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THE FARMER'S ADVOCATE

AND HOME MAGAZINE

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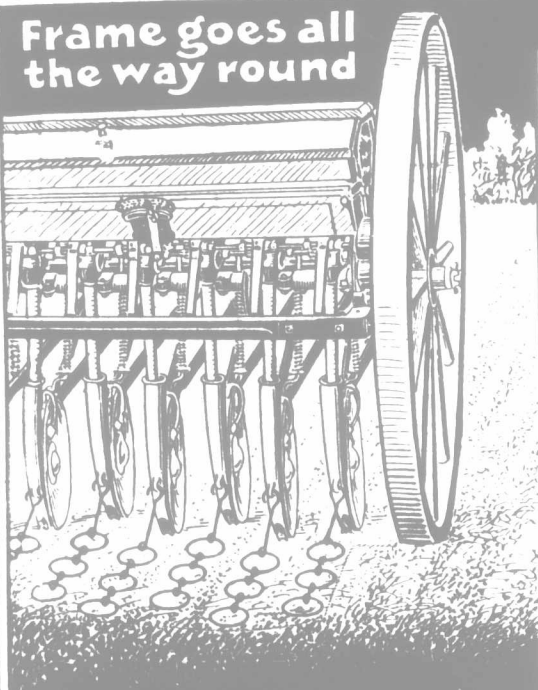
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Vol. XLV.

LONDON, ONTARIO, APRIL 7, 1910.

No. 915

Frame goes all the way round



Sows accurately in dirty fields.
Runs easily. Dust-proof hubs.

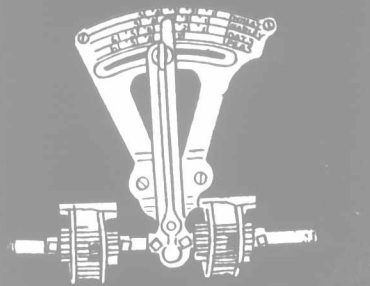
You need never fear that the "Champion" Disc Drill will prove a "quitter." Like all machines in the Frost & Wood "Quality" Line it is built to work where others quit. The "Champion" will sow seed in "dirty" fields where corn roots, tangled grasses and straw manure are in such profusion that an ordinary Disc Drill soon gets choked up and cries "enough." The "Champion's" carefully tempered,

sharp-edged steel discs seem to revel in such a field. They make a clean cut right through such rubbish. They gather no trash. The cutlery-steel scrapers keep them scrupulously clean.

Should a heavy stick or stone be in the path of the machine, don't stop and waste time throwing it out of the way. Just keep right on. The discs are adjusted to raise automatically and roll over the obstruction.

Frost & Wood

Champion Disc Drill



Grain Index



Ball Bearings in Disc Hub

Disc, Boot And Scraper



Your horses would rather be hitched to the "Champion" than an ordinary Disc Drill, because the "Champion" runs so much easier. It has friction-eliminating Ball Bearings in the disc hubs, where others have hard-running friction bearings. As there are eleven to twenty discs on each machine you can imagine how much lighter draft the "Champion" must be.

These Ball Bearings on the "Champion" are in dust-proof hubs, too. You need oil them but once a year, whereas friction bearings are crying for oil and getting choked with dust all the time.

Yes, indeed, you can sow a lot more seed in the same time with the "Champion" than with harder-running disc drills.

Before you get your machine, we know positively that the "Champion" will do your sowing accurately. As it is built to work in the dirt and grass seed, you can get it to do so. We make sure that they have the "Frost & Wood" name on every part of it. You can be sure that every machine bearing the Frost & Wood name will do its work. It is the only machine of its kind you can get.

You can sow as you please with the "Champion." There are no "slot holes" or notches into which you must shove a shifting lever. You can adjust the Index so your machine will sow to a fraction of a pint if you so desire. And the Grass Seed Index is plainly marked for different varieties of grass seed. You'll not find this convenience on other makes of disc drills.

"Champion" Disc Drills have Telescope Axles, while other Drills have to have loose axles to accommodate their range of pressure. They cannot compare in rigidity with the "Champion." We maintain a perfectly stationary axle and grain box.

We've not the space to tell you other points of superiority about the "Champion," so send today for our Disc and Hoe Drill Catalog F 43, which describes our line in detail. And remember this: No manufacturer maintains a higher standard of quality than Frost & Wood, and no maker gives you more downright value for your money. You are making a sound investment when you purchase a machine of Frost & Wood quality.

Frost & Wood Company, Limited, Smith's Falls, Canada 43

Bagpipes



We're the largest Bagpipe dealers in North America.

Lowrie's famous make is the kind we sell. Write to-day for

FREE CATALOGUE

We're from the Old Country ourselves, and know all about the Pipes.

Charters, Bags, Reeds, Etc., in big stock.

Repairs promptly done. Write for catalogue to-day.

C. W. Lindsay
LIMITED,
Ottawa, Ontario.

Northern Ontario

The forest and mineral wealth of Northern Ontario has attracted many people from all parts of the civilized world.

One ninth of the world's reported output of silver in 1908 was taken from Ontario mines.

New discoveries of undoubted richness are being constantly reported from sections far distant from the far-famed Cobalt. Yet a more certain reward is insured to the settler who acquires for himself 160 acres of the rich agricultural lands now open for settlement and made accessible through the construction of railways and Colonization Roads.

The fertility of the soil is unsurpassed. The timber is in demand at a rising price. Mining, railway and Colonization Road construction, lumbering, etc., afford work in abundance to those who have not the means to remain on their farms continually. These also provide a market for farm produce at prices unequalled anywhere.

Cochrane, the terminus of the T. & N. O. Ry., on the G. T. P. Transcontinental Railway, now under construction, is in the same latitude as the southern part of Manitoba, and 800 miles nearer the seaboard.

That the experimental stage is past is clearly demonstrated. The country is rapidly filling up with settlers from many of the other Provinces, the United States and Europe.

For information as to terms of sale, homestead regulations and for special colonization rates to settlers and for settlers' effects write to

D. SUTHERLAND, The Director of Colonization,
Parliament Buildings, TORONTO.
HON. J. S. DUFF,
Minister of Agriculture.



Synopsis of Canadian North-west Land Regulations.

ANY person who is the sole head of a family, or any male over 18 years old, may homestead a quarter-section of available Dominion land in Manitoba, Saskatchewan, or Alberta. The applicant must appear in person at the Dominion Lands Agency or Sub-Agency for the district. Entry by proxy may be made at any agency, on certain conditions, by father, mother, son, daughter, brother or sister of intending homesteader.

Duties—Six months' residence upon and cultivation of the land in each of three years. A homesteader may live within nine miles of his homestead on a farm of at least 80 acres, solely owned and occupied by him, or by his father, mother, son, daughter, brother or sister.

In certain districts a homesteader in good standing, may pre-empt a quarter section along side of the railway. Price, \$3.00 per acre. Duties, Six months' residence in each of six years from date of homestead entry (including the time required to secure homestead patent) and cultivate fifty acres.

A homesteader who has exhausted his homestead right, and cannot obtain a pre-emption, may take a purchased homestead in certain districts. Price, \$3.00 per acre. Duties, Must reside six months in each of three years, and cultivate fifty acres, and erect a house worth \$500.

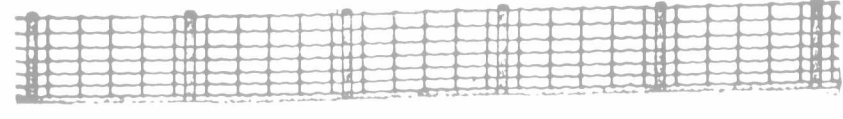
W. W. COOKE,
Deputy of the Minister of the Interior.
N.B.—Unauthorized publication of this advertisement will not be paid for.

PRIME SEED CORN FOR SALE

Our own research White and Yellow Dent Early Learning, Pride of the North, King of the West, Barley, Champion Early, Assorted and a list of others can be found. Write for prices.

L. C. PALMER, Kingsville, Essex Co.

How Frost Fence Saves One-third in Posts



The new Frost Fence is the strongest in Canada. It can be safely stretched tighter than any other.

And because of that, it saves about one-third in Fence Posts. Just think what that means to you. And tests are proving this to be accurate.

You see, we have at last arrived at a correct solution of Canadian Fence requirements. And we didn't arrive here by guess-work, nor say-so, either. It took years of experimenting, studying and tests.

Make Our Own Wire

You know, nearly every Wire Fence ever put up in this country has given up its life from 12 to 15 years sooner than a Wire Fence should. Although that very same grade of Wire, and that same thickness of Galvanizing, has made good in other places.

Our researches have proven that the real cause of failure is nothing short of extreme climatic changes in Canada.

The Wire formerly used for the Frost Fence was made under our own specifications. It always gave better service than any other Fence in Canada. But it could not constantly overcome this destructive Canadian Climate.

So we now Make and Galvanize our own Wire. Frost Wire cannot be affected by that enemy which ruins other wire.

And we are the only exclusive Fence people in Canada who Make Wire.

Rusts Out Life

That climatic business which we were telling you about simply rusts the very life out of the Wire's Galvanizing.

Although two-thirds of the life of a Wire Fence depends upon Galvanizing, that on nearly every Fence in Canada is too thin.

Galvanizing won't adhere permanently to greasy, scaly Wire, will it? That grease and scale will drop off some time, and away goes your galvanizing.

But the Frost Fence is Galvanized about 100 per cent. thicker than most Fence.

Because every speck of grease and scale has been removed from Frost Wire by three "Cleansing" processes.

This leaves the surface as clean as a pin. The Zinc not only spreads over the surface, but it goes into the Wire, becoming a part of the Wire itself.

A poorly cleaned surface is one reason why nearly all Wire is untidily Galvanized for Canadian purposes.

But perhaps the principal reason is because Zinc costs four times more than Wire. For this reason, much Wire is wiped almost clean of its Galvanizing during the surface-smoothing process.

Frost Galvanizing will fight off the rust for 12 or 15 years longer than any other Wire in this country.

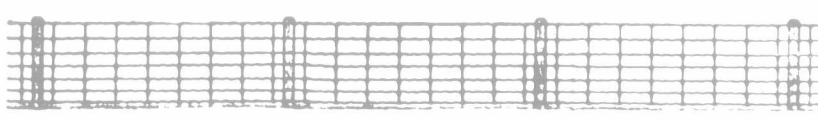
Principal Reason

The principal reason why the Frost Fence will save one-third in Posts is just this:

The Coils in the Frost Fence act exactly like a Spring. When severe Canadian weather changes cause the Frost Fence to contract, these Frost Coils "give" their surplus. But nearly all other Fence will snap.

And when expanded, these very same Frost Coils "take in" that surplus. This, instead of letting the Fence sag, lose its shape and become unsightly. And no matter how often contracted or expanded, these Frost Coils always act the same.

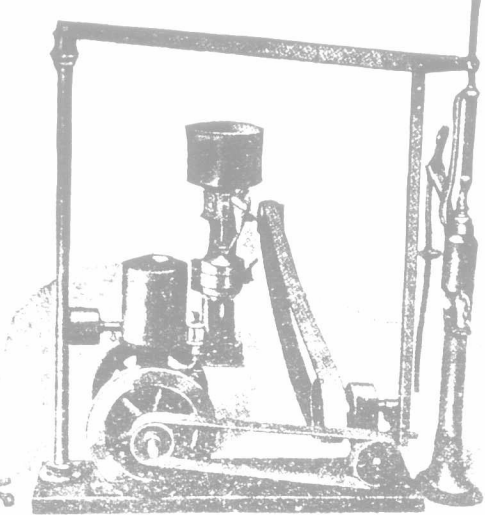
Write for free booklet and samples.
The Frost Wire Fence Co., Ltd.
Hamilton, Ontario.
Agents Wanted



Frost Fence

IDEAL GASOLINE ENGINES

1 1/2 TO 40 HORSE-POWER.



Windmills,
Grain Grinders,
Pumps,
Tanks,
Water Boxes,
Concrete Mixers,
Etc., Etc.

Send for catalogue.

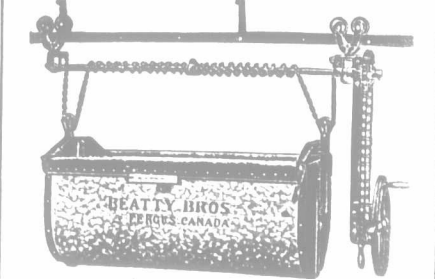
GOULD, SHAPLEY & MUIR CO.,
LIMITED,
Brantford, Canada.

Build Concrete Silos

With the London Admirable Silo, Curtis' Wood Silos, some ten and full size silos, you can store your grain, hay, straw, etc., in the most economical way. The Curtis' silos are made of concrete and are built on a concrete foundation. They are built on a concrete foundation. They are built on a concrete foundation. They are built on a concrete foundation.

Concrete Silo Manufacturing Co., Ltd. 125 St. Lawrence St. London Ontario.

THE "BT" LITTER CARRIER



Note the double purchase in lifting and the simplicity in construction.

No machine on the farm is used as many days in the year, or saves as much disagreeable work as a Litter Carrier. A boy can fill, wind up and push out in a "BT" LITTER CARRIER four barrels of manure with ease, no matter how much mud or snow there is in the yard. The manure can then be dumped into a wagon or sleigh, and put directly on the land, with very little if any more labor and time than is required to pile it in the yard with the old method, where the greater part of the fertilizing value of the manure is wasted.

Write for free catalogue showing best method of erecting Litter Carriers, and telling why you should buy a "BT" LITTER CARRIER.

BEATTY BROS. FERGUS ONT.
We also build Steel Stalls and Stanchions and Hay Carrier Goods.

DO YOU KNOW

THAT WORN-OUT LANDS MAY BE MADE PRODUCTIVE AND PROFITABLE BY THE JUDICIOUS USE OF THE RIGHT KIND OF FERTILIZER?

NOW IF YOU HAVE A PIECE OF LAND THAT WON'T GROW ANYTHING BUT WEEDS, TALK WITH US ABOUT IT AND LET US SUGGEST THE RIGHT FERTILIZER

WE FEEL VERY SURE THAT WE CAN SHOW YOU HOW TO USE FERTILIZERS WITHOUT GREAT EXPENSE SO YOUR LAND WILL PAY

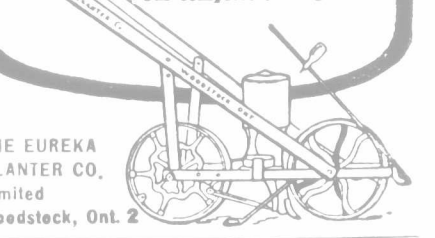
CONSULT US FREELY IT IS OUR BUSINESS TO KNOW ENQUIRIES FREELY ANSWERED AGENTS WANTED FOR TERRITORY NOT TAKEN UP

THE W.A. FREEMAN CO. LIMITED
HAMILTON ONTARIO

The "BACON" Seed Drills and Cultivators

The only Rear-Wheel Driven Seed Drill on the market. The feed in the "Bacon" handles seed without bruising or breaking, and seeds evenly to the last seed. Machine instantly converted from a regular seed sower into a hill dropper. Feed cut prevents waste of seed when turning rows.

For sowing Sugar Beets, Parsnips, Radishes, Carrots, Onions, etc., the 1908 model of the "Bacon" is unequalled for strength, lightness, easy running and good work. Write for our complete catalogues.



THE EUREKA PLANTER CO., Limited
Woodstock, Ont. 2

Corn that Will Grow

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

J. O. DUKE, RUTHVEN, ONTARIO

Seed Oats and Barley—Improved Ligawa, pure, clean, pure sample; Mandchuri barley, a grand lot. Satisfaction guaranteed. For prices, samples, write to

WM BARNET & SONS, Fergus P. O. C. P. R. and G. T. R.

SEED CORN Twenty-one years' experience. Send for free catalogue.
M. A. Jones, Ruthven, Essex Co., Ont.

Why should you pay the same price for a fence made partly of small wires when you can get one made entirely of big wires?

A fence made partly of small wires might just as well be made wholly of small wires. It is only as strong as the weakest parts. A strain that the big wires will easily withstand may be too heavy for the small wires. If the small wires snap, what good are the large wires in the fence?

Now, then, you know what to do when you are asked to purchase a fence made with small wire locks or laterals. Just refuse to consider the proposition.

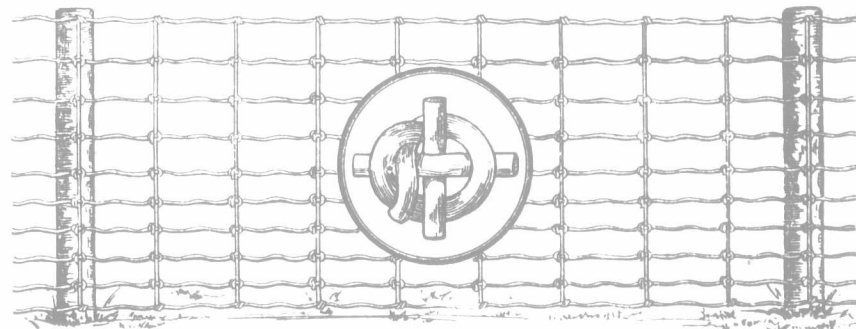
Give the LEADER fence a chance to prove its quality.

Examine it carefully. See how heavily and smoothly the wire is galvanized. This is the best grade of No. 9 hard steel wire produced by the largest mills in the world. It possesses far greater strength than ordinary wire. It keeps rust at bay.

Notice that the locks, laterals and stays are all of this best grade No. 9 wire. The LEADER is thus an evenly-tensioned fence. It will contract and expand evenly throughout the fence.

Be Sure You Buy Fence With Locks, Laterals and Stays all of No. 9 Hard Wire.

Don't purchase a fence with laterals or locks of smaller wire than No. 9. Such a fence will not give as long service



as a fence consisting of No. 9 wire throughout, such as the Leader fence.

Leader fence has the double-grip lock.

Frame & Hay Fence Co., Ltd., Stratford, Ont.

Also look at the way the ends of the LEADER lock curve over and interlock, thus producing a double grip. The LEADER double-grip lock is twice as secure a tie as the ordinary fence lock. It is impossible to spring the ends of the LEADER lock.

We've told you several reasons why you should purchase the LEADER. But we've more to tell you in our free booklet. Send for it without delay. You should have it in your hands now.

Special Agency Proposition.

And if you have an inclination to start an agency for LEADER fence, or know of anyone who would make a good agent, write us for particulars about the agencies we've open in unrepresented districts. Our line is a winner, and comprises farm and ornamental fence and gates. For those who will order in carload lots we've a special proposition, which includes sending an expert salesman to help close orders and show how to erect LEADER fence properly. Write us to-day and get further particulars.

FARMERS AND DAIRYMEN

IF YOU WANT THE BEST ASK FOR

Eddy's Fibreware Canada's Standard

Pails, Tubs, Milk Pans, Handy Dishes, etc., etc. Eddy's Fibreware lasts longer than any other, and COSTS LESS. It is seamless. Has no hoops. Never leaks. Does not rust. Will not taint water, milk or other liquids.

EVERY GROCER KEEPS THEM. MANUFACTURED BY THE

E. B. Eddy Company, Ltd., Hull, Can.

ALWAYS EVERYWHERE IN CANADA, ASK FOR EDDY'S MATCHES



WHETHER you live in the city or country, you'll find no .22 calibre repeating rifle like the *Marlin Model 1897*. For the city man it is a perfect companion for the vacation or outing trip. It's light, takes down and packs in a small space. The ammunition is inexpensive. The gun can be used with .22 shorts for target and is equally capable of handling .22 long or long-rifle cartridges without change of mechanism.

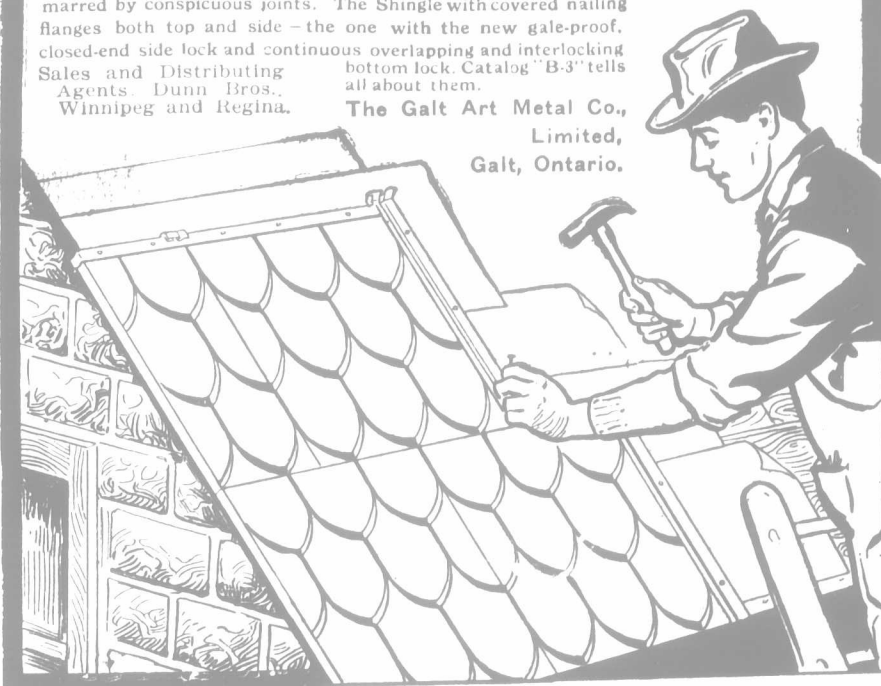
On the farm the rifle is a necessity. The short cartridge is sufficient for sparrows, squirrels and small game; and the long-rifle cartridge makes the *Marlin Model '97* a distinctive weapon for geese, foxes, hawks, etc. up to 200 yards.

The "*Marlin Book*" of 136 pages, with handsome art cover, is jam full of up-to-date information for all gun-lovers and gives full description of all *Marlin* repeaters. It's FREE for 3 stamps postage.

113 Willow St., **The Marlin Firearms Co.,** New Haven, Conn.

"Galt" Shingles

Simplest and Quickest to apply yet invented. Perfectly Square. True and Easy-fitting. The bold Gothic Tile pattern presents a handsome and architectural appearance—unmarred by conspicuous joints. The Shingle with covered nailing flanges both top and side—the one with the new gale-proof, closed-end side lock and continuous overlapping and interlocking bottom lock. Catalog "B-3" tells all about them.



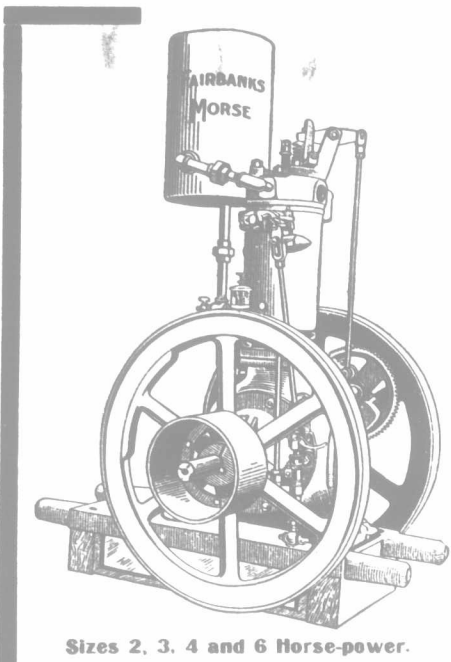
The Galt Art Metal Co., Limited, Galt, Ontario.



Iron Fencing

60 cents per foot up.

Write for free catalogue. Established in 1879. T.E. NICHOLS & SON, 190 King St. West, Hamilton, Ont., Can.



Sizes 2, 3, 4 and 6 Horse-power.

FAIRBANKS-MORSE GASOLINE ENGINES

Portable Vertical Type with Evaporator Tank.
Especially Designed for Farm Work.

