. The book is a well-known work. The recipes always come out right, and they are just the kind of recipes you want in your home. They are easy to use and the delightful dishes they make are not expensive.

Every kind of cookery is dealt with comprehensively. With this book you can cook everything from the simplest to the most elaborate dishes.

Full instructions are given how to carve meats and game, with a number of helpful illustrations.

Besides, there is a large section devoted to useful medical knowledge, a feature which alone makes this book most desirable for your home. It tells you how to deal with accidents, bruises, burns, colds, coughs, headaches, fractures, diphtheria, whooping cough, and the many more serious ills that come suddenly and find you helpless unless you have first-hand advice.

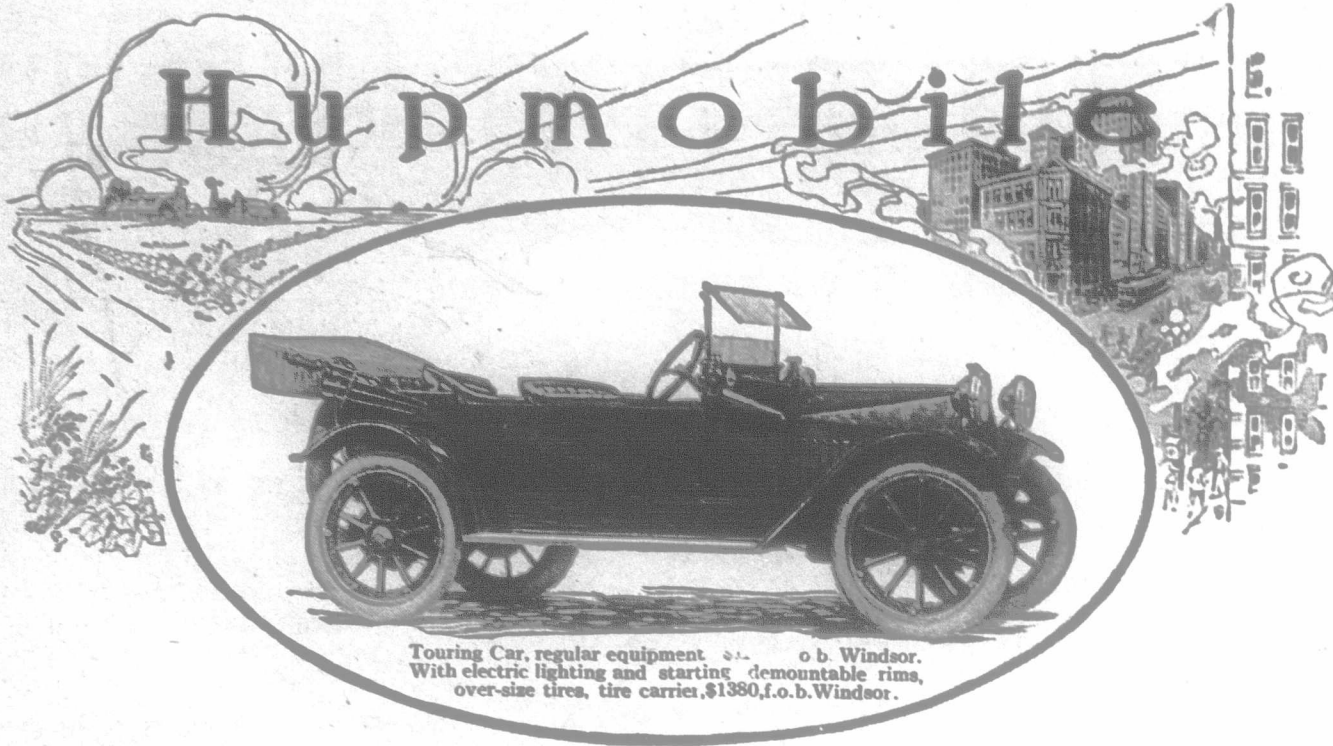
Get this book. Read carefully the easy terms of this offer. The book is free. See how simple it is to get it.

How to Get the Household Book Free

With every purchase from us of not less than three (3) bags of Campbell's Flour (any brand) you will get Household Book Free; but bear in mind that if you order up to five (5) bags we will pay the freight to any station in Ontario, east of Sudbury and south of North Bay (see terms above). To get the book, at least 3 bags must be flour or any other product mentioned in the list printed above. Read the list and make up an order to-day. Add 10 cents to your remittance to cover postage and wrapping of book.

THE SALES MANAGER

The Campbell Flour Mills Company, West, Toronto



Touring Car, regular equipment. o.b. Windsor.
With electric lighting and starting demountable rims,
over-size tires, tire carriers, \$1380, f.o.b. Windsor.

The Car for the Farmer's Family

Is there any *real* reason why the farmer should prefer the Hupmobile to some other car?

We are convinced that there are a *dozen* such reasons.

Almost every automobile maker tells you in a general way that you ought to buy his car.

But we want to go further—we want to tell you why we believe your choice should be a Hupmobile.

We are convinced, and we are sure you will convince yourself, that it is especially suited to the needs of a farmer's family.

One of the prime reasons why it is so suited is the low cost of repairs. Hupmobile records for five years prove that *positively*.

They show every dollar's worth of repair parts sold to dealers and consumers.

And on an average mileage of 5,000 miles per year to each car, the repair cost per mile per car is so amazingly low as to be *almost unbelievable*.

It amounts to 27 mills per mile—27 cents for every hundred miles.

Facts and figures on this subject will be sent you on application.

A Hupmobile farmer almost invariably gets longer tire wear.

He gets it because Hupmobile solid steel construction is still light construction.

The tires wear longer, moreover, because of the steady impulse of the long-stroke engine—less snubbing and rubbing and jerking and jolting.

That long-stroke engine alone is one of the dozen reasons for owning a Hupmobile in preference to any other car.

Another mighty practical reason is the *high price which the Hupmobile commands* as a second-hand car.

People don't give more for a used Hupmobile than they do for other cars of the same price without sound, sensible reasons.

It's especially suited even to unimproved roads—because it's light, though staunch, and skims the rough places.

It's a family car because of these things—a farmer's family car, because it isn't a luxury but a downright saving.

It's good-looking. It's different. There isn't a cheap thing in it.

We can—and will in other advertisements—give you other excellent reasons.

But these are enough for one advertisement. Go to your Hupmobile dealer and give him a chance to continue the story.

Hupp Motor Car Company, Desk N, Windsor, Ont.

A Few Hup "Whys"

Center control—either side front entrance.
Vibrationless steering wheel
Short turning radius—40 ft.
"Lively" motor—quick response to throttle.
Little of customary motor vibration.
Dash control of hot and cold air to carburetor.

Simple carburetor—no delicate adjustments necessary.
Certain clutch action.
Simple, infallible oiling system.
Rain vision, ventilating windshield.
Quickly adjustable side curtains.

Low center of gravity—good looks, easy riding, few skids, no turning over.
Gasoline tank under cowl, nearly over carburetor, assuring constant flow of gas.
Improved tire carrier.
Rainsield magneto.

All moving parts enclosed.
"Streamline" body—only now being adopted by highest priced cars.
Accessibility and lightness in weight of starting system.
Four spare fuses in fuse box cover.

Free Land for the Settler in New Ontario

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

For full information as to terms, regulations and settlers' rates, write to

H. A. MACDONELL
Director of Colonization
Parliament Bldgs., TORONTO

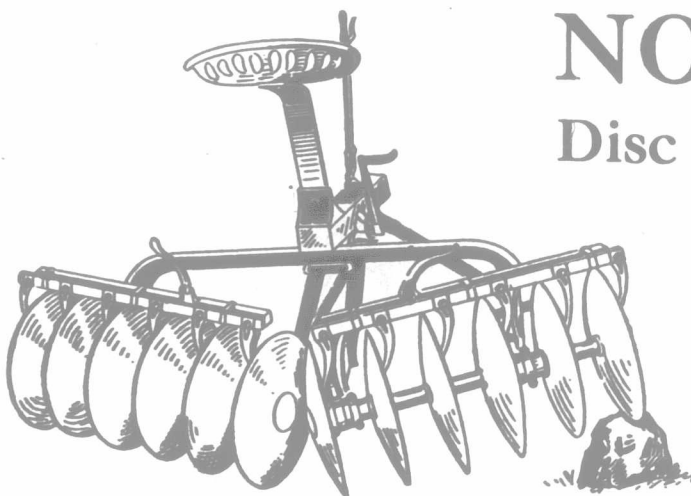
HON. JAS. S. DUFF
Minister of Agriculture
Parliament Bldgs., TORONTO

Hardy Roses

Strong 2 year plants. 25c. each; 5 for \$1.00; 12 for \$2.25 post paid. PINK.—Amy Mueller, Anne Diesbach, Frances Levet, La France, Magna Charta. RED.—Baron Bonnetin, Genl. Jack, Gruss au Teplitz, Mad. Chas. Wood. WHITE.—Blanche Moreau, Coquette des Alpes, Coquette des Blanches. CLIMBERS.—Baltimore Belle, Queen of Prairie, Dorothy Perkins, Lady Gay, Philadelphia Rambler and Yellow Ramblers, Seven Sisters, Tausen chon DWARF.—Baby Dorothy, Baby Rambler.

C. H. PLUMB, Ridgeville, Ont.

Please mention "The Farmer's Advocate."



NOXON Disc Harrows

Made in three sizes

12, 14 and 16 plate

Furnished With or Without Fore Carriage

Write for Catalogue, Terms and Prices

THE NOXON CO., LIMITED

Manufacturers of Binders, Mowers, Rakes, Hay Loaders, Drills, Cultivators, Disc and Lever Harrows, Pulpers and Sleighs

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Canadian Correspondence College, Limited
Dept. E. Toronto, Canada

"1900" Gravity Washer

sent free for one month's trial. Write for particulars.

1900 WASHER COMPANY
357 Yonge St., Toronto, Ont.

The Women's Institute.

[A paper read at the Ravenna branch of the Women's Institute, by Miss Lella McKnight.]

I thought since my topic was "What a Child Should Know Before Starting to School," it would be wise to slightly outline the course of study that a teacher is expected to give a child when it first starts to school, and then it will be optional with the parents whether they accept this method to teach their children or not.

Children bring to school a certain knowledge of their environment and a spoken language to correspond. These two are so closely associated, that the idea and the word or words will call up the other immediately. The knowledge a child has on coming to school is relatively incomplete and indefinite, and it is the teacher's business to make it complete and definite.

The old alphabetic or A-B-C method has passed almost entirely out of use. The new method is called the phonic method. With this we begin with the letter sounds, and not the letter names. It is not really necessary for parents to teach their children the letters before sending them to school, as we do not attempt to teach them to the children until they have mastered the sounds. These sounds are obtained by oral analysis of familiar words, like "mat, m-a-t," or are taught directly without reference to words, through imitation of the sounds given by the teacher. They are associated with their respective symbols or letters so that when a child sees these letters in a word, he is able to combine the sounds and pronounce the word.

Very few parents are familiar with phonics, and therefore few can teach their children very much along this line, but they can teach a beginning in arithmetic, and many other things.

Arithmetic should not demand much time nor worry for a child under six. He should get a sense of number without direct teaching. He should learn to count perhaps to ten, perhaps to one hundred, but just so far as his ambition carries him. Teach him to count people, toys, animals, birds, pennies, and to make change for a nickel, and possibly for a dime. If he knows the cost of a two-cent stamp, he may study out the cost of two or three stamps, but don't puzzle and confuse his little mind with numbers. If you undertake to teach your child at home, do not attempt to take up several subjects in a day, a few minutes at each, but have steady, persistent work upon one.

Stories are an important part of child-life. Tell the little one the story of "The Fox and the Grapes," and let him tell that story to you. You might tell a child a little story like this every day, and let him tell it back to you. Before many days these stories may materially increase in length and difficulty. This teaches a child to express himself coherently to better advantage than will a later course in rhetoric. Naturally, we should choose stories that a child likes, but at the same time our serious purpose is to produce a taste for sober reading.

Children begin their education when they begin to play; for play not only affords an outlet for their energy, and so supplies one great means of growth and training, but places them in social relation with their mates in conscious contact with the world about them. The old games that have been played by generations of children not only precede the training of the school and supplement it, but accomplish some results in the nature of the child which are beyond the reach of the school.

There are some misguided parents in this world. They send their children to school with the one aim in view—to educate them—never dreaming that education and book-learning alone do not accomplish everything. I once heard a mother tell her boy that she wanted him to have an education so he could make his living more easily. A boy educated with that purpose in view will not benefit by an education. The boy when he enters school must be given to understand that education does not fit a man for idleness, but industry, that he may

MARCH 5, 1914

fully understand his duty and be able to do it in a more satisfactory manner, both to himself and society in general. Then, too, he should be given to understand that all labor is honorable. A boy that is not industrious from childhood up will never amount to much, education or no education.

A child should be thoroughly trained at home in manners and obedience. If a child is not obedient at home, it will be more difficult for the teacher.

News of the Week

At times the wind that swept over Ontario on Sunday last, causing much damage, reached a velocity of upwards of ninety miles an hour.

Hon. Charles Ramsay Devlin, Minister of Colonisation and Mines in the Quebec Administration, died at Aylmer, Que., on March 1st. Mr. Devlin was born in Aylmer in 1858.

Lord Minto, ex-Governor of Canada, and subsequently Viceroy of India for five years, died at Hawick, Roxburghshire, on March 1st.

At time of going to press, the condition of Sir Geo. Ross, who has been ill in Toronto for some time, is exceedingly grave.

The Benton Investigation Committee has ascertained that William S. Benton, the British rancher who met his death recently in Mexico, was murdered by General Villa. It has also been ascertained that Benton went to Juarez unarmed.

A Resurrection Dawn.

"I remember a story told me in my youth of a very remarkable, but rather quaint, old Welsh preacher. He was conducting a funeral service over a poor fellow who had had a very bad time through life without any fault of his own. They could hardly find a space in the church-yard for his tomb. At last they got enough to make a brockless grave amidst towering monuments that pressed upon it, and the old minister, standing over it, said: 'Well, Davie, vach, you have had a narrow time right through life and you have a very narrow place in death; but never you mind, old friend, I can see a day dawning for you when you will rise out of your narrow bed and call out to all these big people, 'Elbow room for the poor.' Ah! I can see the day of the resurrection, the dawn of the resurrection of the oppressed in all lands already gilding the hilltops.'"—Lloyd George at Glasgow, Scotland.

THAT YOUNG'UN.

Sometimes when I am noisiest, My pa he gits so mad An' says: "That young'un—how he acts! He'll come to suthin' bad. He'll have the house around our heads—I hate to see sech work—He's shif'less too, ther' never was A lazier little shirk. An' money—well, I wish I had The half o' what he spends; 'Twould help, I swan, at evenin' An' meetin' up both ends."

It useter make me feel real queer; Afraid I'd land in jail Some day, if I wa'n't stiddier,— Pa said it couldn't fail. 'Til one day ol' Mis' Bascom, she Says, laughin' sly at dad, "Your boy's the same young limb you was, When you was jest a lad." (I wish ye could o' seen pa's face). "O' course," she says,— "we know Where Jimmie gits his mischief from; You useter act jest so."

By Grace Stone Field.

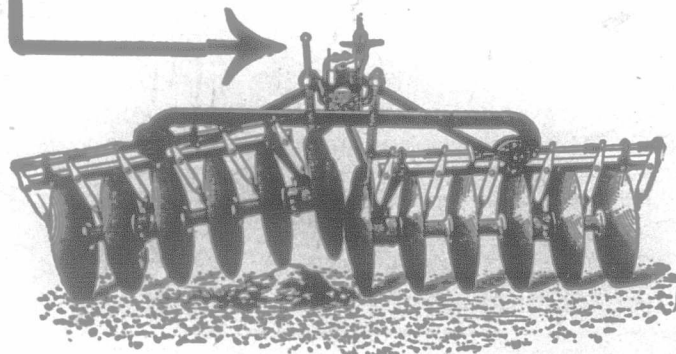
Thorough Cultivation on Rough and Uneven Land.

THE PRESSURE SPRINGS

hold the Gangs to their work regardless of dead furrows, ridges, etc., and cause the Discs to penetrate soil which would otherwise raise the inner ends of Gangs and leave portions of the field untouched.

One end of either Gang may rise to pass an obstruction while the balance of the Harrow remains at work.

The Pressure Springs prevent damage to the machine when striking obstructions



and save both team and driver from sudden shock.

There are many other good features of these Disc Harrows which must be seen to be properly appreciated.

The Massey-Harris Agent will be glad to talk it over with you.

Massey-Harris Co., Limited. Head Offices—Toronto, Canada.

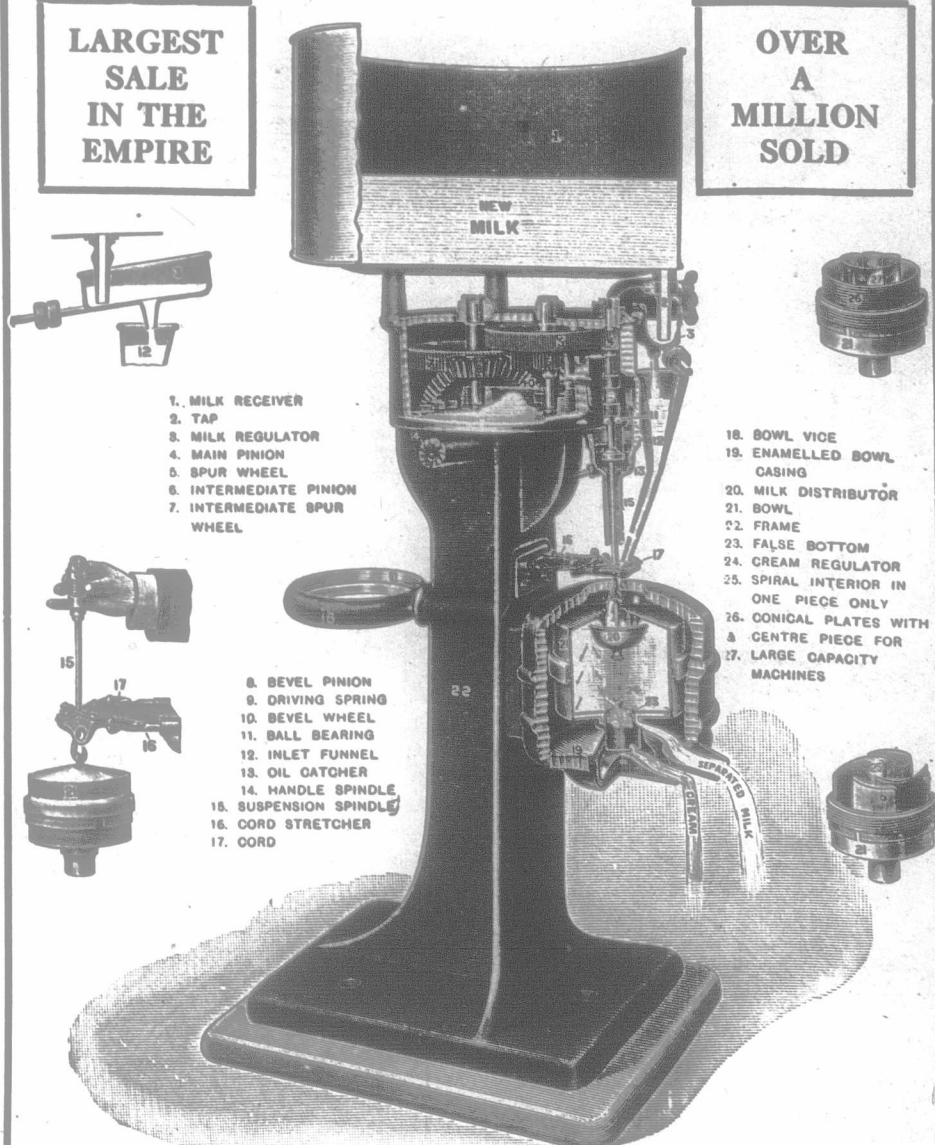
Branches at— Montreal, Moncton, Winnipeg, Regina, Saskatoon, Swift Current, Calgary, Yorkton, Edmonton. Agencies Everywhere

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- 8. BEVEL PINION 9. DRIVING SPRING 10. BEVEL WHEEL 11. BALL BEARING 12. INLET FUNNEL 13. OIL CATCHER 14. HANDLE SPINDLE 15. SUSPENSION SPINDLE 16. CORD STRETCHER 17. CORD

- 18. BOWL VICE 19. ENAMELLED BOWL CASING 20. MILK DISTRIBUTOR 21. BOWL 22. FRAME 23. FALSE BOTTOM 24. CREAM REGULATOR 25. SPIRAL INTERIOR IN ONE PIECE ONLY 26. CONICAL PLATES WITH CENTRE PIECE FOR LARGE CAPACITY MACHINES

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When Writing Advertisers Please Mention "The Advocate."

WANTED

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

TERMS—Three cents per word each insertion. Each initial counts for one word and figures for two words. Names and addresses are counted. Cash must always accompany the order. No advertisement inserted for less than 50 cents.

CLYDESDALE stallion groom, Scotchman, seeks engagement for coming season, life experience, references. Apply J. W. Bruce, 7 Hugo Avenue, Toronto, Ontario, Canada.

FARM Bargain—One hundred acres with buildings, near Paris and Brantford, to be sacrificed for quick sale. Opportunity to secure farm cheap. Write Breo Lapiere, Seitz Building, Syracuse, N.Y.

FARM for Sale—One hundred acres rich clay loam, one mile from Glencoe; ten-roomed brick house, bank barn, silo, water system, telephone and rural mail. Mrs. Sarah E. McLean, Box 236, Glencoe, Ont.

FOR SALE or rent—800 acre farm in good wheat growing and mixed farming district, 400 acres under cultivation. For full particulars write Mrs. Gable, 55 Chantry Ave., Moose Jaw, Sask.

FARM FOR SALE—100 acres under cultivation well fenced, good soil, tile drained. East half lot four, Concession two, Township of Sarnia, County of Lambton. Two story brick dwelling with basement and natural gas for fuel. Good barn and stable, cement silo, sheds etc., plenty of water. There are also a number of producing oil wells upon the property, which yield a handsome monthly revenue. Reason for selling—owing to recent death of owner. For further particulars apply to Charles Egan, Executor, Petrolia, Ont.

SEND for wholesale catalogue to Lancashire's Cheapest Drapery Warehouse, and learn how to increase income. Make money selling British goods, tablings, towellings, ready-mades, dress materials, ladies' overalls, pinafore muslins. Cochrane's Warehouse, Victoria Bridge, Manchester, England.

SITUATION as herdsman or charge of herd; life experience with cattle and sheep; good milker; abstainer; good references. H. Burlidge, 73 Ter-auley St., Toronto.

TWO Good Farm Hands want work on dairy farms, commencing April 1st; use to working with cows, now taking Dairy Course at O.A.C. Write, stating wages, Stevens, 47 James Street, Guelph, Ont. Dr. Creelman permits use of his name.

WANTED—Position on farm by trustworthy, reliable married man. Life experience in raising all kinds of live stock. Skilled feeder and fitter. Address: Box W, Farmer's Advocate, London, Ont.

WANTED—Experienced farm hand. Married or single. Must be able to milk. Good house furnished. Yearly engagement. Hy. Stead, Sparta.

WANTED—Capable married man to take charge. Must understand mixed farming and care of stock. State experience and wages required. T. F. Kingsmill, London, Ont.

CREAM Toronto consumes the milk and cream from over 14,000 cows and the butter production of over 70,000 cows, we need your cream and expect to pay well for it, drop a card.

The Toronto Creamery Co., Ltd., Toronto

HOME-MIX YOUR FERTILIZER
BETTER FERTILIZER--LESS MONEY--NO USELESS FILLER
 If you can mix Cement you can mix Fertilizer

1100 Bushels Potatoes per acre yearly, Guernsey, Channel Islands
 600 Bushels, C. Fred. Fawcett, Upper Sackville, 1913
 350 Bushels, State Farm, Massachusetts, 1913

ON HOME-MIXED FERTILIZER

Write for **FREE Booklets, Formulas, Full Directions**
 NITRATE OF SODA, POTASH SALTS, ACID PHOSPHATES,
 BASIC SLAG, ANIMAL AMMONIATES

NITRATE AGENCIES CO., BAY AND RICHMOND STS., TORONTO, CANADA

Persons seeking investment for surplus money or who desire a new home will do well to investigate this offer. To close an estate I must sell 800 acres, situate on the Assiniboine River, 4 1/2 miles from Alexander Village, on C. P. R. main line, 15 miles from Brandon City, Manitoba. Exceptional buildings in excellent state of repair; good land; good fences; school about 50 rods away; close 5 grain elevators. This property may be purchased with or without complete equipment, such as horses, cattle, machinery, etc. Further particulars on application. Also must sell 160 acres, 7 miles from Antier, Saskatchewan, and also small house with lot in Elya, Manitoba. I am an executor of a will and must sell. These properties will stand investigation in every way. Write to-day. **JOHN CAMBRIDGE, 224 Dundas Street, London, Canada, or U. A. BUCHNER, Solicitor, London, Canada.**

POULTRY AND EGGS

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

BARRED Rock eggs, choice utility stock; winter layers; dollar per fifteen. Sam Cordingly, Lisgar, Ont.

BARRED ROCKS—Home of greatest layers. B Cockerels one-fifty to two dollars; eggs one-twenty-five for fifteen. Central Ontario Poultry Yards, Colborne, Ont.

BIG MONEY in Indian Runner ducks from best American and English strains; steady winter layers of pure white eggs \$3.00 per setting from both pens. Mrs. E. C. Cattley, Weston, Ontario, Canada.

BREEDER of high-class Barred Rock cockerels. Eggs for hatching. Get my prices. Leslie Kerns, Freeman, Ont.

CHOICE White Wyandotte Cockerels from bred-to-lay stock. Roy Hindley, Everton, Ont.

EXHIBITION S. C. B. Leghorn cockerels. Apply to Thomas Eyres, Cameron, Ont.

EGGS for hatching from high-class prizewinning Barred Rocks and S. C. Brown Leghorns. Stock for sale. Satisfaction guaranteed. Wm. Minniken, Barrie, Ont.

FOR SALE—A few choice Rose Comb Rhode Island Red cockerels, from my best laying strain, two to five dollars each. Howard Smith, Winona, Ont.

FOR SALE—Mammoth Bronze turkeys; prize winners at the Western Fair, also Guelph Angus Beattie, Wilton Grove, Ont. R. No. 1.

I HAVE a choice lot of exhibition and utility Barred Rock cockerels which I must on account of room sell this month and at a big reduction. Write at once for prices. Eggs for hatching \$3 and \$5 per setting. J. A. Betzner, Aldershot, Ontario

LIGHT Brahma Cockerels two to three dollars each.—beauties. H. Wilson, Collingwood, Ont.

MAMMOTH Bronze Turkeys, fine heavy birds bred from prize stock. R. G. Rose, Glanworth, Ont.

PURE-BRED Buff Orpington pullets, cockerels and eggs. James McGregor, Caledonia, Ont.

PARTRIDGE Wyandotte poultry and eggs. Selected males and females. Eggs from special pens \$2.00 per fifteen. H. H. Groff, Simcoe, Ont.

SILVER Campines, prize winners. The Dutch Egg Machine, eggs, \$3 for fifteen. Stanley, R. Jones, Newmarket, Ont.

SINGLE Comb Brown and Buff Leghorns. Cup, 3 specials, 17 ribbons in two shows 1914. Eggs \$1.00 up. Good hatches guaranteed. Stock shipped on approval; hardy, vigorous layers. Geo. J. Fern, Orillia, Ont.

UNFERTILE Eggs replaced free and safe delivery guaranteed. Eggs from high standard bred-to-lay Barred Rocks, White Wyandottes, Buff Leghorns, \$1.25 fifteen; large vigorous stock; extra heavy layers; pullets laying at 5 months old. Write for free catalogue which gives full particulars. Satisfaction or money refunded. Charles Watson, Londesboro, Ont.

WHITE Wyandottes—Champions eight years at New York State Fair. Big, vigorous cockerels, \$2, \$3 and \$5 each. Pullets, \$2 and \$3. Eggs, \$3 per setting. Send for free catalogue. John S. Martin, Drawer R, Port Dover, Ont.

Farm Help

We are now organizing parties of men and boys for Ontario farms, to arrive February, March and April. If you are requiring help, for full particulars, apply

BOYS' FARMER LEAGUE
 Drawer 126 Winona, Ontario

STRAWBERRY PLANTS

Most profitable varieties grown under ideal conditions. 125 for \$1.00 post paid. Silverwood Fruit Farm, W. J. Galbraith, Phelpsston, Ont.



The Secret of good butter making is the Salt used
Windsor Dairy Salt

Baby Chicks

Order your baby chicks now from our splendid laying strain of single-comb White Leghorns.

UTILITY POULTRY FARM
 T. G. Delamere, Prop. STRATFORD, ONT.

SHOEMAKER'S BOOK ON POULTRY

and Almanac for 1914 has 224 pages with many colored plates of fowls true to life. It tells all about chickens, their prices, their care, diseases and remedies. All about incubators, their prices and their operation. All about poultry houses and how to build them. It's an encyclopedia of chicken-dom. You need it. Only 15c. C. C. SHOEMAKER, Box 920 Freeport, Ill.

LOOK OUT FOR THE

Imperial Life

ASSURANCE COMPANY'S

big advertisement, which is due to appear in next week's issue, entitled, "One Mother's Experience." It will certainly interest you.

The Windrow.

Prince Erik of Denmark, a nephew of King Christian X, is at present working on an English farm in Gloucestershire, but will soon go to Holland and Belgium to continue his agricultural education. The prince, it is said, works hard, and for long hours. Occasionally he pays a visit to his aunt, Queen-mother Alexandra, at Sandringham.—Mail and Empire.

The Sault Ste. Marie canals, between Lakes Superior and Huron, carry more traffic than any other canal in the world, the total amounting to over 50,000,000 tons a year. A new lock, now being built there, is the largest in the world.

The introduction of kerosene in the China field by the Standard Oil Company within the last ten years, says the Independent, has affected a transformation in the habits of a people almost unparalleled in the history of the world for extent and rapidity. A lamp was invented by the company which could be retailed for 7 1/2 cents, and which would burn for eleven hours at one filling. This was sold by Chinese agents in the remotest interior of China, and the familiar Standard Oil cans are found by travellers in regions where no other evidences of Western civilization have penetrated. For the last six years the annual sales of these lamps in China have aggregated two million.

Thomas A. Edison and his wife have lived for the last two years on less than ten ounces of food each day, and Mrs. Edison has actually grown stout as a result of the experiment, while Mr. Edison has retained his normal robustness. Mr. Edison celebrated his 67th birthday on February 11.

A treaty is being negotiated between Great Britain and the United States for the protection of migratory birds as they pass between Canada and the United States. It is understood that this treaty will be followed by others between the United States and France and Holland.

One of the beauties of New Zealand is the pohutukwa, or Christmas tree, which grows in especial abundance on Mt. Rangitoto, an extinct island-volcano in Auckland harbor. At Christmas, this tree blossoms into a mass of scarlet flowers, and it is then a memorable experience to climb the mountain and look upon hundreds of these gaudy bouquets glistening amid the otherwise green forest that covers its slopes.

The Naval Question.

"The Farmer's Advocate and Home Magazine" need make no apology for giving space to protests against the wild military program into which the country is being pulled, and warnings like that of W. L. Martin, of Northumberland Co., Ont., in our February 19th issue, against the sinister designs of the naval armament clique upon the pockets and general interests of the Canadian people, farmers in particular. "A timely and valuable little book, "Canada and Sea Power," by "Christopher West," has been published by McClelland & Goodchild, Toronto, and should be in the hands of every farmer, artisan and well-wisher of his country. It throws a strong, clear light on naval and military follies, and the curse of modern armaments, which are crushing under an intolerable burden the tillers of Europe as vividly depicted by our cartoon. Part one deals with "The economics of war," part two "the politics of war," and part three "the morals of war," in all 38 concise and vigorous chapters. The book can be ordered through this office for \$1.00 post paid. Read it and pass it on to your neighbor.

KEITH'S TESTED MANGEL SEEDS

Did you ever figure out what it costs you in returns you do not get when root seed germinates poorly and leaves big empty spaces?

WHY NOT GET

Keith's Tested Seeds

for 1914, and be absolutely certain of live seeds and a perfect stand?

It is worth your while to sit down and order good live fresh seeds direct. Do not put off till seeding time, when you will have to go to the nearest store to get doubtful seed.

Our mangels and turnips are put up in 1-lb. cotton bags. There is nothing better to be got.

If you are ordering clover and timothy seed, seed grain or seed corn, your mangel and turnip seeds can go along with them at 5c. per lb. less than prices herewith quoted.

Mangels.—Keith's Prizetaker, Danish Sludstrup (a new intermediate, very fine). Prices for both, postpaid, lb., 35c.; 5 lbs. or over at 30c.

Mangels.—Keith's Yellow Leviathan, Yellow Intermediate, Mammoth Long Red, Giant Half Sugar. Prices, postpaid 30c.; 5 lbs. or over at 25c.

Swede Turnips.—New Century, Scottish Champion, Elephant. Price, postpaid, lb., 30c.; 5 lbs. or over at 25c. per lb. Keith's Prizetaker. Price, postpaid, 35c.; 5 lbs. or over at 30c.

Mammoth Smooth White Intermediate Carrot.—Price per lb., 60c. postpaid.

Geo. Kieth & Sons

Seed Merchants Since 1866
 124 King St. East TORONTO

Liquor and Tobacco Habits

A. McTAGGART, M.D., C.M.
 155 King Street East, Toronto, Canada.

References as to Dr. McTaggart's professional standing and personal integrity permitted by Sir W. R. Meredith, Chief Justice. Sir Geo. W. Ross, ex-Premier of Ontario. Rev. N. Burwash, D.D., ex-Chancellor Victoria College. Rev. J. G. Shearer, B.A., D.D., Secretary Board of Moral Reform, Toronto. Right Rev. J. F. Sweeney, D.D., Bishop of Toronto. Hon. Thomas Coffey, Senator, "Catholic Record," London, Ontario. Dr. McTaggart's vegetable remedies for the liquor and tobacco habits are healthful, safe, inexpensive home treatments. No hypodermic injections, no publicity, no loss of time from business, and a certain cure. Consultation or correspondence free.

Buy your Seed Oats direct from the grower

PURE BRED DAUBENEY EARLY OATS

These oats are grown from O. A. C. seed and have been specially selected on our farm for 3 years. We guarantee them free from noxious weed seeds and barley. Price 80 cents per bushel, bags free. 20 bushel orders 75 cents, bags free.

W. G. STARK & SON, Chatham, Ont.

Registered Seed Potatoes

My Registered Green Mts. yielded last season over 600 bushels per acre

Write me for price list of other varieties.

C. Fred Fawcett, Upper Sackville, N.B.

FARM AND SHOP BLACKSMITH'S FORGE 6.85

A well built practical Forge with 6 inch fan, 18 inch hearth. Stands 32 inches high. Weight 85 lbs.

WRITE FOR COMPLETE CATALOGUE OF BLACKSMITH'S GOODS FOR FARM AND SHOP

The HALLIDAY COMPANY, Limited
 HAMILTON, CANADA
 FORMERLY STANLEY MILLS & CO., ESTABLISHED 1868

CEDAR POSTS

One carload choice, round and sound.
THOS. WOOLINGS, Englehart, Ont.

STED
ANGEL
NIP AND FIELD
CARROT
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Intermediate
postpaid.

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FROM the grower

ED
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C. seed and have
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Chatham, Ont.

Potatoes

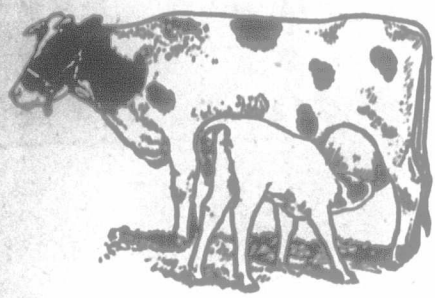
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CATALOGUE OF
FARM AND HOME
MPANY, Limited
CANADA
ESTABLISHED 1866

TS
and sound.
Englehart, Ont



The Best Calf Food is Whole Milk

Every farmer and stockman in Canada knows that. But whole milk brings a good price and you need the money. So you have sold and slaughtered your calves shortly after birth, getting little or nothing for them, and you have thought and thought reasonably that it was cheaper to buy than to raise to replenish your dairy herd.



CALDWELL'S CREAM SUBSTITUTE CALF-MEAL

has changed all that because it contains practically the same nutriment as whole milk at a fraction of the cost. In other words—the user of Caldwell's Calf-Meal finds it easy, economical and profitable to veal up or raise his calves for beef or to replenish his dairy herd. Its the modern way—the wasteless way and it will soon be the necessary way.

Now we know that Caldwell's Cream Substitute Calf-Meal is the best calf feed on the market.

We said the same about Caldwell's Molasses Meal and thousands of farmers know that we were right.

So we say our Cream Substitute Calf-Meal is the best money will buy—

We couldn't have made it better if we charged a dollar an ounce for it—

Being right in the heart of our customers here in Dundas, we have no long freight bills to allow for—

No duty to pay—

Nothing to tack onto the price we ask from you.

And we fearlessly guarantee our Calf-Meal — guarantee its purity and its nutritious qualities to the Canadian Government—

Our guarantee is printed on the tag attached to every bag we sell—

On the reverse side of the tag is a plain statement of the ingredients the Meal contains.

You see we have no secrets—nothing to hide. Knowing that competitors cannot give you a meal with the sum total of the nutritious qualities possessed by our Cream Substitute we lay bare the facts so that you can make your own comparisons.

It will pay you to use Caldwell's Cream Substitute Calf-Meal—

Keep on selling your whole milk and feed this Meal to your calves—

It's just as good for them and— a lot better for your bank account.

Veal up your calves and raise them for beef or to replenish your dairy herd.

It's the modern thing—the economical thing—the profitable thing to do.

Your Feedman sells it.

THE CALDWELL FEED COMPANY, LIMITED, DUNDAS, ONT.

35

TRY STEELS TEN DAYS FREE



"The World's Greatest Workshoe"

Lighter than Leather Stronger than Leather Cost Less than Leather More Comfortable More Economical Best Health Protection Best Foot Protection

For Men and Boys Best for Farmers Stockmen Chicken Raisers Dairymen Creamery Workers Truck Farmers, Etc.

Free Ten-Day Try-on Offer

No man or boy should think of buying ANY workshoes until he SEES and TRIES my "steels" at home. My "steels" are better in every way than any all-leather workshoe or rubber boot you ever wore. I will send a pair of "steels" your size, for your Free Ten-day Try-on, without cost, risk or obligation on your part to prove them an ABSOLUTE NECESSITY in your work.

An Absolute Necessity to Outdoor Men

Over a Million men and boys wear "steels" because they are "The World's Greatest Workshoes" for field, furrow, stubble, roads, forest, stable, barnyard or cement floors; rain, mud, slush, sand, gravel, rocks, snow or ice. "Steels" are the only Light, Comfortable, Economical, WATERPROOF, Cool in summer and Warm in winter workshoes ever made. They cost less and outwear 3 to 6 pairs of best all-leather shoes. Get full particulars and Free Ten-day Try-on Offer—today, Sure.

Sizes for Men, 5 to 12
Steels 8 in. high, extra grade of leather, black or tan, \$5.00
Steels 12 in. high, extra grade of leather, black or tan, 6.00
Steels 15 in. high, extra grade of leather, black or tan, 7.00

Sizes for Boys, 1 to 4
Steels 6 in. high, extra grade of leather, black or tan, \$2.50
Steels 9 in. high, extra grade of leather, black or tan, 3.50

Each style of "Steels" is worth at least twice as much as the best all leather workshoe of the same height. My "Steels" run in the same sizes as ordinary, all leather workshoes. In case of error in ordering, exchange will be made to larger or smaller size, without extra cost to you.

Write a Postal for Free Book

It tells How to Keep Your Feet in Good Condition; Tireless, Powder-dry and Comfortable; How "steels" save your feet, your health, your money. Read my free book, "The Sole of Steel"—SEE and TRY my "steels" before buying workshoes.

H. H. RUTENSTEIN, The Steel Shoe Man, Dept. 50, TORONTO, CAN.

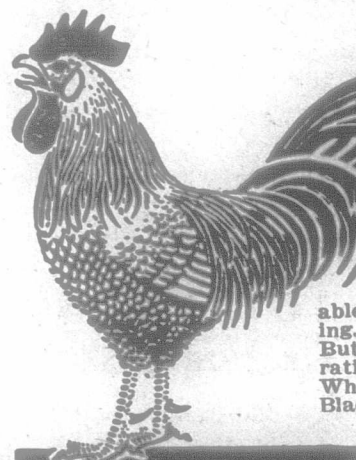
Gossip.

JANEFIELD JERSEYS.

A surplus sale of Janefield Jersey cattle, acknowledged by Jersey breeders to be the most successful sale they have ever attended, was conducted on Feb. 20th, at Janefield Farm, Guelph. Mr. W. J. Beaty, the proprietor, sold over twenty head of Jerseys at handsome prices, showing the popularity of the Jersey breed. Three registered cows averaged \$265.70, the highest price for any one being \$350. Five registered heifers, one year old, sold for \$79 each; eleven grade cows averaged \$97, and two eight-months-old bulls sold for \$50 each. The Legg Miller Bros., who are establishing a large herd of Jerseys at Peterboro took away five. Frank Numberson, Prenticeville; Mr. Holman, West Monkton, and J. Clark, Norval, also were good purchasers.

LAST CALL FOR "SPRUCEDALE."

No further mention will be made of the sale conducted by A. Watson & Sons and C. F. Jackson, at the Sprucedale Stock Farm, St. Thomas, Thursday, March 12th. The announcement in another column of this paper sets forth the great variety of stock offered, most of which represents some of the most popular breeds, and the kind of stock now being sought after by stockmen at large. The dairy cows, as well as the Shorthorns, are what people are looking for at the present time. The sheep at this season of the year will pay the buyer well, and the horses will be ready to put to work at once on any farm. The farm of 100 acres is also being offered, and the community and its proximity to the city of St. Thomas, makes it a good proposition. Phone the proprietors of the farm, and get full information about the sale, on Thursday, March 12. All trains at St. Thomas will be met with rigs, and prospective buyers driven to the farm, which is only four miles west on the Talbot road. A lunch will be provided, and all will be made welcome.



Black Victor Meat Foods

A Little Meat — A LOT OF EGGS

Every modern poultry raiser knows that a good egg yield cannot be obtained without animal food. Good Meat and Bone, fed in proper proportions, is the most profitable investment you can make in winter feeding. But it is also the most expensive part of the rations. When it comes to concentrated Poultry foods, Black Victor—fresh, healthy meat and clean bone, with all the waste and moisture removed—will prove the most economical and profitable. Black Victor Meat Scrap at your dealers, or sent, all carriage charges prepaid, for \$4.00 per cwt. Write for complete price-list before the best egg season is past.

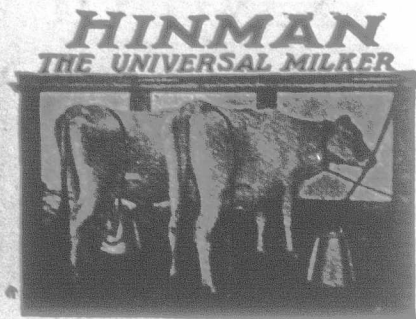
Matthews-Blackwell Limited
Toronto

"MAPLE LEAF" BRAND Oil Cake Meal

Old Process Guaranteed Absolutely Pure

If it pays the British Farmer to send 4,000 miles for "Maple Leaf" Brand Oil Cake Meal to feed and fertilize his soil, it will surely pay the Canadian Farmer to feed it to his own stock and enrich his own soil. Are you feeding our Oil Cake Meal? If not, a trial will convince you of the superior quality of our product. All orders given prompt and careful attention. Write us for samples and prices.

THE CANADA LINSEED OIL MILLS, LIMITED,
MILLS AT TORONTO AND MONTREAL.



COMPARE ALL
**Milking
Machines**
AND JUDGE FOR YOURSELF

Questions and Answers About Our Milkers

1. Will the machines do the work right?
Yes. We have demonstrated this for over four years.
2. Do you have to strip after the machines?
No. If properly handled they milk dry.
3. Can your machines injure a cow?
No. We have absolute vacuum control.
4. How many cows can the average man milk in an hour?
From eighteen to twenty-five.
5. How many machines can the average man handle?
Three, with extra pail.
6. What is the weight of an entire machine?
Twelve pounds.
7. How much power is required to operate an outfit?
One H. P. (Tread power, Gas Engine or Electric Motor.)
8. Is the machine practical in a small dairy?
Yes. We have many outfits in ten cow dairies.
9. How many machines are required for ten cows?
Two.
10. Does the engine necessarily have to be in the barn?
No. It can be set wherever convenient.
11. Can each cow's milk be kept separate?
Yes.
12. What if a pail becomes full; must the machine be stopped?
No. Set an empty pail beside the full one and change cover.
13. Are the vacuum pumps stationary on the stanchions?
No. They unhook and move with machine.
14. How are the vacuum pumps operated?
By the drive rod. It extends the length of stanchions and operates back and forth on a 15-inch stroke.
15. Explain how pumps are attached to drive rod while it is in motion?
The pump fastens over a 3/4-inch steel pin at the base, and the piston is automatically hooked to the drive rod by means of a small casting.
16. Is there any way to reduce the vacuum?
Yes.
17. Is the milk exposed to air on its way from the cow to pail?
No.
18. How about the different size teats?
We can fit them all; have different size cups.
19. How often do you have to replace the mouthpieces?
Every five or six weeks. Cost 5 cents each.
20. What do you mean by each machine being independent?
Each machine works individually. If the cups are removed from one cow it in no way affects the remaining machines.
21. Can I keep a record of each cow's milk without much loss of time?
Yes. Without any loss of time. Change the pails, weigh and record milk.
22. Can the HINMAN be installed on the stanchions where the cows stand?
Yes.
23. Must I have two extra pails and a divided pail with the machine to keep record of each cow?
No. Not with the HINMAN.
24. Does the HINMAN have a continuous vacuum?
No. The vacuum is broken 45 times every minute.
25. Is it necessary to remove all pressure from the teats each pulsation to get good results?
Yes. Absolutely.
26. Why?
A continuous vacuum retards the circulation of blood in the teats causing them to become temporarily swollen during the milking process.
27. Why is your independent pump system superior to the piping system?
The HINMAN system exactly imitates the action of the human hand, applying the pressure at first and gradually increasing until the exact amount of pressure is applied, then the vacuum is all removed from the teats. (Refer to questions Nos. 3, 17, 21, 22.)
28. Does a machine milk one or two cows at a time?
One.
29. Why not milk two with one machine?
No two cows milk out alike, too much time is lost waiting for the last cow to finish.
30. Will cows give as much milk in a year if milked with a HINMAN as they would milked by hand?
Yes. If correctly handled, we have many fine records made with the HINMAN. Ask for them.
31. How can you milk a cow that has only three teats?
Simply shut off pressure on one cup by hooking into claw hook.
32. How much noise is there when the outfit is running?
None. The HINMAN is noiseless.
33. How about cleaning; does it take long?
Fifteen minutes for four machines.
34. Where should the machines be kept when not in use?
In brine or lime water, in a cool place. Do not leave in sunlight.
35. Is anyone using these machines on valuable registered cows?
Yes. Write for a list of names.
36. What constitutes a complete machine?
Pail, Pump, Valve-Chamber, complete set of test cups, rubber connections, between cups and pail and between pail pump, a surringe is included.
37. Do you make a hand-power machine?
No.
38. Do you have illustrated circulars showing each part of the HINMAN?
Yes.
39. What guarantee do you give?
To do perfect work, when handled according to our instructions.
40. Do you have agents?
Yes. Everywhere.
41. Briefly outline the advantages of the HINMAN.
Low initial and upkeep cost. Perfect vacuum control. Operates with little power. Change of pails while machines are at work. Each machine works independent. Each cow's milk is kept separate. Easily adapted to all cows. Can be operated by the average man.
42. Where can I see the HINMAN at work?
Write us and we will advise you of nearest outfit.
43. How many machines have you at this time in use?
Over 5,000.
44. Can any dairyman install his own machines?
Yes.
45. Is the shafting or the drive-rod unsightly or in the way?
No.
46. Did you ever have a man install and start an outfit without help from you, aside from correspondence?
Yes, many dairymen have started the HINMAN alone, and are having splendid success.
47. How much milk does the pail hold?
40 pounds.
48. How can a full pail be changed for an empty one without stopping the milk from the cow or breaking the vacuum?
There is no vacuum in the pail, the machine is in the cover.
49. How much time can be saved by the use of an extra pail?
Two machines and the extra pail will do the work of three machines without its help.
50. How can the different size cups be told in a dark stable?
Each size has its marking easily recognizable to the touch.
51. Has the vacuum pump with each machine any complicated parts liable to get out of order?
No, it has but one simple cupped leather valve.
52. What changes must be made in the stable before the machines are installed?
No changes are made. Line up the stanchions so drive-rod will drive easily.
53. Can a boy of 12 or 14 years run the HINMAN successfully?
Yes, usually a boy will milk faster than a man.
54. How long has the HINMAN been in daily use?
Since September, 1907.