Special Terms

TO
FARMERS
Send me Catalogue G. E. 102, F.A.,
showing full line Gasoline Engines.
NAME
ADDRESS

Our Gasoline Engines meet every requirement demanded of an engine for general farm power. They are so simple that an ordinary farm hand can operate them, and in addition are practically fool-proof and frost-proof. Thousands of other farmers have found these engines money-savers on the farm, and you can realize the same results.

Send for our free catalogue TO-DAY, describing our complete line of Farm Engines. It means money saved for you.

THE CANADIAN FAIRBANKS COMPANY, LTD.
MONTREAL, CANADA.

BRANCHES: Toronto. St. John, N. B. Winnipeg. Calgary. Vancouver.

McDonald's
TESTED SEEDS
TRUE-VIGOROUS-RELIABLE

Have Produced the Finest Crops for the past thirty years.
If you grow crops of any kind or description, a request by mail will bring you our handsomely illustrated catalogue.
Write at once. Do it right now. May mean dollars in harvest.
Kenneth McDonald & Sons
OTTAWA, ONT.
Dept. O

The Herbert Raspberry

Originated in this City about 20 years ago, and after thorough test it has proven the hardiest, most productive of the finest berries of any variety in America. It stood a temperature of 59 degrees below zero at the Government Experiment Station in the Peace River District last winter. For information about this and other hardy lines of fruit trees and plants, ornamentals, etc., and for eggs of Buff Orpington, White and Golden Wyandotte fowl, write:
The Ottawa Nurseries,
Ottawa, Ontario.

RED CLOVER!

Send for samples of our re-cleaned seed.
"GOLD COIN," \$9.00 bush.
"EXCELSIOR," \$8.60 bush.
Bags extra. Cash with order. F.O.B. Thamesville.
E. S. HUBBELL & SONS,
SEEDSMEN, THAMESVILLE, ONT.

Strawberry Plants!

Our soil being a deep, rich sandy loam, and our many years' experience in commercial strawberry growing, helps us to offer you first-class, vigorous, well-rooted plants. Leading varieties. Send for price list to-day.
S. H. RITTENHOUSE, Jordan Harbor, Ont.

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SELLS LIKE SIXTY
SELLS FOR \$65

GILSON
GASOLINE
ENGINE
For Pumping, Cream Separators, Churns, Wash Machines, etc. Free Trial. Ask for catalog—all sizes.
GILSON MFG. CO., 150 York St., GUELPH, ONT.

IF AT FIRST YOU DON'T SUCCEED
GET A
DE LAVAL
Cream Separator

And be done with Dairy disappointments.
The De Laval Separator Co.
173-177 William Street
MONTREAL
Catalogue Free. Agents Everywhere. WINNIPEG VANCOUVER

Ewing's

Seeds that Grow Dollars

Are you like the man who walked fifty miles and wore out a five-dollar pair of shoes to save one dollar railway fare?

May be you wouldn't do this—you're too wise—but how about risking next fall's crop by trying to save a few cents in the price of your seeds? Is that much wiser?

Good seeds, like all other good articles, cost more than poor ones, but they never fail to repay you with good interest.

EWING'S SEEDS are just a little better than most seeds—the little that makes the extra profit.

They're not better just because we say so, but because they're grown from selected plants—the strongest, healthiest and most perfect of their kind—and reproduce accordingly.

If you want to be sure of getting good big crops, ask for EWING'S SEEDS, and be sure you get them.

If your dealer can't supply you, write to us.
OUR BIG ILLUSTRATED CATALOGUE IS A NECESSITY. SEND FOR A FREE COPY.

WM. EWING & CO., SEEDSMEN,
McGill Street, Montreal.

SEEDS

FENCE FOR SALE

4,000 Rods 4-bar 40-Inch No. 9 Fence, stays 22 inches apart. In lots to suit, in 40-rod rolls. **PRICE 23c PER ROD.** Freight paid east of Fort William. This fence was made up for a foreign customer, who failed just before shipment was made. Also, some bargains in small lots of 7-Bar, 8-Bar and 10-Bar Fences. Particulars on request.
THE EMPIRE FENCE EXPORT COMPANY, LTD., Walkerville, Ont.
Good dealers desired in Unoccupied Canadian territory.

BELL
ART
PIANOS
CANADA'S BEST

Are used in thousands of homes—not in Canada alone, but throughout the world.
The only piano with the illimitable quick-repeating action.
Send for free catalogue No. 40.
THE BELL PIANO & ORGAN CO.
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Learn Bookkeeping
Complete course of instruction by mail in Commercial subjects: Bookkeeping, Arithmetic, Commercial Law, Business Correspondence, Penmanship, Shorthand, Typewriting; also in Matriculation, Teachers' Certificates, Beginners' Course, Steam Engineering, Mechanical Drawing, Stock Raising, Agriculture, Special English, Journalism, and 100 other courses. Ask for what you need.
CANADIAN CORRESPONDENCE COLLEGE LIMITED
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CENTRAL Business College
STRATFORD, ONT.
A Commercial school of the highest grade. A school without a superior in the Dominion. Catalogue free.
ELLIOTT & McLACHLAN, PRINCIPALS.

MANDSCHEURI SEED BARLEY
Grown on new land from our 1908 first-prize seed field in Provincial Competition. Good, clean, medium-sized grain. Heavy yielder.
J. & D. J. CAMPBELL, Fairview Farm, Woodville, Ont.

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The Farmer's Advocate and Home Magazine

"Persevere and
Succeed."

Established
1866.

REGISTERED IN ACCORDANCE WITH THE COPYRIGHT ACT OF 1916.

Vol. XLV.

LONDON, ONTARIO, APRIL 7, 1910

No. 915

EDITORIAL.

It is easily within the mark—understating the case, in fact—to say that ten acres of good apple orchard, properly cared for, will yield more net profit per annum than fifty acres devoted to the production of grain for sale.

It has been a poor spring for good-roads agitation, so far, at least, as Western Ontario is concerned. Good-roads enthusiasm reaches fever-heat when the going is at its worst. "We never miss the water till the well runs dry."

That Manitoba farmers are earnestly talking live stock, particularly sheep, as a means of maintaining soil fertility and combating weeds, is the reassuring assertion of John Campbell, lately returned from the Brandon Winter Fair.

Nine dollars per hundredweight for a twelve-months-old baby-beef steer, bought in Toronto for the Easter trade! Suppose he weighed 800 pounds, which he might easily have done, if he did not (and without much whole milk, either). That would bring his value to \$72, or more than many a two-year-old has been sold for.

An object-lesson in the principles of road maintenance is furnished by those districts where a dry autumn, followed by a heavy snowfall, and succeeded in turn by a dry spring, combined to defeat the usual havoc of the Frost King. Once more it calls to mind D. Ward King's epigram that most roads "will be all right in the spring if we don't put a lot of mud into cold-storage in the fall."

Will increasing cost of living compel us to return to the simple life? Or will common sense, supplemented by the knowledge that nutrients, in the form of cereal, milk and vegetable products, can be purchased for about one-fifth to a tenth what they would cost in the form of animal foods, lead people back to it from choice? The fact that less meat would mean, in many cases, better health, may help. This is not to say that we shall dispense wholly with meat, but the most expert testimony is that most of us eat more than is good for us. Less meat, of better quality, would be a boon.

Most of us have hindsight, but the best prizes go usually to those with foresight. Foresight assures us that, of all the farm crops produced on our land, good timber is going to be one of the most remunerative in ultimate net profits per acre, particularly for rough land, as well as being one of the most pleasant and easy to raise. The average wood-lot asks only to be left alone. Fence it off, keep stock out, and in ten years' time, or less, what was a thin and scattering sod-bound lot will be thick with lusty young saplings. These may need thinning and culling, but that can be done with comparative ease. This thick young growth will soon smother out grass (that arch enemy of the farm wood-lot), thus improving conditions for the larger trees. Careful observation of cross-sections of trees has shown that the annual layer of growth increased perceptibly after the grass had been thus expelled by upspringing young saplings, which also serve to hold the forest leaves for a natural cover and mulch. Bush pasture is poor and scanty, at the best. Keep stock out of it for some years, at least, that the trees may get a chance to reproduce.

Canadian Clover-seed Trade.

During the month of February the wholesale clover-seed trade was dead. Those who follow our market reports will have noticed that our Toronto market correspondent for a few weeks would not give any quotations for clover seed. Wholesalers, he said, had bought as much as they expected to need, and did not care to invest in more, except at a price they could afford to pay for seed for export, or to be held over. So trade was dull, and prices nominal.

It is not likely, however, that retail buyers of seed will be able to notice anything specially favorable to them in the prices they have to pay this season, but probably there will be more clover seed held over than usual.

Canada exports clover seed every year. This may seem absurd to many who remember the shortage in such seed, and its high price for the past few years. But, though the amounts exported are greater in some years than others, yet even in the scarcest years they are very considerable. The returns for the past five years show an average yearly export of over 140,000 bushels, valued approximately at \$1,000,000. The United States has taken nearly half of this yearly export of red clover and alsike seed, but investigation shows that little of it is used in that country. The most of it finds its way ultimately to European countries. Great Britain is the next heaviest buyer of our seeds, and the price that is paid shows that the British farmer takes our best quality of clover seeds. The values per bushel of clover seed exported in 1908 were as follows: Great Britain, \$9.71; United States, \$7.26; other countries, \$8.25.

This export trade virtually controls the Canadian prices for clover seed until about the tenth or 15th of February in each year. After that date, Canadian and American seed merchants have to reckon with the demand for our home trade only. The lull in the trade which occurred last February is not singular to this year, but is a sort of between-seasons slackness which usually prevails at the same period in most years. Prices strengthen or weaken afterwards, in accordance with the supply and demand.

Speed Versus Horse.

In the powerful effort made by the turf interests to defeat the Miller Bill, aimed against race-track gambling, the argument has been freely used that racing blood is the necessary concomitant of horse-improvement. That contention is dealt with by T. B. Macaulay, whose evidence the Parliamentary Committee have before them, as outlined in our Horse Department of this issue. He does not take the extreme position that an infusion of the blood of desirable members of the Thoroughbred family is devoid of advantage. The prepotency of the great running horse, or ability to transmit his own individual characteristics, good or bad, to his offspring, is conceded. Once it was a sort of historical pastime to trace to Imported Messenger the spirit and stamina of the Standardbred trotter, the race-track machine of America; and long ago, out of a combination of Thoroughbred and Norfolk Trotter, grew the Hackney, whose get from ordinary mares in Canada is not lacking either in style, spirit, or salableness. But, as Mr. Macaulay puts it, the Hackney is well able to stand on his own feet. It can hardly be claimed that the race-horse is the sole repository of stamina and endurance, for the draft breeds also possess these traits, and they did not acquire them from the Thoroughbred. In many great breeding studs of the latter, extreme speed has been the desideratum, not beauty or utility. Undesirable traits are condoned if the horse can win

on the track "by a neck." United States horse-men evolved the greyhound type of trotting horse. Consequently, as Mr. Macaulay states, out of the necessity and desire for A HORSE, rather than speed, has come the Hunter Improvement Society of Great Britain, and the efforts of Government and private enterprise in the United States to revive the Morgan type of horse, or a decent driver or carriage horse, by combining Hackney with Standard blood, or otherwise. As speed increased, and more horses "got in the list," beauty and utility disappeared. It is not suggested by anybody that farmers should take to rearing race-horses. In Canada, the big stables that produce the turf horses of note, like King's-Plat winners, can be counted, probably, on half a dozen fingers, and they will look after that business. It is unfortunate that the saddle has no general vogue in America, like the carriage, single or double; so, next to the draft horse, which by all odds is the safest and most profitable for farmers to raise, the handsome driving horse is the one in most popular demand. When up to weight, the Thoroughbred cross makes an ideal army horse, but Boer Wars are not a certain contingency to breed for. When buyers are falling over each other to secure drafters, and, to a considerable extent, tractable, showy drivers, at almost any price that farmers feel like putting on them, it is surely the part of wisdom to stick to types, the rearing of which from suitable sires is well understood. If in any district a Thoroughbred of good temper, substance and conformation is available, that has proven himself a carriage-horse-getter, by all means use him. The curse of many districts has been the multiplicity of breeds and types. "Why take the chances of a 'dash of hot blood' out of a racing horse to further multiply them?" farmers naturally ask themselves, when the classes of farm-bred horses referred to cannot be produced fast enough to meet the demand. Interference with horse-breeding is not the real logic of the opposition to the Miller Bill.

U. S. - Canadian Trade Relations.

The horns of the tariff dilemma, resulting from the inelastic provision of the U. S. Payne-Aldrich tariff law, which required that, after March 31st, a maximum schedule exceeding the minimum by 25 per cent. ad valorem would be levied on the products of all foreign nations which President Taft could not absolve from the charge of being unduly discriminatory against Uncle Sam's exports, have been avoided by a few unimportant concessions on Canada's part. Actuated though he undoubtedly was by a spirit of friendliness toward Canada, supplemented by political exigencies, the President was at a loss how to interpret the law so as to declare that Canada's French treaty did not constitute undue discrimination. Of course, the onus of the situation rested upon the framers of the Payne-Aldrich law, but, as this could not be changed in time to avert a tariff war, Canada has played the part of magnanimity, and granted Uncle Sam reduced rates on about forty articles, representing an annual trade of some five million dollars. Inasmuch as no Canadian interest will suffer seriously, while consumers will get the benefit of reduced prices, Canada cannot be said to have sacrificed anything but a nominal point in principle, and if this should lead to a fair and well-guarded reciprocal trade agreement on the broader and more liberal lines which should obtain between countries so closely related geographically and racially, as indicated by the President in his recent utterances, and by the exchange of notes between Secretary Knox and Hon. W. S. Fielding, the tariff difficulty will have served a good purpose.

THE FARMER'S ADVOCATE AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN THE
DOMINION.

PUBLISHED WEEKLY BY
THE WILLIAM WELD COMPANY (LIMITED)

JOHN WELD, MANAGER

AGENTS FOR THE FARMER'S ADVOCATE AND HOME JOURNAL,
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Seed Time: the Season of Hope.

"The time of the singing of the birds is come," and come exceptionally early. March closed in the vicinity of London, after weeks of sunshine, with a temperature like that of May. Seeding operations commenced in many sections of Western Ontario, as well as the prairie West before the usually blustering old March smiled his genial adieu.

The silent, mysterious forces of nature, which have as their field of activity the surface soil of the earth, have, after a few months of torpor, again begun to work. Tender shoots of grass are appearing, and garden and forest bulbs, fearless of frost, are making rapid headway. In the soil itself, which is in truth a vast chemical and bacteriological laboratory, these potent forces are changing inert matter into forms suitable for plants to feed upon, and bringing life out of death.

Is it because of these vital changes that the fresh upturned soil in spring has that pleasant aroma so well known to everyone who has worked in it with plow or harrow? What delight again to smell the rich, moist earth after the somewhat stuffy experiences of the winter's feeding work. Who would not now be a farmer? In the Old Country, about a century ago, a favorite medical prescription for a weakly child was to order it to follow a plowman in his furrow. And certainly, if one may judge from the average plowman's heartiness at the table, the old doctors' belief in the virtue of the smell of fresh-stirred soil had a substantial basis in fact. Let not the press of work hold our eyes from seeing the wonders among which we labor, or the wholesome delights which surround us. The speculator's interest in the state of the country's crops, which is solely that of personal profit, of how he can buy and sell, and make the greatest gain, is not a high, but a sordid one at best. The farmer, whose chief interest lies in production, that he may earn an honest living and something over, is himself not wholly free from the temptation to look only at the cash to be made by his work, and so make that work a mere grind for money. There ought

to be, and there may be, a genuine delight in seeing things grow, in reflecting on the marvelous processes by which this increase comes to us, and on the wondrous beauty with which all vegetation clothes itself, aside from the profit of it all.

But, after all, how little a part Man plays in the process of crop production! Germination, growth, weather, even soil itself, are all beyond him. He sows the seed, but the springing thereof is of life that he cannot impart. He can, by manipulation, produce conditions favorable to growth, but the growth itself is not his doing. With cultivating implements he puts in a few days' work, at most, on a field of spring grain, sows the seed, and his part is done. But the work goes on. As the months pass, those wonderful processes, so utterly beyond his control, or even his complete understanding, by which development proceeds from the seed through various intermediate stages, to the ripened grain, go on unceasing by day and by night, week after week, until maturity is attained.

Spring is the season of hope. The balmy days

make the good housewife think of having a fine garden. Flower and vegetable seeds are planted, and in imagination she sees full-ranked masses of lovely flowers, and inhales their fragrance, and has full supplies of crisp lettuce and other tender growth with which to vary the farmhouse dinner. For the time she reckons not of the fowls that scratch, the storms that beat, the drouth that withers, or the numerous family of grubs and bugs and worms that rejoice in devouring her greenery. But she is right. Her hopes have partial fulfilment, at least, while those who have no hope have nothing. How beautiful a newly-braided field of grain. Every blade is a prophecy. Each one may become a perfect specimen of its kind. The inequalities which develop later are not then seen. But though some may be crowded out, or perish from other causes, though some are weaklings while others are strong, though never is there fullness and equality all through, yet the bountiful harvest by which all are gladdened comes only after the seed-time of promise.

Peat Fuel for Canada.

Nature, in her beneficence, endows the northern countries, where it is most needed, with vast supplies of fuel for lighting, heat and power. When we grow apprehensive over the waste of forest resources, or the tying up of coal mines, "white power" is evolved in the form of electrical energy, from the giant streams of Canada, and Dr. Eugene Haanel, Director of Mines, at Ottawa, reminds us that the Dominion possesses an area of approximately 40,000 square miles of peat bogs, formed by the slow decay of vegetable matter, varying in depth from 5 feet to 30 feet, suitable for making fuel and other purposes, as yet practically undeveloped. Last year, only one small peat plant was in operation, a very limited quantity being produced for local use. Many such enterprises have been projected, but were not successful, because the properties of peat were not sufficiently understood, the machinery or methods employed were impracticable, or the bogs worked were unsuitable. The aim has been, by artificial drying and pressure, to make condensed fuel in the form of briquettes (small blocks) that could be handled and shipped like coal. These have been made, and burned fairly well in domestic use, but the process was so costly that the product did not pay. As Dr. Haanel observed recently to a representative of "The Farmer's Advocate," it resolved itself into spending \$200 to make \$100 worth of fuel; in other words, more fuel is required in the artificial process to evaporate the water from the bog material than it will yield in dry-peat substance. The present solution of the problem is in an air-drying process. Nature must be harnessed in a simple way. For a couple of years, the Mines Branch of the Dominion Dept. of Mines has addressed itself to this task of learning, first, how peat fuel is successfully and profitably made, and used in Sweden, Norway, Denmark, Finland, Russia, Germany, Austria, Holland, and Ireland; second, the condition of the industry in Canada; third, the character of the Canadian peat bogs; and, fourth, making an actual demonstration in peat production near Caledonia Springs, Ont., at the Alfred bog, in the Townships of Alfred and Caledonia, on the C. P. R., about 40 miles from Ottawa. The total area of this bog is about 6,800 acres, and capable of yielding approximately 9,369,000 tons of peat fuel. A bog with an average depth of six feet after drainage, contains about 1,210 tons air-dried peat to the acre, and 1.8 tons air-dried peat is equal to about one ton of coal. The bogs should be fairly free from roots and stumps, and well humified. The Government has purchased about 300 acres of this bog, and did a large amount of preparatory work last year. A modern European peat-fuel plant, Anrep system, is being installed, and operations will be commenced during May next. The Department has also established a fuel-testing plant at Ottawa, where this manufactured peat will be tried as a gas-producer and generator of power. In Sweden, several power plants, with peat gas producers, are successfully in operation. In the researches thus far conducted, Dr. Haanel

has had the valuable assistance of Erik Nyström, M. E., who investigated the European industry, and A. Anrep, peat expert, with Mr. Nyström, in reporting upon the Canadian bogs. As a general conclusion, it has been clearly demonstrated that the manufacture of air-dried peat fuel is a sound business proposition. Canadian conditions in the interior Provinces are quite as favorable as those in Europe; in fact, the drying conditions are more favorable, the summer being longer and warmer. In case of most bogs, the employment of machines for mixing, pulping and shaping the peat in blocks for drying, without extra addition of water in the process, which occupies from 16 to 30 days, is recommended. The blocks vary in size, 4 x 5 x 9 inches being perhaps an average. They can be readily handled, but are not intended for shipping long distances. Adding water is a method advised where suitable drying fields can be secured, or where small production is required. Though the manufacture of peat croquettes has not proved lucrative, the production of lignite briquettes in Germany has reached large proportions. Another promising fuel is peat powder, which might be advantageous in such industries as cement-making. The manufacture of peat cake is also reported feasible, where the by-products can be disposed of to advantage. Moss litter from the bogs, and peat mull are used for bedding and packing purposes (fruit and eggs, etc.), but the staple output of European bogs is air-dried fuel. The governments there have expended large sums in its development, in order that they might be independent of foreign countries for fuel. Russia has the largest peat industry in the world, with some 1,300 Anrep peat machines, and other plants are in operation, some of which are owned and conducted by the Government. Over 4,000,000 tons of peat fuel per year have been produced. Holland stores immense quantities of peat fuel for military purposes in case of war. In some cases the plants are run by private companies, and in others on a simple co-operative plan, perhaps a dozen or twenty persons uniting to make their own fuel. Machinery for such purposes could probably be set up for \$5,000, capable of turning out from 20 to 30 tons per day, at an approximate cost of from \$1.75 to \$2.00 per ton. The raw material is dug, and pulped and formed on the bog's surface into bricks or blocks, which are placed to dry in the air. Air-dried peat may contain from 25 to 30 per cent. moisture, and is used either for domestic or industrial purposes. Incidentally, it is learned that the bogs, as they are worked out for fuel purposes, are converted into use as farming land. Being already drained, they prove highly valuable for crop production. The rapidly-growing population and industrial activity of Canada, and the increasing demand and cost of fuel, coupled with the fact that we are importing between 7,000,000 and 8,000,000 tons of coal annually, demonstrate the immediate and practical value of the Canadian peat-fuel industry. The work undertaken by the Government towards its development is certainly to be commended. One point stands out clearly, viz., that, before any

peat-making enterprise is projected, the bog should be carefully tested by experts, such as the Department of Mines have engaged, in order that its value and the character of the plant required may be determined. The results of the demonstrations at Caledonia Springs and in Ottawa should prove of inestimable value to the Canadian public, either from the standpoint of producers or consumers of fuel.

Simple Directions for Spraying.

Spraying instructions in compact form, very convenient for reference, are contained in the Spraying Calendar published on another page of this issue. This calendar differs in some of its suggestions, both as to material and time of application, from those published in previous years, but may be followed with confidence, having been prepared by an expert in fungous diseases and insects. Mr. Caesar, the expert in question, has not only read widely and studied well, but has demonstrated his ideas conclusively in practice. Last year, in the apple orchard of a man who had become discouraged in attempting to combat codling moth, he succeeded by two thorough sprayings of arsenate of lead, two pounds to the barrel of water, in producing apples 90 per cent. of which were free from worms, while in neighboring orchards 50 to 95 per cent. were wormy. In ordinary districts, Mr. Caesar considers that one thorough spraying with arsenate of lead should suffice for the codling moth, but, with a view to combating other pests as well, such as scab, he recommends, for general practice, three sprayings of apple and pear orchards:

1. Just before the leaf-buds burst, lime-sulphur mixture, preferably the home-boiled.
2. Just before the blossoms open, either Bordeaux mixture or commercial lime-sulphur, one gallon to thirty of water. Two pounds arsenate of lead should be used to every forty gallons of whichever fungicide is used for this application.
3. Immediately after the blossoms have fallen, use the same fungicide and poison as in No. 2, but the fungicide should be somewhat weaker, as this has to be a heavier application to control the codling moth. Thoroughness is emphasized as of the greatest importance.