H. F. BAILEY & SON
SOLE MANUFACTURERS FOR CANADA
GALT ONTARIO, CANADA

Gossip.

Volume 81, of the American Shorthorn Herdbook, containing pedigrees of animals calved before January 29th, 1913, has been issued from the press and a copy received at this office. This volume contains the pedigrees of bulls numbered from 367001 to 376000, and of cows from 127001 to 138000. The President of the Association is F. W. Harding, Waukesha, Wis., and the Secretary is Roy G. Groves, Chicago, Ill.

Samuel Dolson & Son, breeders of the famous Cherry Lane Berkshires, say the demand for young pigs of both sexes has never been so great as at present, many enquiries coming from Alberta and Quebec. Last year, one man from Alberta purchased 46, all the offspring of this famous prizewinning herd. In 1913 they won more prize-money than any other Berkshire breeder in the Province. They have some fine young sows, and a few choice boars from three to six months old, all from prizewinners. Write for information, or go and see them.

Volume 21, of the Clydesdale Studbook of Canada, compiled and edited in the office of the Canadian National Livestock Records in Ottawa, and published by the Clydesdale Horse Association of Canada, has been issued from the press and a copy received at this office. This volume contains pedigrees of stallions numbered from 13050 to 14344, and of mares from 27426 to 30015, a total of 3893; also excellent photogravures of sixteen champion prizewinners at prominent Canadian exhibitions, and a record of principal winners at leading shows throughout the Dominion, together with the name and address of exhibitors. The book contains 734 pages, and is a creditable production.

THE BELGIAN HORSE.

In another column appears the advertisement of M. B. Wilson, London, Ohio, who has on hand a number of horses carrying in their veins some of the best blood of Belgium. In color they are dark bay, chestnut, and red, or roan. These horses, like the Percheron and other heavy horses, trace back to the Flemish horses of Flanders and the Belgians, as owned by Mr. Wilson, have retained the style and conformation of these famous horses of history. Mr. Wilson writes that they make a fine cross with other heavy horses of that community, and that in the show-ring they have done remarkably well, for they have, with their sires and dams, won over twenty-five ribbons at Ohio State Fairs. Look up this advertisement in another column, and communicate with M. B. Wilson, R. D. No. 8, London, Ohio.

THE WALKER FAMILY.

A. A. Farewell, of Oshawa, is in possession of a notable family of Holsteins known as the Walker blood. At the present time he has six generations, all with outstanding records. The first of this illustrious family is Prilly, whose seven-day butter record is 25.2 pounds, at 13 years of age. Then comes her daughter, Beauty Pietertje, record, 30.5 lbs.; and her daughter, Lillian Walker Pietertje, record, 30.01 lbs.; and her daughter, Ruby Walker Pietertje, record, 30.22 lbs.; and her daughter, Segis Walker Pietertje, record, 27.85 lbs., at three years of age; and her daughter, Segis Walker Pietertje 2nd, also with a record of 25.8 pounds butter when three years old. Here are six generations with records of over 25 pounds of butter each in the seven-day test, and two of them only three years old. This establishes the Walker family as one of the most prepotent, and most capable of transmitting their characteristics to their offspring. These are the characteristics which breeders are looking for in their breeding stock, and a cow may make a big record, but if she does not possess the ability to pass it on to her offspring, her value as a breeder is depreciated to a large extent. Hence this point in the Walker family is very commendable indeed. This is not true only of this particular strain possessed by A. A. Farewell, but it exists universally in the Walker family. An advertisement relating to this blood appears in our columns. Look it up and get more information about this illustrious strain of Holsteins.

Order Your POTASH At Once

POTASH and other Fertilizer materials should be ordered at once, so as to ensure early delivery and early application.

DO NOT DELAY — DELAY means late applications. FERTILIZERS, with the exception of some sources of Nitrogen, should be applied as soon as the land is workable, so that the PLANT FOOD may be available to the young plants — thus ensuring a good start.

POTASH is an Indispensable Plant Food
Muriate of Potash
and
Sulphate of Potash

can be obtained from the leading fertilizer dealers and seedsmen. Purchasers of "ready-mixed" goods should buy brands containing high percentage of POTASH.

Write for our FREE, educative bulletins on the important subject of fertilizing, and which contain interesting results of experiments. These include:-

- "Artificial Fertilizers; Their Nature and Use"
- "Principal Potash-Crops of Canada"
- "Fertilizing Orchard and Garden"
- "Fertilizing Grain and Grasses"
- "The Potato Crop in Canada"
- "Fertilizing Hoed Crops"
- "Farmer's Companion" etc.

STATE WHICH YOU REQUIRE.

GERMAN POTASH SYNDICATE

1106 Temple Building

TORONTO : : : ONTARIO

264 Page Book on Silos and Silage

1913 copyrighted edition now ready. Most complete work on this subject published. Used as text book by many Agricultural Colleges. Gives the facts about Modern Silage Methods—tells just what you want to know, 264 pages—indexed—over 45 illustrations, a vast amount of useful information boiled down for the practical farmer. Tells "How to Make Silage"—"How to Feed Silage"—"How to Build Silos"—"Silage System and Soil Fertility"—"Concrete or Cement Silos." All about "Summer Silos" and the Use of Silage in Beef Production. Ninth Edition now ready. Send for your copy at once. Enclose 10c in coin and mention this paper.

Silver Manufacturing Co., Salem, Ohio

Potato Profits

depend largely on how the crop is planted. Every skipped hill is a loss in time, fertilizer and soil. Every double waste valuable seed. It means \$5 to \$50 per acre extra profit if all hills are planted, one piece in each. That is why

IRON AGE 100 Per Cent Planters

often pay for themselves in one season on small acreage. They also plant straight, at right depth, 12 to 24 inches apart. With or without fertilizer distributor. Ask your dealer to show you this Planter and write us for booklet, "100 Per Cent Potato Planting" and copy of Iron Age Farm and Garden News.

The Bateman-Wilkinson Co., Ltd. 415 Basinghall Ave., Toronto, Can.

\$7.55 Still Buys World's Champion 140-Egg Incubator

Double cases all over best copper tank nursery, self-regulating. Best 140-chick hot-water brooder, \$4.85. Ordered together, \$11.50. Freight Paid (E. of Rockies). No machines at any price are better. Satisfaction guaranteed. Write for book today or send price now and save time. Jim Bohan, Pres. BELLE CITY INCUBATOR CO. Box 197 Racine, Wis.

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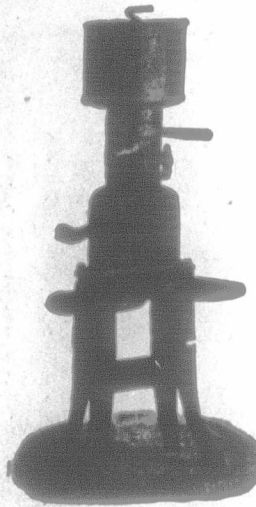
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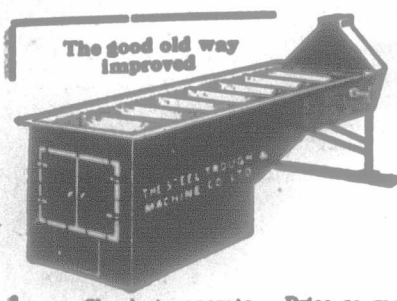
\$15 and Upwards

Whether you have but one cow, or if you have fifty cows, we have a high-grade Cream Separator, suitable for your requirements, at a price you can afford to pay.

We send you a machine, on FREE TRIAL, anywhere in Ontario or Eastern Canada, and prepay the freight. Thoroughly guaranteed. LOW PRICES. EASY PAYMENTS. You take no risk whatever, for you settle for it only if satisfied.

Send for Circular "A" to-day, giving particulars of our Free Trial Offer, prices, etc. Agents wanted.

NATIONAL MACHINE CO., Brighton, Ont.
DOMO SEPARATOR, St. Hyacinthe, Que.



Money in Your Sugar Bush

Preserve the real maple taste in your maple syrup by boiling it down in the

PERFECT Maple Evaporator

Simple to operate. Price so moderate that anyone can buy. Made of first quality material. Sold you direct. Makes the small bush profitable. Every one guaranteed. If not as represented when it reaches your station, fire it back at our expense.

Order now and be ready to take care of your early runs of sap, the best and most profitable you get.

Send us a list of just what you want, and get our lowest price on the entire outfit.

What one customer says:—

Gentlemen:—Your Evaporator is a first-class article. Makes the finest quality of syrup and uses very little fuel. It makes syrup-making a very profitable business. The investment is so small, and there is always a ready market for the syrup. I cheerfully recommend it. JAMES MOORE, Queensboro.

WRITE FOR CATALOGUE TO-DAY. Y 72.

The Steel Trough & Machine Co., Ltd., 145 James St., Tweed, Ont.



STANDARD Gas Engine Oil

Recommended by leading builders for all types of internal combustion engines, both tractor and stationary—gasoline and kerosene. Keeps its body at high temperature, leaves practically no carbon deposit. Equally good for external bearings.



PRAIRIE Harvester Oil

The most durable oil for farm machinery. Stays on the bearings; will not gum or corrode; not affected by weather.

Eldorado Castor Oil
Thresher Hard Oil Arctic Cup Grease

Imperial Oil Co. service puts these products within the reach of anyone in the Dominion.

Write any agency.

THE IMPERIAL OIL COMPANY, Limited

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| Toronto | Montreal | Winnipeg | Vancouver |
| Ottawa | Quebec | Calgary | Edmonton |
| Halifax | St. John | Regina | Saskatoon |

30% DIVIDEND GUARANTEED

Have You Seen the Prospectus for The International Black Foxes, Limited, Which Appeared in Our Last Week's Issue?

If you haven't, it will pay you to get a copy of last week's issue and read it over carefully.

It tells you how to obtain an interest in a business, which during the past year or two, has paid dividends all the way from 25% to 500%.

It tells you how similar earnings may be made without any effort, thought or worry on your part.

It tells you all about the greatest stock breeding industry of the twentieth century.

It tells you about the value of Fox raising, not only for breeding purposes, but shows the profit to be obtained from the sale of pelts.

All this information and much more is contained in a very interesting little booklet, which we shall be pleased to send you on application.

Write for it to-day, before you forget, as it may be the means of starting you on the road to wealth.

International Black Foxes, Limited
Suite 15, Record Building
SHERBROOKE, P.Q.

363.1 Bushels Potatoes

From One Acre of Massachusetts Land

A. Webster Butler of Brockton, Mass., won the first southern zone prize offered by the Bowker Fertilizer Company for the largest yield of best quality potatoes grown exclusively on Stockbridge Potato Manure. His acre was a "rocky loam" producing about 2 1-2 tons of hay per acre in 1912 on manure. Rows were 36 in. apart and Green Mountains cut to two eyes were planted 14 inches apart. The piece was cultivated five times. The acre was sprayed with Pyrox.

STOCKBRIDGE POTATO MANURE

was applied 2100 lbs. broadcast and 700 lbs. in the drill. No other fertilizer or dressing of any kind was used. The entire crop weighed 21,783 lbs. or 363.1 bushels. His total score including quality points was 589 points, the highest in the southern zone.

Other Winners secured yields ranging from 311.1 bushels to 502.6 bushels in the northern zone, (Me., N. H., Vt.,) and from 183.8 bushels to 363.1 bushels in the southern zone, (Mass., R. I., Conn.)

Send us your name for complete and instructive statement concerning the results of the contest and how these great yields of potatoes were obtained. No other fertilizer than the Stockbridge Potato Manure was used.

BOWKER FERTILIZER COMPANY
43 Chatham St., Boston.
Also Baltimore, Buffalo, Philadelphia and New York.



OUR IDEAL

Our home-grown Yellow Mangel "Our Ideal," leads them all "Obtained 1,100 bushels from one acre," so writes us a Newmarket, Ont., farmer. This new mangel is easily harvested and a keeper of highest feeding value. Give it a trial. 45c. per lb. postpaid. Sow 5 to 6 lbs. to an acre.

ASK FOR OUR CATALOGUE AND SECURE OUR

Home-grown and Tested Seeds

Remember: BEST SEEDS—BEST CROPS

SPECIAL OFFER! Order Our Famous Special Collections:

Farm Garden Collection D.—31 selected varieties, \$1 postpaid. One packet each of Beans (wax), Beans (green podded), Corn (early sugar), Peas (early garden), Beets (early round), Cabbage (early), Carrot (garden), Cauliflower, Cucumber, Lettuce (early head), Lettuce (curled), Onion (large yellow), Musk Melon (early), Parsnip, Parsley (curled), Pumpkin (sugar), Radish (French Breakfast), Radish (White Icicle), Tomato (early), Turnip (table variety), Marjoram, Sage, Savory, Spinach, Thyme, Mangel ("Our Ideal") and five selected Flower Seeds including Aster.

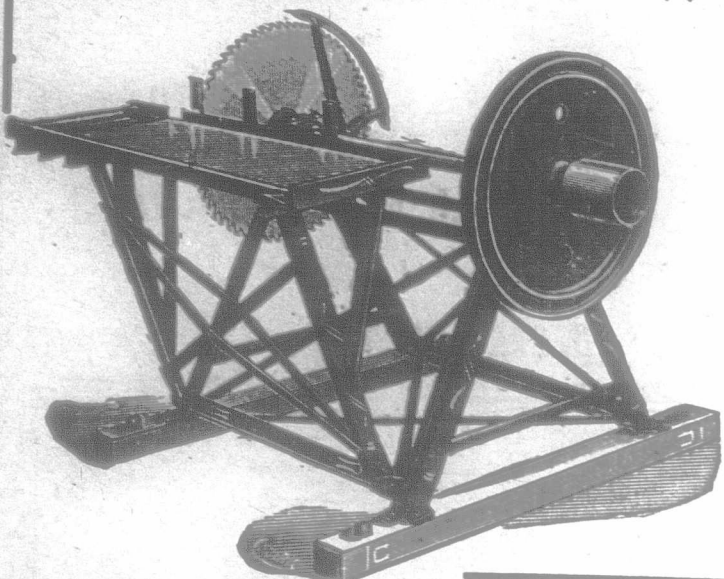
Trial Collection E.—17 selected varieties, 50c. postpaid.

Children's Collection F.—13 selected varieties 25c. postpaid.

Ontario Seed Company Successors, Waterloo, Ontario

Our Hurst Sprayers are the best. Ask for Catalogue

This PAGE STEEL FRAME TILTING TABLE WOOD SAW Only \$19.00



Freight Prepaid East of Fort William.

It has all the latest improvements in wood-saw construction. The frame is built of heavy angle steel bars strongly bolted together and rigidly braced in every direction by heavy flat steel bars. The shaft is a 4 ft. 4 in. piece of lathe-turned steel, and runs in well-babbitted, self-adjusting, dust-proof, non-heating boxes. The saw blade is protected by a heavy steel guard.

The tilting table has a roller at one end for convenience in handling long poles. The balance wheel and pulley are interchangeable. The inside distance between the balance wheel and the saw blade is 3 ft. 6 in. Size of pulley, 5 in. diameter by 6 in. face. Weight, 276 lbs., without saw blade.

It is unquestionably the strongest and most rigid steel saw-frame of its style on the market, and the only one to which there is absolutely no shake when in operation.

Saw of any diameter from 24 inches to 30 inches can be supplied as follows:

24-inch	\$5.25
26-inch	6.25
28-inch	7.25
30-inch	8.25

PAGE WIRE FENCE CO.

WALKERVILLE TORONTO MONTREAL ST. JOHN
87 Church St. 1137 King St. W. 505-517 Notre Dame St. 39 Dock St.
Order from nearest PAGE branch.

CLOVER SEEDS

GOVERNMENT STANDARD

Grown in County of Haldimand on good clean farms. We guarantee Seed to satisfy you on arrival, or send it back at our expense. These prices good until next issue.

- ALFALFA, Home grown, \$11.00 Bush.
- ALFALFA, Northern grown, \$ 8.50 Bush.
- RED CLOVER - - - \$10.50 Bush.
- ALSIKE - - - \$11.00 Bush.
- TIMOTHY - - - \$ 4.00 Bush.

Bags are 25c each extra. Cash to accompany order. Ask for samples if necessary.

If you want lower grades enquire. We also make splendid Family Flour and have Feed for sale.

The Caledonia Milling Company, Limited

Caledonia :: :: Ontario



MAIL CONTRACT

SEALED TENDERS addressed to the Postmaster General, will be received at Ottawa until noon on Friday, the 3rd day of April, 1914, for the conveyance of His Majesty's mails on a proposed contract for four years, six times per week over Dorchester Station's (East) Rural Route, from the Postmaster General's Pleasure, next.

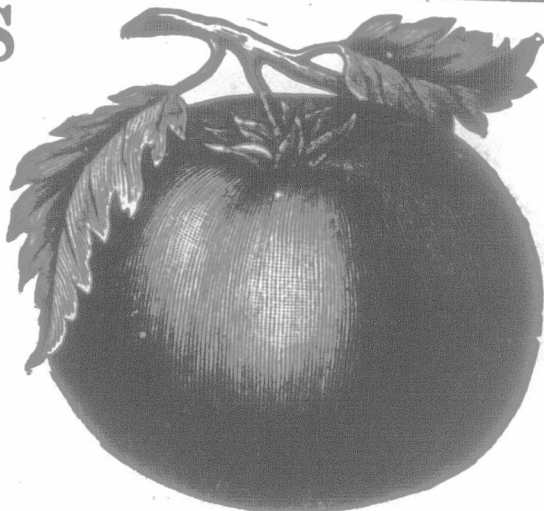
Printed notices containing further information as to conditions of proposed Contract may be seen and blank forms of Tender may be obtained at the Post Office of Dorchester Station, and at the Office of the Post Office Inspector at London. Post Office Department, G. C. ANDERSON, Superintendent, Ottawa, 21st February, 1914.

FOR SALE—SEED CORN

Many varieties; also Feed Corn. Apply to Edward Tellier, St. Joachim, Ontario

RENNIE'S I.X.L. TOMATO

EXTREMELY EARLY, WONDERFULLY PROLIFIC



A week earlier than the Earliana. More productive than the Chalk's Jewel. As large as the Plentiful. As solid as the New Globe. In fact, the world's leading extremely early Tomato.

In our field tests, I.X.L. Tomato proved to be a week to ten days earlier than the Spark's Earliana, with an abundance of fruit larger and more prolific than Chalk's Jewel; in fact, any number of specimens could be found as large as the Plentiful Tomato. The I.X.L. Tomato is without a single exception the leading extremely early Tomato. Do not experiment with it, but plant your entire early crop in I.X.L. Tomato. Your crop will net you big returns.

1. A beautiful, brilliant red color.
2. Vines are a perfect mass of large, smooth fruit, a single plant yielding 1 bushel.
3. Fruit is extremely early, enormously abundant, ripens all at once.
4. Vines compact and can be placed two feet apart in three-foot rows.
5. The largest growers tell us that we cannot say too much in favor of the I.X.L. Tomato.

Price: 1/2 lb. \$2.25, oz. 75c, 1/4 oz. 40c. pkt. 15c

OUR SPECIAL OFFER

We want every person who uses seeds to see our 1914 Seed Book and try this Splendid Early Tomato, and we will send a packet for 10c. with Seed Book. This book is full of new photographs of Vegetables, Fruits and Flowers. Send your address to-day.

WM. RENNIE CO. Limited

Cor. Adelaide and Jarvis Streets, TORONTO

Branches at Montreal, Winnipeg and Vancouver

We pay highest Prices For

RAW FURS

And Remit Promptly

Address **JOHN HALLAM, LIMITED**

FREE

HALLAM'S TRAPPERS GUIDE

French or English

A book of 96 pages, fully illustrated. Game Laws revised to date—tells you how, when and where to trap, bait and traps to use, and many other valuable facts concerning the Raw Fur Industry, also our "Up-to-the-minute" fur quotations, sent ABSOLUTELY FREE for the asking.

Mail Dept. 406 111 Front St. East, TORONTO

When writing Advertisers please mention this paper.

Trade Topic.

HOMESEEEKERS' EXCURSIONS AND SETTLERS' TRAINS TO THE WEST.

Those taking advantage of above excursions should bear in mind the many exclusive features offered by the Canadian Pacific Railway in connection with a trip to the West. It is the only all-Canadian route. Only line operating through trains to Western Canada. No change of depots. Only line operating through standard and tourist sleepers to Winnipeg and Vancouver. All equipment is owned and operated by Canadian Pacific Railway, affording the highest form of efficiency.

Homeseekers' fares will be in effect each Tuesday, March 3rd to October 27th, inclusive, and round-trip second-class tickets will be sold via Canadian Pacific Railway from Ontario points (Ankara and East) at very low fares—for example, from Toronto, also west and north of Toronto, to Winnipeg and return, \$85; to Edmonton and return, \$43. Other points in proportion. Fares from points east of Toronto will be slightly higher. Return limit two months.

Homeseekers' trains leave Toronto each Tuesday during March and April.

Each Tuesday during March and April, the Canadian Pacific will run Settlers' trains to Winnipeg and West, and for the accommodation of settlers travelling with live stock and effects, a colonist car will be attached to the settlers' effects train. This car will leave Toronto on regular train at 10.20 p. m., and on arrival at West Toronto it will be attached to settlers' effects train as mentioned above.

For those not travelling with live stock and effects, special colonist cars will be attached to regular trains from Toronto, running through to Winnipeg without change. No charge is made for accommodation in colonist cars.

Tourist sleeping cars are also operated on regular train leaving Toronto 10.20 p. m.

Full particulars from any C. P. R. Agent, or write M. G. Murphy, District Passenger Agent, Toronto.

Gossip.

The Bowker Fertilizer Co. will conduct a better quality corn contest this year. Five hundred dollars are offered to the man, woman, boy or girl, who can raise 150 bushels of crib-dry, shell corn, to the acre. If no one reaches this yield, the money is divided into several prizes, and awarded according to yield. Write the above company at Boston, Mass., for a copy of the rules for the corn contest, and get into the spirit of making your acres earn their keep.

G. M. Forsyth, of the Woodholme Farm, Mount Clarence, Ont., writes that the Shorthorn trade with them has been very brisk, especially in bulls, having already sold about twenty, and enquiries are still coming in. They still have a few more left of a very desirable kind, and one especially might be mentioned, which is ten months old, and sired by the stock bull, Imp. Lord Gordon, and out of an imported Bruce Bella cow. This is a very nice, smooth calf, in every way, and is fit to head a good herd. Mr. Forsyth is of the opinion that any man who wishes to purchase a good bull will be disappointed if he postpones his transaction until spring, for they are becoming very scarce, and the demand is large. Write Mr. Forsyth about his stock.

An extremely interesting auction sale of dairy cattle is that of 80 head of choice Holsteins advertised in this issue, to be sold in the city of Woodstock, Ont., on Wednesday, March 25th, by members of the Oxford District Holstein Breeders' C.ub. This is the third annual contribution sale of the Society, and all who have attended their previous sales, know that only high-class stock in breeding, type, and dairy production, has been included in the offerings. Oxford district is well and widely known as one of the very best in the Dominion for superior Holstein cattle. The terms of the sale, as stated in the advertisement, are liberal and generous, and the offering should attract a large attendance at the sale. If interested, write for the catalogue to the Secretary, W. E. Thomson, R. R. No. 7, Woodstock, Ont., and mention "The Farmer's Advocate."

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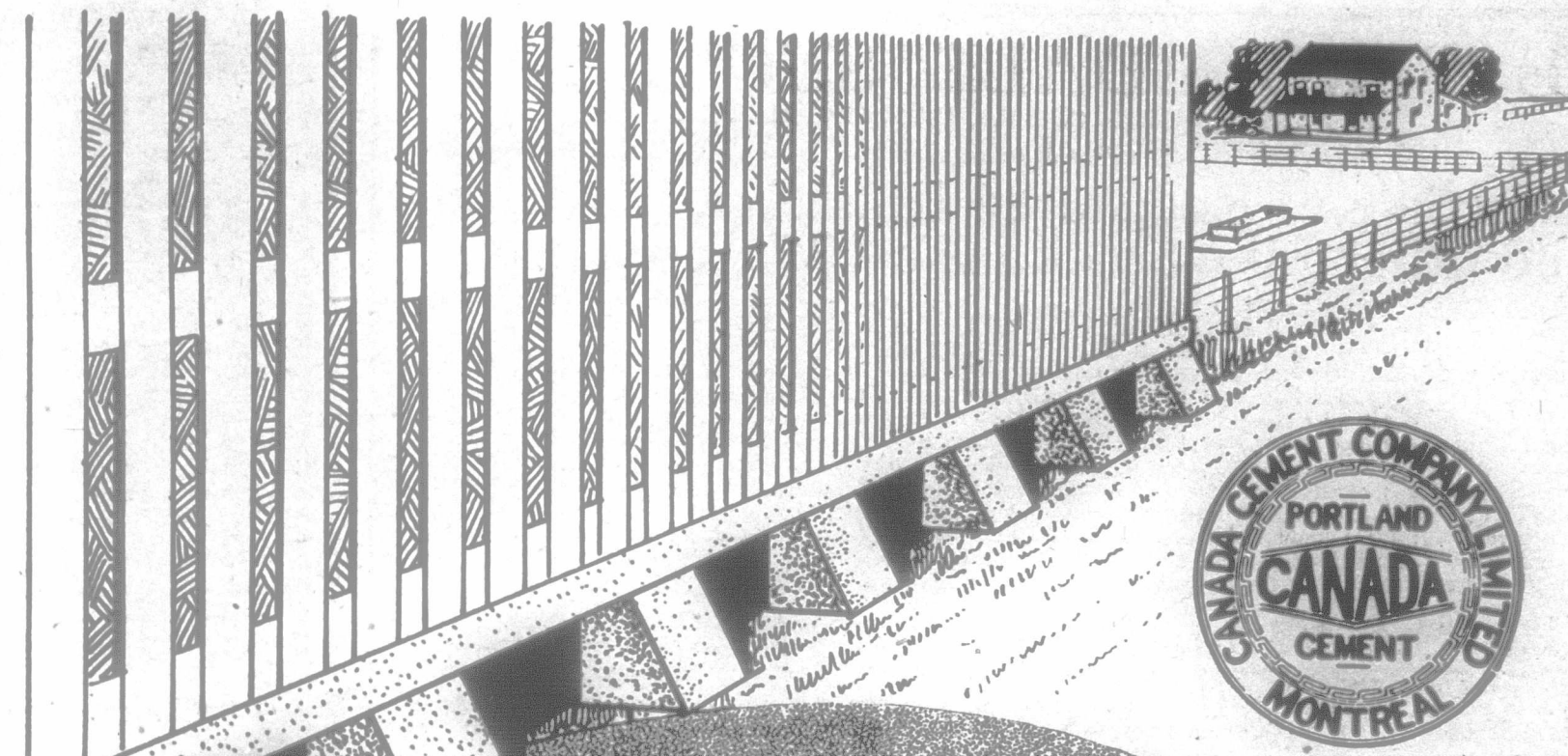
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Build Concrete Crib Floors and Supports

THEY keep the rats, squirrels and other rodents from carrying away your profits. Millions of dollars are lost to farmers each year through the ravages of rodents in cribs and granaries. Part of this loss is paid by every farmer whose crib floor isn't built of concrete.

Concrete crib floors and supports stop the waste because

They Protect Your Grain

Concrete is strong, durable and clean. It never wears out and needs practically no repairs. It is the cheapest of all materials for cribs and granaries.

Write for this free book "What the Farmer Can Do with Concrete." It tells all about the uses of concrete, and will help every farmer to have better buildings and save money.

Farmers' Information Bureau
Canada Cement Company Limited
561 Herald Building, Montreal



THE "SPRUCEDALE" STOCK FARM

A. WATSON & SONS, G. F. JACKSON, PROPRIETORS,

will hold an important

Auction Sale of Registered Holsteins, Clydesdales and other Live Stock, also 100 Acre Farm,

On Thursday, March 12th, 1914

The sale comprises:—15 Registered Holsteins, Four due to freshen about time of sale. 2 Registered Bulls, one yearling and one two-year-old. 10 Grade Holstein Cows, Springers, Five Fresh Milk Cows. 12 Durham Cows, 5 Jersey Cows, due to calf March and April. 10 two-year-old Steers and Heifers, 10 yearlings, Grade Durhams. 20 Grade Shrops., 20 Long Wool Sheep, All Brood Ewes. 6 Oxford Lambs, 22 Leicester Ewes Registered. 3 York Sows, Registered, 3 Brood Sows, (in pig). 5 Young Boars, fit for service (Registered); 5 Yorkshire Sows, ready to breed (Registered); 10 Young Pigs (Registered); 10 Shoats. 3 Clyde Mares rising 3 (Registered); 6 Percherons, in foal, 5, 6, and 8-year-olds, Dark Greys; 3 Percheron Mares, rising 3, Black; 2 Geldings, General Purpose, 4 and 5-year-olds; 1 Chateau Mare, extra good mare, five-year-old; 1 Hackney Gelding, sired by Brigham Radiant, five-year-old, broke single and double, with style; 2 two-year-old Clydes; 1 three-year-old Clyde Colt; 3 yearling Clyde Colts; 2 Hackney yearlings, 2 general purpose yearlings. 6 Pure Bred Bronze Hen Turkeys and two Gobblers. 25 Fowls.

Also the Farm, Consisting of 100 Acres

on Talbot Road, four miles west of St. Thomas. All level land under good state of cultivation. Walnut loam. One and a half storey frame house, one barn 34 by 70, stables underneath. One barn 30 by 50. Drive barn and stable 30 by 60, and other out-buildings. A good orchard and plenty of water. Fall wheat in, and plowing done on the farm.

Sale will be held on this farm, and will commence at 1.30 p.m.

USUAL TERMS

Locke and McLaughlan, Auctioneers.
Trains met on date of sale at St. Thomas.

A. Watson & Sons, G. F. Jackson, Proprietors, St. Thomas, Ont.
Lunch Provided. Long Distance Telephone, Fingal via St. Thomas.

Wilson's Stock and Sheep Scale

With Heavy Wheels, Drop Lever and Brass Sliding Poise



One of our 100 styles.

C. WILSON & SON, 39 Esplanade St. E., Toronto, Canada

Established 62 Years

No. 294.—Capacity, 2,000 lbs.; platform, 30x72 inches, with cattle rack (inclines not included), \$35.00. Inspected by Government.

If cash is sent with order, Wilson pays the freight to any Ontario railway station.

This is a popular scale on the farm—horses, cattle and sheep can be weighed correctly to a pound. Rack can be taken off and scale can be used for weighing grain.

Write to-day is the better way.

Questions and Answers.

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

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

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

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

Miscellaneous.

Red Water.

I have a middle-aged cow that eats good and is in fair condition, and she has started to pass bloody water. Can you give cause and cure, and would the beast be saleable? INQUIRER.

Ans.—This condition is due to a rupture of the small blood vessels in the kidneys. Give the cow one ounce of tincture of iron three times daily in a pint of cold water as a drench until the escape of blood ceases. Feed easily-digested food, and by all means avoid excitement. Another prescription which will do equally well is to purge the cow with 1½ pounds of Epsom salts and one ounce ginger dissolved in two quarts warm water, given as a drench. When purgation ceases follow up with four drams chlorate of potash and one dram each of sulphate of iron, gentian and nux vomica, three times daily as long as necessary.

Tax in Town.

We are farmers living in the limits of the town, that is in the corporation, and do not get any privileges from the town. No water service or any repairs to the road. We have sixty acres of land and pay over one hundred dollars taxes. Could you tell me if we could demand a lower tax or compel the town to give us the water and other privileges? E. G. M.

Ans.—It appears to us that your taxes are high simply because of your location, near to, in fact, in town. You should take the matter up with the Court of Revision in the municipality in which you live if you think your assessment is too high. It is not likely that you could compel the town to lay water mains out to your place if they are not already there unless a sufficient number of ratepayers petitioned for them, and then you would have special water rates to pay.

Gossip.

Don't forget the big Holstein sale of H. F. Patterson, on Thursday, March 12th. Buy your ticket to Alford Junction Station. Conveyances will be there, although it is only a short distance to the farm. A warm welcome and a warm lunch will be waiting for you.

LAST CALL FOR G. H. MCKENZIE'S HOLSTEIN SALE.

In attending the big sale of richly-bred and official-record producing Holsteins at the farm of G. H. McKenzie, a little south of Thornhill, on Yonge street, on Wednesday, March 11th, go by the Metropolitan Electric Road, and whether coming from the north or from Toronto on the south, get off at stop 89, which is at the gate of the farm lane. There never was a time in the history of this country when the demand for dairy products was so great, nor the general prices so high. Add to this the fact that last year the value of the products of the dairy increased by the munificent sum of \$25,000,000 over any previous year, and the proof is given that in no other line of special farming are the results so remunerative and sure. The Holsteins to be sold at this sale have been tested and found true, which, coupled with their official backing for generations back, make the buying of them a certain, safe and sure proposition.

NINE LIVES
Electric Flashlight
Only \$1.00 by mail

—gives a bright, powerful light instantly—just press the button. Compact, handy and safe. Four times as strong as any other and can be recharged for a trifle. Can't explode. The baby can handle it. Sale in a powder keg.

Mail your order to-day
— to —
CANADIAN CARBON CO. Ltd.
96 West King St. - Toronto

\$1.00 prepaid

RAISE MORE OATS PER ACRE

You can also grow Oats of the highest grade if you use Davies Special Fertilizers. Make more money from your farm. Send for free booklet.

The **DAVIES** Company
Wm. Davies Limited
WEST TORONTO, ONT.
We have an agent near you



If you intend to build or remodel your barn this coming year, now is the time to get posted on the most modern stabling for stock. A stable that will save its cost in six months, a stable that will cut your chore work in two and make what is now a drudgery a pleasure, a stable that is sanitary, fire-proof, convenient, comfortable for stock, will last for generations, will prevent big knees, abortion and disease.

WE LEAD---LEARN WHY

Learn about the 17 special patent features in my SUPERIOR EQUIPMENT, found in no other make. Get my big book, it is free. Send a post card now to
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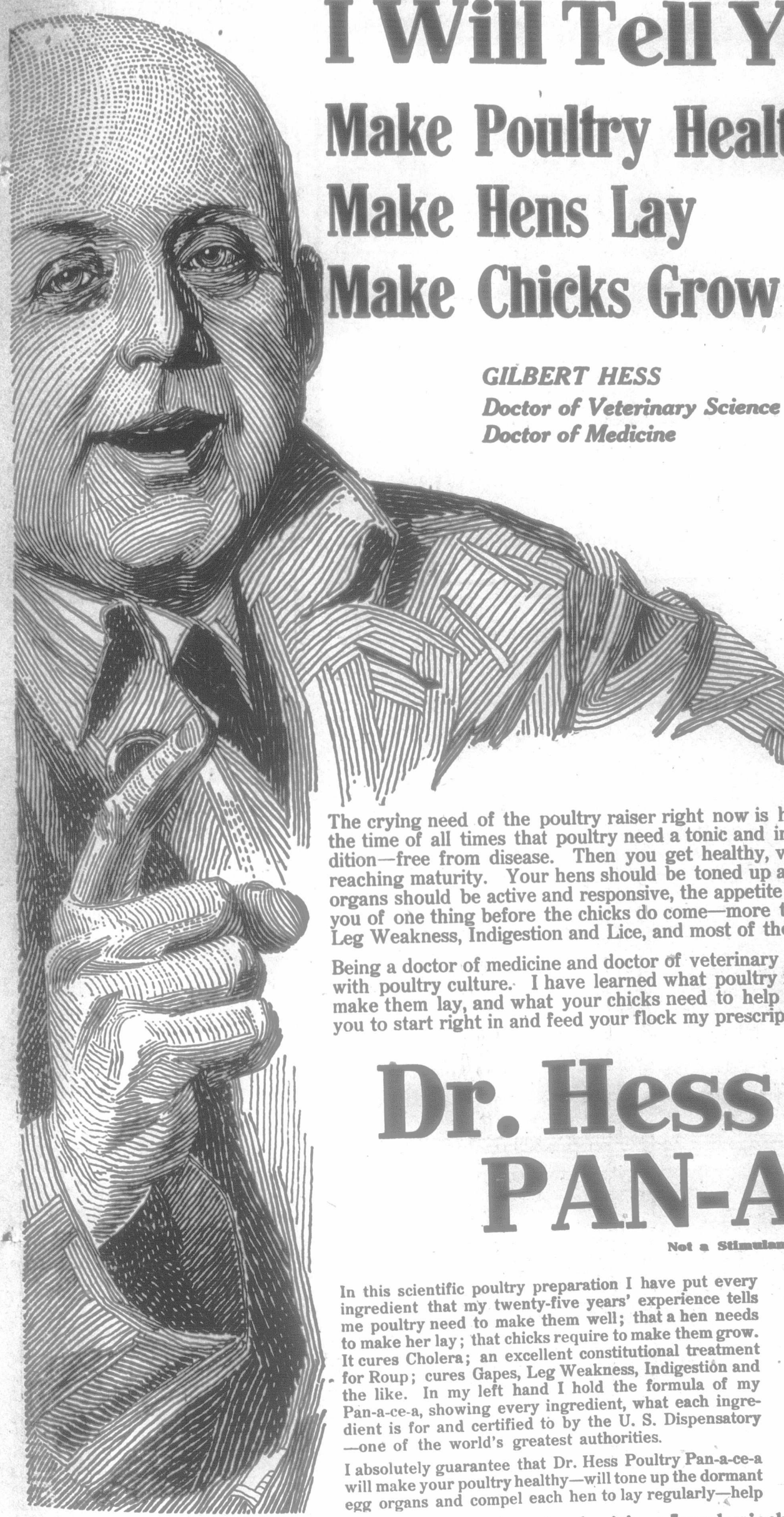
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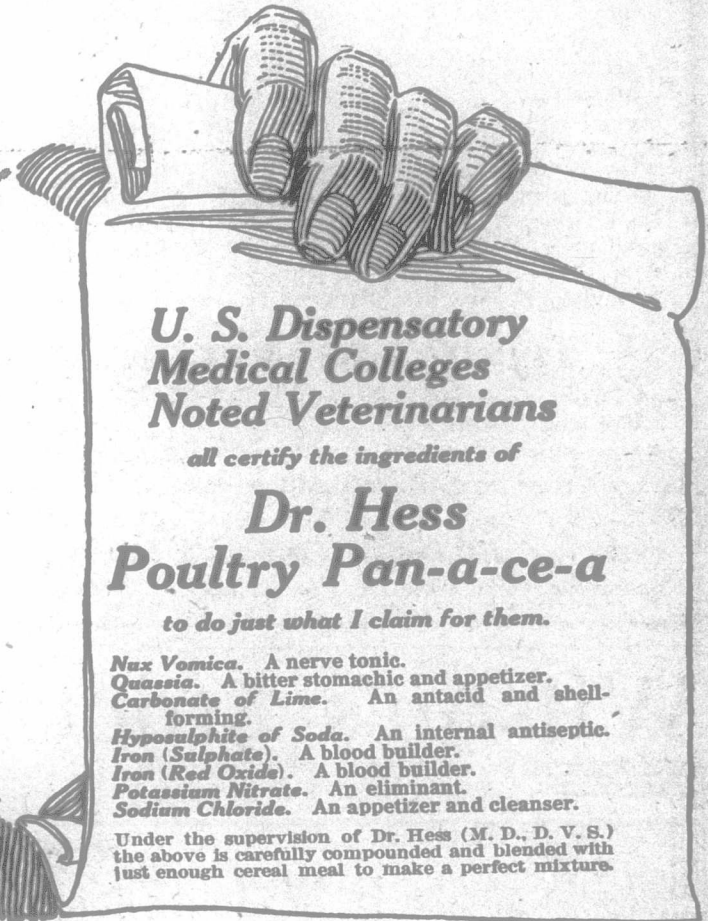
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H. MCKENZIE'S
SALE.
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I Will Tell You How to Make Poultry Healthy Make Hens Lay Make Chicks Grow

GILBERT HESS
Doctor of Veterinary Science
Doctor of Medicine



The crying need of the poultry raiser right now is healthy, fertile eggs for hatching. Mating time is the time of all times that poultry need a tonic and internal antiseptic to put them in the pink of condition—free from disease. Then you get healthy, vigorous chicks that stand a far better chance of reaching maturity. Your hens should be toned up and in the pink of condition right now. The egg organs should be active and responsive, the appetite good and digestion likewise; and let me remind you of one thing before the chicks do come—more than one-half the yearly hatch succumb to Gapes, Leg Weakness, Indigestion and Lice, and most of these can be avoided.

Being a doctor of medicine and doctor of veterinary science, twenty-five years ago I combined science with poultry culture. I have learned what poultry need to make them healthy; what hens need to make them lay, and what your chicks need to help them along to robust henhood. And now I urge you to start right in and feed your flock my prescription—

Dr. Hess Poultry PAN-A-CE-A

Not a Stimulant, but a Tonic

In this scientific poultry preparation I have put every ingredient that my twenty-five years' experience tells me poultry need to make them well; that a hen needs to make her lay; that chicks require to make them grow. It cures Cholera; an excellent constitutional treatment for Roup; cures Gapes, Leg Weakness, Indigestion and the like. In my left hand I hold the formula of my Pan-a-ce-a, showing every ingredient, what each ingredient is for and certified to by the U. S. Dispensatory—one of the world's greatest authorities.

I absolutely guarantee that Dr. Hess Poultry Pan-a-ce-a will make your poultry healthy—will tone up the dormant egg organs and compel each hen to lay regularly—help

chicks grow—get fertile eggs for hatching and shorten the moulting period.

So sure am I that my Pan-a-ce-a will make your poultry healthy, make your hens lay, help your chickens grow and shorten the moulting period that I have authorized my dealer in your town to furnish you with enough Pan-a-ce-a for all your poultry, and if it does not do all that I claim, return the empty packages and get your money back.

Remember this, Dr. Hess Poultry Pan-a-ce-a is never sold by peddlers, but only by reliable dealers whom you know. 1 1/2 lbs. 35c; 5 lbs. 85c; 25-lb. pail \$3.50 (duty paid).

Don't fail to send for my new poultry book—it's a crackerjack and it's free. Write to-day.


Dr. Hess & Clark, Ashland, Ohio

Dr. Hess Stock Tonic
Your stock need this tonic and laxative conditioner now. There's nothing better to put horses in trim for hard spring and summer work. Milch cows need it badly just now to prepare them for the heavy milking season ahead. Dr. Hess Stock Tonic makes all stock healthy—keeps them toned up and expels worms. Sold under a money-back guarantee. 25-lb. pail \$2.25; 100-lb. sack \$7; smaller packages in proportion (duty paid). Send 2c. for my new free Stock Tonic Book.



Dr. Hess Instant Louse Killer
Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks or, if kept in the dust bath, the hens will distribute it. Also destroys bugs on cucumber, squash and melon vines, cabbage, worms, etc., slugs on rose bushes, etc. Comes in handy sifting-top cans, 1 lb. 35c., 3 lbs. 85c. (duty paid). I guarantee.

Will YOUR Roof stand this test?



If burning embers fell on your roof from an adjoining fire, would you be alarmed for the safety of your building?

Statistics show that thousands of buildings are needlessly burned every year—because they are roofed with inflammable materials, easily ignited by sparks and brands. Safeguard your buildings against this dreaded fire-hazard by covering them with

J-M Asbestos Roofing

This is the only ready roofing that affords perfect fire protection. It has withstood the flame of a powerful blow-torch for almost an hour without a sign of burning. The wonderful fire-resisting quality of J-M Asbestos Roofing is due to its all mineral construction—layers of Asbestos felt (fire-proof rock), cemented together with Trinidad Lake Asphalt, Nature's time-defying waterproofing.

The absence of perishable animal and vegetable substances also means that J-M Asbestos Roofing contains nothing to rot, melt, dry out crack or rust. Hence, it never needs coating or protection of any form. Its first cost is the last cost. It is the cheapest-per-year roofing on the market.

Adapted to any type of building—in any climate. Easily applied. J-M Roofing Cleats, packed in each roll, make absolutely watertight seams and give the entire roof a handsome white appearance.

Order from our nearest branch if your hardware or lumber dealer can't supply you. Write our nearest Branch today for a sample of the curious Asbestos Rock that forms the base of this roofing and Book No. 2, 74.