By following these instructions faithfully, the veriest tyro, if he be of fair intelligence, and painstaking, can go to work and spray with satisfactory results. Of course, he will not do the best work the first year, because the amateur sprayer can rarely or never be made to understand what thoroughness means, but he will learn as he goes on. Both lime-sulphur and arsenate of lead may be purchased ready to dilute and use, the former coming as a liquid, and the latter as a sort of paste. The cost is not great, the work is interesting, and the results gratifying. Every man who owns an acre of orchard should buy or secure the use of a spray pump. It will also come in handy for spraying plum and cherry trees, and potatoes, as well as for whitewashing buildings. Spray, and grow clean fruit.

World's Wheat Market.

The Economist, a British review of high repute, has a capital resume of the world's wheat market. When the season opened, in August last, most predictions were that the high prices, which had lasted over two years, would come to an end. This has not happened so far, owing partly to the bad condition in which most of the European crop was harvested, and the unexpected demand for wheat in Hungary. The world's wheat crop was estimated at 40,000,000 quarters over the average production of the two previous seasons, and though Russia, especially, poured enormous quantities of surplus wheat on the market, western Europe easily absorbed it, owing to the absence of reserves of old wheat, and the wet condition of the new crop.

Although prices have been high so far, the probabilities are believed to be for lower prices in the near future. Russia and Canada have a large proportion of their crop still to market, and England and western Europe will have a large quantity of the wheat, which was too wet to market in the autumn, to sell.

German Agricultural Development

Herr Zelter, the German farmer, whose recent strictures on English agriculture have been much discussed, has an article in an English morning paper, defending his position. Referring to Germany, he says the development has been largely due to four forces, namely: A suitable division of ownership; intensive, instead of extensive methods of culture; the combination of agriculture, with industry for the production of sugar, alcohol and starch; and finally, protective tariff legislation.

Two-thirds of the land used for agriculture in Germany is owned by the peasants, and one-third by great land-owners, and most of the land is worked by the owners. German agriculture has now almost reached its goal. Last year Germany exported more breadstuffs than she imported, and imports of meat have been reduced to a minimum.

Herr Zelter omits to explain that Germany's imports of meat have been reduced by a tariff that has made horse flesh almost a luxury to the poor. Agricultural development thus secured is purchased at too high a price.

Approximate Cost of Spraying.

Five dollars per acre, or about ten cents a tree, was the cost of material in our demonstration apple orchard last season, for what have usually been regarded as the three most important sprayings. For material and labor combined, the total cost was \$16.33 per acre, or 33 1-3 cents a tree, allowing liberal wages to men totally inexperienced in the work. The trees in this orchard were twenty-two years old, fairly well-grown, and planted fifty to the acre. These three sprayings alone, if very thoroughly done, will insure the production of fruit, ninety per cent. of which will be free from codling moth and serious defacement by scab. The trees will also be, to a large extent, protected from the attacks of other orchard pests, such as oyster-shell bark-louse and bud-moth. In the average orchard, the benefit from such spraying would represent a net gain ranging anywhere from five to fifty dollars per acre over and above wages and cost of material.

Economy in Human Diet.

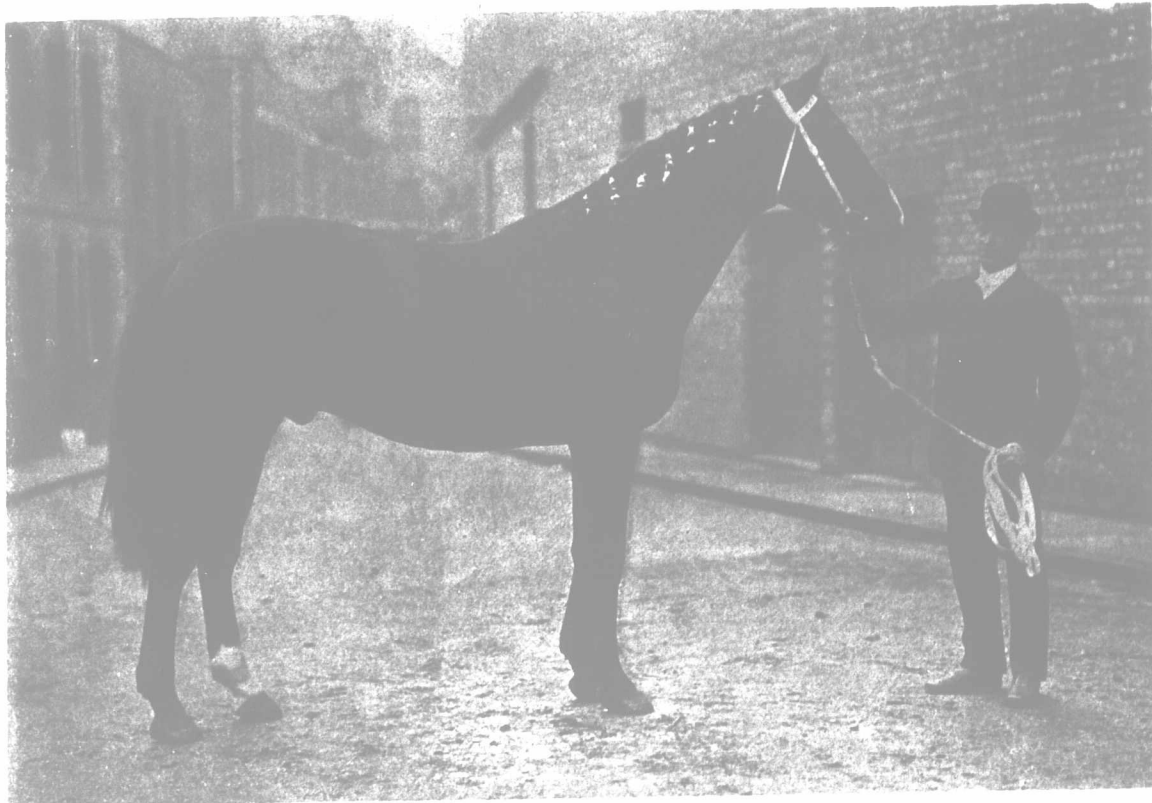
Editor "The Farmer's Advocate":

From time to time discussion centers around certain fashionable topics, and nowadays we hear a good deal about the "increased cost of living," with special, tacit reference to meat products. I often wonder why it is not more popular to apply the same study and reasoning to the question of human food as is applied to that of stock foods. "Feeds and Feeding" has been a topic of perennial interest in agricultural journals and Farmers' Institute meetings. Why not turn our attention for a little to the question of human "feeds" and

feeding," especially now that the public interest seems centered upon the increasing cost of living?

On March 26th I happened to be in a butcher shop, and saw a couple of spring lambs whose hindquarters were priced at 35 cents a pound. Meanwhile, potatoes can hardly be got rid of at any price, though some few sales have been made at 40 cents a bag; and most cereal foods have not advanced in price to any very remarkable degree. The intelligent farmer provides suitable food for his cattle at a minimum cost, but the same man, or his fellow man, will cry out in dismay when the prices of certain human-food products begin to soar beyond reach. Everywhere we find that alfalfa is recommended as a cheap source of protein for dairy cows and young stock of various kinds, and the farmer is being taught to grow and feed alfalfa, rather than bran or other relatively expensive concentrates. But skim milk, usually estimated at 15 cents per 100 pounds, is a most valuable source of protein for humans, and yet goes practically unused. Whole milk, to be sure, is fairly popular, but skim milk, obtained as a by-product in the manufacture of butter, is rarely used as human food. Why? In some European cities, particularly in Copenhagen, which has, perhaps, the best milk supply of any city in the world, milk with varying degrees of butter-fat is sold regularly to the inhabitants. But in Canada, skim milk is only rarely used, when the supply of whole milk fails. What sort of a diet could be constructed from skim milk and potatoes as a foundation, and what would be its cost, in comparison with other diets? Suppose we allow 25 cents per 100 pounds for the skim milk, and 60 cents per bag for potatoes. The 100 pounds skim milk will contain about 3 pounds protein and 5 pounds sugar, and the 90 pounds potatoes will contain, say, 20 pounds solids, mostly starch, which, from the standpoint of nutrition, is identical with sugar. We have, then, in the 100 pounds of skim milk and bag of potatoes, about 30 pounds digestible dry matter, at a cost of 85 cents, or, say, 3 cents per pound. Add to this oatmeal, containing a splendidly-balanced ration, for a little over 3 cents per pound; rolled wheat and wheat products adapted for human food, at about the same price; beans, containing an unusually high percentage of protein, and, when properly cooked, both palatable and digestible, at a little over 3 cents a pound; sugar, if you will, at 5 cents a pound; and, for flavoring and extras, the many cheap fruits and vegetables. There are, therefore, many suitable sources of human food at approximately 3 cents per pound, for digestible nutrients.

Now, compare with these the cost of nutrients purchased in certain other food products: Beef-steak, at 15 cents per pound, containing 25 per cent. protein; cost of protein, 60 cents per pound. Cheese, containing 70 per cent. dry matter, at 17 cents per pound; cost of nutrients (proteids and fat), 25 cents per pound. Butter, worth 2½ times as much as starch or sugar as an energy producer, at 30 cents per pound, 30 cents' worth being equal to 8 cents' worth of starch or 13 cents' worth of sugar. Ham and pork products (containing protein and fat), with nutrients at about 40 or 50 cents per pound; and so on. If people will choose as staple articles of food those sources which supply nutrients at 30



Carrington.

Thoroughbred stallion, chestnut, five years old. King's Premium winner in Class A, London, England, Hunter Show, 1910. Sire Sainfoin.

cents a pound, and reject those sources which supply them at 3 cents a pound, I, for one, see no reason for special complaints as to the high cost of living. If the same intelligent study were devoted to the selection and preparation of human foods as is now being applied to the selection and preparation of stock foods, we should not hear so much about the cost of living; and if some of the glaring waste of food in our large cities were remedied, it would be better for the whole nation. Man's life consisteth not in the things which he possesseth; nor is an individual any healthier, happier or wiser because he eats food that costs 30 cents a pound, when he might have eaten similar food at three cents a pound. All over the American continent, in particular, there is vast waste of food products, and not a little ill-health—both physical and moral—by reason of allowing whimsical, cultivated appetites to dominate, instead of common sense.

Of course, there has been a gradual rise in the average price of all food products, due to a variety of causes, largely to the increasing supply of gold, which is our artificial standard of value. But this is another question.

It is, of course, obvious, that animal products must be more expensive, on the whole, than vegetable products, and the question arises as to what effect upon civilized life it would have if the demand for human food should gradually discriminate in favor of vegetable products. How far could humanity profitably dispense with animal foods? The question is interesting from a speculative standpoint, but is not of pressing practical importance.

There is, however, another question of more moment at the present time, and that is a consideration of the consequences of man's analysis of various food products; analysis or separation for use, not for mere information, is what I mean. For example, the fat is separated from the milk, the sugar from the beet, the starch from the maize or potato, and so forth. Modern milling processes separate the wheat grain into various products, and we find, too, all kinds of prepared foods. What is the effect of all this? The consequences are by no means all happy. Children feed extensively upon candy, and cannot develop bone or muscle; white flour replaces whole-wheat flour at great expense, and what is gained? Often improper nourishment and alimentary disturbances. The natural foods have been analyzed, and recombined, and it is a question as to whether most of the labor expended in this way is not wasted. Let sugar be eaten more in vegetables and fruits, where it occurs naturally, and let fats be eaten in combination with proteids, and carbohydrates in milk and meats, not so largely in separated forms. There are, of course, exceptions, sufficient, doubtless, to justify a modicum of current practice; but, on the whole, a return to the simplicity of nature will provide a simple remedy for many of the ills of civilization. The analysis of food products provides the opportunity to choose, and, unfortunately, choice may be made of the wrong, as well as of the right. At the present time, the best remedy lies in the dissemination of knowledge. W. C. GOOD.
Brant Co., Ont.

That Mrs. W. E. Hopkins, writer of the lengthy letter which appeared in "The Farmer's Advocate" of February 24th, has "struck fire," is evident from the aftermath of comment pouring into the editorial department. Most of her critics, while evincing a desire to be fair, show lack of wide acquaintance with conditions. Also, we echo one correspondent's advice to re-read her letter before criticising too harshly. Though it is difficult for persons residing in the more progressive farming districts to believe, as a matter of fact, there are not a few sections where Mrs. Hopkins' characterizations all too truly apply. Fortunately, they are not wholly true of Canadian agriculture in any large or general way, but certain of her criticisms will strike home a twinge of self-consciousness to no small number of us, if read with an introspective attitude of mind. Daughters do not get a square deal in many cases, either in country or city, nor is the masculine arrogance and rudity, of which Mrs. Hopkins speaks, so exceptional as we could desire. Let us each see what can be done to add to the refinement and attractiveness of rural society, and hasten the day when to no part of Canada may any such strictures be applied.

We might wipe out every city in the world, and the countryman would breed a new humanity. Obliterate the farmers, and the cities in three months would be silent, and their inhabitants fleshless bones.—Irish Homestead.

If, by obliteration of the farmers is meant permanent obliteration of soil husbandry, the foregoing sentence is not far from the mark.

HORSES.

Treatment of Mares at Foaling.

II.

Unless the weather is favorable to have the mare in a field alone, which is preferable in daytime, quietness should be observed, and if she lies down with the buttock so close to the wall as to prevent the foal from passing back easily, then the position should be changed to a more desirable one, to give room for easy delivery. If the presentation is normal, the act is generally performed quickly, and sometimes the foetal membrane does not rupture, and the foal smotherfs. Therefore, so soon as the colt's nose appears outside the vulva, if the covering is not torn, the attendant should tear it, to allow the colt to breathe; and, after delivery, if the umbilical cord (navel cord) does not break, it should be cut. First, tie a strong, rather soft string that has been soaked in a three-per-cent. solution of creolin or carbolic acid (prepared previously) around the cord about one and a half inches from the belly, to prevent bleeding, and cut the cord an inch below the string. A sharp knife or large shears should be convenient for the purpose. The cord is composed of three tubes or cords, twisted. Dress the belly around and over the navel with a three-per-cent. solution of creolin or carbolic acid two or three times a day for a few days, until the cord dries up and drops off, when most danger of infection has passed. If the mare lies quiet for half an hour, or thereabouts, allow her to do so, by which time she may expel the foetal membranes, if they did not come with the foal shortly after delivery, or, as soon as she rises, offer a gallon or two of tepid water, into which has been stirred a handful or two of bran, repeating the drink hourly until thirst has been satisfied. Feed light, easily-digested food for a few days, gradually increasing quantity until full feed and exercise is given. Watch the foal for action of the bowels, and, if it is constipated, give an injection of half a pint of warm water and an ounce of glycerine, mixed, and repeat in an hour, if necessary. This, in my experience, has proved more satisfactory than any physics or medicine given by the mouth.

So far, I have been considering almost normal conditions, which, unfortunately, is not always the case.

Returning to delivery, if the act be delayed beyond a few minutes (five to ten), the labor pains being strong, the attendant should summon assistance, halter the mare, get her on her feet, bathe the hand in warm water, in which a small quantity of creolin has been mixed, then pass the hand through the vulva, and discover whether the position is normal (that is, the fore feet presenting, with the nose lying about on the knees), or a breach presentation (that is, the hind feet presented, with the tail of the colt up towards the mother's back). In either case, assistance should be given by drawing on both feet together; but if the presentation be other than one of these (and in these, if convenient), procure, as soon as possible, the most skillful assistance obtainable. While doing so, keep the mare on her feet, walking her to prevent strong labor pains forcing the colt into cramped position and contracting the walls of the uterus, making it difficult to adjust the position. There being many abnormal positions known to skilled men, descriptions will not be beneficial, other than to say that some of them can best be relieved by in part dismembering the foetus, and removing it in pieces, thereby, in many cases, saving the life of the mare. In many cases, where the presentation is not so difficult, by early, skillful assistance, the foal's life, as well as the mother's, may be saved.

Occasionally, a mare will decline to allow the foal to suck, when it may be necessary to coerce her by holding up a fore foot, or even applying a twitch for a few times; but, in many cases, if the foal be smart, and they are left alone, the mare will submit, and almost always after being controlled a few times. But if she be vicious with the colt, it is advisable to remove the colt only while she is under control, or she may kill it. Such mares, sometimes, after the foal has sucked a few times, become very fond of and careful with their young. Sometimes pregnant mares have considerable swelling along the belly and in the legs, even bog spavin and thoroughpins appear. In such cases it is well to regulate the feed by reducing the quantity and increasing the exercise, to relieve the condition, as, a few days after delivery, such conditions generally disappear, and, when physics or other medicines are administered, abortion may be induced. In some cases, the milk may drop from the teats for days or weeks before delivery. In my experience, this is symptomatic of a weak or dead foal. All that can be done is to give the mare the already advised care, and wait for delivery; then, if the foal be alive, and weak, treat carefully; give the advised injection, as it will be deprived of the first milk, which has a mild, purgative action; and, if the foal be unable to rise, it should be rubbed dry, assisted to rise, stand and suck. But if the mother has

not sufficient milk, cow's milk should be substituted, given from a clean sucking bottle, the milk to be sweet, warm, and have a small quantity of sugar added, and given every four or five hours for a few days, when the periods between feeds may be gradually lengthened.

If the mare has an inflamed udder, bathe with warm water, or, better still, warm, sour buttermilk, two or three times a day; have the milk frequently drawn, either by the colt or by hand. After each bathing, rub well in camphorated oil and belladonna, made by taking four drams tincture of camphor, four drams fluid extract of belladonna, and eight ounces of raw linseed oil. After applying the oil, prevent the colt sucking for an hour or two, then wash the teats with warm water, and permit the colt to suck.

The placental membranes should be expelled along with or shortly after the foal; if not, they should be removed, and, as it is a delicate operation, a skilled person should be secured as soon as possible. Occasionally, there may be considerable straining and hemorrhage after delivery, when a dose of one dram of powdered opium, or one ounce of laudanum, is beneficial, and the mare should be kept as quiet as possible. As to breeding again, frequently that may be accomplished about the ninth day, or at the end of any twenty-one days following this, being general, although there is considerable variation. It is well to wean the foal at about five months of age. Have it feeding well, and gradually prevent its sucking for a few days; allow it to suck twice a day, and for a day or two more only once a day, and then prevent altogether. Attend to the udder, drawing the milk once a day, or once in two or three days, as condition demands, until danger from inflammation is passed, then keep her in condition for the next foal. J. STANDISH, V. S.
Colchester Co., N. S.

Improvement of Horses.

A memo by T. B. Macaulay, of Montreal, a breeder of draft and carriage horses, and close observer of the horse stock of the country, form part of the evidence received by the Parliamentary Committee on the Miller Bill, at Ottawa, in regard to race-track gambling. Mr. Macaulay takes the broad ground that improvement in our horses can only be made by specializing them. The great trouble with the horses of every country is that the vast majority have no special characteristics; they are merely ordinary general-purpose horses, and this is the class that always sells at the lowest prices. It is only to the extent that horses have some special quality that they are worth more than the ordinary and comparatively low value. There are three main lines along which specializing may be developed:

1. Heavy draft horses.
2. Stylish carriage horses.
3. Speedy horses.

For the draft group, the qualities desired are size, weight, strength, and the proper conformation for heavy draft. For carriage horses, what is needed is beauty, style, action. And, for speedy horses, courage, ambition, grit, and the conformation suitable for speed.

Size, weight and strength certainly cannot be implanted in horses by an infusion of racing blood, either Thoroughbred or Standard-bred. The addition of hot blood to a draft type would simply reduce the size, reduce the strength, and make the horse less quiet, steady and reliable at work, thus reducing his efficiency in every way. In other words, so far as the draft type is concerned, the addition of hot blood would be very undesirable. The importance of weight in this connection may be seen by the fact that if a horse of 1,500 pounds would sell for \$250, a horse of exactly the same quality otherwise, but weighing 1,600 pounds, would certainly sell for \$300, the extra hundred pounds being thus worth \$50, or, say, 50 cents a pound. This emphasizes the loss which it would be to farmers to have the weight of their animals reduced, for any reason whatever.

"Stylish carriage horses," observes Mr. Macaulay, "are represented in this country almost entirely by the Hackney breed. This breed traces back to union of the old Norfolk trotters of long ago and the English Thoroughbreds of that time. It combines a large measure of ambition and endurance, with greater beauty of conformation and high, stylish action. The special characteristic in this line which brings great prices is action. The addition of any hot blood to this breed is unnecessary, and would simply lessen the action, detract from the beauty, and lower the value of the horse. Mares with warm blood, of course, give better results when crossed with the Hackney than do cold-blooded mares, but certainly will not equal, on the average, those from pure Hackney mares, or even from half-bred Hackneys. The results of Sir Gilbert Greenall's annual auctions are convincing proof of this. Sir Gilbert is the most prominent breeder of Hackneys in England, and his sales are almost historic events in the Hackney world. Some years ago he tried the experiment of introducing some of the best Thoroughbred

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blood into his stud. What has been the result? I have the catalogues and prices for a number of years. Not one animal in those catalogued which had a Thoroughbred as parent or grandparent sold for a high price, most of them going for comparative trifles. As a contrast, some of the pure-bred Hackneys at those same sales sold for record prices."

Coming now to the third group, Mr. Macaulay admits at once that for certain purposes warm blood has much value. In horses of the draft type, however, it is worse than useless, and for stylish carriage horses it is also not needed, to say the least; but, on the other hand, the addition of Thoroughbred blood would unquestionably make the ordinary plugs, which constitute such a large proportion of the horses of the country, better than they are. It would give them more ambition, more grit, and a little more speed, but would not help them in any material manner otherwise. It would certainly not improve either their size or their action.

We have thus three divergent and conflicting lines of possible improvement of the horse-breeding of the country. In order to judge at all accurately of the value of the third line of breeding, it is important to compare it with the two other lines. Is it desirable, for instance, to encourage farmers to raise horses of racing blood, either pure-bred or half-bred, in preference to draft animals? We can leave the carriage horse out of consideration for the moment. I do not hesitate to say that it would be a fearful mistake to do anything that would encourage farmers to go in for racing blood, rather than for draft blood. For a country like Canada the draft type is the one that should be encouraged as the main type, beyond all question. The best proof of this is to be found in the number of horses imported into the country each year by horse dealers for breeding purposes. Last year, the number of Clydesdales imported was somewhere around 1,200, to say nothing of Shires, Percherons, Belgians, and other draft breeds. The Hackneys imported were, of course, fewer, but still a substantial number. I do not know the number of Thoroughbreds imported, but think that, outside those brought in by the National Breeding Bureau, of which more further on, are hardly worth counting. This shows what the intelligent farmers of the country think they need. It also shows what the horse-dealers think they need, and our farmers and horse-dealers certainly should know what pays best. If the raising of horses with hot blood in them paid as well as the raising of draft horses, then, unquestionably, the farmers and horse-dealers would import racing stock. This goes far, I think, to show that the intelligent, experienced men of the country are not in favor of the introduction on any large scale of Thoroughbred blood for the purpose of crossing with the ordinary stock of the country.

The horses of the Bureau in question are said to include some of the finest Thoroughbreds in existence, and they were brought in by people to whom I give credit for an honest desire to improve the stock of the country, according to their light. One of these horses was stationed with one of my neighbors in the County of Vaudreuil. I understand, however, that very few, if indeed any, of the farmers around there availed themselves of the opportunity, although the horse was right at their own doors. As a contrast, the demand among farmers for the Clydesdale horse, and even the Hackney, has been remarkable. The farmers want the draft type, and do not want the hot-blood type, as a rule, even when brought to their own doors. This judgment on the part of farmers is very significant, and in their view I myself thoroughly agree. Outside of supplying horses for military purposes, and for riding and fast roadsters, we have no need of hot blood. I have no objection whatever to its being introduced, and would rather see a cross of warm blood upon the ordinary stock of the country, than no improvement at all, but I would a thousand times rather see a cross of draft blood than of hot blood. This is a case of the good being the enemy of the best. Those who desire to raise carriage or riding horses can be trusted to secure such stallions as they desire, whether Hackney, Thoroughbred or Standard-bred.