The Canadian H. W. Johns-Manville Co., Ltd.
 (Manufacturers of Asbestos and Magnesia Products) **ASBESTOS** Asbestos Roofings, Packings, Electrical Supplies, Etc.
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International Harvester Cream Separators



THE I H C LINE GRAIN AND HAY MACHINES
 Binders, Reapers
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 Farm Wagons
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A DAIRY farmer who does not use a cream separator is losing up to \$15 per cow per year. Complete your dairy equipment by the purchase of an International Harvester cream separator—Lily, Bluebell or Dairymaid. These separators skim closely—leaving barely a drop of cream in a gallon of milk—and they will do it for years.

These machines are furnished with pulleys for the use of power. Belted to a small I H C engine, you have the best outfit it is possible for you to buy. Note the low supply can on I H C separators, the height of the milk spout which allows a 10-gallon can to be used for the skim milk, the strong frame with open base which can be kept perfectly clean, and the dozen other features which make these I H C machines the best.

Your local dealer should have one of these machines on sale. If he has not, write us before you buy and we will tell you where you can see one; also send you an interesting book on separators.

International Harvester Company of Canada, Ltd
 At Hamilton, Ont.; London, Ont.; Montreal, P. Q.; Ottawa, Ont.;
 St. John, N. B.; Quebec, P. Q.

Questions and Answers.
 Miscellaneous.

Building up a Farm.

1. Can you give me any idea through your paper on building up a run-down farm I have bought?

2. What is the best way to build a hen-house and pig pen. P. H.

Ans.—1. There are several methods by which you may build up a run-down farm, but we don't believe that any are more economical than using a short rotation of crops and bringing a legume into this rotation frequently. Of course, it is always well to keep as many cattle, sheep and pigs as the place will support, and sometimes it is even profitable when grain is cheap and meat high to buy feed for some. This gives you considerable barn-yard manure. Apply this as liberally as you can. Cultivate the farm well, because only from thorough cultivation can you get the best results. Do not neglect to sow plenty of clover and alfalfa, and if the land is in very poor condition it may be beneficial, especially if it is a heavy clay soil, to plough down this mixture, and by getting strawy manure and clover into the land add considerable nitrogen and humus to the soil to improve its texture and increase its fertility. We would advise a three-year rotation if possible with a root crop or corn or perhaps potatoes followed by a grain crop seeded to clover, the third clover, and so on.

2. In last week's issue there appeared two pig-pen plans, which we think quite suitable for the average farm. If you choose to put the hens in with the pigs we would advise that you use a pen facing the south, that is, if your pig pen is facing east and west. It would be better to put the hens in the south end. We do not know that there is anything particular about the plan for this kind of pen. Have plenty of glass, and arrange the roosts and nests so as it would be most convenient.

Fireless Cookers.

I wish to know how to make a good fireless cooker. I understand the real good ones are packed with ground cork. If that is correct, where can I procure the material and at what cost? Where can I get the aluminum pockets made? Also the discs that are placed in the bottom of the pockets? How close together may these pockets be placed? If the cork packing is hard to procure, what would be a good substitute? Any further information you think necessary will be appreciated. Sincerely yours,
 York Co., Ont. W. S.

Ans.—We would really advise you to buy a fireless cooker all ready for use. They are made in different sizes and designs, some merely cooking by conservation of heat and being suitable only for foods that may be cooked slowly, while others are supplied with discs which are previously heated, and so permit roasting and baking to be done in the cooker. Fireless cookers are not expensive, ranging in price from about \$8.00 to \$15.00 or more (utensils included) according to size and design. We are not aware that discs or pockets can be bought separately.

A home-made fireless cooker is only a makeshift, nevertheless a fairly satisfactory one may be made to cook such dishes as stews, scalloped potatoes, porridge, etc., which permit of, or are the better for, slow cooking. To make one get a tight box with a close-fitting lid. Line the inside with papers, felt, anything that will keep in the heat, then pack well with excelsior or hay. Probably cork would do, but we do not know where it can be procured. Make holes for the vessels, which may be placed as close together as you please to admit of packing. When the vessels containing the boiling food are placed in the box they should be covered at once with a cushion made for the purpose, the lid should be shut down and not raised again until time has been given to complete the cooking, which is accomplished solely by "keeping in" the heat. Needless to say, the cooker should be kept in a warm place, as if the packing becomes very cold the heat of the vessels will be too much dissipated.



Certain-teed ROOFING
 GUARANTEED

The General says:
 Eggs are eggs—when your hens don't lay. A warm chicken house encourages the hens. Make the roof—and sides too—of

Certain-teed ROOFING

—The label guarantees it for 15 years—the three biggest mills in the roofing industry are behind that label.

No roofing "tests" can give you that assurance.

Your dealer can furnish Certain-teed Roofing in rolls and shingles—made by the General Roofing Mfg. Co., world's largest roofing manufacturers, East St. Louis, Ill., Marseilles, Ill., York, Pa.

We are sole Agents in Ontario for

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RED RING ROOFING

THE Roofing that is guaranteed for 15 years, and will last longer.

See your dealer—if he does not handle RED RING Certain-teed Roofing, write us for samples and prices.

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SEEDS

A FARMER'S GARDEN
 Helps his wife to plan her table in busy times. Saves work and worry, saves buying so much meat, gives better satisfaction to the help. A good garden will be almost impossible in your busy life without proper tools. They cost little and save much hard work.

IRON AGE WHEEL HOES AND DRILLS

will sow, cultivate, ridge, furrow, etc., better than you can with old-fashioned tools and ten times quicker. A woman, boy or girl can do it. Can plant clover and work these heavy tools while the horses rest. 38 combinations from which to choose at \$2.50 to \$12. One combined tool will do all of the work.

Ask your dealer to show them and write us for booklet, "Caring for Your Garden With Modern Tools" and "Iron Age Farm and Garden News" both free.

The Iron Age
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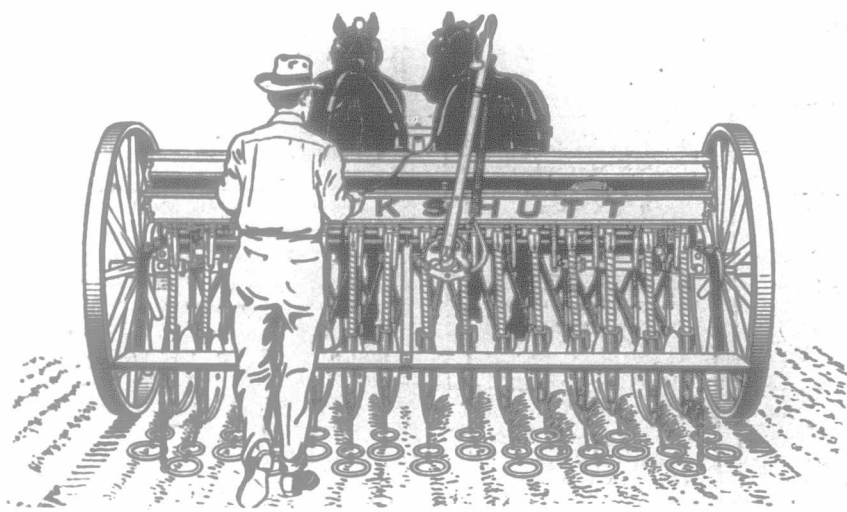
Gossip.

DISPERSION OF HIGH-CLASS HOLSTEINS.

The big rise in land values bordering on Yonge street is not without its features of profit to the farmers as a whole, and to the dairy cattle breeding farmers in particular of this country, inasmuch as it results through breeders of that section selling their farms and dispersing their herds of high-class Holstein cattle. Through this cause, Bales Bros., Lansing P. O., about five miles north of the C. P. R. crossing, will, on Tuesday, March 24th, sell their entire herd of 65 head of Holsteins. Some three or four years ago, several of the breeders in that section joined together in the purchase, at a price no single breeder could afford to pay, of the intensely producing bred bull, Sir Lyons Hengerveld Segis. He is a son of the world famous sire, King Segis, who has now over seventy daughters in the A. R. O. up to 31.86 lbs. in seven days, twenty-one of them at two years of age with records from 20 to 26.44 lbs. He is by Mercedes Julip's Pietertje Paul, with sixty daughters and six sons with eighty-five daughters in the A. R. O. He again is by Johanna Rue 2nd's Paul De Kol, with eleven daughters and eight sons with 101 daughters in the official records. The dam of this bull was Blanche Lyons De Kol, seven-day record 33.31 lbs. butter; 608.80 lbs. milk; butter-fat test 4.88 per cent. Thirty-day record, 134.78 lbs. butter; 2,723.70 lbs. milk. She is by Pietertje Hengerveld's Count De Kol, with 97 daughters and 25 sons with 110 daughters in the A. R. O. Sixteen of his daughters, from calves up to two years of age, will be in the sale, and all the cows will be in calf to him. This is only a short synopsis of the breeding of this great bull. For full particulars, write J. C. Bales, Lansing P. O., for a catalogue.

Miss C. Smith, who succeeds the late A. W. Smith, at Maple Lodge, writes: "Owing to the death of my brother, A. W. Smith, Maple Lodge, the business has fallen into my hands. It was his wish that the work be continued here. The Shorthorn herd and the flock of Leicesters had been much reduced owing to my brother's failing health, hoping to continue with less hired labor. Following his usual plan, he kept the choicest in both cattle and sheep, so that what remains is what he considered the best. I think anyone who knew him respected his judgment in these things. I hope to continue the same fair and satisfactory methods of business, and shall be pleased to see any of those who have so often visited us and had dealings with my father and my brother. For many years great attention has been paid to the milking qualities of our Shorthorns, and we have won many times first place in dairy tests at shows. We did not, however, lose sight of good beef qualities, so we claim to have milking and beef qualities admirably combined. We have made numerous sales lately, and find the demand for pure-bred cattle unusually good. We have sold lately to J. D. Drummond, Ailsa Craig, the dark roan bull, Magee, a real good and attractive calf. To David A. Ross, Watford, the young cow, Melba. She had been milking five months, and during that time gave us over 4,000 lbs. of milk, testing over 4 per cent. This was her first calf, and the cow was very young when she freshened. To Peter Mitchel, Coldstream, we sold the handsome yearling heifer, Duchess Jane 33rd. To James Hord, Ilderton, Prince John, from the same family. He is a beautiful dark-red calf, that has done exceptionally well with us, and should make a fine animal. To W. B. Martyn, Springfield, Strathallan Boy, one of the best calves we have had for sale in some years. To James Fargey, Foxboro, the red calf, eight months old, a real good one, and doing well. We still have one very fine bull calf nine months old that would be a credit to any herd. He is a beautiful color, of good form, straight and smooth, with a deep body and a nice head and horns, and showing himself well. His dam is Melba, the young cow whose milk record I have given. We have also three heifers two years old of good milking strain for sale. The sheep are coming through the winter very well, and we hope to always have something good to offer in that line."

Every Seed Counts When You Sow With A Cockshutt Drill



GOOD seed and good soil are half the victory in the battle for crops. Proper planting is the other half.

And proper planting—the right way to put good seed in good soil—is to sow with a Cockshutt Drill.

The feed is even and uniform—you set the index and the Cockshutt sows at exactly the rate you want it to sow.

Each seed is placed in the centre of the channel; quickly and completely covered up. All the seed is sown at the same depth—insuring early, uniform growth and well-shaded land.

Drill-discs are self-cleaning—field-trash won't "stick" nor bind them. Discs are a full inch closer than on many other drills—giving more rows per field and more bushels per acre.

The increased yield per acre pays for your "Cockshutt" Drill in a very short time. Our complete Drill Book gives many reasons why a "Cockshutt" will make and save much money for you. Write for a free copy to-day.

COCKSHUTT PLOW COMPANY LIMITED,
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Insure Your Horses

against Death through Disease or Accident, Fire and Lightning. We issue the most liberal policies free from vexatious conditions and offer indisputable guarantee of solvency and square dealing.

We insure: Stallions, Track Horses, Draft Horses, In-Foal Mares, with or without insurance on the Foal; Cattle, Castration and Transit Risks, etc.

All kinds of Animals Insurance

Write us for further information and address of nearest agent.

THE GENERAL
ANIMALS INSURANCE COMPANY OF CANADA

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GRAND TRUNK RAILWAY SYSTEM

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Manitoba, Alberta, Saskatchewan

Each Tuesday, March 3rd to October 27th inclusive. Via Chicago, St. Paul or Duluth.

Winnipeg and Return - - \$35.00
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From Toronto and stations north and west of Toronto. Proportionate low fares from stations east of Toronto.

Return limit two months.

Full particulars at Grand Trunk Ticket Offices, or write C. E. HORNING, D. P. A., Toronto, Ont.

CLOVER SEED—Red Clover, Alsike and Timothy, high government tested. Write for samples and prices. SHIPMAN & DAWSON
Cannington - - - - - Ontario

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Vigorous Stock

PLENTY of sunlight, clean bedding and fresh air are essential to the maintenance of health in the stable. But even with the best of care, the close confinement and heavy demands made upon the animals always necessitate a tonic and health regulator.



Pratts Animal Regulator

puts new life and vigor into horses, cows, sheep and hogs. It is a mild digestive tonic, purifying the blood and gently regulating the bowels, kidneys and digestive organs. It is a preventative of disease, because it supplies just the necessary elements to keep the stock healthy and vigorous when closely confined or overworked.

"Your Money Back if it Fails."

At your dealer's, in pails at \$2.00 and \$3.50, also in packages at 25c, 50c and \$1.00.

PRATT FOOD CO. of Canada, Limited
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Send 10c. to cover postage, wrapping, etc., and we will mail you Pratt's "Pointers on Cows, Hogs and Sheep"—172 pages—or "Pointers on Horses"—183 pages—both books for 20c. Use the Coupon.



Preparations for Horses, Cows, Hogs and Sheep.

- Pratts Healing Ointment (for Man or Beast), 25c-50c.
- Pratts Worm Powder, 50c.
- Pratts Veterinary Colic Cure, 50c-1.00.
- Pratts Liniment (For Man or Beast), 25c-50c-\$1.00.
- Pratts Distemper and Pink Eye Cure, 50c.
- Pratts Animal Regulator, 25c. to \$3.50.
- Pratts Dip and Disinfectant, \$1.50 gal.
- Pratts Healing Powder, 25c-50c.
- Pratts Heave, Cough and Cold Cure, 50c-\$1.00.
- Pratts Fly Chaser, 60c-\$1.00.

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Send me your book on:
Horses (10 cents)
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SOLD THE FARM

Unreserved Auction Sale of FARM STOCK and IMPLEMENTS

TO BE SOLD ON
March 17th and 18th, 1914

The following Stock and Implements to be sold March 17th

32 HORSES.—One Imported Clydesdale Stallion, four years old, Barskimming (Imp.) = (14605) = (16469). 6 matched teams imported and home bred. 4 mares in foal, two 2-year-olds and two colts. 15 Hackneys Imp. and home bred. Imp. Hackney Stallion, Warwick Albert, Imp. (14553). 1 extra fine carriage team, four years old, thoroughly broke, single or double, four 3-year-olds, broken to harness and saddle, two 2-year-olds and two colts, three mares in foal.

HARNESS.—6 set heavy team harness, 1 set carriage harness, 3 set single harness. English riding saddle, blankets, robes, carriage sleighs, cutter and a full line of farm implements.

The following to be sold on March 18th.

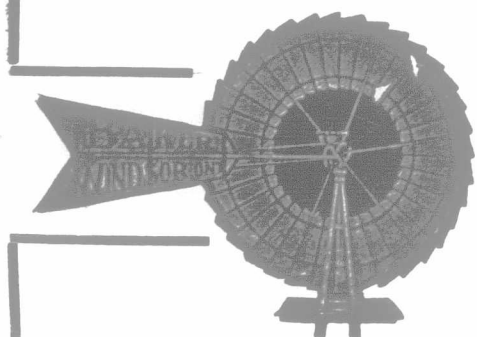
60 HEAD OF CATTLE.—Shorthorn and Shorthorn grades. Stock Bull, Robin = 79431 = , 20 cows, some fresh and giving a good flow of milk, some with calves by their side, others in calf, balance ranging in age from one month to twenty months old.

TERMS OF SALE.—All sums of \$10 and under cash, over that amount eight months' credit will be given on furnishing approved joint notes, or discount of 5% per annum off for cash on all sums entitled to credit.

Oak Park Farm is situated between Brantford and Paris, and can be reached by the Grand Valley car from either town, which runs every hour by the farm. Sale starts at 10 o'clock. Lunch at noon.

OAK PARK STOCK FARM CO., LTD.

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Windsor, Ont.

Questions and Answers. Miscellaneous.

A Horse Breeding.

Would it be possible for a horse with one testicle to serve a mare?

C. S. B.

Ans.—Yes.

The Large Cutting Box Best.

Editor "The Farmer's Advocate":

In your paper of last week G. B. B. asks for information re silo filling with a six or seven horse-power gasoline engine. I have never seen a cutting box with carriers used for filling silos, but have heard men say that half as much power will run them as is needed for a blower. I have run a large-sized cutting box and blower for three seasons with all kinds and makes of engines from twelve to twenty-five horse-power. We tried a six horse-power gasoline engine this fall and we had to quit. We were starting to fill a 24-foot silo and had everything in good shape but we were two hours putting in three loads, so you see we were only wasting time and gasoline. In the first place you cannot get speed enough and still supply power even if you cut only one-half sheaf at a time.

I get the best results from a twenty horse-power engine, as you can get plenty of speed and even power all the time. About 800 revolutions per minute is the proper speed for a large cutting box and blower. It takes about five hours to fill a twelve-foot silo thirty feet high with our box. A six or seven horse-power engine might run a box and carriers, but it will not run a large blower.

A SATISFIED SUBSCRIBER.

Haldimand Co., Ont.

Fertilizers and Beehives.

1. I have six acres of blue grass sod I plowed last fall. I would like to raise a good crop of corn, and, as I have no manure to spare, would like it if somebody who understands fertilizer would tell me the best kind and quantity to use.

2. I want to make some bee hives so as to leave them on the stand and save the trouble of packing them for winter. Would like to know if hives made of 1-lumber and two thicknesses of paper and then 1/2-inch lumber would be as good as a double hive with two inches of chaff.

3. I also have some ground I plowed under clover in August, and then late in fall plowed in narrow lands. I want to raise potatoes and mangels on it. Would like to know the best fertilizer to use.

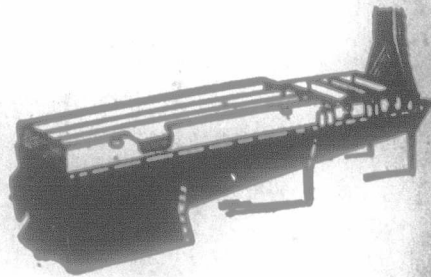
W. H. S.

Ans.—1. All fertilizer firms have fertilizers mixed especially for corn, and they are sold under a guaranteed analysis. If you wish to mix it yourself the following recommendation is sufficient for one acre: Nitrate of soda, 120 lbs.; acid phosphate, 340 lbs.; muriate of potash, 140 lbs.. Mix thoroughly and sow broadcast just previous to planting. One could use less per acre, but it would be wise to use the same proportions.

2. We are not acquainted with devices that will winter and summer bees satisfactorily. The best bee keepers pack four hives together and pack them with four inches of forest leaves on the sides and about ten inches on the top, with the covers removed and a burlap covering applied to allow the moisture to escape. The double hive with chaff packing commends itself to us for winter protection, but we fear it would be rather warm in summer.

3. Potatoes require a fertilizer rich in nitrogen and potash. A mixed fertilizer analyzing, 2 1/2-6-8 running in the order of nitrogen, phosphoric acid and potash is advisable. The separate ingredients should be mixed in the proportion of nitrate of soda, 130 lbs.; acid phosphate, 370 lbs.; sulphate of potash, 160 lbs. The sulphate instead of the muriate of potash is used on potatoes on account of the quality of the potatoes resulting therefrom. This can be sown in the drill or broadcast.

A home-made mixture for mangels should contain 130 lbs. nitrate of soda, 400 lbs. acid phosphate, and 120 lbs. muriate of potash. A ready-mixed fertilizer should be fairly rich in nitrogen and phosphoric acid.



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The season of icy roads and sudden heavy snowfalls is an anxious one for horseowners, because it is so easy for a shapshod horse to cut himself seriously when floundering in the deep snow. A bottle of

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Read what Mr. G. P. Ashbocker, Evan Mills, N. Y., says about it:

"Egyptian Liniment has made extraordinary cures for me. One of my horses got badly calked, and everyone said he would have the lockjaw. The wound gathered and broke, and there was a great hole between the hair and the hoof. I used only Egyptian Liniment, and the horse's foot was soon sound and well. It made a permanent cure. In my estimation there is nothing equal to this Liniment for cuts or sores of any kind."

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that will GROW. I have 300 bus. Wis. No. 7 White Corn and 100 bus. of White Cap Yellow Dent that was picked for seed. Picked from standing stalk after being fully matured and placed on drying racks. Never piled up, and thoroughly dried before cold weather. This corn is an early variety and especially good for silo and fodder. Will ship in crate or shelled. If shelled will be tipped and graded. Will ship on approval. Address

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on your soil. The soil must be sweet to produce good crops. Where sorrel, horse tail, moss, etc., appear, the soil is sour, and you cannot expect the maximum yield of hay, cerea, or fruit without correcting this acid condition. Lime Carbonate (Caledonia Marl) will do this. In many instances it has more than doubled the yield. We furnish blue litmus paper free with directions for testing your soil. Write us for further information. Agents wanted.

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THE HOLSTEIN SALE OF THE SEASON

Third Annual Sale of the Oxford District Holstein Breeders' Club, will be held in the City of Woodstock, on

Wednesday, March 25th, 1914

80 Head of Choice Holsteins will be sold subject to inspection. All cattle are being inspected before being entered to catalogue. Every buyer will have until removal or up to Ten O'clock on the day after the sale to examine his cattle, and if they are not as represented your money will be refunded. No old worn-out cows, no three teaters, no slack quarters no scrub bulls, nothing but the best. They are consigned by some of the most noted breeders of the age, and the best lot ever offered at Public Auction.

Sale at One O'clock in a well-seated building.
Catalogues on application.

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HORSES FOR SALE

Twenty teams of horses for sale, comprised of mares and geldings. All good workers and sound. These horses have been working on construction work and we have no further use for them.

Several sets of harness and waggons.

Two standard-bred mares that can step very fast and have been at the Matinees. All good drivers and perfectly broken.

One four-year-old gelding that has done miles better than 2.18.

Buggies harness and robes.

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Questions and Answers, Miscellaneous.

Age of Poultry-Worms.

Would you kindly repeat the following information, which I am unable to find in a back number of "The Farmer's Advocate."

1. How to tell the age of poultry (particularly hens).

2. Cure for pin-worms in a full-grown horse.

Ans.—1. There is no way of telling a yearling hen from a two-year-old. Each breeder should have the birds with leg-bands on them, and then he could tell them.

2. For pin-worms, inject per rectum a lotion made from quassia chips. Take half a pound of quassia chips and add two gallons water in a pot. Put on the stove and bring to a boil for four or five hours, adding a little water if necessary. Strain off and add sufficient warm water to make a gallon. Inject the rectum with warm water first to remove all faeces. When this is expelled, inject the decoction and hold down the tail for at least one-half hour to prevent the animal expelling it.

Mating Turkeys -- Dead Fish as Fertilizer.

1. How many hen turkeys should be kept with one gobbler? Is 12 too many for a good, strong bird?

2. Would decayed fish be a good fertilizer? Near here, we could get loads of fish in the fall of the year that go up the small streams and die. Do you think it would be good to plow furrows and put fish in them and cover up, and work ground again in spring before seeding, land being of a light, sandy nature, and of an acidy nature, being originally covered with a pine growth?

Ans.—1. It will be impossible to give any inflexible rule to govern this phase of the breeding operations, as freedom of exercise, strength, vigor, etc., are most important. In extreme cases, the results have been satisfactory where one male bird was mated with twenty females, but under ordinary conditions it will be safest if not more than eight females be placed with one male. If you have a good, strong bird, you might successfully mate him with twelve hen turkeys.

2. On the Atlantic seaboard, the waste fish is composted with success. If you had some coarse material to use as a base, it would enhance the value of the compost. A thin sod, straw, or weedy growth, would be satisfactory. This involves more labor, but we prefer it to the application of raw fish.

The Standard-bred.

Will you kindly inform me from what origin the Standard-bred horse comes, and where first produced?

Ans.—The Standard-bred horse of America traces back to Messenger, a gray Thoroughbred horse, foaled in England in 1780, and imported to Philadelphia in 1788. He was the sire of Mambrino, which was in turn sire of Abdallah.

Abdallah was mated to a mare known as the Charles Kent mare, who had behind her two generations tracing to the imported Messenger. She was owned by a butcher in New York City. Hamblonian 10 was the result of this cross, and to him traces a great amount of the American trotting stock. The Hamblonians, however, are not responsible for all the trotting breeds of America. A Norfolk trotter named Bellfounder was imported in 1823, and was the sire of the Charles Kent mare. This horse was numbered 55 in Volume 1 of the English Hackney Studbook. Mambrino Chief, a grandson of the old Mambrino, already mentioned above, was the founder of the so-called Mambrino family. The Canadian Pilots, Royal Georges, Morgans and Champions, were incorporated, and have been gradually absorbed from time to time. Infusions of the Thoroughbred have been injected into the trotter directly in some instances and indirectly in others, so that the American Standard-bred is now a breed based on speed and ability to produce speed. The National Association of Trotting Horse Breeders was organized in 1876, but the "Trotting Register" was kept by J. H. Wallace, from 1871. The American Trotting Register Association succeeded the National, and purchased the Register from Mr. Wallace.

SAVE-THE-HORSE



THE TIME IS NOW

All the winter long, the troubled owner of a lame horse reads our advertisements. Then, day after day slips away, while he talks, laments, listens, takes advice and hesitating — **FAILS TO ACT**—till the Springtime is on him and his horse is not yet able to work. Meantime the thrifty, prosperous, resolute man, reads, considers the evidence carefully — **Decides Promptly**—and his horse is working in, say, ten days to two weeks. That's exactly what happens every winter.

We Originated the treatment of horses by mail—Under Signed Contract to Return Money if Remedy Fails—and every minute of every day for Eighteen Years our advice and treatments have been on the way wherever mails go and horses are. Our charges are moderate. Spring work is near; Write.

Our Latest Save-The-Horse BOOK is a Mind Settler—Tells How to Test for Spavin—What to Do for a Lame Horse—Covers 58 Forms of Lameness—Illustrated. But write describing your case and we will send our BOOK—Sample Contract and Advice—ALL FREE—to Horse Owners and Managers—Only.

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Druggists Everywhere Sell Save-the-Horse WITH CONTRACT or sent by us Express Prepaid



KEEP THEM WORKING

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KENDALL'S SPAVIN CURE

at any druggists at \$1 a bottle, 6 for \$5, and Kendall's will cure. Thousands of farmers and horsemen will say so. Our book, "Treatise on the horse" free.

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HAS IMITATORS BUT NO COMPETITORS!

SAFE, SPEEDY AND POSITIVE.

Supersedes All Caustery or Firing. Invaluable as a CURE for

**FOUNDER,
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BONY TUMORS,
LAMENESS FROM
SPAVIN,
QUARTER CRACKS,
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PARASITES.**

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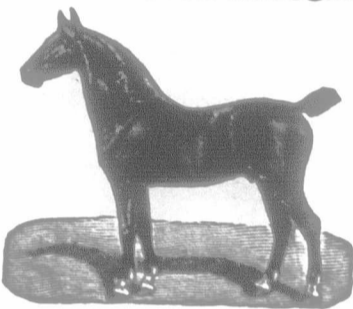
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Imported CLYDESDALE Stallions

Yes, they are here, our 1914 importation, and if you want a big young stallion with the best legs, ankles, feet, action, breeding and character you ever saw at a price a poor man can pay, come and see our lot.

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When in want of a high-class Clydesdale stallion or filly, or something that has won and can win again in Hackney stallion or fillies, visit our barns at Hudson Heights, Que.

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Seven 4-year-olds and two 3-year olds with an average weight of 1750 lbs. all of them safe in foal, well matched pairs, have been in Canada over a year and in fine condition. Choicely bred, a high-class quality lot.

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I have just landed a big importation of Clydesdales and Percherons, if you want a big ton stallion with the best of quality, come and see me, I can show you the best lot of stallions you ever saw.

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For the first time we are offering for sale Shorthorn cows and heifers, and Jersey cows and heifers with official R. O. P. records, with their official records is high-class individuality.

G. A. JACKSON, WESTON STATION, DOWNSVIEW POST OFFICE.

Questions and Answers. Veterinary.

Inappetence.

Cow became sick and constipated. I purged her freely, but now she eats very little. O. J.

Ans.—Mix equal parts sulphate of iron, gentian, ginger, and nux vomica, and give her a heaped tablespoonful of it three times daily in a pint of cold water as a drench. Feed her a little at a time and often, until her appetite improves. V.

Injury to Eye.

Yesterday my mare had her eye struck by a broken limb. To-day the eye is sore, and has a small, white spot on it. D. D. McC.

Ans.—Keep her excluded from draughts and sun. Bathe the eye well three times daily with hot water, and after bathing put into the eye a few drops of a lotion made of 15 grains of sulphate of zinc, 20 drops fluid extract of belladonna, and 2 ounces distilled water. V.

Strangles.

Two-year-old colt had a swelling under his jaw. This broke and discharged matter. Now, at three years old, a similar lump is appearing. P. C. McL.

Ans.—This is strangles or distemper. It is not often that a colt has a second attack, but it occasionally occurs. Apply mustard, mixed with oil of turpentine, to the lump. Lance it as soon as it becomes somewhat soft, and then flush out the cavity twice daily until healed with a five-per-cent. solution of carbolic acid. Give him 3 drams hyposulphite of soda three times daily, and if complications appear employ a veterinarian. V.

Weak Ankles.

Colt had weak ankles when born, but they got some better during the summer. Now, at ten months of age, they are bad again. The fetlock pad descends until the toes turn up, and he walks with a stiff, halting gait. S. R.

Ans.—Shorten the toes of his feet. Rub the joints well with a liniment made of ½ ounce tincture of iodine, ½ ounce camphor, ½ ounce oil of turpentine, 4 ounces extract of witchhazel, and wood alcohol to make a pint. Add sufficient water to this to make a quart, and rub well three times daily. In an hour after applying the liniment, apply bandages, and leave on until you need to apply the liniment again. Give him a roomy box stall. Do not keep him tied. It is not probable that he will ever be very strong, but may make a useful animal. V.

Open Joint.

Colt got kicked below the stifle joint a week ago. Since then the wound has been discharging so freely that I cannot get any dressing to stay on. It is very sore, and he puts no weight upon the leg. P. L. M.

Ans.—This is open joint, and a recovery is very doubtful. He should have been under treatment by a veterinarian from the first. He should be placed in slings, and, as the parts are so sore, they should be bathed with hot water, as hot as a man can stand his hand into. The more bathing the better. In fact, the bathing should be almost constant for a day or two. When ceasing bathing, apply 1 part carbolic acid to 24 parts water. It is very probable he will be either dead or improving by the time you see this. V.

Recurrent Spinitis.

Yearling colt was found unable to rise in the field last August. I consulted a veterinarian, who treated him, and stated that he would grow out of the trouble. In three days he got up, and in three weeks he had another attack, and had recurrent attacks until Christmas, when he was unable to rise for eight days. I called another veterinarian, and he advised me to kill him, as he could not recover. Since then he has steadily improved. A. J. B.

Ans.—This was repeated attacks of spinitis, probably due to pressure upon the spine, and in most cases recovery takes place when the patient is so young. It will be well to keep him quiet in a roomy box stall, and feed on laxative food, and give him 1 dram of iodide of potassium twice daily. If this interferes with his appetite, reduce the dose to 40 grains. V.

Make Your Lame Horse Sound, Like This

You Can Do It While He Works.

We want to show you that there isn't any affection that causes lameness in horses that can't be cured, no matter of how long standing. We want to send you our instructive book, "Horse Sense" No. 8.



It describes all. And with the book we want to send you an expert's diagnosis of your horse's lameness. All this is absolutely free. Simply mark the spot where swelling or lameness occurs on picture of horse, clip out and send to us telling how it affects the gait, how long animal has been lame and its age.

We absolutely guarantee Mack's \$1,000 Spavin Remedy to cure Spavin, Bone or Bog Spavin, Curb, Spint, Ringbone, Thoroughpin, Sprung Knee, Shoe Bole, Wind Puff, Weak, Sprained and Ruptured Tendons, Sweeney, Shoulder or Hip Lameness and every form of lameness affecting the horse. We have deposited One Thousand Dollars in the bank to back up our guarantee. Cures while he works. No scars, no blemish, no loss of hair.

Your druggist will furnish you with Mack's \$1,000 Spavin Remedy. If he hasn't it in stock, write us.

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—Are prevalent in cold weather. Irregular work and overfeed induce both. A system tonic and blood purifier, such as

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will prevent these troubles and when developed with Fleming's Veterinary Heaving Oil quickly cure them. Per. Box \$1.00

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will clean them off permanently, and you work the horse same time. Does not blister or remove the hair. \$2.00 per bottle, delivered.

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If you want to buy Percheron Horses and Mares, I will save you time and money and all trouble with papers and shipment. Will meet importers at any landing port. I am acquainted with all breeders and farmers. 30 years experience. Best reference. Correspondence solicited.

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LABOUR (Imp.) (3853) (100565)—Percheron Stallion, 2 years old. Prizewinner Toronto and London Exhibitions.



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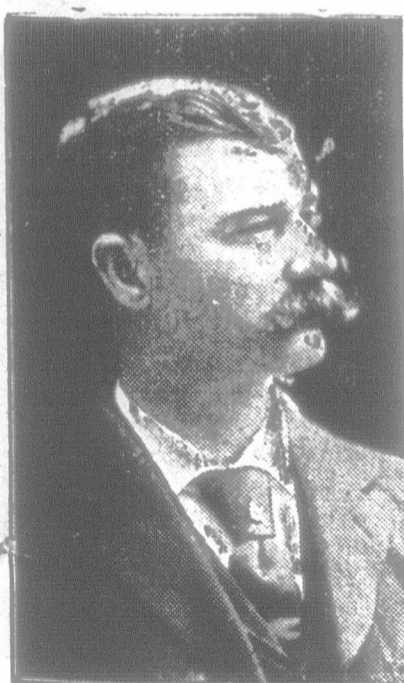
Above are true photographs of two of our Percheron Stallions, we have lots of others just as good and some better, all ages from two to eight years, blacks and greys, weights from 1800 to 2100-lbs. Every horse sold under a breeding guarantee that protects the buyer. We have more prize-winners in our barns at the present time than can be found elsewhere in Eastern Canada. It will pay all intending purchasers to see our offering before buying.

G. T. R. and C. N. R. Bell 'Phone 18.

HODGKINSON & TISDALE, Beaverton, Ont.

WESTON, ONT. BRANDON, MAN. IMPORTING BARN

J. B. Hogate, Proprietor IMPORTER OF Percheron Stallions and Mares



Ages from one year old to six years old Blacks and greys. Great, big, thick ones. Come and see what I can show you and get prices before you buy. That will be to your interest. And if I cannot sell you a better stallion or mare for less money than anyone in the business I do not want you to do business with me. Weston is three miles from Toronto, and can be reached by C.P.R. and G.T.R. Also by Dundas & Weston electric cars every twenty minutes. For further particulars, write

J. B. HOGATE West Toronto Ontario

SEE OUR CLYDESDALES

A choice lot of Stallions and Mares are in our stables at the present time. They are the big kind, with the best of quality and in the pink of condition. Write us for particulars, and we will be pleased to meet you at any of the Stations mentioned.

SMITH & RICHARDSON Columbus P. O. Myrtle, C.P.R.; Brooklin, G.T.R.; Oshawa, C.N.R. Long-distance 'Phone.

Percheron, Clydesdale and Shire Stallions, Mares and Fillies Belgian, Hackney and French Coach Stallions

We have a better bunch of stallions and mares in our barns at present than ever before, and are in a position to sell cheaper than any other man in the business. We raise our own feed, do our own buying and selling. No commission agents to share profits with. We have nice, big, stylish blacks and greys, with right kind of bone and feet and good, straight, true action. Every stallion guaranteed a foal getter. Every mare a breeder. List of prizes won: Sherbrooke and Ottawa on 16 head, 15 firsts, 6 seconds, 4 thirds, 3 fourths and 6 championships. This speaks stronger than words as to the quality of my stock. J. E. ARNOLD, Grenville, Que. Three trains run daily from each of these cities.

Imp. Stallions CLYDESDALES Fillies Imp. To the Clydesdale men of Canada we wish to say we have some of the best show material in this country. More size, more style, more quality, more character and better breeding than ever before, in both stallions and fillies. JOHN A. BOAG & SON, Queensville, Ont. Electric cars every hour.

When writing advertisers please mention this paper.

Questions and Answers. Miscellaneous

Telephone Company Charter.

Would you please answer in your paper where application should be made for a charter for a county telephone line, now erected and running, and about what same would cost? A. I.

Ans.—Write the Provincial Secretary, Parliament Buildings, Toronto, and get full particulars.

Town and Country School.

Where a school section includes part of two different corporations, how is the tax rate adjusted so that each corporation shall pay a fair proportion of the expense? In our case, the farmers pay 12 mills on their assessment, while the town pays but 7½ mills on theirs.

ONE OF THE FARMERS.

Ontario.

Ans.—For the desired information, we would refer you to the Public School Act (Ontario Statutes, 1909, Chap. 89), Sec. 29; also amending Act of 1911, Chap. 17, Sec. 55 (6); and also amending Act of 1913, Chap. 70, Sec. 6.

Boundary Timber.

A and B own adjoining farms. Along the line fence between A and B there is large timber standing on both sides of the fence. A comes along without notifying B and cuts timber on both sides of fence.

1. Has A a legal right to do so?
2. Has B a right to half of the timber?
3. If so, what steps should B take against A?

Ontario.

Ans.—1. No; he was only entitled to cut timber standing on his own land.

2. He owns the timber that stood on his land prior to being cut.

3. He ought to request A to make amends, and in the event of his neglecting or refusing to do so, or of a failure to agree upon the amount of the compensation, B would do well to instruct a solicitor in the matter.

Prize Winning Belgian Stallions For Sale

ONE DARK BAY with black points, foaled April, 1911, 16 hands, weighs 1,850. Strong and sturdy, low down and broad, round shapely body, short strong back, fine head and neck, plenty bone, a horse of perfect conformation with plenty of scale.

ONE VERY DARK CHESTNUT small splash of white in face, white hind pasterns, foaled May, 1911, 16.1 hands, weighs 1,760, will grow to be a big horse, with a good head, neck, front, back and middle, quick in action and lots of class and bone.

ONE RED ROAN coming two-years-old, weighs 1,500, will make one of the largest and best in the country, a great prospect. He was 2nd prize as a colt in 1912 and 1st prize as a yearling at the Ohio State Fair last fall.

These horses with their dams and sires have won over twenty-five ribbons at the Ohio State and Madison Co., Ohio Fairs in the last two years. They are registered and from imported mares by imported sires, carrying the best blood of Belgium, they are acclimated and sure breeders.

Will sell at reasonable price. No trades. Come and see them, and if not found as advertised, your railroad fare and expenses paid. Reference, The Central National Bank, London, Ohio.

M. B. WILSON, Breeder, R. D. 8, London, Ohio, U.S.A. (On Penn. and Big 4 R.R., or "Deer Creek" stop, Ohio Electric.)

5 Yearling Clydesdale Stallions

10 Young Holstein Bulls, 1 Stallion (Imp.) in dam, others grandsons of Baron's Pride, bulls got by King Payne Segus Clothilde, a grandson of King Segis and Grace Fayne 2nd's Homestead, 35 lbs. butter in 7 days (world's record), and 2 other sire's dams in R.O.P. milking up to 84 lbs. per day, and 16,000 lbs. in 11 months. Write, or better come and see them (a few Ponies).

Manchester P.O. on G.T.R. Myrtle C.P.R. Bell 'Phone

R. M. HOLTBY

PERCHERON STALLIONS

One Grey, ten-year-old; one Black, seven-year-old; one grey, three-year-old; also one German Coach, three-year-old. Prices right. Main line G.T.R., 30 rods from station.

Jacob Steinmann ; New Hamburg, Ont.

CLYDESDALE STALLION

For sale. Royal Tom (13428) rising 4 years old. Sire—Sir Lachlin Imp. (6147) (10460). Dam—Sweetheart Abbey Imp. (10047). Also 1 stallion rising 2 years old from Imp. dam and sire

JOHN CALDWELL, R. R. Shanty Bay, Ont.

More-Finer Fruit

USE the quickest, surest, most economical method of spraying: preventing disease, blight; killing bugs; assuring bumper crops of finest fruit. 300,000 farmers, gardeners have found

Brown's Auto Spray
most efficient—Style No. 1 shown here. Capacity 4 gallons. Easily carried over shoulder. Does more work than 3 ordinary sprayers. Patented Auto Pop Nozzle—throws any kind of spray—does not clog.

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NON-CLOG ATOMIC NOZZLE
sprays any solution without clogging. Guaranteed. 40 styles, sizes—hand—power. Write for Free Spraying Guide.

The E. C. Brown Co.
67 Jay St.
Rochester, N. Y.



Questions and Answers.
Miscellaneous.

Fertilizing Corn.

In your issue of February 12th, you advise "Subscriber," who has no manure for corn ground, to use nitrate of soda, acid phosphate, and muriate of potash. Our land is heavy clay and some limestone gravel. Would the same fertilizer do for us? We have not enough manure to cover all the field as we would like. Would it be better to give part of field a fairly good covering, and use fertilizer for the remaining part, or give all the field a light covering of manure and not use so much fertilizer per acre? Do you think it is of any benefit to root crops to apply about 300 pounds of salt per acre? Do you apply fertilizer broadcast to land after corn is sown?

SUBSCRIBER.

Ans.—The fertilizer as recommended in our issue of February 12th would likely prove satisfactory on your land, especially that you have no barn-yard manure to apply to this soil. We would advise giving the entire field a light covering of the barn-yard manure, and using a lighter application of the fertilizer with it than putting all the manure at one end of the field and the fertilizer on the other. We would not advise sowing salt extensively on land which you are preparing for roots. In applying fertilizer, it is better to sow it just before the crop is sown or planted, and work it in with the cultivator or harrow.

Summer Henhouse and Rations.

1. Please give a plan for summer henhouse, to hold 150 hens, using California siding. Please quote approximate prices.

2. What would be a good summer ration for laying hens? C. P. M.

Ans.—1. The best house we know for this purpose would probably be the open-front house. To accommodate 150 hens, it would require to be 20 feet wide by at least 30 feet long. The floor is sometimes made of concrete, but the ordinary earthen floor would serve your purpose very satisfactorily in the summer time. The south side of the house is left open, with the exception of a wire netting. The posts in the front or south side are three feet high, and in the back or north side four feet six inches. The gable end or peak of the roof is seven feet high. In the west end is a large window to admit light, and in a building 20 x 20, which is the customary size for 100 hens, this window is built 4 feet 2 1/2 inches, by 5 feet 4 inches. There is a door in the east end. This building is used summer and winter, without any extra protection in front, but a curtain might be used over the wire netting, if it were put up and down at the right time. If you require this building in summer only, we can see no reason why the front should not be built the same height as the back, and protected with wire in the same way as with the shorter posts. The material for this building, 20 x 30, will cost you in the vicinity of \$65 or \$70, and the labor will bring it slightly over \$100.

2. In spring and summer feeding, the rations are better composed entirely of grain and green foods, when the eggs are to be used for hatching purposes, but if they are desired for the market only, mashes and small quantities of animal food may be used to good advantage. With the dry-grain method of feeding, the grain is scattered in the straw during the forenoon, and they are allowed to eat it from a trough at night, but after they go to roost the grain is scattered in the littering, and all gathered up into one heap. Early in the morning they busy themselves procuring their breakfast from this heap of grain and chaff. In addition to this, a small hopper of rolled oats is put on the side of the wall where they can get it at pleasure. Green foods should be supplied liberally, either by running on small grass plots, or by cut clover or sprouted oats. Roots, apples, or vegetables of any kind, would be relished very much, and sour milk is very much relished as a drink. Where mashes are used, it is composed of mixed ground grains, moistened with water or milk, fed in the morning. Some grain is scattered in their litter at noon, and at night they get all the whole grain they can eat. The same caution should be taken to furnish green food when mashes are fed as in the case of whole grains.



Royal Dublin Society

GREAT IRISH SPRING SHOW, TO BE HELD AT DUBLIN, ON

April 14, 15, 16 & 17, '14

Magnificent display of the largest number of pure-bred young bulls at any show in Europe. Auction sales on the second and third days of the show. For all particulars, apply to the

Agricultural Superintendent
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5 SHORTHORN BULLS

from 9 to 14 months, large growthy fellows; 1 high-class herd header, 9 months, sired by a Duthie bull; a few good young heifers all priced, worth the money. STEWART M. GRAHAM Lindsay Ontario

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., R. R. No. 1, Drumbo, Ont. Telephone, Ayr

1854 MAPLE LODGE STOCK FARM 1914

Shorthorns and Leicesters
have a most excellent lot of young rams for sale, mostly sired by imported Connaught Royal. Something very choice in young bulls. House one mile from Lucan Crossing, G.T.R. Estate of Late A. W. SMITH. MAPLE LODGE, ONTARIO

Woodholme Shorthorns

I have a few more Scotch Bulls, of the low set thick kind, breeding unsurpassed, left for sale; among others a 10 month's, out of imp. sire and dam, a herd header of the right kind. Write me your wants G. M. Forsyth, North Claremont, Ont.

THE MANOR SHORTHORNS AND LINCOLNS

Young bulls, also heifers, got by, and cows in calf to one of the good bulls of the breed. In Lincolns 6 yearling rams and 10 ram lambs by an imported ram. Inspection solicited. J. T. GIBSON, Denfield, Ont.

"OAKLAND" SHORTHORNS

50 head of good individuals to select from, 26 breeding females, headed by a fine Roan 1st prize, and sweepstakes bull. Just three bulls fit for service, all of high quality, and priced to sell. Dual purpose a specialty.

John Elder & Sons Hensall, Ontario

Shorthorns "Trout Creek Wonder" at the head of the herd which numbers about 40 head. Heifers and bulls of the best quality for sale at reasonable prices.

Duncan Brown & Sons, RR 2, Shedden

Shorthorns and Swine

—Have some choice young bulls for sale; also cows and heifers of show material, some with calves at foot. Also choice Yorkshire sows.