The Hackneys are monopolizing more and more the trade in ordinary city carriage horses. Style and appearance are being taken into account in this connection more and more. The automobile is driving out the necessity for horses with extra speed, except for the race-track, and, to the extent that carriage horses are needed, the Hackney type is the one usually preferred. It is easily possible to overestimate the importance of warm blood in this country, and certainly its value is not to be compared in any way with the value which a greater infusion of draft blood would be.

But now let us consider the effect of racing upon type. Whether it be Thoroughbreds of Standard-breds, the one object in all races is, of course, to win. The type developed by the race-course is, naturally, a racing machine—a horse capable of covering a short distance with extreme speed, even

though he may not be able to carry an ordinary man comfortably for any long distance, or able to draw an ordinarily heavy carriage comfortably, to say nothing of being able to continue for long distances. This view is confirmed by several facts. In the first place, there is in England what is known as the "Hunters' Improvement Society," an organization with its own studbook, whose object is to encourage the breeding of hunters of more substance than the ordinary Thoroughbred. Then, too, what is being done in the United States is very suggestive. There were formerly, in Vermont and the New England States, great numbers of Morgan horses, which were very popular fifty years ago, and so long as they were able to hold their own on the race-track, they continued to be bred. They were noted for their endurance and other good qualities, but have in time been almost replaced by other families of Standard-bred horses, simply because the latter were able to win races more successfully. The Morgan horse became almost extinct, notwithstanding his great endurance and beauty. An attempt is now being made, under the auspices of the United States Government, to revive the Morgan horse because of those qualities. In like manner, the United States Government is starting the breeding of a special strain of carriage horse, which is being developed from the American Standard-bred animals, with the idea of breeding a type with more substance, more size, more beauty, and more action than the kind developed by the race-track. These three instances, it seems to me, show conclusively that the race course develops speed at the expense of more desirable qualities, and that, to encourage racing does not necessarily encourage the breeding even of the type of racing-horse that would be really valuable to the country. If racing developed an ideal type of horse, why should the U. S. Government find it necessary to establish



Not Worrying for Grass.

Feeding silage at the Central Experimental Farm, Ottawa.

(Photo by F. T. Shutt.)

these breeding stations? If we wish to get an infusion of hot blood into Canada, we do not necessarily wish the blood of animals of the extreme type developed by race-courses. The larger, stronger, more enduring animals would be far better for our purposes, even though they could not win races. I think, however, that the farmers and stock-breeders of the country may safely be left to select the kind of animals they really want.

I have no objection to racing as such, but, for the reasons given, I do not myself think that the encouraging of racing, by permitting betting, would have any beneficial effect whatever upon horse-breeding in Canada.

This year promises to break all records in horse shows and the horse business in Western Canada, so far as draft horses are concerned. The West received a large proportion of the fourteen hundred-odd Clydesdales exported from Scotland in 1909. Clydesdale men out there have been buying freely in the East and South. Of Percherons, there are more good ones on the prairies than ever before. Shires are increasing in numbers, and, in Alberta, Suffolk-Punch breeders have increased the numbers of this excellent British draft breed by substantial importations from the Old Land. The outlook in pure-bred drafters was never more promising. At the Brandon Winter Fair there appeared the largest rings of Clydesdales, Percherons and Shires ever seen at a Western Canadian exhibition—rings large in numbers, and of a particularly high standard of excellence.

LIVE STOCK.

Sheep for Western Farms.

Seeing peoples and places is a line of education which is most interesting and instructive. Seeing the Canadian West, with its Province-loyal inhabitants, their great faith in the country, and the results, as observed at their Winter Fair, and enjoying the free, hearty hospitality in their homes, was our means whereby first-hand and useful information was secured, and an estimate made as to future prospects. Going on towards the setting sun, for the most part, is monotonous and dreary. Were one so unfortunate as to be companionless, the day spent in the rough, rocky regions of our North lands would be nearly a blank in life. So little of humanity to be seen outside the train, and the continuous, apparently useless character of the district, causes one to wonder what Providence may have in future store for such desolation. All is soon forgotten when the hustling, rapidly-growing, bounding, hopeful City of Winnipeg is reached. Pressing onward towards Brandon, full variety of soils and conditions is sighted. Here we see, surrounded by grass-covered marsh land, or hay lands, a village-like group of well-built and neatly-painted stock buildings, near the track; while there, a mile or two away, is another, with half a dozen windmills on duty. Inquiry elicited the information that the first was a very extensive piggery, operated by a city boot-and-shoe dealer, and the other a collection of dairy-cattle barns.

Onward—grass lands, seemingly too level and waterlogged for cultivation, to the apparent extent of hundred of thousands of acres, were passed through. In imagination, the future picture conceived was a large section of very fertile land, with deep-cut waterways, similar to those seen in Essex and Kent Counties, in Western Ontario, with probably extensive tile-draining, and growing a wealth of crops, such as no present cultivated part of Manitoba now produces. That a great and profitable future lies before the now nearly useless area, is a certainty, judging by what we have seen accomplished in our Province, with somewhat similar conditions.

Higher levels brought us to fertile fields, and, after that, a run of lower flats of land ready for cropping, but with water standing in the furrows

for miles and miles, and no outlet in sight. Next, sand hills in plenty were passed before Carberry was reached, and that followed by the homestead stretch to Brandon, where large farms, comfortable-looking homes, and well-painted barns were in the foreground, as well as away in the distance.

Brandon entered, the bustle of the Fair was immediately apparent, with the horse interest outclassing all else. It is a horsey city, sure; and Clydesdales were many times more than all others. Numbers and quality joined hands, and made it a show of heavy horses, of which the Westerners were justly proud. The fact of a Western-reared two-year-old stallion, imported in dam, winning the championship, added greatly to their satisfaction. When, later, the press gave the information that the champion was sold at \$4,000, the successful and profitable breeding of Clydesdales in Manitoba was no longer in doubt.

Cattle, in goodly numbers, had fair to real-good entries. Aberdeen-Angus, shown by J. D. McGregor, President of the Board of Directors, were a credit to the exhibitor, and would be hard to beat in any show-ring. One of them carried off the championship.

Sheep two years ago were represented by six entries; in 1909, less than two dozen were in pens, with sixty to seventy this year. The classes were a pleasing surprise in their average good quality, though, for a fat-stock show, the condition of fleshing should have been a bit higher. Tail-ends were few in number.

The one fully-conditioned flock, shown by a young man who got both his training and flock foundation from one of our leading Ontario breeders, made a showing good enough for any company in all America. Some others were not be-

hind in quality of their exhibits, and, with more experience in feeding and fitting, will prove, in the near future, worthy contestants, and put our former Ontarian on his mettle. Will refer more to sheep further on.

Swine were a fairly good all-round average, but too thick-fat from the Ontario standard of excellence.

The universally-expressed opinion was that the fair registered a marked improvement in com-



Canadian-bred Berkshire Sow.
A Toronto first-prize winner.

parison with past ones. Their excellent building, to which a large addition was built recently, will soon be found too small. The all-prevailing topic of conversation during the Fair week was the need of sheep in Manitoba, as a decided change in the present methods of operating farms is forcing itself upon the minds of many. It is felt by the outstanding majority that live stock, and especially sheep, must go hand in hand with grain-growing. While cattle and hogs must be increased in numbers, it is the sheep, to aid in checking weeds and add fertility to the soil, which is claiming the greatest attention. Sheep talk was constantly in the air. The marked decrease in yields of wheat is a condition which is forcing itself on the attention, and that is leading many to the determination to own a flock of sheep as soon as possible. They have already proved themselves most beneficial, as related by Mr. McGregor, who for years borrowed hundreds of sheep from a Brandon live-stock dealer, to run on his fallows, to subdue weeds, thereby making one profit for himself, and another for the lender in increased flesh and weight. By comparing notes with many, some having flocks, and others aiming soon to have sheep on their farms, it is confidently expected that in a short time Ontario sheep-breeders will find Manitoba one of the best available markets for good sheep.

The standard set in horses will be closely followed in sheep. In discussing the subject, the readily-expressed opinion was that preference would be given to real-good animals in laying flock foundations. Had it been thought proper, while doing work for the Department, to solicit orders for next fall's trading, a brisk business could have been done. It was considered better to attempt devising a scheme whereby wholesale carcass operations could be started, with united Ontario breeders at one end, and the lots sent Westward put up at public auction, and sold to the highest bidder. It was freely talked over, and generally approved of. More may be stated later on, when fully considered from the Ontario end by our associations.

We need not be surprised at the anticipated change to more live stock on the Manitoba farm. Taking the past nine years' average of wheat per acre (the tenth, back in 1900, being less than half a crop), a period the best in the Province's wheat-growing history, it is not assuring to find that, with 1901 giving an average of 25 bushels per acre, 1902 with 26 bushels, the average there has been a steady decrease, until last year gave but 17 bushels as an average. While discussing this most serious trend of results, the question was asked, "How many bushels are required, at the average price, to pay cost of production?" After considerable hesitation, 13 bushels was given, and the statement went unchallenged. It was easy to figure out that, with a yield decrease during most favorable seasons, of 8 to 9 bushels in nine years, only six more years will pass till, with proportionate decrease, the average wheat crop of Manitoba, like the average dairy cow of Ontario, will be handled at a loss.

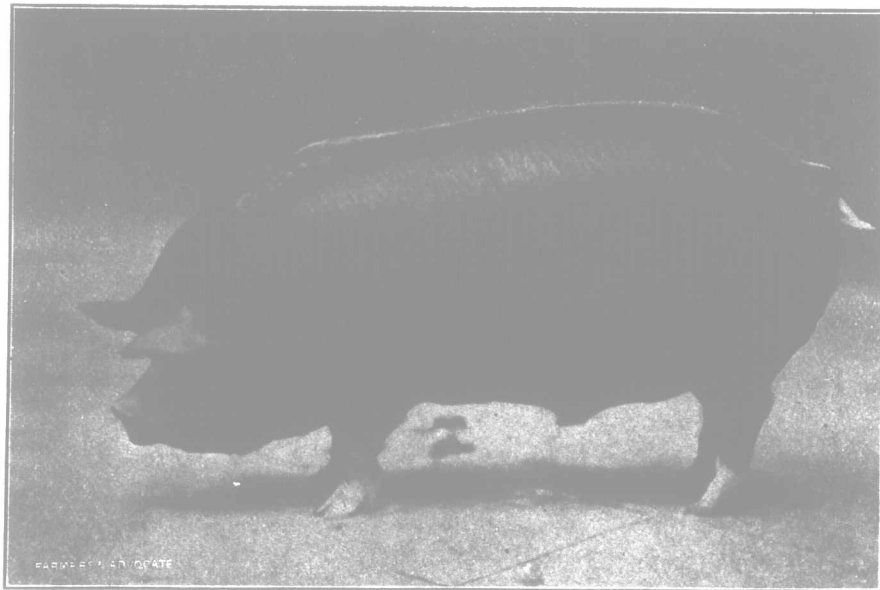
The cultivated soil, so far as seen, is far too good, and conditions too favorable, to justify the tiller of the soil in Manitoba to so continue robbing his land of plant food, and return nothing, as to make the near-by future as dark as the present is rosy. Not many years have passed since it was a question with the many as to how soon would they, like not a few in their midst, become so discouraged, by inability to meet obligations, as to move out. The trying situation suddenly brightened some nine or ten years ago. Now, again, danger is present, but from another source. Formerly, unfavorable seasons and other

hindrances made the trying time. Now the danger arises from the fact of nine successive favorable seasons causing the soil to yield so bounteously year after year, as to draw on the natural stored-up fertility, and thereby lessen the power of production. It is a case of "riding the willing horse to his death." Here is where man should do his part, but has failed, resting content with drawing to the limit on the present, and letting the future take care of itself.

The possible excellent future of the Province depends very largely on how soon the present occupants will adopt such methods as will maintain and restore fertility to the rapidly-exhausting soil. It appears too good a country to spoil, even for a time, by thoughtless mismanagement. Victoria Co., Ont. JOHN CAMPBELL.

Berkshires.

The Berkshire is one of the oldest of the British breeds of swine. It derived its name from the County of Berkshire, in England, where its early improvement was principally effected, and the breed made popular. The original Berkshire, like most of the breeds in their early history, was a coarse animal, of varying color—sandy, white, or reddish brown, spotted with black. A considerable improvement was made in the breed in the eighteenth century, Chinese, Siamese and Neapolitan crosses, it is reported, having been used in the process, more especially the first mentioned. In the early years of the nineteenth century, by judicious selection of the fittest, a marked uniformity of characteristics was effected, the color being fixed, as a rule, as black, with white points, an attractive feature, which has been maintained with little variation, but is not adhered to as closely as at one period in its history, when the demand for correct markings be-



Berkshire Barrow.

Winner of championship as best hog, any breed, at Smithfield Fat-stock Show, 1909. Shown by H. R. H. Prince Christian.

came a fad, and led to the neglect of more important qualities. The demand for an extremely snort, dished face, with the accompanying heavily-fleshed jaw, also at one time became a hobby of breeders of this, as of the Yorkshire and some other breeds, still too closely followed in the United States, but largely discarded by English and Canadian breeders catering to the British market, which calls for the long-sided type, producing bacon, with a desirable proportion of lean meat. The modern improved Berkshire fills the bill for this requirement admirably, and, being of a quiet disposition, and the best of grazers, can be raised and finished for the market more economically than other breeds, and producing a quality of flesh unexcelled for flavor and palatability.

As now bred, the Berkshires, at the age at which hogs at present are principally marketed, weigh, as a rule, as heavy as any of the other breeds, though, being shorter-legged, and nearer the ground, they may not look as large. The breeders have, in recent years, greatly improved the breed by giving more attention to lengthening the form, by selection and mating of the longer-footed specimens, giving more outdoor exercise on pasturage, feeding less of rich, concentrated foods, and more of the less-fattening but more growth-producing and muscle-making foods, such as oats and barley, supplemented with roots in winter, and clover and rape in summer. Great improvement has been effected in producing smoothness of shoulders, the shoulders in the improved Berkshires fitting neatly into the loins, and in line with the sides.

VALUE IN CROSSING.

None of the breeds have been more useful than the Berkshire in grading up and improving the common stock of the country, while crossed with

other breeds, they have been, and are, especially valued for the production of vigorous and profitable feeders. They have proved of great value in refining the coarser breeds and improving the quality of the flesh, the lean and fat being well intermixed. As to their breeding qualities, or prolificness, while they may not, as a rule, produce as large litters as some of the breeds, the larger and more lengthy class of Berkshire sows produce good-sized litters, not infrequently farrowing ten to a dozen pigs at a birth, and the sows are, as a rule, good nurses and quiet mothers. The Berkshires are second to none in constitution, healthfulness, and the power to resist and repel diseases. They are attractive and spirited, yet quiet, and they have a good quality of bone, upright pasterns, and strong feet. Their color is a strong point in their favor, as a black skin will not blister, mange or crack under a hot sun, as a white skin is liable to do.

The Berkshires have retained their popularity remarkably well in England, the home of the breed, and our best market.

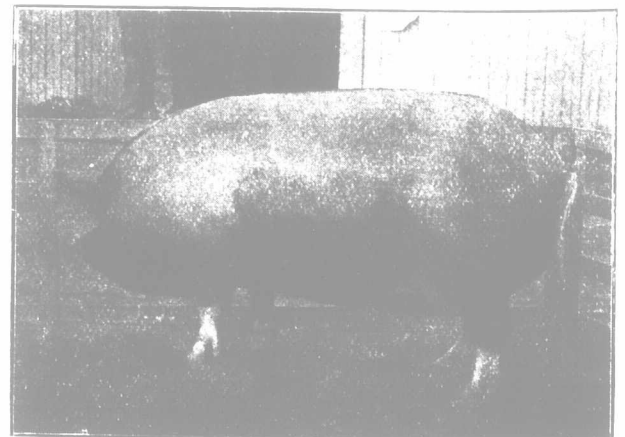
The championship for the best single hog of any breed at the Smithfield Show, in 1907, was a Berkshire. In 1908, at the same show, the grand-champion pen of two of any breed were Berkshires, weighing, at 11 months and 2 weeks, 962 pounds, while the reserve pair were cross-bred, Berkshire and Middle White. The supreme championship for best single pig, any breed, under one year, at the 1909 Smithfield Show, was a Berkshire, which at 11 months and 2 weeks old weighed 529 pounds. The principal points in the standard for Berkshires are: Head moderately short, broad between the eyes, face slightly dished, snout broad, neck medium to short, ear upright on young pigs, good size, inclined to droop slightly with age, brisket wide, hair fine and soft, inclined to thickness in the male. Shoulders smooth and even on top, and in line with sides; skin smooth and pliable; back moderate width, strong, straight, or slightly arched; side moderately strong and deep, and of nearly even thickness above and below; flank thick, full, and low-down on leg; loin full and wide; ham deep, and holding thickness well down to hock; tail well set up on line with back; legs and feet short, straight and strong, set well apart, with hoofs nearly erect, and capable of holding good weight; size all that is possible without loss of quality or symmetry; style attractive, spirited, indicative of good breeding and constitutional vigor; color black, with white on lower part of legs, on face and tip of tail, a white fringe on one or both ears, or on inside of

ear, a white splash on jaw or forearm, or a few white hairs on any part, is not a serious objection. In general appearance, Berkshires are of good size, fairly compact in form, regular and even in outline, and easy in movement.

J. C. S.

Sow's Milk.

For the first weeks of a pig's life the mother's milk is its drink, as well as food, and, therefore,



An English Berkshire Sow.

in caring for suckling sows, it should be the aim to so feed them that milk of only medium richness will be furnished, instead of a limited supply of that which is extremely rich, the latter being less healthful, and more liable to cause thumps, scours and unsatisfactory growth. It is only a law of

nature that pigs should make more economical gains through the milk of the dams than in any other way, and it is also true that the sow will furnish nourishment for her young at less cost for the raw material than any other animal on the farm. A sow's milk is rich in solid matter, which amounts to 17 to 20 per cent. On a comparative basis of 1,000 pounds live weight, a cow giving three gallons of milk a day will give in the milk 1 pound of fat, and .77 pounds of protein daily, while a sow's milk will yield 1.26 pounds of fat and 1.1 pounds of protein a day on an average. In composition, sow's milk, in comparison with cow's milk, is very high in total fats, as well as solids.—[From Coburn's "Swine in America."]

Our Scottish Letter.

GREAT CATTLE SALES.

The past four weeks have witnessed unusual activity in the live-stock markets of the British Isles. Bull sales have been held at the great centers, and remarkable prices have in cases been realized. The demand generally has been very wholesome and healthy. While all the breeds have sold well enough, Shorthorns have easily maintained the lead. In fact, the red, white and roan were never more popular than now. The highest price paid at these spring sales stands at the credit of Birmingham, where the red bull, Shenley Banner, shown by Mr. Raphael, made 1,000 gs., his buyer being Dan. MacLennan, a noted purchaser for the South American market. Mr. Raphael got an average of £204 16s. for twelve bulls. Mr. Leopold de Rothschild got an average of £257 19s. for eleven. The total sum realized for Shorthorns at Birmingham in three days was £26,200. Alongside such figures as these, all other breeds in this country must take a secondary place to the Shorthorn. The demand for whole-colored reds or roans for Argentine export is something phenomenal. Good prices are handsomely paid, and when shapes, pedigree and color combine to meet the Argentine ideal, everybody seems delighted. The great Scots sale of Shorthorns was held at Perth, when 86 females realized £30 5s. 4d. of an average. Augusta 125th, a yearling heifer, bred in Ireland, topped this section of the sale at 220 gs. The Augusta race was reared by the late James Bruce, of Inverquhomery, one of the most enlightened of the Aberdeenshire Shorthorn breeders. He believed in them all the time, but it was not until he had passed away that their vogue really began. At present, an Augusta or a Broadhooks makes quite as good money as a Clipper. We rather think they have the advantage of the Clippers in respect of fertility and milk production. Very fine trade was experienced at Perth. Congalton Baron, bred by Joseph Lee, Congalton, Drem, East Lothian, made 850 gs. Strowan Archduke II., bred by Captain Graham Sterling, of Strowan, made 780 gs. These were first-prize winners. Balnakyle Marmion, bred by C. M. Cameron, Balnakyle, Munloch, Ross-shire, a second-prize winner, made 400 gs.; and King of the Mint, another second-prize winner, bred by Duncan Stewart, of Millhills, Crief, made 650 gs. The Balnakyle first-prize group of three made an average of £215 5s., and Mr. Stewart's lot of two from Millhills made an average of £635 5s. Congalton, all together, sold four, at an average of £260 13s. 3d., and Strowan sold four at £223 7s. 9d. All together, 301 Shorthorn bulls were sold at Perth, at an average of £53 4s. 3d., as against 279 at the same sale last year, at an average of £43, 13s. 6d. This is a remarkable result, and is indicative of a substantial growth in the demand for Scots Shorthorns. There is a poor demand for any other kind. William Anderson, Saphock, Old Meldrum, one of the tenant-farmer breeders of Aberdeenshire, sold five young bulls at Perth at an average of £150 3s. Sales of Shorthorns were also held at Inverness and Aberdeen. At the former center, 106 head, of which all but two were bulls, made an average of £20 19s. 2d., and at Aberdeen, 214 bulls made an average of £24 13s. 3d.

SALES OF DODDIES.

Aberdeen-Angus cattle come next to Shorthorns in popular favor, but at present there is a long interval between the two. The best prices made for Aberdeen-Angus bulls this spring have been 300 gs., 210 gs., and 140 gs. The famous Auchorachan herd, owned by Colonel Smith-Grant, was dispersed: 39 females from it made an average of £48 18s. 4d. each, while four bulls made £64 1s. of an average. The best average for Aberdeen-Angus bulls at Perth again stands at the credit of Ballindalloch, who made £142 16s. with three. His Majesty the King, from Abergeldie Mains, made £100 3s. 3d. with five. Ernest Kerr, of Harviestown, made £64 1s. with an equal number: 494 Aberdeen-Angus bulls sold for an average of £28 15s. 4d., as compared with 394 bulls, at an average of £32 2s. 8d., in 1909; 196 females made £29 13s. 4d., a slight increase of 2s. 1d. on the figure for 1909. It is thus apparent that A.-A.'s are selling profitably, but the trade this year is wholly confined to the British Isles. Ireland was a good buyer alike for Short-

horns and Aberdeen-Angus, and the Department was also a buyer of Galloways at Castle-Douglas. There the trade showed a distinct improvement on recent figures. The best prices were 50 gs., 40 gs., and 28 gs. The best average was made by Messrs. Biggar & Sons, Chapelton, Dalbeattie, who got £33 19s. for three. Highlanders find their headquarters at Oban. The best prices for them were £53, £50, and £35. Considerable numbers were bought by the Congested Districts Board for the use of the Crofters in the West Highlands. Unfortunately, in these days of early maturity, Galloways and Highlanders are at a great disadvantage. They will not lay on flesh like the "improved" breeds, and yet this very disqualification it is which befits them for withstanding the rigorous, wet climate in which they can both live and thrive. The Irish Department finds the Galloway very suitable for County Donegal and the West of Ireland. Nothing can beat the Highlander on his own ground in the Western Isles and North-west Highlands of Scotland.

HORSE SHOWS AND SALES.

Horses have been much in evidence. The three great London Spring Shows have been held, lasting for three weeks. The Shires come first, and, as a bucolic event in the metropolis, the Shire-

pleased me. I found this opinion confirmed by others who have been much more regular in their attendance at the Shire Show than I have been. They considered the Shires at the London show ten years ago better than they are to-day.

HACKNEYS JUDGED SOLELY AS HARNESS HORSES.

Hackneys had their innings during the first week of March. The nags have fallen on evil days, so far as the misfits are concerned. The market for these is gradually disappearing. The taxi, motor and motor-bus are threatening every form of horse vehicle. Yet, in spite of it all, the Hackney of the first-class has seldom been in keener demand than at the present day. At the show there were numerous foreign buyers, and they operated to good purpose. They took one Scots-bred Hackney, which stood fourth in his class, to France, at £430, and it was said that £1,600 had been refused for one, and £2,000 for another first-prize winner, both by Mathias 6473. Whether these figures be reliable or not, there cannot be a doubt that, for good, well-bred harness sires, as much money can be got to-day as at any previous date in their history. But there is a big change in the public taste, compared with what it was ten or fifteen years ago. Then, a Hackney of what was somewhat contemptuously termed the "harness type," was rather despised. Why, we never could make out, because to us a Hackney was either a harness horse or he was of no use whatever. To talk about him as a saddle horse, and to judge him from saddle shoulders, as some men did, was the finest burlesque. Now the harness type is the only one men look at, and rightly so. The sires that matter are those which breed harness horses, and among these two stand out conspicuous—Polonius and Mathias, sons of the only London Hackney champion mare worth speaking about, the great Ophelia. Nearly all the best harness horses at the show were got by these two horses, and, as a sire of stock to go in leather, Polonius seems simply invincible. The champion mare, Adbolton St. Mary, was also champion in 1909. She was bred by her owner, A. W. Hickling, Adbolton, Nottingham, and takes a deal of beating. She led the "simple life" until last year, and, no doubt, this had a deal to do with her supreme bloom and cleanness of joints and limbs. For the sixth time out of seven in which he competed for it, the supreme championship for stallions was won by F. W. Buttle, Kirk-



"Oh, for a Wife to Thread My Needle!"

burn, Driffield, a Yorkshire farmer. His exhibit this time was Kirkburn Toreador, a horse which I do not very much love, yet he seemed about the best one shown. He was bred in Scotland, and was got by Mr. Buttle's great champion horse, Rosador. This week (ending March 12th) it has been the turn of the Thoroughbreds, Hunters and Polo Ponies. In some respects this is the most important show of the three, and yet it is the least interesting, and, as a spectacle, of no consequence at all. Its importance lies in its relation to the question of a national horse supply during times of war. It is distinctly the Riding Horse Show. Tuesday was devoted to the judging of Thoroughbred stallions; Wednesday and Thursday were devoted to Hunters; Friday was the Pony day, and was patronized by the Queen and other representatives of the Royal family. It is generally understood that the Government mean to do something for the promotion of horse-breeding along these riding lines. Action is urgently required. The horse markets of this country are being scoured by foreign agents, who are determined to have what they want. Price never

stops them. They purchase what suits them, and no private owner in this country can afford to compete against them. The difficulty with us is that the peace establishment, in respect of horses, is so very different from the establishment in time of war. It cannot be made a paying venture to breed army horses during the time of peace, if only market prices are to be paid. Something must be done to enhance the value, and this is only possible by way of a Government subsidy, or something of that sort. Let it be made worth the farmer's while to breed horses, and he will soon breed them. But he cannot breed horses to pay, selling them at £30 to £40, when five years old. Something certainly must be done, and that quickly, or the situation will be fraught with peril to the national well-being. The first step has been taken by the Government, who have ordered a census of the horses in the British Isles. When this is completed, a further step will not now be taken. Plainly, it is well to know the facts before any advance is made.

THE QUESTION OF IDENTITY AGAIN.

I noticed your editorial paragraph re the difference between the Clydesdale authorities on either side of the Atlantic, with respect to the horse, Braiddle Prince (12871). Happily, he was photographed in Canada before he died, and that photograph is and has been for some length of time in possession of the studbook authorities in this country, and before it reached them it was submitted to the breeder of the two horses, Braiddle Prince (12871), and Sir Henry (13200), who certifies on the back that the horse represented is the foal out of Cynthia (16115). The fact that Braiddle Prince would not now be eligible for free export to Canada has no bearing whatever on the question, because the horse was exported before the present regulations came into force, and only a comparatively short time elapsed after he was exported, when Messrs. Smith & Richardson were notified that they had not got Sir Henry, and were asked to return the certificate, when the proper one would be forwarded.

"SCOTLAND YET."

Shearing Sheep Early.

Most breeders who prepare sheep for show purposes make it a rule to shear that portion of the flock in April, if not earlier, and many shear all their yearlings at the same time, finding that the sheep thrive better in the warm days of spring, devoid of their coats. There is very little risk in shearing on favorable days in March or April, provided the sheep are kept in a fairly warm building for a few days after the operation. If the sheep are infested with ticks, there is economy in early shearing, as otherwise they are apt to rub off some of their wool in scratching against fences, and they cannot thrive when so afflicted. There is less loss from the difference in the market prices for washed and unwashed wool than is generally supposed, when the greater weight of unwashed fleece is taken into account. And profit from the more rapid growth of the new wool after shearing is reaped in the following crop. Besides this, sheep to be sold in the fall make a much better appearance with well-grown fleeces, and bring better prices. There is profit, too, in dipping the sheep, soon after shearing, in a solution of one of the proprietary dips for the destruction of ticks and lice, and the cleansing of the skin. If a dipping tank is not on hand, the solution may be poured or rubbed on the animals, but, for a flock of any considerable size, a dipping tank should be provided, as it comes useful for washing sheep for show or sale, and for other purposes, and soon pays for its cost in the improved condition of the sheep.

It is not considered advisable to shear early sheep that are in very thin condition, unless they are kept in a very warm place, as they are more susceptible to the cold than are those in good condition. Neither is it advised to shear at this season ewes that have lambed, or are due to lamb early, as they are liable to adder troubles, from exposure to cold winds and dampness. But, as a rule, the whole flock may safely be shorn unwashed much earlier than they can be safely washed in a river. There is always more or less danger to the health of the sheep and the washers in the river washing, but, if that system is practiced, the timid animals should be quietly and carefully handled in taking them into and out of the water, as well as when in the water.

Some Tariff Logic.

Editor "The Farmer's Advocate":

If the duty has been raised on pork, do you think there are any farmers silly enough to claim increase in price is the effect of increased duty, when you quote the market price in Toronto at \$9.65, and Buffalo \$10.60 to \$11.00?

S. A. FREEMAN.

[Yes, we think there are. At least, equally absurd claims have been previously made under similar conditions as to relative prices.—Editor.]

Beef Notes from S. Ontario.

Editor "The Farmer's Advocate":

A stranger coming through this part of the country would think there were yet hopes of the urban population getting beef. Very little dairying is carried on here, except enough to supply the local demand, with the exception of a few farms within convenient distance of a railroad station. The Canadian Northern Railway, now constructing a line through the center of Whitby and Pickering Townships, may change this somewhat.

Among the largest feeders in this district are Jeffrey Bros. They are old hands at the business. Last fall they put up about eighty head. These were mostly purchased in the early fall at Toronto markets, and, having lots of pasture, went in winter quarters in good condition. They soil, prices permitting, when they have a carload ready. They fill five silos each fall with Compton's Early. This corn makes very rich silage, as they are never in a hurry to fill. The last silo they built may be worth describing; 2 x 4-in. uprights were used, and nailed to these were two thicknesses of 7-16-in. lumber, with building paper between. This makes a practically frost-proof silo, and is more inexpensive than others. It gives good satisfaction.

Steel silos have caused considerable discussion, although none are likely to be built, as they are but an experiment, and, also, it is not a pleasant idea to repaint every three or four years, and it is feared galvanizing would be destroyed by the effects of the acids of the silage.

Westney Bros. are feeding 26 steers, mostly purchased at Toronto market. These cattle are sold for May, and will weigh between 1,200 and 1,300 pounds. A silo 15 x 30 feet supplies a bountiful supply of silage. Leaming and Compton's Early, mixed in the ratio of 3 to 1, is used. The corn is left late before cutting, and is also left lying on the ground before putting in the silo. If then considered too dry, a small stream of water is let run in with corn. Silage made this way will never get sour. The manure is drawn direct from stable to field; between 300 and 400 loads have already covered 22 acres. With this method, much work is saved in spring. Cattle are watered by a long trough (galvanized sheet iron) in front. This is preferred to any other method, though very little exercise is given. From gains made (cattle are weighed each month), one might wonder if 'twas necessary.

A 4½-horse-power gasoline engine has recently been installed. At the request of the insurance company, a house 8 x 10 feet was built for the engine, entirely of steel, with the exception of framework. The power is then transmitted by shafting and belting where required. The engine is mounted on a stone-boat, and, being light (about 750 pounds), it is easily moved. This engine, omitting 25 per cent. of possible drives, will give a little more power than five horses on a sweep, at a cost for gasoline of 6½ to 7½ cents per hour, with gasoline at 16 cents per gallon. An accurate account of work done has been kept, and might not be out of place here to give it. In crushing oats (coarse) for horses, 35 to 40 bushels per hour, and one-half this grinding mixed grain fine; engine working as above, for very light work, the cost will not exceed 2 cents per hour—for instance, pumping water or running fanning mill. The hopper system of cooling gives the best of satisfaction.

Richard Guthrie & Sons are feeding a carload this winter. These will probably be sold for May. They do not use a silo, although they appear to have favorable views regarding them. They grow a large acreage of both the dent and flint varieties of corn, and, by careful curing, they get a large quantity of good fodder. We will give Wm. H. Guthrie's own words as to their method of handling manure: "There are two ways of caring for manure, and in my opinion only two. Haul direct from yard to root field, and heap about thirty loads in a heap, then use spreader, and apply as liberally as can be afforded. Heap neatly in yard, and, after harvest, use spreader for next year's root crop. This I believe to be the best."

Now, our agricultural professors would scarcely call this the most economical way of handling manure, the former too much handling, the latter too much waste, yet Mr. Guthrie is looked upon as one of the most progressive farmers of S. Ontario. He says there is no better way of watering cattle than to turn them out, thus giving the much needed exercise.

Across the road from Mr. Guthrie's is the McGilvray farm, presided over by E. E. Vanestone. He is feeding about two carloads, mostly for grass. They have abundance of pasture, and are mostly sold about July. No silo adorns the farm, but one will probably be built this summer; he is a firm believer in silage. His method of handling manure and watering is practically the same as Mr. Guthrie's. He dehornes everything, and feeds partly loose, partly tied, slightly preferring the former.

"Everybody" says cattle will be sky-high

shortly. "Everybody" made similar remarks last fall regarding clover seed, but "Everybody" was fooled; but indications are that "Everybody" will not be so far out this time. Mr. Guthrie stated they were holding for 7 cents, while Mr. Jeffreys says they will need to realize 8 cents in July, if they buy at prices farmers are asking for grass cattle. A number of cattle are sold for May at prices ranging from 6 to 6½ cents. Stockers may reasonably be expected to be high next fall, as practically anything fit to feed was put up last fall. It is expected the supply will not equal the demand.

There are probably 500 cattle fed within a radius of five miles from the writer's place, and 85 per cent. at least, of these are brought from outside points. F. H.

Ontario Co., Ont.

The Call for Pork and Beef.

In season and out of season, if there be any such period as the latter, "The Farmer's Advocate" has steadily urged keeping more hogs, and a cessation of the foolish policy of rushing in wholesale when prices are up, and out of them when markets veer the other way. A year ago the specific counsel was offered to add several brood sows to the stock of every farm. Those who did so have been making good money, even at the high prices of feed. But the supply is falling off still. John A. Gunn, in the course of his address at one of the Macdonald College short-courses, again called attention to the declining weekly killings of hogs by the principal packers of Canada: 26,000 in 1907; 24,000 in 1908, and 19,000 in 1909, and this, too, in face of the fiercest competition, and with prices double what they formerly were; in fact, coquetting with the 10-cents-per-pound live-weight mark. Our fathers, observed Mr. Gunn, would have danced for joy could they have realized such prices as are now freely offered. The supply does not begin to approximate the demand, nor will it till farmers awake to the importance of the business. Mr. Gunn is associated, as the public know, with one of the most modern packing establishments in Canada, and, with close knowledge of the situation, he ventured the prediction that before the year was out the shortage prevailing in hogs would be more apparent in cattle, and that beef, instead of being a daily food, would become a luxury. In a country where farmers are so intelligent, this should not be, and is hard to understand. People will soon be asking themselves the question, Where are the cattle to come from?

THE FARM.

Timely Road Repairs.

A drive over our country roads at this time of the year suggests the importance of heeding the teaching of the old proverb about "the stitch in time." For instance, one frequently meets the little stream that comes running down the space usually covered by the wagon wheel. This little stream is muddy enough, and tells the story of a wasting roadway, that will cost, in all probability, many a dollar before it is repaired. Then, again—and this refers to our gravelled roads, more particularly—one comes across many a small hole in the road, with its little pool of muddy water resting snugly at the bottom. One knows the result in this case; each passing vehicle will make the hole deeper and wider, till, in a few days, there is quite a mudhole.

Would it not be well for the local authorities to be on the alert to mend these defects in the road before they become serious? Each section of two or three miles should have a couple of men employed during the days when the first wheeled vehicles are on the road, to see that neither standing nor running water is allowed to do harm. Often, a few minutes will suffice to dig a trench that will turn the running water into a ditch or a culvert, and a few barrowfuls of gravel gathered from the sides of the wagon-track, or a barrowful of broken stone, will fill up an incipient mudhole. Indeed, the proper thing for municipalities to do is to leave the roads smooth and level in the fall, but this is very difficult, owing to the fact that late fall and early winter usually have their share of bad weather and heavy traffic, that test the qualities of even the best of roads. Railroad companies know the value of the section gang, whose duty it is to attend to smaller repairs. Would it not be well for each rural municipality to have a similar body of men, whose duty it would be to attend to such minor matters as have been indicated. A few alert men in each township would easily save their municipality the value of their wages many times over, to say nothing of increased convenience and safety in travel. J. K.

Wentworth Co., Ont.

Fertilizers.—I.

In plant growth, said Prof. W. P. Gamble, O. A. C., Guelph, speaking before the Niagara District Fruit-growers' Association, there are three main chemical substances which are absolutely essential, namely, nitrogen, phosphoric acid, and potash, and a fourth, lime, the latter being usually present, however, in sufficient quantities in the average soil. In selling crops off the farm, large quantities of these soil constituents are removed, and very often, to get good crops, these have to be replaced by stable manure or artificial fertilizers. Barnyard manure, which may contain 15 to 18 pounds of nitrogen per ton, is not quite as rich in phosphoric acid and potash as in nitrogen, but gives a large amount of vegetable matter, and has a mechanical effect on the soil not given by the application of commercial fertilizers. Barnyard manure is slow-acting, and gives up its nitrogen more tardily than some of the nitrogenous chemical fertilizers.

NITROGENOUS FERTILIZERS.

Of the purely nitrogenous fertilizers, we have nitrate of soda, sulphate of ammonia, and cyanamid; then, the products of the packing-house, as dried blood and tankage, contain much nitrogen and some phosphoric acid. Nitrate of soda is usually applied from 100 to 150 pounds to the acre; it is the most soluble of all artificial fertilizers, and should be sown in small quantities at different dates during the growing season. Sulphate of ammonia is also soluble, and, on washing down into the soil, it becomes somewhat bound up in other chemical compounds, but not in insoluble compounds on which plants cannot feed. Care should be exercised in applying it, for reasons which will be explained later on. Tankage, etc., are still slower-acting manures. Cyanamid is a gray powder, and reacts very quickly with water, and for this reason should not be exposed to the action of atmospheric agencies before the time of its application to the soil, but it must be sown some time previous to the date of seeding, because, if applied along with the seed, or at the time of seeding, it may poison the germ or young plant. It is advisable, therefore, to apply it at least 10 days to two weeks before seeding, or before the young plants are set out.

Tankage, dried blood, etc., are slower in their action than the nitrate of soda or sulphate of ammonia, as they contain their nitrogen in an organic and insoluble form. Those mentioned contain a large amount of nitrogen, and are well suited to certain crops when immediate results are not looked for.

PHOSPHATES.

No plant food is so slow in its action and so difficult of access to the plant as the natural phosphates in the soil. To a very large extent, the roots only obtain the supply they need by direct contact with and the actual corrosion of solid particles of phosphate in the soil.

One of the chief sources of phosphoric acid for plant food in commercial fertilizers is superphosphate, which consists of ground phosphate rock, treated with sulphuric acid to change it into a form soluble for plant food.

Other forms are: Dissolved bone (which is ground bone treated with acid); ground bone, which is highly insoluble, and bone flour, which is a finer grade. These latter two act slowly in the soil, and benefits are not usually obtained earlier than a year or more after date of application.

Still another phosphatic fertilizer, basic slag, is a dark ground powder, which is obtained as a by-product in the manufacture of iron, and contains from 15 to 20 per cent. of phosphoric acid, in the form of phosphate of lime. In England, France and Germany it is regarded as one of the cheapest sources of phosphoric acid, and is a very valuable fertilizer for top-dressing clover sod and old pasture land. It is also valuable to apply to soils which are inclined to be acid in nature.

Basic slag, which is a cheap form in which to apply phosphoric acid, can be used to advantage in large quantities by crops which are gross feeders. If the soil is rich in vegetable matter or acid, the acids will help to dissolve the insoluble forms of phosphoric acid, and make them available for the plant. Acid phosphates should not be sown with the seed, or too near the roots of growing plants, as injury may result. Phosphates do not leach readily out of the soil, even when applied in a soluble form, as superphosphate, for instance, so it may be sown even the fall previous to good advantage; this is also true of potash commercial fertilizers.

POTASH.

As a supplier of potash, the oldest form of fertilizers in use is hardwood ashes, but, with the advent of coal for fuel, it is practically unobtainable. The forms now in use are the chloride of potash (or muriate of potash) and sulphate of potash, which are salts obtained in a fairly pure state in Germany, and which contain about 50 per cent. of potash, and are sown in quantities of from 100 to 200 pounds per acre.

FUNCTIONS OF VARIOUS ELEMENTS.

The use of artificial fertilizers requires a certain knowledge on the part of the user as to the general influence of the three main plant foods, potash, phosphate, and nitrate, on the crop. A gardener has very different objects in view in the case of cabbage or tomatoes, for instance. In one case he wishes to produce thick, fleshy leaves, of good flavor and tender consistency, while in the other he wishes to produce freely and abundantly fruit of good quality, and withal of early maturity. Let us, therefore, remember that if any one of the three aforementioned substances be wanting, no excess of the other two will make good the deficiency. On the other hand, if we give our crops a free supply of potash, phosphate and nitrate, they will grow as luxuriantly as the season, climate and physical condition of the soil will allow.

Nitrogen promotes leaf and stem growth. So powerful is this influence that the profitable character of fruit trees and fruit-bearing plants may be destroyed, and all their energies diverted to the production of coarse, rank shoots and leaves by too liberal an application of nitrogenous manures.

Phosphates promote fruitfulness and early ripening. Phosphate is far more necessary in the garden and orchard than on the average farm, and an application of phosphates every year is a step in the right direction.

Potash improves the quality and color of fruit, and aids in the formation of starch and sugar. Before deciding as to the best means of providing potash, phosphate and nitrogen for his trees and plants, the horticulturist should first carefully consider the properties of individual manures already stated.

Fruit trees and vines are perennial occupants of the soil, and do not yield the most profitable returns in ground which is over-rich in nitrogenous materials, and for these artificial supplies of potash are essential, if fruit of highest quality is desired.

of from one to eight acres. The district is famous for plums, and the well-known Pershore plum is grown in large quantities. It is said that 75 per cent. of these small holders started life as laborers.

Road Improvement With Split-log Drag.

Most convincing evidence of what can be accomplished with the simple, inexpensive split-log drag in the improvement of earth roads, has been furnished by a Municipal Road-improvement Contest, held last year by Clinton Township, Lincoln Co., Ont.

A year ago this spring, a few men in that Township, who had become impressed with the usefulness of the drag, worked up the contest on the following plan. The township was subdivided into eight divisions, in each of which four prizes were offered to the persons who should make the most improvement on one-half mile of road, and keep their beats in the best condition for traffic during the season. Over sixty competitors entered, the split-log drag and the King ditch-cleaner being the principal implements used in effecting the improvement. Some dragged their beats a few times; others dragged them whenever the condition of the road required it. Some of the competitors greatly improved their roads, narrowing them down, where necessary, to about 24 feet, straightening them, cutting off sodded shoulders, grading up the crown, and removing stumps, stones and other obstructions.

Many used only the split-log drag and ditch-cleaner; others shaped up their beats with the road machine (which they had to use at their own expense), afterwards dragging frequently to complete the work, and keep the road in good condition. Most of the one-half miles were kept in race-course condition throughout the greater part of the season for wheel traffic.

The judging was done by John Young, of Abingdon, a municipal officer of experience, and an expert himself in the use of the drag, and first-prize winner in the Provincial competition held in 1907. The accompanying illustration of one of the first-prize roads shows the degree of excellence which was obtained by these road-improvers. Other illustrations were published in "The Farmer's Advocate" of June 10th, 1909.

W. B. Rittenhouse, the leading spirit in the competition, in speaking of the competition at the recent Good Roads Convention in Toronto, urged that one of the great secrets is to use the drag early in the season, when the roads are soft and slushy. More can be done in shaping them up than in one hour than in two hours after they are dry. To get a hard surface, drag when they are miry, just as they are drying. The sun bakes clay roads dragged in that condition almost as hard and firm as asphalt, so that rain has comparatively little effect on it. Those who have travelled over these Clinton Township dragged roads are loud in their praise of the exceptionally good condition in which they were maintained.

It has been calculated that, for \$250 in prizes, the township has easily had \$300 to \$400 worth of work done on its roads, and done well. The results have, furthermore, been a valuable demonstration in this and the adjoining counties, and the effect has extended to even more remote parts of the Province. Education, enthusiasm and demonstration were the three ends attained.

Statute labor in this Province has been abolished some years ago, the roads being looked after by a system of four commissioners. The idea now is to improve the leading roads first, then keep them in good condition with the drag and the ditch-cleaner. It is expected, in ten years, to have every road in the township in ideal condition, and maintained so.

As a means of securing systematic dragging of roads where a competition is not on, it is suggested that the work be let by contract for the season, at a certain rate per mile, the work done by the various draggers being inspected by a man appointed for the purpose who can advise and supervise.



What the Split-log Drag Will Do.

A road improved and maintained by Johnson B. Parker, in the summer of 1909. Winner of first prize in one of the four divisions of Clinton Township Road-improvement Contest, Lincoln Co., Ont.

Potash salts should be applied in the autumn. The muriate is cheaper than the sulphate, and appears to give equally good results in most cases. It is a highly-irritating and injurious substance, if placed in direct contact with the rootlets of certain crops, e.g., strawberries. Therefore, if it be desired to apply potash during the growing season, or to enrich potting soil with potash, the sulphate is the safest and best form in which to apply it.

Intensive Agriculture in England.

One of the best-known business men in England, Mr. Fels, has been engaged for several years in the creation of small holdings at Maryland, Essex. Although the land is naturally heavy, and not of great fertility, considerable success has attended the venture. The farm consists, all together, of 600 acres, and before division found work for three men and two boys. Now, when it has been divided into small holdings, there are fifty-three men and seven boys at work. Each five-acre plot has its cottage and outbuildings, and an experimental French garden has been laid out, and this produced, from March to November, £388 to the acre.

Another district where small holdings are said to be very successful is the vale of Evesham. Fruit, flowers and vegetables are grown, and more than 10,000 acres have been split up into holdings

The cost of maintaining roads in some townships in the United States has been found to be within \$6.00 per mile, whereas, by the old system, using the grader frequently, it required \$42 to \$50 per mile. The old system of maintaining earth roads is wasteful, and not productive of the best results. With the split-log drag we can do cheaply and well what would cost a large sum per mile to do poorly when the grader is depended upon.

For use when the roads are sloppy, Mr. Rittenhouse prefers a light drag, with the pieces canting forward. A three-blade drag of 10-in. plank is by many preferred to a two-piece drag for this purpose, though the latter, if properly constructed, will do excellent work.