ANDREW GROFF, R. R. No. 1, Elora, Ont.

FLETCHER'S SHORTHORNS—Present offering 5 choice bulls, suitable for high-class herd headers, 8 to 11 months, and females all ages. Present stock bull "Royal Brice" (imp.) = 55038 = George D. Fletcher, R. R. No. 2, Erin, Ont. Erin Station, C.P.R. Long Distance Phone

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Convert it into dollars by feeding it to your calves, along with a small portion of GARDINER'S CALF MEAL, the perfect cream substitute. You will save money, and make money three times a day. Better begin at once.

GARDINER'S CALF MEAL
THE PERFECT CREAM SUBSTITUTE

is now being discovered by new users every day, who declare it to be a good business proposition, anyway it is figured. It is a perfect substitute for cream or milk. You can raise just as good calves on GARDINER'S CALF MEAL as you can on whole milk, but at a great saving. You owe it to your bank account to take advantage NOW of the special offer below.

SPECIAL OFFER!

We will ship to any address in Old Ontario one of our big hundred-pound sacks of GARDINER'S CALF MEAL, freight prepaid, for \$3.75. Send to-day. This offer may not appear again.

GARDINER BROS., SARNIA, ONT.
A live representative wanted in each locality.

Reg'd R. O. P. Milking Shorthorns

BY AUCTION, IN THE CITY OF WOODSTOCK.

Tuesday, March 10th, 1914

TO BE HELD IN DR. RUDD'S SALE STABLES.

The herd consists of 7 cows, 4 heifers under a year, 1 ten-months-old bull, and 3 bulls 2 to 3 months old. They are large, strong cattle, nearly all dark reds or red and white. Every cow is a good individual of milking Shorthorn, heavy milk producers and regular breeders. Those under test are the big, strong, red cow, Belle of Beachville 2nd 55450; she is 19 years old April 10, 1914, has been under test 10 months, and has produced 9,483 1/2 lbs. of milk testing over 4%, and still giving 20 lbs. a day, and apparently good for years to come. Is safe in calf to College Duke. Butter Belle 96416, a 3-year-old daughter, has produced 5,200 lbs. in ten months, testing over 4% and safe in calf. A pair of 2-year-olds lately entered are doing well also. Duchess of Maple Lane, a very large heavy cow, produced in one

month since calving on Nov. 30 1,394 lbs., testing 4.2%, and others of like record of which records will be given on sale day. The 10-months-old bull is a large, vigorous, growthy fellow, fit for service. His dam is Belle of Beachville 2nd, and sired by our late stock bull, College Duke, now owned by The William Weld Co., Ltd., bred by the Macdonald College, Quebec, out of imp. English stock with high milk records.

Also a big, high-class Hackney mare, 3-year-old, and a good Simplex separator 700 lbs. capacity.

Bereavement in the family the cause of selling, and everything will be sold without reserve.

Terms: 6 months' credit on approved notes, or 6% per annum off for cash.

For further particulars write:

Walter Pullen, Prop., R.R. No. 1, Beachville, Ont.
Welby Almas, Auctioneer, Brantford, Ont.



Elm Park Aberdeen-Angus and Clydes

We have for sale a few two-year-old heifers by imported bulls and out of imp. cows bred to good bulls. We also have four good Clydesdale fillies, 2 two-year-olds and 2 yearlings. Also 2 stallion foals. Five of them out of Lord Charming mares by King Seal, imp. Address: JAMES BOWMAN, Elm Park, Guelph.

CANADA'S CHAMPION HEREFORDS

When selecting a herd header or foundation stock, come to the fountain head; for years my herd have proved their title as the champion herd of Canada. I have always both sexes for sale.

L. O. CLIFFORD, OSHAWA, ONT.

"THE AULD HERD"

We have a select lot of females of all ages, and of the best Scotch families for sale. Also a March bull calf, red, little white, an Orange Blossom by Broadhooks Ringleader.

A. F. & G. AULD, Eden Mills, P.O. Guelph or Rockwood Stations

100 SHORTHORNS IN OUR HERD 100

Our 1913 crop of 22 bulls are all sold, we have 20 extra bull calves coming on for the fall trade. For Sale—25 heifers and young cows; those old enough are bred to Right Sort (imp.), or Raphael (imp.), both prize winners at Toronto last fall.

MITCHELL BROS. Farm 1/4 mile from Burlington Junction. BURLINGTON, ONT.

Maple Grange Shorthorns

Pure Scotch and Scotch topped. Breeding unsurpassed. A nice selection in young bulls, and a limited number of thick, mossy heifers.

R. J. DOYLE, Owen Sound, Ont.

Willow Bank Stock Farm Shorthorns and Leicester Sheep.

Head established 1855; flock 1848. The imported Cruickshank Butterfly Roan Chief = 60865 = heads the herd. Young stock of both sexes to offer. Also an extra good lot of Leicester sheep of either sex; some from imp sires and dams.

James Douglas, Caledonia, Ontario

SHORTHORN BULLS FOR SALE

8 head from 10 to 18 months, bred from cows which are from imported dams and sired by choicely bred bulls, prices are not high as I need the space for stabling cattle. Shropshire and Cotswold ewes bred to imported rams.

BLAIRGOWRIE FARM JOHN MILLER, JR., ASHBURN, ONT.

SHORTHORNS

Our present offering consists of Nonpareil Lord = 87184 = Dam Imp. Dalmeny Nonpareil 6th. 7 young bulls from 6 to 12 months old. 15 cows and heifers of choicest quality and breeding.

A. J. HOWDEN & CO., COLUMBUS, ONTARIO Long-distance phone.

SHORTHORNS AND CLYDESDALES

5 Bulls of serviceable age, choice quality, some of them herd headers, sired by His Grace (imp.) = 69740 = and a number of cows and heifers. One stallion rising 3-year-old. A big good quality herd also four choice fillies, all from imported stock.

A. B. & T. W. DOUGLAS :: L. D. Phone :: STRATHROY, ONT.

Springhurst Shorthorns

Four of the first-prize Shorthorns at the 1912 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 quality. HARRY SMITH, HAY P. O., ONT. Long-distance Telephone. Exeter Station.



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TALK No. 6

"GEORGE" STEEL GALVANIZED SHINGLE

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Decide to-day to "PEDLARIZE" your buildings.

The big "GEORGE" Shingle (24 in. x 24 in.) for your barns, and the "OSHAWA" Shingle (16 in. x 20 in.) of identical quality and design, for your houses, sheds and smaller buildings.

Have perfect positive watertight lock on all four sides.

Absolute protection from Fire, Flood, Storm and Lightning.

Highest grade galvanized steel alone used.

Every shingle triple inspected.

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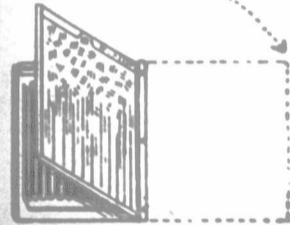
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The All-perfect Metal Shingle. No greater cost, but greater service and satisfaction.

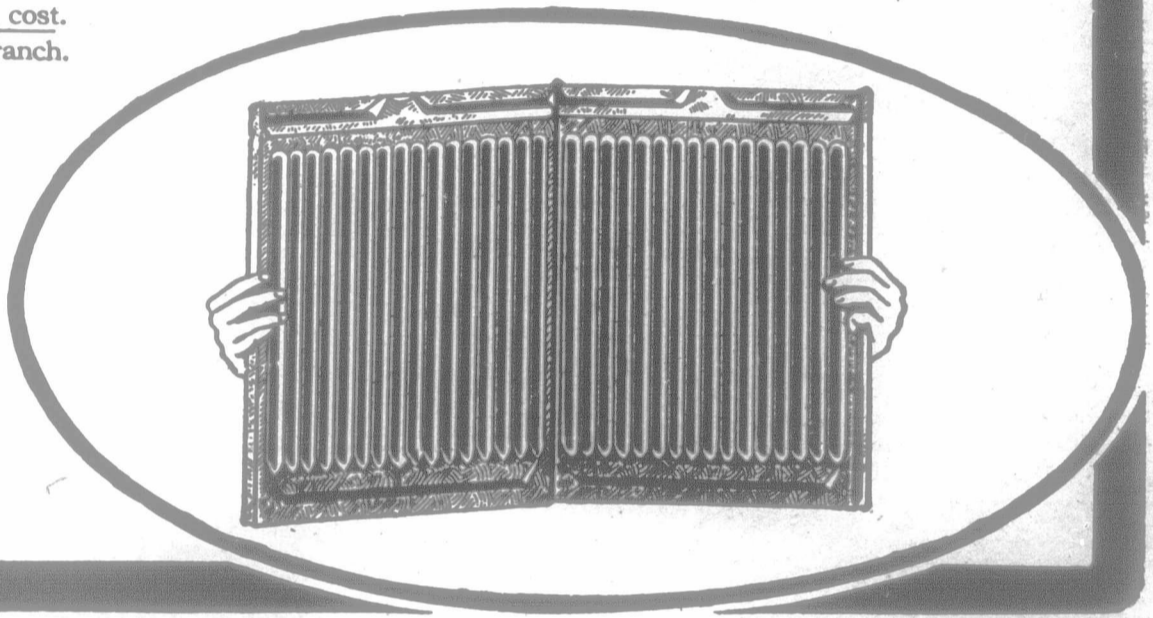
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Large and varied stock always carried at Oshawa, Montreal, Toronto, London, Chatham, Quebec, Calgary, Halifax, St. John, Sydney, Ottawa, Winnipeg, Vancouver.



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There is no case so old or but that we will not guarantee Fleming's Spavin and Ringbone Paste to remove the lameness and make the horse go sound. Money refunded if it ever fails. Easy to use and one to three 6-minute applications cure. Works just as well on Sidesbone and Bone Spavin. Before ordering or buying any kind of a remedy for any kind of a blemish, write for a free copy of Fleming's Vest-Pocket Veterinary Adviser. Fifty-six pages of veterinary information, with special attention to the treatment of blemishes. Durably bound, indexed and illustrated. Make a right beginning by sending for this book. FLEMING BROS., Chemists, 78 Church Street, Toronto, Ont.

Questions and Answers. Miscellaneous.

Suckers as Scions.

Last spring, in grafting Kings on Duchess of Oidenburg stock, I used suckers for scions. They all grew well, but I am advised by some parties who profess to know, that a graft grown from a sucker will never produce fruit.

W. R. P.

Ans.—Suckers do not have the same propensities to produce fruit quickly after being set that is inherent in the wood on the tips of the branches, but they bear fruit, nevertheless.

Kneesprung - Buckwheat.

1. I have a road colt rising two years which I intend to train in next fall that is weak at the knees. Please advise me as to what I should do. I have been feeding him off the floor. Are the kneesprung cures that are advertised any good? In case of blistering him, where would you apply the blister, the front or back of knee?

2. What would be the best kind of buckwheat to sow on clay loam?

3. Give the addresses of some girl homes.

L. B.

Ans.—1. Theoretically, the blistering of the extensor muscles and tendons should give good results. In most cases it is the flexor or back tendons that are blistered, and if this has any result at all it increases the trouble. Kneesprung is due to too strong or too short flexor (back)tendons, or to too long or too weak extensor or front tendons. The flexor being stronger than the extensor, keeps the limb in a partially flexed position. Blistering stimulates muscular contraction, but has slight effect upon tendons. Hence, it should be the exterior muscles (the front muscles above the knee) that should be blistered. The slight contracting action of blisters upon tendons explains the absence of noticeable evil effects when the flexors are blistered for kneesprung.

2. Rye buckwheat has yielded highest returns at the O. A. C. Japanese or Silver Hull would likely do all right, also.

3. Write the Secretary of the Children's Aid Society at Ottawa, Kingston, Belleville, Toronto, or London.



Shorthorns & Clydesdales

We have seven yearling bulls and seven bull calves from 7 to 12 months. All reds and roans, and of choice breeding. We have some extra good imported mares, for sale also some foals. If interested write for catalogue of their breeding.

W. G. PETTIT & SONS
Burlington Junction, G. T. R.

FREEMAN, ONTARIO
Bell Phone.

SHORTHORNS

"A PLENTY." I have a wide range for selection in Shorthorn bulls and heifers, pure Scotch or Scotch topped, beef bred and beef type. Dairy bred and dairy type; make a point to visit my herd at Markdale, Ontario.

T. L. MERCER,

MARKDALE, ONTARIO

Shorthorns

I have ten young Shorthorn bulls, some fit for service now. Part of them are bred, and made so that they are fit to head the best herds in any country, some of them are of the thick, straight, good feeding kind, that will produce money-making cattle; some of them are bred from the best-milking Shorthorns, and the prices of all are moderate. I have Shropshire and Cotswold rams and ewes of all valuable ages. Write for what you want. I can suit you in quality and in price. Ask for Bull Catalogue.

ROBERT MILLER
STOUFFVILLE, ONT.

Shorthorn Bulls, Cows & Heifers

For Sale.—A number of them from imported Sire and Dam and from good milking families. Prices reasonable. Write or call on

H. J. DAVIS

WOODSTOCK, ONT.

Salem Shorthorns

—As ever in the front rank. Special offering: Ten young bulls, quality and price to suit any buyer.

J. A. WATT, Elora, Ont.

Glenallan Shorthorns

We have some of the best young bulls we ever bred, Scotch or Booth breeding, low thick mellow fellows of high quality also some heifers.

Glenallan Farm, Allandale, Ontario

R. MOORE, Manager.

LAKESIDE AYRSHIRES

A select lot of young bulls, all ages, sired by the following: Barcheskie Cheerful Boy (Imp.) 28879 (7731); Hobland Bonnie Boy (Imp.) 33275 (8776); Morton Mains Planet (Imp.) 33279 (8774); Auchbrain Sea Foam (Imp.) 35758 (8865). Imported dams. Record of Performance dams.

GEO. H. MONTGOMERY, Proprietor
Dominion Express Bldg., Montreal.

D. McARTHUR, Manager
Phillipsburg, Que.

STOCKWOOD AYRSHIRES

Stocks of all ages for sale, one 12 months old bull (Imp.) in dam will make a winner for someone; also bull calves from a week to two months old all from show cows and sired by White Hill King of Hearts, a son of the great bull Emu Mee, and a half-brother of Brae Rising Star, highest priced bull in Scotland; prices and terms easy.

D. M. WATT

ST. LOUIS STA., QUEBEC.

GLENHURST AYRSHIRES

ESTABLISHED OVER 50 YEARS AGO, and ever since kept up to a high standard. We can supply females of all ages and young bulls, the result of a lifetime's intelligent breeding; 45 head to select from. Let me know your wants.

JAMES BENNING, WILLIAMSTOWN P.O.

Summerstown Sta., Glengarry

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Rice's Pure Salt

IT WILL PAY YOU

NORTH AMERICAN CHEMICAL CO., LTD.
Clinton, Ontario

SHORTHORNS

Bulls all sold, choice females for sale. 1 yearling Clyde stallion, 1 weanling Clyde stallion, big, best quality and breeding.

John Clancy, Manager
Cargill Limited, Cargill, Ont., Proprietors.

GLENGOW SHORTHORNS

Still have a few choice bull calves, and several real nice heifers of different ages.

WM. SMITH, Columbus, Ont.

Shorthorn Bull

For Sale. I have several choice young bulls for sale, from English Lady and Roan Duchess dams by Red Prince (Imp.) now in his sixteenth year. Also two imported Clydesdale mares in foal and one yearling fully imported in dam. Can now book orders for Leicesters for this coming season.

Geo. B. Armstrong, Teeswater, Ont.

Money

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MEAL

are it to be a good
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RDINER'S CALF
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or \$3.75.

A, ONT.

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Shorthorns

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S.

on Nov. 30 1,394 lbs.
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ull is a large, vigor-
fit for service. His
chville 2nd, and sired
ll. College Duke, now
am Weld Co., Ltd.,
ald College, Quebec,
ock with high milk

ss Hackney mare, 3-
simplex separator 700

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ars write:

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esdale fillies, 2 two-year-
out of Lord Charming
N. Elm Park, Guelph.

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WA, ONT.

ERD

Scotch families for
Orange

or Rockwood Station

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Young stock of both
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Jr., ASHBURN, ONT.

asists of Nonpareil Lord
almeny Nonpareil 6th.
2 months old. 15 cows
lalty and breeding.
TARIO
ong-distance phone.

LES

d by His Grace (Imp.)—
A big good quality horse

RATHROY, ONT.

irst-prize Shorthorns at
lph Show, including the
l grand-champion fat
or sale ten young herd
H. HAY P. O., ONT.
g-distance Telephone.



EVERY farmer knows that his cows yield more milk and better milk when they are contented. Are your cows contented? Are they profitable? If not, make them so by doing away with your old-time wooden stalls. They gather dirt, harbour disease germs, and prevent the free circulation of life-giving air and sunlight.

LOUDEN

Perfect Barn Equipments

The LOUDEN Tubular Steel Stable Equipment is easily and quickly installed and insures cleanliness and ventilation. Its use means comfort for your cows and profits for you.

GET INTERESTED. WRITE TO-DAY. Our book, "Perfect Barn Equipment," and the service of our architectural department, are free.

The LOUDEN MACHINERY CO.
Dept. 51 - GUELPH, Ont. 5

FORTY YEARS REPUTATION

is something that is of incalculable value.

It is plain that we have to be just as careful of the quality of our goods now, to keep up that reputation, as we have been in building it.

And that is your surest guarantee of the uniform excellence of—

GUNNS SHUR CROP FERTILIZER

We have an interesting book about fertilizers—it is yours for the asking.

Gunns Limited, West Toronto

15⁹⁵ AND UPWARD ON TRIAL AMERICAN CREAM SEPARATOR

A SOLID PROPOSITION, to send fully guaranteed, a new, well made, easy running, perfect skimming separator for \$15.95. Skims warm or cold milk; making heavy or light cream.

Absolutely on Approval.

The bowl is a sanitary marvel, easily cleaned. Different from this picture, which illustrates our large capacity machines. Shipments made promptly from WINNIPEG, MAN., TORONTO, ONT., and ST. JOHN, N. B. Whether your dairy is large or small, write for our handsome free catalog. Address:

AMERICAN SEPARATOR CO. Box 1200 BAINBRIDGE, N. Y.

Balance The Ration With "GOOD LUCK" COTTON SEED MEAL

41-48% Protein.
Price \$34.50 per ton, f. o. b. Toronto.
Send money order or postal note.

CRAMPSEY & KELLY,
Dovercourt Road, Toronto, Ontario
"The Home of High Quality Feeds."

O. A. C. No. 72 OATS

Government tested, for sale by the grower.
F. F. KLINCK, Victoria Square, ONTARIO

Questions and Answers. Miscellaneous.

Annual Report -- Assessment Notice.
In issuing Township's Annual Report of expenditures, etc.:

1. If there is no signed statement of auditors having found accounts correct, how would ratepayers know they were examined? Is it business without, or legal, or otherwise?

2. If any report with signed statement of auditors having found correct, is found deficient, who is responsible for the deficiency?

3. If a notice is sent to ratepayer that he is assessed a certain amount, and states the time of meeting, so he can appeal if overcharged, said notice being dated January, 1913, instead of January, 1914, is that notice valid? Ontario.

Ans.—1. There should be appended to the report a signed certificate of audit. It would be unbusinesslike and otherwise unsatisfactory to omit it.

2. Probably both Treasurer and Auditors.

3. Yes. The error would be obviously the result of a mere slip.

Oil Cake Meal vs. Roots.

1. Is oil-cake meal at \$30 a ton, cheaper to feed dairy cows and young cattle, than mangels at 12 cents per bushel?

2. Is oil-cake a good feed to feed fattening steers, along with oat and barley chop, 3 to 1; all the chaff and oat straw they will eat, and a few mangels?

3. Is it profitable to feed oil-cake to hogs which are being fitted for market?

4. Some of my hens are ailing. Their heads are very pale, and they sit around drooping. They crave very much for green food when given to them. I feed grain in morning, soft feed about nine o'clock, also some skim milk or butter-milk at same time; give them a mangel every morning; grain at noon again, and at night. Their manure is very soft. Would the soft feed give this effect?

A SATISFIED SUBSCRIBER.

Ans.—1. Oil-cake meal at \$30 a ton, would still be cheaper than mangels at 12c. per bushel. If you consider the food constituents themselves, the quantity of oil-cake meal that you can feed to an animal is somewhat limited, whereas a large quantity of mangels can be fed to each individual animal with good results. However, in small quantities, the oil-cake meal is superior to the mangels. A mixture of the two is hard to beat. In the issue of February 5th, 1914, there is a comparison drawn between oil-cake meal and turnips in the Question and Answer Department. The constituents in turnips and mangels are very similar, with the exception of carbohydrates, where the turnips are slightly superior.

2. Oil-cake meal would be an excellent addition to your oat and barley chop for fattening steers. It gives them a finished appearance, as well as adds to their weight. It could be economically fed to them.

3. Experiments with feeding oil-cake meal to hogs has been favorable to the use of oil-cake. Lots of pigs fed middlings and corn, required from 13 to 16 per cent. more concentrates for 100 pounds gain than those fed oil-cake meal and corn. Another authority declares that pork from pigs fed oil-cake meal was characterized by white hard fat.

4. The few symptoms which you have given are evidently those of tuberculosis. This is becoming more prevalent in the country than people are now aware of, and many deaths occur without the knowledge of the prevalence of this disease. A post-mortem examination of one of these fowls might reveal small, white, elevated tubercles on the liver, glands or internal parts of the fowl. They are the tubercles containing the germs of tuberculosis. Separate all diseased fowls, fumigate and thoroughly cleanse the house, whitewashing it with a mixture containing about five-per-cent. carbolic acid, and, if possible, change the runs of the fowl from those which they have been in the habit of frequenting. This diarrhoea is due to the disease, and not to the soft feed.

Feed Your Stock on

PURE CANE MOLASSES

EXPERIENCED stock feeders know the value of Cane Molasses in toning up the stock and finishing fattening animals. It is extremely palatable and much relished by cattle, pigs and horses. By its sweet taste, great palatability and high nutrient content, it is very valuable to mix with other feeds, especially at this season, when the last stages of finishing fattening animals have been reached and when other feed may be growing scarce. Put up in barrels containing about six hundred pounds, also half barrels.

Dominion Sugar Company, Limited
Wallaceburg, Ontario

Complete Dispersion of 65 Holsteins

BALES BROS., OF LANSING P. O., ONTARIO

Having sold their farm on Yonge Street, will, without reserve, on

Tuesday, March 24th, 1914

Sell by auction their entire herd of 65 head of richly-bred, high-producing and showyard-quality Holsteins. 54 head of females. 11 bulls. 16 of the heifers, from calves up to two years of age, are daughters of the famous and intensive bred bull, Sir Lyons Hengerveld Segis, whose five nearest dams have records averaging 27.51 lbs.; his dam and sire's dam over 30 lbs. for 7 days, 126.52 lbs. for 30 days, and an average butter-fat test 3.98%. He is son of the greatest producing sire of the breed, King Segis. The females of breeding age will all be in calf to this bull. The bulls range in age up to 2 years. R. O. P. records: 13,539 lbs. in 10 months; 13,000 lbs. for 2-year-olds; an average for the mature cows on ordinary feed of 60 lbs. per day. A big, high-class lot of cattle in prime condition. Terms: Cash, or 8 months' with 6%. For catalogue write:



J. H. PRENTICE,
Auctioneer.

J. C. BALES,
LANSING P. O., ONT.

SALE AT 12.30 SHARP.

Stop 33, on the Metropolitan Electric Road, is at the gate.