Mr. Rittenhouse believes that some Provincial subsidy could be applied to advantage to stimulate and assist the improvement of earth roads, of which a large mileage still remains, and which are in the aggregate, of great importance to the rural public.

Sow Thistle.

Editor "The Farmer's Advocate":

One day in late June, 1908, I travelled 160 miles by rail. In every grain field but two on the right-hand side of the right-of-way, sow thistle was more or less in evidence. This was in Eastern Ontario and Western Quebec. It is evident, therefore, that sow thistle is an exceedingly common weed in some parts of Canada.

No doubt, more or less effort is made by farmers to get rid of this weed, for it is an exceedingly bad one. Apparently, such efforts have quite often proven abortive. Yet it is not so very difficult to get rid of, if proper methods be followed. On two separate farms, many miles apart, the writer followed the same plan, with equally satisfactory results. The plan was to crop as follows:

First year, hoed crop, manured. The hoed crop used was corn, sown in hills three feet apart each way. Manure applied at the rate of 15 tons per acre. No weeds allowed to grow. Land was disk-harrowed in autumn. Second year, grain crops, disk-harrowed again next spring, and sown to oats, 2 bushels per acre, with 10 pounds red clover, 2 pounds alsike clover, and 12 pounds timothy per acre; any odd sow thistles pulled, or at least not allowed to seed. Third year, clover hay, two crops. Fourth year, pastured till August 10th. Plowed, rolled and disked several times, then harrowed at intervals of a week or ten days, till October 20th, then ribbed up. Fifth year, mixed grain. Clover, 10 pounds per acre. No sow thistle. Sixth year, corn and manured. No sow thistle.

In conclusion, I might say that fields were infested, in one case, at least, with both annual and perennial sow thistle. It would appear to me, if I might judge by my own experience, that all that is needed to rid a farm of weeds is a good rotation, well carried out. Also, see that your neighbor does not reseed you.

J. H. GRISDALE, Agriculturist.
Central Experimental Farm.

Nearly Flat-roofed Barn.

Editor "The Farmer's Advocate":

My barn was built in 1856, on stone foundation 60 x 36, with 18-ft. posts, of the old style, with swing beam. In 1880 it was raised a few feet, and basement stable put in. In 1905, to make more room, I raised the frame 6½ feet, splicing the posts and lowering the swing-beam, leaving the granary as it was. This made it 24 feet high on the side, and gave about 50 per cent. more room. In 1909 I had to renew the roof, and, in doing this, I put 3 x 5-inch studs, 6½ feet long on the plate, and raised the purlines to correspond, placing them twelve feet from each side, and 12 feet apart. The roof then had a pitch of 1 inch in 12, and was covered with a felt ready-roofing, and had two ventilators, and also a manhole through which to get out on to it. Under the old roof we had one fork-track, and had to spread the stuff 18 feet; as it is now, we have three tracks, and in about two minutes one can spread a load of grain. Across the end of tracks there is a foot-board, and the car can be changed from one track to another in two minutes, at each end of barn. There is no untying of rope, and the only pulley to be moved is the one at end of track. Some of the advantages of the change are that it cost about the same as re-shingling the old one would have done; the building of the loads is practically all the building or mowing that is done; the barn holds more, as the weight drops in more places; the sheaves come out better at threshing time; and there are six places for hay or grain. The beams are 18 feet high, and are convenient for hanging fence wire on to keep cut straw in place. It was a nineteenth-century barn; now it belongs to the twentieth century.

WM. WHITELAW
Grey Co., Ont.

Round Silo Roof.

Editor "The Farmer's Advocate":

In reading "The Farmer's Advocate," I noticed an inquiry re a silo roof, and, having built one last summer, I feel it my duty to help someone else, seeing it is simple, durable and cheap. Our silo is 35 feet high, without the roof, and is built of solid concrete 10 inches thick, and 14 feet in diameter.

The figure is to represent the sectional elevation of the roof, looking from the top, in which A are the ½ x 9-inch bolts to fasten the 2 x 8-inch plate, B, cut to form a circle around the silo, C is the top plate, 2 x 4 inches, cut at the sawmill to form a circle 3 feet in diameter. The rafters, D, are 14 feet long, and are set at 2-ft. centers, measured at the bottom plate. Braces are put in about 5 feet from the plate to receive

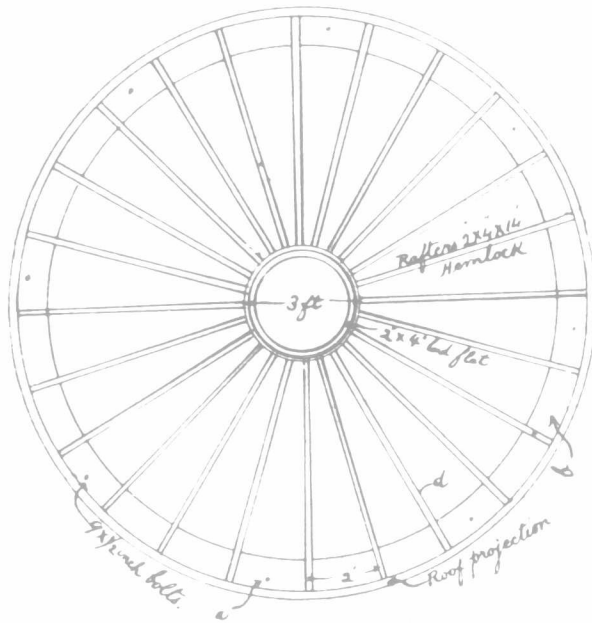


Diagram Showing Construction of Silo Roof.

the sheathing, which is sawed at the sawmill to run lengthwise of the roof. The roof-covering is composed of rubber felt, cut the width of the rafter space, allowing for lap. After everything is completed, the roof-cap is built, and set on top, which completes the whole roof. Also, here one can put up a weather-vane, if desired. The following is the estimated cost:

450 ft. hemlock sheathing, at \$12 per M.	\$ 5.40
200 ft. hemlock scantling, at \$12 per M.	2.40
5 rolls rubber roofing, at \$1.90	9.50
1 sash and glass	.70
4 men, one day, at \$2.25	9.00
Total cost	\$27.00

In conclusion, I might say that cheaper roofing could be used, and, with a silo 12 feet in diameter, the altitude of the roof should be 10 feet, and so on, deducting two feet for every two feet less in diameter.

S. G. S.
Waterloo Co., Ont.

The Dollars Keep Coming Back.

For all crops, fall plowing is preferred, so as to lessen labor in spring, and get grains sown at earliest possible dates. The exception to the rule is the past year's root and rape lands. If properly managed, and no weeds allowed to grow, no fall plowing is required. The harrows first, and the spring-tooth cultivator put over the land when dry enough, will give the inch or two of seed-bed depth necessary, before the sowing is done, be that done broadcast or drilled in.

Fall manuring for roots and corn is advisable, yet good results in growing corn and turnips have been frequently obtained from spring manuring. For mangels, manuring immediately after harvest, deep cross-plowing in October, left rough all winter, will work into excellent condition by repeated cultivatings and harrowings, till four to five inches in depth of mellow soil is obtained for drilling.

On our clay and clay-loam soils, we have found the broadcast seeding prove more successful than any other, except for peas and fall wheat. They are always drilled in. The steel roller is run over after sowing, or some time later, as conditions of soil and time will demand. No press drills are used in this locality. In dry soils, the disc drills find favor.

It requires careful study to get the possible in securing a good catch of seeds, and at times "the best laid plans of mice and men gang a-glee." We have to guard against getting seeds too deep, as a heavy after-rain may so crust the land as to hinder the tiny plants ever getting to the surface. Therefore, for years, after fields are sown and harrowed with a hand sower we scatter the seeds and roll down immediately. That insures suffi-

cient covering for the small seeds, and does not hinder the young plants from getting soon to light and air, so necessary for their rapid growth.

Wherever needed, no operation is so necessary or so certain in good results as underdraining. The early-sown grains, on dry soils, well tilled, get a start in life, which in nearly every case means an increase in yield ranging from a few bushels to nearly double of crop, according to dates of sowings. There appears to be a naturalness about getting the plant-life started near the opening of spring, when nature is putting forth her best efforts to help the vegetable kingdom fulfil its best destiny. The quick start in a race goes a long way towards winning. So does the early start of our grains, when all creation is responding to the sun's heat and call to fruitful life, get a lead which scarcely ever fails to be a winner at the latter end.

On wet, cold-bottomed soils that early start is impossible. The grain may be sown, but the overabundance of moisture requires the sun's heat to evaporate it, robbing the grains and plant of heat which is so essential to a strong, sturdy growth, and that, in turn, so helpful in resisting the attacks of insects or disease. Having for thirty-odd years been draining, and personally placed miles of tiles, the benefits of draining have been object-lessons with the return of each and every spring-time. Drier soil, less labor in preparing a seed-bed, a better one when done, and a surer start and development of crop, are some of the benefits in tilling drained land.

The fact of having spent \$40 per acre in tiling a field of nearly useless swamp land, a few years ago, is ample proof of our faith in burying many dollars out of sight. But in three years, at the most, they all have come to the surface, and into the pocket, and their progeny will keep on coming to the end of life.

JOHN CAMPBELL.
Victoria Co., Ont.

Alfalfa.—II.

SOIL, SEEDING, INOCULATION, ETC.

In attempting to successfully grow alfalfa, many things should be carefully taken into consideration, viz., the soil, seeding, inoculation, harvesting, etc., which we will now discuss.

Alfalfa grows best on rich, loose, limestone soils. It will grow luxuriantly on strong, stiff, limestone clays once they are made dry by drainage, and when fed with manure. It grows well on sand when the sand is made rich, and away from limestone when the land has been sweetened with lime.

Now, while it is true alfalfa may be grown by enthusiasts anywhere, yet it has an affinity for certain types of soils, and is more easily grown on such. These soils are deep, pervious to air and water, and are somewhat alkaline in their composition. This alkalinity favors the multiplication and development of the bacteria which grow upon the alfalfa rootlets, and causes the plants to make their most luxuriant growth.

In regard to drainage, any soil that is not more than two and a half feet above the water-line is too shallow for continual alfalfa growth. It needs a depth of at least three feet to the water-line, and if this distance is greater, all the better. Therefore, in laying tile underdrains for an alfalfa field, seek to get the level of the water-line down at least three or four feet.

On peaty soils, with little clay or sound earth within them, it is not often alfalfa will thrive, and, on nearly barren sands it is hardly worth while trying to establish alfalfa fields, as they must be continually fed in order to produce this forage which is so rich in natural elements, as these elements must come from the soil. Therefore, it is very important that we select soils in a good state of cultivation, and one that has a deep, sweet subsoil, with moisture surrounding its particles, and with air between them to allow the roots to spread in all directions in search of moisture and plant food.

There are practically two seasons for sowing alfalfa, viz., in the spring, and in the fall, either with or without a nurse crop. That sown with nurse crops in the spring has given the best results. It does best when sown with spring wheat or barley. When sown with the nurse crop, a lighter seeding of grain should be made than when grain is seeded alone.

The first requisite in getting a good stand of alfalfa is good seed. Only large, uniform, bright seed of good vitality, which is free from weed seeds, should be sown.

Alfalfa seed should be tested before it is sown, in order to determine its actual vitality. This may be easily done by putting a fold of wet paper in the bottom of a small box. Over this sprinkle a little seed, and then cover with a wet paper. In a few days open the box, and count germination. Thus, the percentage of good seed can readily be secured. Good seed should give about eighty-five per cent. of germination.

The seed-bed should be in a rich, mellow condition, and free from all kinds of weed seeds, as weeds hinder the growth of alfalfa to a very

marked degree. The surface soil should be rich and mellow to a depth of two or three inches. The ground beneath the surface soil, in which the seed is sown, should be quite firm, in order to establish capillary connection between the surface layer and the subsoil. This may be best prepared by using a sub-surface packer. The mellow covering allows the air and heat to reach the seed from above. Moisture, heat and air are necessary to germinate the seed. Another method is to cultivate the ground thoroughly, and then level the soil with a harrow and weeder just before the seed is sown. If a nurse crop is used, the seeder should be placed in front of the drill, so that the alfalfa seed will fall on the soil before the tubes of the drill reach it. After drilling, the ground should be levelled again with a weeder. This may be done best by driving angling across the rows. About twenty pounds of seed should be sown to the acre, and a full seeding of the nurse crop should not be sown.

It is a well-known law that all leguminous crops grow best when grown in the presence of certain bacteria. These bacteria are small, microscopic plants. They attach themselves on the sides of plants, or enter the roots and form enlargements on them. Nitrogen is taken from the atmosphere, and converted into such form that it remains in the soil, and becomes available as plant food. This nitrogen is then taken up by the roots, and is sent to all parts of the plant. A certain species of these bacteria is necessary in the ground where alfalfa is sown, in order for it to make the best growth. When these bacteria are not at first present in the soil, they may be introduced by spreading earth taken from an old alfalfa field lightly over the field on which alfalfa is to be grown. The soil used for this purpose may be soil in which alfalfa or sweet clover has been grown.

Then, there are the pure liquid cultures of the legume bacteria. These liquid cultures are more reliable than dry cultures, and, if any at all are used, they should be carefully prepared, to exclude other organisms, as contaminating organisms may suppress the growth of the nitrogen bacteria.

There are a few insects injurious to alfalfa to some extent. These are grasshoppers, web-worms, army-worms, cutworms, blister-beetles, clover hay-worms, and chalcis flies. They are, however, not very troublesome, and may be controlled mostly by the thorough cultivation of the soil.

Thus we see that if the people of America grasp the opportunity to make all that is possible from this extraordinary plant, it will no doubt prove to be one of God's richest gifts to them.

O. A. C., Guelph. G. S. DUNKIN.

Bleached Flour Declared Adulterated.

A decision has been given by Judge Rufus E. Foster, in the United States District Court for the Eastern District of Louisiana, to the effect that flour bleached by the Alsop process is adulterated within the meaning of the Food and Drugs Act of June 30th, 1906. The three reasons assigned were that flour bleached by this process contains (1) added poisonous and added deleterious ingredients which render the flour injurious to health; (2) a substance known as nitrites, which reduces, lowers and injuriously affects the quality and strength of the flour; (3) that the flour so leached is mixed, colored and stained in a manner whereby damage and inferiority are concealed.

As to just how great the injury may be, we are not informed; possibly another decision would upset the one reported above. Meantime, it is interesting to note that Canadian investigators are studying the effect of bleaching, though up to a recent date we believe no particularly injurious effect had been discovered in the research work at Guelph.



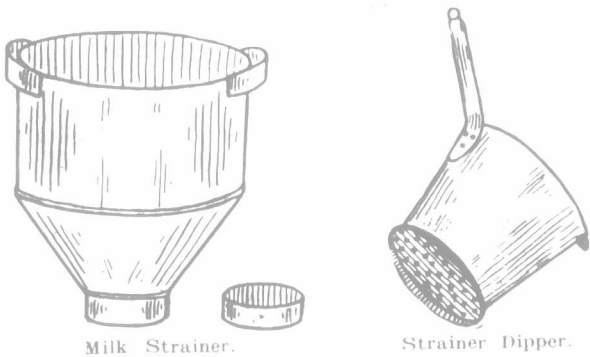
Ayrshire cattle in dispersal sale of the Glenhurst herd of James Benning, Williamstown, Ont., to take place April 20th, as advertised. Reading from right to left: 1, Bronzan Mains Guarantee—26337—; 2, Silver Lass of Glenhurst—25020—; 3, Floss 3rd of Glenhurst—16313—; 4, Floss of Glenhurst—29878—; 5, Glenhurst Fay—29862—.

THE DAIRY.

Some Buttermaking Utensils.

I want to make a butter-worker, and would be much obliged if you would describe one for me, J. B.

A very effective butter-worker can be made from some strips of well-seasoned wood, maple or whitewood preferred. Make a V-shaped table, 3 feet long by 2½ feet wide, tapering at one end to about three inches. Have the sides 6 inches at highest point, and 3 inches at narrow end. Set this table on three legs, two under the wide



end, 24 inches high, and one under the narrow end 21 inches high. This slope allows for butter to drain while being worked. Strengthen the legs by cross-bars.

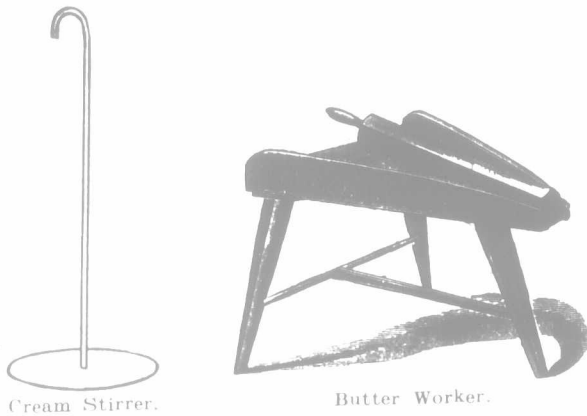
The roller or lever is octagon in shape, tapering toward the end, made from a piece of wood three inches square by 32 inches long. At the end of the roller drive a heavy cut-iron spike or nail. This spike fits into a hole in a piece of hard wood which is fastened across the small end of the worker. A good idea of further details may be had from our illustration.

For handling butter when working and printing it, a flat spade, 5 in. by 10 in., like the one shown, is much handier than a ladle.

CHURN.

There are other appliances for home buttermaking, cuts of some of which we give that are essential to good work.

The first which may be mentioned is the Babcock tester. This does not have to do with the actual manufacture of butter, but is a wonderful revealer of leaks if tests are made of the skim milk and the buttermilk. By means of it, combined with the weigh scales, the actual



Cream Stirrer. Butter Worker.

worth of each cow as a producer can be determined.

The barrel churn, without dashers or paddles, is preferred by most dairy workers. When filled too full of cream, however, the objection that it is slow can reasonably be made regarding it. Many people err in buying too small a churn.

The larger the churn, and the smaller the quantity of cream in it, the lower the temperature at which you may churn, the quicker the butter comes, and the more exhaustive the churning!

STRAINERS.

A good kind of strainer is shown for use when milk is to be strained into creamers or cans. It should be 12 inches wide at the top, and 5 inches below. Several thicknesses of cheese-cloth should be placed over the bottom, pulled up and held in place by a well-fitting tin band. This cloth must be taken off and washed each time of using.

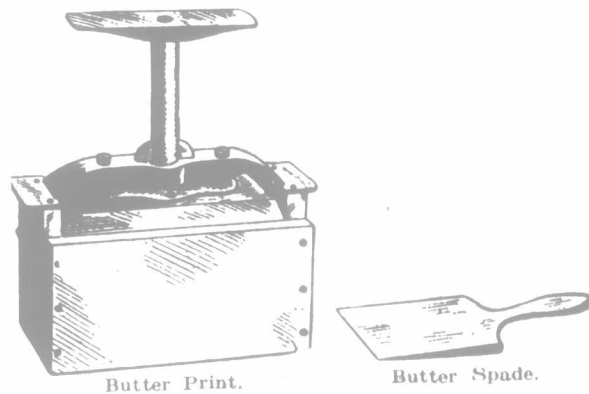
A strainer dipper is a great convenience for straining the cream into the churn, straining the buttermilk from the butter, etc. A convenient size is 9 inches across the top, 7 inches across the bottom, and 6 inches deep. Bottom is of strong tin, with one-sixteenth-inch perforations. A strong handle, and a lip at the opposite side, keeps it from sliding into the churn.

CREAM STIRRER.

Little, but good. The tin saucer is 3 or 4 inches in diameter, with heavy tinned wire handle about 20 inches long. By an up-and-down motion cream is mixed thoroughly from bottom to top.

THERMOMETER.

A good dairy thermometer costs little, but is essential in buttermaking.



Butter Print. Butter Spade.

BUTTER PRINT.

A good style of this useful article is shown in cut. It can be set to print a pound, exactly, and rapid work can be done with it. Butter sells more readily when made in this form than in any other. Avoid a cheaply-made butter print.

Fibre scrub brushes, one with a long handle for deep vessels, should be used in cleaning dairy utensils, instead of dish cloths. Occasionally a print should be weighed, as butter varies in weight from time to time. Allow from ¼ to ½ ounce extra for shrinkage.

Cooling Milk for Cheesemaking.

An excellent little seven-page bulletin on "The Cooling of Milk for Cheesemaking," by J. A. Ruddick and G. H. Barr, has been issued by the Dominion Department of Agriculture, and may be obtained by managers of cheese factories and creameries for their patrons on application to the Dairy and Cold-storage Commissioner, Ottawa. Following are the recommendations offered:

1. Evening's milk, intended for the manufacture of cheese, should be placed in the cans as soon as possible after milking. In warm weather, the milk should be cooled by surrounding the milk cans with cold water, or water and ice. A tub made from a barrel cut in two will serve the purpose, or a special tank made to hold several cans. If the supply of water is limited, ice may be used with advantage. Where there is plenty of cold well water, ice is not absolutely necessary, except when the milk is to be kept over Sunday. Do not dip or pour the milk.

2. The cover should be placed on the cans as soon as the milking is finished, and left there for the night. There will be no clotted cream on the surface of the milk when the milk is cooled and the can is covered.

3. It is advisable to deliver the evening's and the morning's milk in separate cans, but if, for any reason, the two milkings must be delivered in the same can, and the morning's milk is not cooled, the evening's milk should be cooled to 60 degrees or under. If the two milkings are delivered in separate cans, of if the morning's milk is cooled to 75 degrees, the evening's milk need not be cooled lower than 65 degrees under ordinary circumstances. The morning's milk need not be cooled when it is delivered in a separate can, and it should not be dipped or aerated in any case.

4. When milk is to be kept over Sunday, it should be cooled to 50 degrees or under.

5. A thermometer should be used to

determine the temperature. Use only the special dairy thermometers, made wholly of glass, and known as "float" thermometers.

NOTES.

Covering the Cans.—Our advice to put the covers on the cans as soon as milking is finished is contrary to what has been the usual practice among cheese-factory and creamery patrons. It has been popularly supposed that the milk should be left uncovered to facilitate the escape of "animal heat," "animal odors," and so on. On the other hand, in the high-class dairies, where milk is bottled for direct consumption, the practice is to put the milk in a tightly-stoppered bottle as soon as possible after milking. Our experiments proved that the best results were obtained by covering the milk. It protects it from insects, dust, falling leaves, or other dirt which may find entrance, and thus carry to the milk many injurious germs of one kind and another. It also prevents the evaporation from the surface of the milk that causes the formation of a tough, leathery surface of cream, much of which is lost in the process of cheesemaking.

Water for Cooling.—The quantity of water that is required to sufficiently cool a given quantity of evening's milk depends on several conditions, such as the temperature of the water itself, whether the evening is a cool one or a warm one, and at what hour the milk is delivered at the factory in the morning. The latter point is important. Milk that is delivered at the factory at 6 a. m., as is the practice at many factories, does not require as much cooling as it would if delivery were delayed two or three hours.

Generally speaking, if deep-well water is available, at a temperature of 50 degrees or under, a quantity equal to that of the milk will be sufficient for the purpose. If the water is warmer, a larger quantity will be required. If the supply of water is limited, ice can be used in it to good advantage. One pound of ice has a cooling power in this connection equal to 8 to 10 pounds of the coldest well water.

Water is a better cooling medium than is air. Thus, if the milk cans are surrounded with water at a temperature of 50 degrees, cooling is effected more quickly than if the cans are surrounded with air at the same temperature. Quick cooling is important.

APIARY.

Elementary Instructions in Bee-keeping.—II.

HER MAJESTY THE QUEEN.

The latter part of spring, in summer, and in early fall, there are three kinds of bees in a hive. At other times there are but two kinds; that is, under normal conditions. To name them, first is the queen, then the workers, and, lastly, the drones. The queen is sometimes incorrectly called the "king bee." This would denote her sex as male, but "she" is of feminine gender. Every once in a great while there are reported another kind of bees, not belonging to any of the mentioned classes. They are simply freaks of nature, as the occasional multiped calf or duck, and need not be considered.

In a certain sense, the queen is the important personage of a colony. She is mother of all three kinds of bees. There are conditions when worker bees will take upon themselves the duty of laying eggs. Such eggs, or some of them, will hatch, too, but the resultant bees are never anything else but drones.

To consider the evolution of "her majesty," first, the egg is laid by another of her kind. So far as appearance is concerned, this egg looks exactly like those from which worker bees and drones develop. But the cell in which a queen bee develops is considerably different from either drone or worker cells. It is about the size, and looks like, the end of a medium-sized peanut. It is generally believed that the construction of the cell and the food fed the queen larva is what makes a queen bee, and not any difference in the eggs.

Three days from the time an egg is laid in the queen cell, it hatches into a tiny larva, or worm, as commonly but incorrectly called. For the first three days of the larval state, a queen larva is said to be fed the same food given worker larvae. After this, the food is said to be richer; at any rate, it is different, as can be ascertained by taste and observing the consistency of the two kinds of food.

After the queen larva has been fed by the nurse bees for five or six days, the cell is sealed. Before sealing the cell, a considerable quantity of "royal jelly," as the queen food is called, is yet put into the cell. Upon this the queen larva develops fully, when at about fifteen days from the time the egg was laid she emerges from the cell.

But at her maturity she is not yet in the right physical condition for her life-work. The next step is the mating with a drone. It is not until this sexual act has taken place that a queen can

lay eggs that will develop into worker bees. It is in about a week after her emergence from the cell that a queen flies from the hive to meet or mate with a drone, as the male bee is called. They mate in the air, while on the wing. If the mating has been successful, the queen will commence to lay in two or three days after her "wedding flight." Then her real life-work commences. Unless she is killed accidentally by the apiarist, or she in some way becomes faulty, a queen lays eggs till her supply is so much reduced that she no longer can keep up the strength of the colony. Then her infirmity induces the worker bees to rear another one to take her place. This rearing of a queen is called superseding.

When conditions are favorable, a good queen will lay 3,000 eggs every twenty-four hours; yes, an extra-good one may lay even 4,000 or 5,000 for a short time. Is this not a remarkable feat? And the queen does not cackle about it, either! To perform such strenuous work, it is necessary for the worker bees to feed their "majesty" highly-concentrated and predigested food. I think that queens do take some honey direct from the cells, but their life is largely sustained by food prepared and fed them by worker bees.

It is not always that a queen is successful in her mating. Then, she will commence to lay, but not so soon, but the eggs will produce nothing but drones. Such "drone-laying queens," as they are called, are useless, or, rather, a little worse. Generally, the eggs of a drone-laying queen are not deposited in as regular order as those of a fertile queen. But this is not a sure sign of a queen's functional inability. The only way to find out is to wait and see if the worker cells are capped high, as drone brood is capped. Then, if later the bees that emerge are drones, we have to do with a drone-laying queen.

Before a queen has mated, she is termed a "virgin queen." I mention this, as I will make use of this phrase in subsequent articles. I have had much to say about queens, as they are so very important to every colony.

Wisconsin. F. A. STROSCHEN.

POULTRY.

Lost, \$308,818!

After a long and extensive experience in the business, John A. Gunn, of Gunns Limited, states that only fifty per cent. of Canadian poultry is marketed in proper condition. During the past year, it is estimated that the number of all classes of poultry killed or sold in the Province of Ontario was 4,177,583. Reckoned at 5 pounds per head (chickens, geese, turkeys and ducks), this would amount to 20,587,915 pounds, on half of which there was easily a loss of three cents per pound, due to want of care in preparing for market, or an actual total loss of over \$308,818. Is there not food for thought in that statement? His firm was willing to pay 17 and 18 cents per pound to one man for poultry, and only 10 or 12 to another, just because one lot was properly fattened and prepared for market, and the other not. Crate-fattened birds realized the highest prices, and the largest proportion of these were received from men and firms who buy from farmers, live weight, and then fatten for the profit there is in that business. Why should not the farmer have that extra profit himself, finishing off the birds for a few weeks in crates, on skim milk and other rough foods of the farm? The high price of other meats has stimulated the call for poultry, and the home demand is such that last year Canada exported only \$109,290 worth, whereas the British market requires \$5,000,000 worth per year. The outlet for poultry supplies is, therefore, practically unlimited.

A Good Winter Egg Record.

Editor "The Farmer's Advocate":

I give you below this winter's egg record of my flock of chickens. My flock consists of 80 pure-bred White Wyandottes and 40 Rhode Island Reds, mostly June and July-hatched pullets. The record for December, you will note, is rather low, on account of not having their quarters in proper shape before cold weather: December, 644 eggs; January, 1,688; February, 1,740; March 1st to 27th, inclusive, 1,699.

My fowls are housed in two buildings, 20 x 12, and 16 x 10, set end to end, with doorway between. They were fed three times a day during December and January; mixed grain fed morning and noon in litter, and hot mash in evening. In February and March the noon feed was omitted. Green food, in the shape of mangels, turnips or apples, was constantly before them, as was also oyster-shell and grit. Meat was supplied in the form of green bone and beef heads broken up with an axe, and scattered about for hens to pick at.

I might add that I never had a healthier bunch of chickens, notwithstanding their rather confined quarters. I have lost two to date of writing, both dying from some physical ailment.

It has been my experience that the proceeds from the sale of the broilers pay for the food consumed by the pullets to December 1st. I am keeping account of supplies used and fed, and receipts from sale of eggs and the yearling hens, and am confident they will net \$2.00 per hen during the year.

I consider dry houses, with lots of ventilation—straw lofts seem about the ideal thing to me—windows set low, about 15 inches above ground, to let in sunlight direct on the fowls; plenty of litter for chickens to work in; vegetable food and meat in some form or other, to be requisite for winter-egg production. W. C. FLETCHER.

Wentworth Co., Ont.

GARDEN & ORCHARD.

Orchards Worth \$1,000 an Acre.

That practical demonstration with materials and apparatus, under farm, orchard or garden conditions, is the most helpful form of Institute work, was indicated by the Fruit Institute held at Lambeth, Middlesex Co., Ont., on March 29th, under the auspices of the William Weld Co., assisted by the Provincial Department of Agriculture. Following a couple of addresses, the audience accompanied the speakers to a near-by orchard, where a spray pump, spray materials, and instruments for pruning and grafting, were used to give practical demonstration in these three important phases of orchard work. What to spray with, when to apply it, and how to put it on, were explained and illustrated.

While, owing to the energetic prosecution of spring-seeding operations, and the holding of a sale in the vicinity, attendance was not so large as it would have been, still, over a score of men were present at each session, and the earnest, practical interest exhibited gives reason to expect a revival of fruit-growing in this favored agricultural district. D. Johnson, of Forest, the principal speaker, is a practical orchardist, operating very successfully on an extensive scale, in partnership with his brother. Their output last year was nearly \$8,000 worth of fruit, and in the busy season they employ some hundred and fifteen hands in their orchards and evaporators. In addition to their own large orchards of apples, plums and peaches, they make a business of renting other orchards, and putting them into shape. His assurance that if he owned Mr. Poole's three-acre orchard, which "The Farmer's Advocate" has rented for demonstration purposes, he would not take \$1,000 an acre for it, is calculated to stimulate appreciation of this much-neglected branch of agriculture. The fact that 13½ per cent. interest on this valuation was cleared from the orchard last year, after all expenses, including liberal wages, goes to support Mr. Johnson's opinion. His further remark, that he had seen in British Columbia orchards selling for \$1,500 an acre that would not compare with this and many others he knew of in Western Ontario, should set people thinking whether a little judicious advertising and exploitation would not persuade many to remain in the East, and improve opportunities at their door, instead of chasing Will o' the Wisp fortune to the far Western Provinces, and beyond.

Conditions Affecting Vitality of Seed Corn.

Injury to corn by drouth and hot weather in August, resulting in the production of many light and chaffy ears, together with an early setting-in of winter, which in many cases prevented farmers from gathering their seed corn before the freeze-up, led the Kansas State Agricultural College and Experiment Station, last winter, to invite farmers to send samples of the seed intended to be used to the Agronomy Department for testing. From the results of the tests made, a few instructive points are generalized:

One hundred and twenty-five samples of corn, gathered early, before December 1st, gave an average germination of 95.18 per cent.

Fifty-four samples of corn, gathered late, after December 1st, gave an average germination of 88.51 per cent.

Eighty samples of seed corn, gathered early, and well saved, gave an average germination of 97.7 per cent.

Nine samples of corn, husked early, but seed taken from the crib, gave a germination of 93.3 per cent.

Thirty-six samples, gathered from the field after December 1st, gave an average germination of 87.7 per cent.

Six samples, taken from the shock after December 1st, gave an average germination of 86.6 per cent.

The germination of early-gathered corn was, on the average, nearly 7 per cent. better than the germination of the late-gathered corn.

The early-gathered and well-saved seed corn germinated 4.5 per cent. better than the corn husked early and stored in cribs, and over 9 per cent. better than the late-gathered seed corn.

Spray Calendar.

BY L. CAESAR, DEMONSTRATOR IN FUNGOUS DISEASES AND INSECTS, O. A. C., GUELPH.

PLANT.	1ST APPLICATION.	2ND APPLICATION.	3RD APPLICATION.	REMARKS.
APPLE. Scab or black spot, canker, leaf spot, codling moth and other biting insects, scales, blister mite and aphids.	Shortly before the buds burst. Use A or B1.	Just before the blossoms open. Use B2 or D with a poison.	Immediately after the blossoms have all or nearly all fallen, and before the calyxes close. Use B2 or D with a poison. This is the application for codling moth.	Cut out, disinfect and paint cankered areas on trunk and large branches. For aphids see if they are present just before the buds burst; if so, supplement the lime-sulphur spray by an application of kerosene emulsion. If the season becomes wet or foggy after 3rd application, spray at once to prevent a late outbreak of scab. Repeat if necessary.
PEAR. Scab or cracking, blight, codling moth, other biting insects, scale insects, blister mite, psylla and slug.	Shortly before the buds burst. Use A or B1.	Just before the blossoms open. Use B2 or D with a poison.	Just after blossoms have all fallen. Use B2 or D with a poison.	Cut out and burn blight as soon as seen, cutting 1 ft. or more below diseased area. If slugs are present, spray with a poison or dust fresh air-slaked lime over the foliage.
PLUM AND CHERRY. Black-knot, brown rot, leaf blight or shot-hole fungus, curculio, slug and aphids.	Just before buds burst. Use A or B1.	Just after fruit is set. Use B2 or D with a poison.	About 2 weeks later. Use B2 or D with a poison.	Cut out black-knot well below diseased area, and burn whenever seen. Look for aphids just before buds burst; if present spray with kerosene emulsion. Same remedy for slug as for pear. Leaf blight if present requires 1st application 4 weeks after fruit is set, and 2nd as soon as cherry fruit is picked. Use B2 or D, but somewhat weaker than usual, as cherry foliage is tender.
PEACH. Leaf-curl, scab or black spot, yellows, little peach, curculio, borer, San Jose scale, shot-hole borer.	Before the buds begin to swell. All must be done before any sign of bursting of buds. Use A or B1.	Just after fruit is set. Use arsenate of lead alone with water for curculio.	About 1 month after fruit is set. Use C.	If brown rot is likely to be severe, use C again about 2 weeks later. Dig out borers. Cut down and burn before end of April all dead and dying trees and branches to control shot-hole borer.
GRAPES. Black rot, powdery mildew, downy mildew, anthracnose, flea beetle, thrip or leaf-hopper.	Before buds burst if anthracnose is troublesome. Use copper sulphate solution.	When 3rd leaf is appearing. Use D.	Just before the blossoms appear. Use D.	Spray again after fruit sets and whenever wet weather threatens, as moisture favors disease. At first sign of powdery mildew dust with sulphur. For flea beetles use poison whenever they appear. For leaf hoppers or thrips use sticky shields to catch adults, and kerosene emulsion for nymphs. Clean cultivation is very important, and destruction of old mummied grapes and prunings.
CURRENT AND GOOSEBERRY. Mildew, leaf-spot, currant worm, aphids.	At same time as 1st application for apple and most other fruit trees. Use A or B1.	Soon after leaves open. Use B2 with a poison.		If English varieties of gooseberry, spray with B2 just before blossoms appear and again after fruit is set, in addition to 1st application. For worms when fruit is ripening use white hellebore. For aphids spray with kerosene emulsion as early as seen to be present.
RASPBERRY AND BLACKBERRY. Anthracnose, red rust, crown gall.	Before growth begins. Use D.	When new shoots are 6 or 8 inches high. Use D.		If anthracnose is very bad set out new plantation from a healthy one. If disease begins cut out old canes as soon as fruit is picked, also badly attacked new ones, and burn. For red rust remove and burn plants at once. No other remedy. For crown gall set out plants in fresh soil, rejecting any plant with a gall on root or crown.
STRAWBERRY. Leaf spot, white grub.	For leaf spot, set out only healthy plants with no sign of disease, spray them with D before blossoms open, and again soon after picking. Don't take more than two crops off. Plow down at once after 2nd crop. For white grubs dig out as soon as injury is noticed. Do not plant on land broken up from old meadow or pasture for at least 3 years after breaking.			
ROSE. Black leaf-spot, mildew.	For black leaf-spot use D as soon as any signs of its appearance. Repeat twice at intervals of 10 days. For mildew in greenhouse keep pipes painted with paste of equal parts lime and sulphur, mixed with water; outdoors dust with sulphur or use B2.			
ONION. Blight, root maggot.	For blight use D, beginning when 3rd leaf appears and repeat every 10 days till crop is harvested. Add 1 gallon sticker to every 40 gallons Bordeaux. Too late to spray when disease appears. Rotate crops. For root maggot use Cook's carbolic wash, or hellebore. Begin when plants appear above ground and repeat every 7 days.			
BEAN. Anthracnose and bacteriosis.	Get seed from pods showing no signs of disease. Spraying scarcely pays as a rule.			
CABBAGE, TURNIP. Flea beetles, caterpillars, root maggots, aphids.	For flea beetle of turnip, sow after June 21st, or dust plants as soon as they appear above ground with Paris green, or spray with Bordeaux and a poison. For caterpillars, dust with Paris green until heads begin to form on cabbage and cauliflower, then spray with pyrethrum, 1 oz. to 2 gals. water. For root maggots use medium thick tar-paper discs, putting on as soon as plants are set out, or use hellebore once a week up to July 1st, or set out plants after July 1st. For aphids use kerosene emulsion as soon as they appear.			
POTATO. Tip burn, early blight, late blight, scab, Colorado beetle, flea beetle.	Keep foliage covered with D from time plants are about 5 inches high. Take special precautions to see this is well done if weather is at all damp after about 15th July, as late blight begins about this time. Add a poison to each application when necessary. For scab, soak seed before cutting in formaldehyde solution, 1 pint of the liquid solution to 30 gallons water, for 2 hours. Spread out on grass to dry. Wash all boxes, bags, or other vessels to be used in same liquid.			
TOMATO. Leaf blight, black rot, flea beetle.	Spray plants in seed-bed with D. Keep foliage in field covered with D until danger of staining fruit. Add a poison if necessary for flea beetles.			
ASPARAGUS. Rust, beetles.	For rust, let no plants, not even wild ones, mature during cutting season. Late in fall, when growth is about over, cut and burn old plants. For beetles, let poultry run in the plantation. After cutting season is over spray with arsenate of lead; repeat in two weeks. May add sticker and a little lime.			
CELERY. Rust or leaf spot.	Keep plants covered with D throughout season.			

NOTE.—A=Home-boiled Lime-sulphur.—20 lbs. lime, 15 lbs. sulphur, 40 gallons water.
B1=Commercial Lime-sulphur.—Spring strength, about 1 gallon to 9 of water.
B2=Commercial Lime-sulphur.—Summer strength, for foliage about 1 gallon to 30 or 40 of water.

O=Self-boiled Lime-sulphur.—8 lbs. lime, 8 lbs. sulphur, 40 gallons water.
D=Bordeaux Mixture.—4, 4, 40, formula.

Formulæ for Insecticides.

- POISONS (for biting insects only):**
 - ARSENATE OF LEAD.**—2 lbs. to 40 gals. liquid spray; 3 lbs. for potato beetles.
 - PARIS GREEN.**—(a) $\frac{1}{2}$ to $\frac{1}{4}$ lb. to 40 gals.; 1 lb. for potato beetles. If used with water alone, add 1 or 2 lbs. fresh lime.
(b) 1 lb. mixed with 50 lbs. land plaster, air-slaked lime or some similar substance, for dusting on plants.
(c) Poisoned Bran.—Mix 1 lb. Paris green with 50 lbs. bran moistened with sweetened water. Scatter in evening on soil by plants.
 - ARSENITE OF LIME.**—Boil 1 lb. white arsenic and 1 lb. sal soda (crystals), with stirring, for about 15 minutes in 1 gallon water till all the arsenic is dissolved, then add 2 lbs. stone lime and let slake in boiling liquid. Add water to make up for what has evaporated. One quart of this when well stirred is sufficient for 40 gals. spray liquid. Arsenite of lime can be made in large quantities and stored. Label barrel "Poison," and be careful to keep white arsenic itself labelled "Poison." Keep barrel covered to prevent evaporation. Stir well before using.
N.B.—With Bordeaux, 1, 2 or 3 may be used; with commercial lime-sulphur, 1 or 3.
 - WHITE HELLEBORE.**—1 oz. to 2 gals. water, or dust undiluted over the plants. For root maggot, dust close to plants, or pour around root.
- CONTACT POISONS (chiefly for sucking insects):**
 - KEROSENE EMULSION.**—
Kerosene (coal oil)..... 2 gals.
Rain water 1 gal.
Soap $\frac{1}{2}$ lb.

- Dissolve the soap in water by slicing and boiling; take from fire and while hot pour in kerosene and churn vigorously for 5 minutes. For use dilute with 9 parts of water, so that the whole is 3 gals. of stock emulsion will make 30 gals. of spray mixture.
- WHALE-OIL SOAP.**—For brown or black aphid, 1 lb. in 4 gals. For green aphid, thrip and leaf-hopper, 1 lb. in 6 gals.
- TOBACCO WATER.**—Boil 1 lb. refuse tobacco in 2 gals. water for 1 hour; make up for water that evaporates.
- PYRETHRUM (or Insect Powder):**
Pyrethrum powder..... 1 oz.
Water 2 to 3 gals.
Dry Mixture.—Mix thoroughly 1 part by weight of pyrethrum with 4 of cheap flour, and keep in air-tight vessel for 24 hours before dusting over plants.
Note.—Pyrethrum is useless if left exposed to the air.
- LIME-SULPHUR WASH.** (See under fungicides.)
- COOK'S CARBOLIC WASH.**—1 qt. soft soap or 1 lb. hard soap, $\frac{1}{2}$ pint crude carbolic acid, 1 gal. water. Boil for few minutes, dilute to 50 gals. and spray directly on plants once a week from the time they appear above ground.

Formulæ for Fungicides.

- BORDEAUX MIXTURE:**
Copper sulphate (bluestone)..... 4 lbs.
Unslaked lime 4 lbs.
Water 40 gals.
Dissolve the copper sulphate in a wooden or brass vessel with hot water, pour into a barrel and add cold water to make 20 gals.; slake the lime, preferably with hot water; add cold water to make 20 gallons.

- Stir both barrels well, and pour lime into the copper sulphate barrel. (Never mix concentrated milk of lime and copper sulphate solutions.)
A stock solution of each may be made and kept indefinitely if not mixed: Dissolve 40 lbs. copper sulphate in 40 gals. water by suspending just below the surface of the water in a coarse sack. Each gallon of the liquid will now contain 1 lb. copper sulphate. Slake any desired quantity of lime and put into a box or barrel in shaded place, or sunk in the ground. Keep covered with small amount of water to exclude the air. Calculate how much is required for 4 lbs. lime if well stirred.
To test Bordeaux mixture, let a drop of ferrocyanide of potassium solution fall into the mixture when ready. If this causes it to turn reddish brown, add more lime until no change takes place.
- COPPER-SULPHATE SOLUTION:**
For fruit trees or grapes only before buds burst:—
Copper sulphate (bluestone)..... 1 lb.
Water 20 gals.
- LIME-SULPHUR WASH:**
 - HOME-BOILED (for use on dormant wood only).**
Fresh stone lime..... 20 lbs.
Sulphur (flour or flowers)..... 15 lbs.
Water 40 gals.
Slake the 20 lbs. lime in about 15 gals. boiling water in a kettle or other boiling outfit. While slaking add the 15 lbs. sulphur made into a paste by the addition of a little water. Boil vigorously, with stirring, for 1 hour. Dilute to 40 gals. with cold or hot water. Strain and apply at once.
 - COMMERCIAL.**—This is for use either on dormant wood or on foliage. For the former use at the strength of about 1 gal. to 9 gals. of water; for

- the latter 1 gal. to 30 gals. water. Dilute to 40 gals. for cherry.
 - SELF-BOILED (chiefly for use on peach foliage).**
Fresh stone lime..... 8 lbs.
Sulphur (flour or flowers)..... 8 lbs.
Water 40 gals.
Best prepared in quantities of 24 lbs. at a time to get sufficient heat. Place 24 lbs. lime in a half barrel, add enough cold water to start it slaking well and to keep the sulphur off the bottom. Dust the 24 lbs. sulphur over the lime, having first worked the sulphur through a screen to break lumps; then add whatever further amount of water is necessary to complete the slaking. Stir well with a hoe to prevent the lime caking on the bottom. As soon as the slaking is over, add enough cold water to cool the whole mass and prevent further combination. Strain into spray tank. Keep well agitated while spraying.
 - FORMALDEHYDE.**—For smut of oats and stinking smut of wheat.—Formaldehyde solution, $\frac{1}{2}$ pint; water, 21 gals.; immerse 20 min.; or Formaldehyde solution, $\frac{1}{2}$ pint; water, 5 gals.; sprinkle and stir till thoroughly moistened. Take care to have bags and drill also treated to prevent infection.
- STICKER.**
- Resin 2 lbs.
Sal soda (crystals) 1 lb.
Water 1 gal.
Boil together till a clear brown color, which takes from 1 to 1½ hours. Cook in iron kettle in an open place. Add the above to 40 gals. Bordeaux for use on smooth foliage like onions, cabbage or asparagus. If used with arsenate of lead, Paris green, or arsenite of lime, add 1 or 2 lbs. of fresh lime to every 40 gallons of spray.

THE FARM BULLETIN.

Wm. Slaght's Holstein Sale.

The sale of Holstein-Friesian cattle, on March 30th, held by Wm. Slaght, at Maple Stock Farm, Bealton, Ont., was a decided success. The larger part of the herd were offered and sold, numbering 27 head. The arrangements for the sale were very conveniently held under a large tent alongside the barn. The crowd was not so large, perhaps, as at some sales held in the past, on account of spring seeding starting early, but those who came to buy meant business, as well they should, after seeing the quality and condition of the cattle. Col. Welby Almas, of Brantford, conducted the sale, assisted by E. J. Wiggs, of Cayuga, disposing of all the cattle in about two hours. The 27 head sold for the sum of \$3,450, an average of \$127.70. Following is a list of those selling for \$100 and upwards:

FEMALES.

Aulinda Crown De Kol; A. E. Hulet, Norwich	\$225
Maud Mercena; A. H. Teeple, Currie's	225
Aggie Schulling; F. Wilson, Newport	210
Belle Schulling; F. Wilson	200
Daisy Posch Johanna; D. Nelles, Boston	200
Lizzie Pietje De Kol; A. E. Hulet	195
Flossie Schulling; A. H. Teeple	175
Maxine Elliott; F. Passmore, Brantford	175
Ruby Pauline Schulling; A. H. Teeple	170
Queen De Kol Johanna; T. F. Patterson, Thorold	170
Della De Kol Pietertje; P. Merrit, Beamsville	170
Rachel Wayne Posch; T. F. Patterson	145
Jenima Cubana; A. E. Hulet	145
Tryntje's De Kol; A. H. Teeple	135

MALES.