Brampton Jerseys

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. Canada's Greatest Jersey Herd B. H. Bull & Son, Brampton, Ont.

Fairview Farms Herd

Offers for sale: A son of Rag Apple Korndyke 8th out of a daughter of Pontiac Korndyke with a record of 27.72 lbs. in 7 days, averaging 4 1/4% fat. Grand dam has a record of 29 lbs. Calf is nearly ready for service. Write me for description and breeding.

E. H. DOLLAR,

HEUVELTON, N. Y. (near Prescott, Ont.)

HOLSTEIN CATTLE

The Buyer's Opportunity

We have more cattle than we can stable. Some of the finest young bulls and heifers we ever offered; their breeding and quality is the very choicest, they will be sold worth the money. Don't wait to write, but come and see them.

D. C. FLATT & SON, R. R. No. 2, Hamilton, Ont.

L.-D. 'Phone 2471.

LAKEVIEW HOLSTEINS

Senior herd bull—Count Hengerveld Fayne De Kol, a son of Pieterje Hengerveld's Count De Kol and Grace Fayne 2nd. Junior herd bull—Dutchland Colantha Sir Mona, a son of Colantha Johanna Lad and Mona Pauline De Kol. Third bull—King Canary Segis, whose sire is a son of King Segis Pontiac, and whose dam is 27-lb. three-year-old daughter of a 30-lb. cow. Write for further information to—

E. F. OSLER,

BRONTE, ONT.




HOLSTEINS—I can supply a limited number of high producing and highly-bred bulls, bred on both sides from high official backing. Let me know your wants.

W. E. THOMPSON, R.R. No. 7, Woodstock, Ont. L.-D. 'Phone.

When Writing Advertisers Please Mention this Paper.

Lump Jaw



The first remedy to cure Lump Jaw was

Fleming's Lump Jaw Cure

and it remains today the standard treatment, with years of success back of it, known to be a cure and guaranteed to cure. Don't experiment with substitutes or imitations. Use it, no matter how old or bad the case or what else you may have tried—your money back if Fleming's Lump Jaw Cure ever fails. Our fair plan of selling, together with exhaustive information on Lump Jaw and its treatment, is given in Fleming's Vest-Pocket Veterinary Adviser. Most complete veterinary book ever printed to be given away. Lustrously bound, indexed and illustrated. Write us for a free copy.

FLEMING BROS., Chemists,
75 Church Street, Toronto, Ont.

Calves Without Milk

BLATCHFORD'S CALF MEAL

The Complete Milk Substitute

The result of over 100 years' experience with calf-raisers. 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 postcard to



Steele, Briggs Seed Co.,
Toronto, Ontario

Prilly, 7 day butter record	- 25.20-lbs.
Beauty Pietertje	- 30.51 "
Lilian Walker Pietertje	- 30.01 "
Ruby Walker Pietertje	- 30.22 "
Segis Walker Pietertje	- 27.85 "
Buttercup Clothilde Pietertje	- 32.92 "
Mary Walker Pietertje	- 31.81 "
Marion Walker Pietertje	- 31.63 "

These are the Champion 3, 4 and 5 Generations of the

HOLSTEIN HERD

Buy a son of King Segis Walker from daughters of Pontiac Korndyke and get connected with this family.

A. A. FAREWELL, Oshawa, Ont.

HOLSTEIN - FRIESIAN ASSOCIATION OF CANADA

Applications for registry, transfer and membership as well as requests for blank forms and all information regarding THE FARMER'S MOST PROFITABLE COW should be sent to the secretary of the Association.

W. A. CLEMONS, ST. GEORGE, ONT.

Maple Grove Holsteins

Present offering: a few bulls fit for service, sired by the great King Lyons Hengerveld, who is beyond doubt the richest butter and milk bred bull of the breed in Canada. These bulls are out of high testing R.O.M. cows and heifers, and individually are unsurpassed. Also a few heifers just freshened. If you want the best write me for prices and particulars.

H. BOLLERT, R.R. No. 1, Tavistock, Ont.

Woodbine Holsteins

Young bulls and bull calves, sired by Duke Beauty Pietertje; sire's dam's record 32.52 lbs. butter, and his two grand-dams are each 30-lb. cows, with 30-lb. daughter, with 30-lb. granddaughter. Three generations of 30-lb. cows. If you want a bull that will prove his value as a sire, write

A. KENNEDY & SONS, R.R. No. 2, Paris, Ont.
Stations: Ayr, C. P. R.; Paris, G. T. R.

The Maples Holstein Herd

Headed by Prince Aaggie Mechthilde. Present offering: Bull calves born after Sept. 1st, 1913. All sired by Prince Aaggie Mechthilde and from Record of Merit dams. Prices reasonable.

WALBURN RIVERS,
R. R. No. 5, Ingersoll, Ontario

Holsteins

Young herd headers. Just now headers up to 15 mos. of age, closely related to our Toronto Dairy Test Champion, and sired by the richly bred, Imperial Pauline De Kol.

W. W. Walker & Sons, Utica P. O. Manchester Station.

HOLSTEINS AND YORKSHIRES

Minster Farm offers a bull fit for service, in spring from a bull that has 12 R.O.M. sisters. His dam is from a 4-year-old heifer that gave 14,753 lbs. of milk in R.O.P. in 1 year. For price and particulars, write Richard Honey & Sons, Brickley, Ont.

Questions and Answers. Miscellaneous.

Incubating Ducks.

Could you give me some advice on incubators, as I am just a beginner? Will an incubator hatch ducks? How many times should the eggs be turned in a day? When hatched, how long should they be left in the incubator? What should they have to eat at first? I am trying an experiment for this next season. I have saved over eight ducks and two drakes. Would you kindly give me your advice, and give me a good idea of how to manage an incubator, and what kind to get and where to get it?

D. W. B.

Ans.—An incubator may be used to hatch duck eggs. Once a day is enough to turn the eggs. If you have a good brooder, or a broody hen to put them with, do not leave them in the incubator very long after they have been hatched. About twenty-four hours should be long enough. A good feed for young ducks is a mash prepared from ground grain. A mixture may be used for this, but very good results are generally obtained from using shorts and middlings mixed to a thick porridge with water, or perhaps, in some instances, a little milk might be used. We would advise using water in the trays when incubating duck eggs. As to the best incubator to use, we can only refer you to our advertising columns. There are several good makes, and the firms advertising them are reliable, and if their machine, with proper care, does not work right, they will see that things are adjusted properly.

About Tubercular Cattle.

1. Would cattle that were running with pigs that had tuberculosis be liable to get it from them?
2. Will horses contract tuberculosis from cattle?
3. Would cattle contract tuberculosis from other cattle in summer-time when there is just a line wire fence between them?
4. Would cows that were bred to bull that had tuberculosis be liable to take it, or do cattle have to be where it is for some length of time to get it?
5. How do they manage herd at O. A. C.? What success have they had?
6. Will people catch tuberculosis from cattle? If so, how is it that in dairy barns where we work with cows the year around, and drink milk from them every day, we do not have more dairymen dying from tuberculosis?
7. Can you give a plan for two neighbors to keep a herd, one to keep the reactors, the other the ones that do not react, so they may raise the young stock and share equally?

A. B.

- Ans.—1. There is a danger in this case.
2. To date, it is not known that bovine tuberculosis is communicated to horses. Authorities on the subject say it is not.
 3. There is a chance of them contracting tuberculosis, but we cannot say positively that they would.
 4. It is not likely that the cow would contract the disease at this one mating, but it is advisable to keep healthy and diseased animals entirely separate.
 5. Write Prof. G. E. Day, O. A. C., Guelph.
 6. Bovine tuberculosis is communicable from cattle to infants and invalids. Conditions rather indicate that it will not be readily transmitted to healthy adults.
 7. This is a new departure, and we can simply make a suggestion on which two broad-minded individuals, willing to give and take, may base an understanding. Divide the herds, healthy and reactors. Have a strong, healthy bull with the pure herd. As soon as calves are dropped, remove at once to the healthy herd and rear on milk from healthy dams. If cows are unequally profitable as milkers, weigh and test the milk, and strike a balance between the two herds. Man with reacting herd pay the keeper of the non-reactors so much per head for raising the calves belonging to him; cost of rearing a steer to 2½ years of age is about \$45, counting service of bull, but omitting price of labor; \$55 will, approximately, cover all. It would be difficult to arrange for an equal division of revenue as the party with the non-reactors will of necessity have the greater amount of young stock to feed and care for along with the cows.

NORFOLK SALE

The First Annual Sale of the
Norfolk Holstein-Friesian Breeders' Club
Will be held in Dr. Burt's Sale Stables, SIMCOE, ONT., on
Tuesday, March 10th, 1914

The cattle offered at this sale have been carefully selected, with a view to winning your confidence. We believe it is the best all-round lot for individuality, breeding and high official records that will be offered this season. Two-year-olds with 7-day records up to 22.07 lbs. butter. Two-year-olds with 30-day records up to 89.65 lbs. butter (Canadian record). Three-year-olds with yearly records up to 19,611 lbs. milk (Canadian record). Three-year-olds with yearly records up to 748 lbs. butter. Mature cows with 7-day records up to 23.42 lbs. butter. Cattle will be sold subject to tuberculin test. No three-teaters. No shy breeders.

Sale will commence at one o'clock sharp.

MOORE & DEANE Auctioneers.

WRITE FOR CATALOGUE TO

J. ALEX. WALLACE, Secretary, Simcoe, Ont.

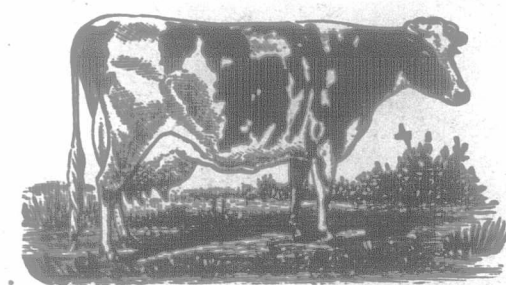
43 R.O.P. HOLSTEINS 43

BY AUCTION

Mr. G. H. McKenzie, of Thornhill, Ontario, has leased his farm for a term of years; and on

Wednesday, March 11th 1914,

will sell without any reserve, his entire herd of 43 R.O.P. Holsteins, 39 Females and 4 Bulls. Mature Cows in official R.O.P. tests averaging



15,000 lbs., two-year-old heifers averaging 10,000 lbs. All two years and under, the get of Canada's richest bred Sir Lyons Hengerveld bull, Segis, the records of whose Dam and Sire's Dam average 30.46 lbs. in 7 days, and 126.52 in 30 days, and average B.F. test 3.98%; the average record of his five nearest dams 27.51 lbs. A son of the great King Segis, with

70 R.O.M. daughters, 21 of them two-year-olds, with records from 20 to 26.44 lbs. All the Cows will be in calf to him. A high-class show herd, in show condition. Terms: Cash, or 8 months with 7%.

J. H. Prentice, Auctioneer.

Sale at 1 p.m. Sharp.

Stop 39 on Metropolitan Electric Road, is exactly at the gate of the farm.

For Catalogue: Write, **W. G. McKenzie, Thornhill, Ontario**

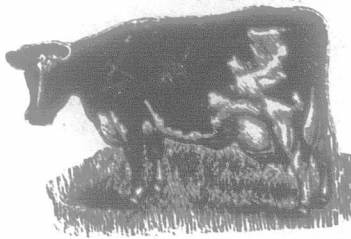
50 R.O.M. HOLSTEINS 50

R. O. P. HOLSTEINS 50

BY AUCTION

Having rented his farm Mr. H. F. Patterson, R.R. No. 4, Paris, Ont., will, at his farm on

THURSDAY, MARCH 12th, 1914



hold a complete dispersion sale of his entire herd of 50 R. O. M. and R. O. P. Holsteins, 45 females and 5 bulls, every one a high-class proposition both as individuals and as producers and all in the finest condition.

R.O.M. records from 18 to 23 lbs., mature 3-year-olds up to 21.43 lbs.; 2-year-olds up to 14.62 lbs. R.O.P. records from 10,776 lbs. for 2-year-olds, up to 21,556 lbs. for mature cows, the latter a private test, many of them

with B.F. tests, official, over 4% and up to 95 lbs in one day, among them being the 2nd-prize cow at the Guelph Dairy Test, both in standing and production; also the herd won 1st prize for largest quantity cream delivered to the Brant factory from any 15 cows. Take main line trains to Brantford. Trains leaving Brantford for Harrisburg will stop at Alford on day of sale. Trains will leave Brantford 8.55 a.m. and 11.15 a.m. TERMS: Cash, or 7 months at 7%. For catalogue write

H. F. Patterson, R.R. No. 4, Paris, Ont.
WELBY ALMAS, Brantford, Ont. - Auctioneer

HOLSTEINS

F. HAMILTON

FOR SALE—Male or female. Herd sire, Prince Hengerveld of the Pontiacs, son of King of the Pontiacs. A few choice females bred to above sire. "Hamilton Farms" St. Catharines, Ont.

BEST ON EARTH

WATCH FOR THE TRADE MARK AND KNOW WHAT YOU GET

FREEMAN'S FERTILIZERS

A SPECIAL FORMULA FOR EVERY REQUIREMENT.

Do not buy a "A Pig in a Poke."

Send for booklet showing just what Fertilizer you should use and the exact composition of it. Your copy will be sent for a post card.

The W. A. FREEMAN CO., Ltd.
222 HUNTER ST. E.
HAMILTON, ONTARIO.

RAW FURS

Our specialty is **CANADIAN RAW FURS**. Write for our free price list. We pay all mail and express charges. Remit same day as goods received. Hold shipments separate when requested. Prepay charges for returning furs if valuation is not satisfactory. We do not buy from dealers, but from trappers only.

HALLMAN FUR CO., Toronto
N. Hallman, Manager, 4 years with John Hallman; E. J. Hines, 1 year, 11 years with John Hallman; J. L. Jewell, Buyer, 1 year with John Hallman; G. Hagen, Secy., 1 year with John Hallman.

OXFORD DOWN SHEEP

We have the champion Oxford Flock of America. Winners at Chicago International, Toronto, London, Winnipeg, Regina, Brandon and Saskatoon Fairs. Present offering: 100 ram and ewe lambs, and 50 yearling ewes by imported rams. Consult us before buying.

Peter Arkell & Sons, Teeswater, Ont.

CATTLE AND SHEEP LABELS

Size	Price doz.	Fifty tags
Cattle	75c.	\$2.00
Light Cattle	60c.	1.50
Sheep or hog	40c.	1.00

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, Ontario

Alloway Lodge Stock Farm

Aberdeen Angus Cattle
Southdown Sheep
Collie Dogs

A few heifers and young cows in calf to the Chicago winning herd bull, for sale as well as some very strong young bulls. Four very promising puppies from imported stock are also offered.

ROBT. McEWEN, Byron, Ont., Near London

CLOSING-OUT SALE

40 SHROPSHIRE

breeding ewes, \$15.00 each; bred to a choice ram. Also 10 ewe lambs at \$10.00.

W. H. BEATTIE,
WILTON GROVE, ONTARIO

Wanted to buy YOUNG BREEDING SOWS

Grades of any kind. Old enough to be bred.

LAKEBOURNE FARMS LTD.,
BRIGHTON :: ONTARIO

MAPLE LEAF BERKSHIRES

for sale at reasonable prices, boars fit for service, also young pigs ready to wean; boars and sows 3 and 4 months old, bred from imported stock. Satisfaction guaranteed.

J. Lawrence, Woodstock, Ont. R.R. 8

Yorkshire Sows

For Sale, four choice Yorkshire sows, bred; show stock, weight about 300-lbs.

GEO. D. FLETCHER, R.R. No 2., Erin, Ont.
Erin Sta., C.P.R.

Cloverdale Large English Berkshires
No matter what your needs in Berkshires may be see Lang the live Berkshire man. He is always prepared to furnish anything in Berkshires. Write or come and inspect.

C. J. LANG,
Hampton, Ont., Durham Co.

Questions and Answers.

Miscellaneous.

Unpaid Legacies.

In the case of a farmer becoming insolvent, and never having paid legacies mentioned in will to his sisters, and in the absence of a written agreement, can interest be collected as a first charge on the estate, on legacies which remain unpaid after the time specified in the will?

Ontario. SUBSCRIBER.

Ans.—Interest is payable in respect of the legacies. But whether interest or principal of such legacies is a charge on the farm or other property included in the estate, depends upon the terms of the will. We would require to be informed of the exact wording of same in order to give an opinion on the point.

Lump Jaw.

If there is a cure for a new-formed lock jaw on a cow, kindly name the remedy?

FARMER.

Ans.—We read this question as lock jaw, but we cannot understand what a new-formed lock jaw would be like. The nature of the disease called "lock jaw" makes such an enquiry very improbable, so we concluded that it is a lump jaw that is newly formed. The remedy for lump jaw is the iodide-of-potassium treatment, which consists of giving the drug three times daily dissolved in water and sprinkled on the food. Start with dram doses, and increase by one-half a dram daily until the patient shows a loss of appetite and thirst. A discharge from the mouth and eyes, as well as a scruffy skin, are also indications to cease. If necessary, repeat the treatment in six or eight weeks.

Silos -- Sweet Clover.

1. I have become interested in silos, and would like a suggestion as to what material is the best to build these of at present. Cement is the most popular, and such material has proved a success lately. I have heard of what they call the — silo, which, I am told, is spruce plank, with some preparation put in to make the plank durable. No doubt you have heard of them, and perhaps have had some experience as well. Please tell me what you know about them. Are they a success? They are offered to hand for \$180, which is some cheaper than the cement silo, if they will stand up and are durable. Please tell me the approximate cost of a cement silo 12x30 feet, aside from the drawing of the gravel and sand. One complaint is made of cement silos that they hold dampness and freeze considerably. Would a mixture of hydrated lime prevent the dampness going through?

2. About sweet clover. If what your correspondent in the last "Advocate" says about it is true, those who know it as a bad weed must be wrong. If it is as good as he says, why do not the agricultural papers give it credit for all it is worth. I am interested in it on account of its value as bee pasturage.

A. C. T.

Ans.—1. We have seen these silos of which you speak, and the silage was in first-class condition. We have never heard of any blowing down, and as none of these silos have been in existence for many years, we can't tell you how long they will stand. A concrete silo would probably cost you in the vicinity of \$200, counting cost of material and labor. We have had in "The Farmer's Advocate," from time to time, articles dealing with the construction of silos, and in some instances they run lower than \$200. You probably have a contractor in your community who would be glad to quote you a price. People who have properly constructed cement silos, very seldom complain of the quality of the silage if the corn was right when it was filled. The frozen silage will thaw and fall off just about as fast as the cattle will consume it, so there is seldom any waste.

2. There must be some experimental work done with sweet clover before agricultural papers will comment it. There is a strong prejudice throughout the country that it must live down, but by a year from now "The Farmer's Advocate" hopes to have the result of some experiments at Weldwood to give its readers.

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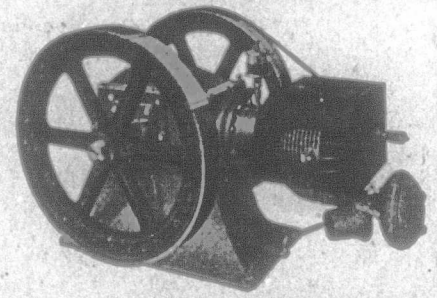
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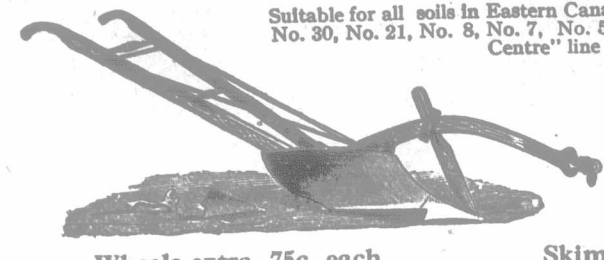
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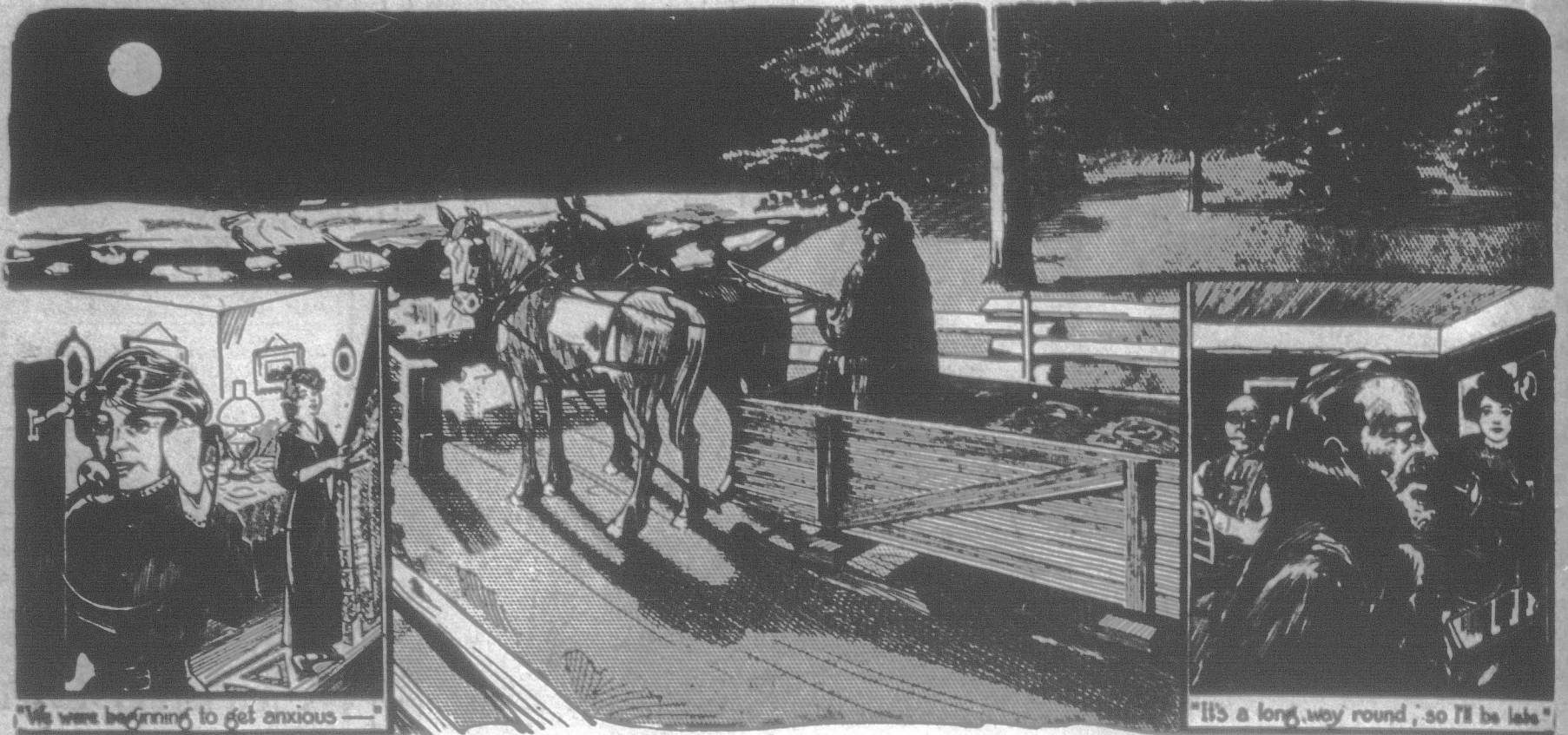
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