Victor Pietje De Schulling; Ira N. Vail, Renton	\$110
Royal Schulling Bonheur; E. Woodley, Waterford	100

Annual Meeting Ontario Winter Fair.

The annual meeting of the Ontario Provincial Winter Fair was held in Toronto on March 24th. The report of the last Fair, which was presented by the Secretary, showed it to have been the most successful one ever held. The total receipts for the year amounted to \$22,852.72, and the expenditures to \$20,899.92, the gate receipts and Farmers' Institute fees totalling \$2,874.95, as compared with \$1,761.60 for the previous event. The sum of \$12,040.25 was paid out in cash prizes in the different departments. This amount is exclusive of the cash prizes offered by the American Sheep-breeders' Associations.

The following officers were elected for the ensuing year: Honorary President, Lt.-Col. R. McEwen, Byron; President, John Bright, Myrtle; Vice-President, Wm. McNeil, London; Secretary-Treasurer, A. P. Westervelt, Toronto. Directors—A. W. Smith, John Jackson, Lt.-Col. R. McEwen, Robert Miller, Wm. McNeil, L. H. Baldwin, A. W. Tyson, W. J. Teale, G. E. Day, G. B. Hood, Wm. Jones, R. H. Harding, Wm. Smith, John A. Boag, Peter Christie, T. A. Graham, John Gardhouse, John Bright, W. W. Ballantyne, R. S. Stevenson.

The dates for the next Fair will be arranged later by the Executive Committee. Considerable discussion took place as to the advisability of considering the feed fed to animals competing in the dairy test, but no action was taken. At the next Fair, Aberdeen-Angus, Herefords and Galloways are each to have separate classes. The secretary of the Canadian Hereford Association informed the meeting that the regular prize-money for Herefords would be supplemented by at least \$150 from the American and Canadian Hereford Associations. Pure-bred animals, as well as grades, are to be allowed to show in the amateur classes for beef-cattle exhibitors. The Executive Committee will further revise the prize-list, and that committee will also appoint the judges for the next fair.

For several years, the plan for admission of Farmers' Institute members to the Fair has been that the Institutes pay \$5 for the first hundred members admitted, \$10 for the second hundred, \$15 for the third hundred, and \$20 for each succeeding hundred. The Fair is now of such size and merit as should warrant the payment of a higher admission fee than has previously been received from Farmers' Institute members. For the next Fair, coupon tickets, good for three admissions, will be issued to members of affiliated Farmers' Institutes, upon presentation of membership tickets sold previously to the first of July each year, and twenty-five cents in cash. An affiliated Farmer's Institute is any Institute which has guaranteed to pay on the following basis to the Winter Fair, upon receiving a statement after the exhibition is held as to the number of membership tickets on account of which coupon

tickets have been issued to members for that Institute for twenty-five cents:

1. For fifty or under, no charge will be made against the Institute.

2. For more than fifty, and not more than one hundred, ten cents each.

3. For more than one hundred, and not more than two hundred, fifteen cents each.

4. For more than two hundred, twenty cents each.

5. For each ticket sold after the 1st of July, which is presented undated, or incorrectly dated, fifty cents each.

(a) Tickets will be considered to have been sold previous to the 1st of July if names are in the hands of the Superintendent of Farmers' Institutes on or before the 20th of July each year. No Institute will be responsible for any ticket plainly dated later than the 1st of July, which may be presented and accepted by the ticket-seller at the Winter Fair.

In order that the attendance may be spread over a greater length of time, so that there will be less crowding than last year, it was decided to have the Fair open on a Monday, and remain open until the following Friday afternoon. Live stock will be required in the building by 10 o'clock on the opening day, and poultry by the previous Saturday night.

Essex Notes.

Spring seeding is in full swing on this date (March 28th), and, to all appearance, will be almost finished before April 1st. The steady winter and exceptional March weather left the soil in prime order. Fall wheat has stood the winter fairly well. Some fields, where water failed to escape rapidly, are slightly injured, but those thoroughly drained have a splendid appearance. Fruit-growers are engaged in a serious conflict against the pernicious and persistent San Jose scale. Peach orchards appear peculiar in their light-green coat, produced by a liberal application of death-dealing mixture. An extensive area is being planted to peaches this spring. A. E.

A Revelation in Uses of Cement.

The rapidly-extending use of concrete is certain to be much further increased by such educational events as the Cement Convention and Exhibition, held at the Princess Rink, London, Ont., March 29th to April 1st. Six thousand four hundred and seventy admissions were registered by the turnstiles, while all kinds of business was transacted by the firms represented. One London Company sold \$4,000 worth of goods. An American exhibitor sold out his whole exhibit, took his grip, and walked off, carrying with him orders for 12 additional machines. Among the exhibits of more especial interest to farmers, we note the following in order of entry: Wettlaufer Bros., of Toronto and Mitchell, large exhibit of cement-mixers and cement machinery of many kinds; John T. Hepburn, of Toronto, two mixers and a cement-brick machine; The Scott Machine Co., of London, Ont., gasoline engines, and a hoisting or pulling machine, which proved very useful in clearing out the rink; C. S. Wert, of Kendallville, Ohio, brick machines and molds. An adjustable core for making various-sized holes for cement culverts, was displayed by the Merrilat Culvert Core Co. Reinforcing material was shown by the Trussed Concrete Steel Co., of Walkerville. The Ideal Concrete Machinery M'fg Co., London, had an exhibit of mixers and a tamping machine for making cement blocks; also, a lining of block molds. The London Concrete Machinery Co. had, besides a line of mixing machines and block molds, their adjustable steel silo curbs, and a cement-tile machine. A big mixer for contract work, weighing over four tons, was shown by a Toronto firm. A machine for making fancy cement brick of all kinds was displayed by the Peerless Brick Machine Co., of Toronto; while, coming to stable fittings, the mold for making cement cow stalls was demonstrated by A. D. Schmidt, North Woolwich, Ont. Wheelbarrows, trucks, etc., needed for cement work, were fittingly exhibited by the London Foundry. Finally, we can assure our friend, quoted in these columns some weeks since, as desiring to be buried in concrete, that he can have his bones laid to rest in a ready-made cement casket, a type of which was offered by W. J. Anthistle, London, Ont. All together, the exhibition was an eye-opener in the adaptability of concrete, and those who missed an opportunity of seeing it will be interested to know that not a few of the exhibits will be again shown at the Western Fair this fall.

At the Canadian Cement and Concrete Association's second annual convention, a long list of subjects of interest to cement men, and many of them to the general public, were discussed. In addition to many eminent Canadian engineers and experts, including President Gillespie, Lecturer in Theory of Construction, Toronto University; A. W. Campbell, Deputy Minister of Railways and Canals, Ottawa; and Prof. W. H. Day, O. A. C., Guelph, there were on the programme several men of prominence from the United States.

The Caskey Holstein Sale.

The dispersion sale, on March 25th, of the Holstein herd of J. A. Caskey, Madoc, Ont., was very largely attended, the quality of the cattle was A-1, bidding was exceedingly brisk from start to finish. Col. D. L. Perry cried the sale to the satisfaction of all, buyers were present from New Brunswick to Manitoba, and good, though not sensational, prices were realized. The 24 mature animals, seven of which were heifers with first calf, brought an average of \$224.80 per head. Fourteen calves (seven heifer and seven bulls) brought an average of \$62.14. The 43 head sold for \$6,880, an average of \$156.00. Following is a list of those selling for \$100 and upwards:

Dolly Inka De Kol, calved Sept., 1901; Burr Bros., Ohio	\$450
Sara Jewel Hengerveld's Son, May, 1908; Ben Hagerman, Minto	400
Jessie De Kol, March, 1905; E. A. Lloyd, Stouffville	240
Dolly Echo De Kol, March, 1905; Burr Bros., Jessie Inka Keyes, Feb., 1904; A. F. Stevenson, Russell	215
De Dikkert Echo De Kol, April, 1906; Thos. Davidson, Spring Valley	175
Countess Zoo De Kol, April, 1903; Pauline De Kol 2nd, March, 1903; A. D. Foster, Bloomfield	155
Seymour Mechthilde, April, 1905; R. L. Hicks, Dalhousie Junction, N. B.	250
Heifer calf from this cow; James Seymour, Bobcaygeon	150
Sylvia, April, 1906; W. E. Wortman, Warkworth	170
Lulu, April, 1906, and calf; W. A. Meadows, Port Granby	235
Jessie Inka De Kol, March, 1906; Ben Hagerman	270
Duchess Echo De Kol, Feb., 1906; R. A. Heron, Billings' Bridge	205
Madam Hartog De Kol, March, 1904; G. H. Wilmot, Kingston	225
De Dikkert Cornucopia, June, 1907; James Seymour	250
Belle Echo Cornucopia, April, 1907; G. A. Brethin, Norwood	235
Dorothy De Kol, April, 1905; H. Smith, Winnipeg	210
Inka Jewel's Echo De Kol, June, 1906; H. Smith	125
Countryman's Cornucopia, Aug., 1907; G. H. Wilmot	170
Beautiful Cornucopia, Aug., 1907; M. Banks, Weston	185
Reta Cornucopia, May, 1908; J. R. Anderson, Mountain View	300
Jessie De Kol Cornucopia, Aug., 1907; A. F. Stevenson, Russell	150
Inka Jewel, Jan., 1899; A. F. Stevenson, Dolly Echo Cornucopia, Sept., 1907; D. C. Flatt, Millgrove	205
Lulu's Cornucopia, May, 1909; D. C. Flatt, Jessie Inka De Kol, Aug., 1909; James Seymour	120
Deborah Cornucopia, April, 1909; T. Curtiss, Fenelon Falls	125
Selma Cornucopia, March, 1909; T. Curtiss	155

A Shorthorn Official Milk Record.

Editor "The Farmer's Advocate":

A registered Shorthorn cow, Rose of Glenside, owned in Pennsylvania, has just completed a year's semi-official record, in excess of all previous Shorthorn records, and one of the largest made by any cow. From March 3rd, 1909, to March 3rd, 1910, she gave 18,075 pounds milk, and 735 pounds butter. Rose of Glenside is 9 years old, and has produced seven calves. She is descended from a line of heavy-milking Shorthorn cows; her dam has a record of 9,470 pounds milk in one year, and her grandam has a record of 10,043 lbs. in one year, and average of 9,137 lbs. per year for six years. Her sire, Belle Boy 2nd, is from a cow with a milk record of over 9,000 pounds in a year, and is sire of Henrietta Clay 2nd, 10,286 pounds milk in one year, as a three-year-old heifer. This cow is owned by Glenside Farm, May & Otis, proprietors, Bradford Co., Penn. She is a cow of large size and good conformation. At the end of her year's work she weighs 1,450 pounds. Cost of grain to produce 1 quart of milk, 85-100 cents—an extremely low figure. Best day's milk, 62.8 pounds; average daily record for entire year, 49.5 pounds milk, 2 pounds butter. And yet some writers claim that there are no milking Shorthorns!

W. ARTHUR SIMPSON,
Caledonia Co., Vt.

In sending out the results of the O. A. C. Dairy School Examinations, Prof. H. H. Dean remarks that the new regulation with reference to dairy certificates for head cheese and butter makers in Ontario factories and creameries, which comes into effect Jan. 1st, 1911, does not appear to have had any effect on the attendance, as there were about the usual number during the recent term.

THE TRADERS BANK OF CANADA

HAS OPENED BRANCHES AT

Haileybury, Porcupine and Matheson

and is prepared to receive collections, documents in escrow, and to transact a General Banking Business, with such specialties as are incidental to a mining region.

STUART STRATHY, General Manager

MARKETS.

Toronto.

LIVE STOCK.

At West Toronto, on Monday, April 4th, receipts numbered 143 cars, comprising 2,878 cattle, 109 hogs, 64 sheep, 115 calves. Quality medium to good; trade slow, exporters being held for Tuesday. Prime picked butchers', \$6.75 to \$7; loads of good, \$6.50 to \$6.75; medium, \$5.50 to \$6.25; common, \$5 to \$5.75; milkers, \$38 to \$68; calves, \$4 to \$8 per cwt. Sheep and lambs, unchanged. Hogs—Selects, fed and watered, \$9.75, and \$9.50, f. o. b. cars.

REVIEW OF LAST WEEK'S MARKET.

Receipts of live stock at the City and Union Stock-yards were not as large as for several weeks. The quality was medium to good, with a few lots and loads of choice amongst them. On Monday, the trade opened up brisk, with prices higher than the previous week, but on Tuesday a reaction set in, and prices were not as good.

The total receipts for the week were as follows:

	City.	Union.	Total.
Cattle	172	165	337
Cattle	2,411	2,776	5,187
Hogs	4,522	1,590	6,112
Sheep	418	238	656
Calves	316	99	415
Horses	—	249	249

The total receipts for the corresponding week at these yards last year were:

	City.	Union.	Total.
Cattle	200	115	315
Cattle	3,626	2,117	5,743
Hogs	2,408	1,042	3,450
Sheep	778	136	914
Calves	475	158	633
Horses	6	143	149

The above figures show a total increase at the two yards of 22 carloads—2,662 hogs and 100 horses—and a decrease of 553 cattle, 258 sheep, and 218 calves.

Exporters.—E. L. Woodward, on Tuesday, bought 183 steers for Swift & Co., weighing 1,200 lbs., for the London market, at \$6.55; 53 heifers, 1,020 lbs., at

\$6.15; 20 bulls, 1,785 lbs. each, at \$5.50; for Liverpool, 83 steers, 1,150 lbs. each, at \$5.95; 9 bulls, 1,500 lbs., at \$5. On Wednesday, he bought 143 cattle, 1,150 to 1,350 lbs., at \$6.40 to \$7.45.

On Monday, Geo. Campbell bought for Morris & Co., 89 cattle, 1,100 lbs. each, at \$5.90 to \$6.65; on Tuesday, he bought 200 exporters, 1,100 to 1,300 lbs., at \$5.75 to \$7.

Alexander McIntosh bought for Gordon, Ironsides & Fares, 157 exporters, at \$6.35 to \$6.75.

Butchers.—Prime picked butchers' sold at \$6.75 to \$7, and one load, 1,290 lbs., bought for one of the abattoirs, at \$7.25; loads of good, \$6 to \$6.50; medium, \$5.75 to \$6; common, \$5 to \$5.50; cows, \$3.50 to \$5.25.

Stockers and Feeders.—Very few of either class are being offered. One lot of 40, 500 lbs. to 900 lbs. each, sold at \$3.90 to \$5.25; and one load of Manitoba feeders of good weights, at \$5.40.

Milkers and Springers.—There was a strong demand for milkers and springers, at prices ranging from \$35 to \$60, and as high as \$70 to \$75 for prime quality.

Veal Calves.—Moderate receipts of calves sold at firm prices, ranging from \$3 to \$8; a very few prime, new-milk-fed calves sold at \$8.50 to \$9 per cwt.

Sheep.—Ewes sold at \$5 to \$6.25 per cwt.; rams, at \$4.50 to \$5 per cwt.; yearling lambs, at \$7.50 to \$9 per cwt.; spring lambs, \$6 to \$10 each.

Hogs.—Selects, fed and watered at the market, \$10, and \$9.70, f. o. b. cars at country points.

Horses.—There was an active trade during last week at the Union Horse Exchange at the Union Stock-yards. Mr. Smith attributed the increased demand to the fact that dealers are becoming seized of the fact that the best class of horses are to be had at the Union Horse Exchange. There were many fresh buyers, and many sales were made of shipments to Ontario points. Another shipment of five carloads was made to the Northwest, and one extra-choice lot of 1,700 to 1,800 lb. drafters, was sold to a railway construction company, at \$250 each. Over 200 horses changed hands, and prices generally ranged as follows: Drafters, \$190 to \$225; general-purpose horses, \$175 to \$200; expressers, \$160 to \$220; drivers, \$100 to \$210; serviceably sound, \$35 to \$85.

BREADSTUFFS.

Wheat.—No. 2 white, \$1.08½; No. 2 mixed, \$1.08. Manitoba wheat—No. 1 northern, \$1.13; No. 2 northern, \$1.11, track, lake ports. Rye—No. 2, 67c. to 68c., outside. Peas—No. 2, 81c. to 82c., outside. Buckwheat—No. 2, 53c. outside. Barley—No. 2, 54c. to 55c.; No. 3X, 53c.; No. 3, 49c. Corn—American, No. 2 yellow, 71½c.; new No. 2 yellow, 67½c.; Canadian corn, 64c. to 65c. Oats—No. 2, 39c., at points outside. Flour—Ontario 90 per cent. patents, \$4.10 to \$4.15, in buyers' sacks, outside. Manitoba first patents, \$5.70; second patents, \$5.20; strong bakers', \$5.

HAY AND MILLFEED.

Hay.—Baled, in car lots, at Toronto, No. 1, \$15 to \$15.50; No. 2, \$14 to \$14.50.

Straw.—Baled in car lots, at Toronto, \$7.50 to \$8.

Bran.—Car lots, in sacks, at Toronto, \$23 to \$23.50 per ton; shorts, \$2 more.

HIDES AND WOOL.

E. T. Carter & Co., 85 East Front street, have been paying the following prices: No. 1 inspected steers and cows, 11½c.; No. 2 inspected steers and cows, 10½c.; No. 3 inspected steers, cows and bulls, 9½c.; country hides, 9c.; calf skins, 13c.; horse hides, No. 1, \$3; horse hair, per lb., 32c.; tallow, per lb., 5½c. to 6½c.; sheep skins, 90c. to \$1.10 each. Wool and raw-fur prices given on request.

COUNTRY PRODUCE.

Receipts of choice butter continue to be light, with prices quite firm. Creamery pound rolls, 29c. to 32c.; creamery solids, 27c. to 28c.; separator dairy, 27c. to 28c.; store lots, 22c. to 23c.

Eggs.—Receipts large, with prices firm, on account of dealers having commenced to put them in cold storage. Case lots are quoted at 21c.

Honey.—Extracted, 10½c.; combs, per dozen sections, \$2.25 to \$3.

Beans.—Market steady. Hand-picked, \$2.15 to \$2.25; primes, \$2 to \$2.10.

Cheese.—Market steady; prices unchanged; large, 13c.; twins, 13½c.

Poultry.—Choice lots of poultry are scarce. Turkeys, 18c. to 24c.; chickens, last year's birds, 20c. to 23c. per lb., fowl, 15c. to 16c. for good hens.

Potatoes.—Plentiful supplies have caused lower quotations. Car lots of Ontario potatoes, on track, Toronto, range from 35c. to 40c.; New Brunswick Delawares, 40c. to 45c.

FRUITS AND VEGETABLES.

Apples are plentiful and cheaper, selling from \$1 to \$2.50 per barrel, a few Spies bring \$3. Onions, per bag, \$1.25 to \$1.35; carrots, per bag, 40c. to 50c.; parsnips, per bag, 65c. to 75c.; beets, per bag, 65c.; cabbage, per barrel, \$1.25 to \$1.50; turnips, per ton, \$6.

Montreal.

In the local market, the situation last week continued about steady. Butchers seemed fairly well supplied after the Easter demand, supplies were light, and no one showed any disappointment there at. The general trend of prices was, naturally, downward, and the stock offered was, naturally, not equal to that of the previous week. Choice steers sold at 6½c. to 6¼c. per lb., fine at 5¼c. to 6c., good at 5c. to 5¼c., medium at 4¼c. to 4½c., common at 3c. to 4c. per lb. Hogs—10½c. to 10¼c. per lb. for select stock, weighed off cars. Supplies continued light and demand fair. Offerings of sheep and lambs were small, and prices held about steady. Sheep sold at 5¼c. to 6c. per lb. There were some spring lambs offering, and prices ranged from around \$5 to \$10 each, as to size. Calves ranged from \$3 to \$6 each, the quality being mostly poor.

Horses.—Dealers report having done a very fair trade of late, heavy horses in particular being in demand, carters requiring them for the opening of the season's business. Farmers, too, have been making purchases. Supplies none too plentiful; market about steady. Heavy draft, weighing 1,500 to 1,700 lbs., \$225 to \$300 each; light draft, 1,400 to 1,500 lbs., \$180 to \$240 each; light animals, 1,000 to 1,100 lbs., \$100 to \$150 each; inferior, broken-down horses, \$50 to \$100 each, and choice saddle or carriage animals, \$350 to \$500 each.

Dressed Hogs.—High and firm, 14½c. to 15c. per lb. for fresh-killed, abattoir-dressed stock. Lard, 16½c. to 17½c. per lb. for pure, and 11½c. to 13c. for compound.

Potatoes.—Prices continued low; supplies liberal; consumption quite large; market about steady. Green Mountains, being quoted at 35c. to 40c. per 90 lbs. carloads, on track.

Apples.—The tone of the market has been decidedly firmer of late, and there have been some advances in price. Some No. 2 Spies sold at \$2 to \$2.50 per barrel, and some No. 3 Spies at \$1.75 to \$2.10 per barrel; No. 2 Baldwins and Ben Davis sold at \$1.75 to \$2, and No. 3 at \$1.50 to \$1.60 per barrel.

Eggs.—Some dealers claimed last week that purchases could be made in the country at 18c. per dozen to 18½c., and that eggs could be purchased here at 20c. per dozen, wholesale. Others claimed that they were still rather higher than the figures mentioned. On Monday, report said steady, but easy in tone.

Butter.—Very little fresh-made creamery is yet being received. It was stated that 32c. had been paid for some, in the Eastern Townships, and that some was bought at 29c. Finest held creamery was selling here at 28c. to 28½c., and some say that 29c. might be paid. Inferior quality might be had at prices ranging down to 24c. Dairy butter was in good demand, at 22c. to 24c. per lb.

Grain.—No. 2 Canadian Western oats, 43½c. to 44c. per bushel, carloads, store; No. 3, 42½c. to 43c.; No. 2 white Ontario oats, 42½c. per bushel; No. 3, 41½c.; No. 4, 40½c.; No. 3 barley, 60c. per bushel; No. 4, 58c., and feed, 56c.

Flour.—Demand fair and prices steady, at \$5.80 per barrel, in bags, for Manitoba first patents; \$5.30 for seconds, and \$5.10 to \$5.60 for patents, and \$5.10 to \$5.25 for straight rollers.

Feed.—Demand very active, and prices steady, at \$22.50 to \$23 per ton, in bags, for Ontario bran; \$23.50 to \$24 for middlings; \$31 to \$33 for pure grain mouille, and \$27 to \$29 for mixed

mouille. Cotton-seed meal, \$39 to \$40 per ton.

Hay.—Market firmer, at \$15 to \$15.50 per ton for No. 1 hay; \$14 to \$14.50 for No. 2 extra; \$12.50 to \$13 for No. 2; \$11.50 to \$12 for clover mixed, and \$10.50 to \$11.50 for clover.

Seeds.—Fair demand, at \$5 to \$7 per 100 lbs., for timothy; \$18 to \$20 for red clover, and \$14 to \$17 for alsike, f. o. b. Montreal; alfalfa, 23c. to 25c. per lb., according to quality.

Hides.—Market steady. Hides, not inspected, and with the horns and tail off, 10c. per lb.; Nos. 1, 2 and 3 hides, 10½c., 11½c. and 12½c., respectively, per lb. Montreal; sheep skins, \$1 to \$1.25; lamb skins, 10c. each; calf skins, 13c. and 15c., and horse hides, \$1.75 and \$2.50 each. Tallow, 1½c. to 5c. per lb. for rough, and 5c. to 6c. for rendered.

Chicago.

Cattle.—Steers, \$6.25 to \$8.50; cows, \$4.75 to \$6.50; heifers, \$4.25 to \$7; bulls, \$4.50 to \$6.25; calves, \$3 to \$9.25; stockers and feeders, \$4.75 to \$6.75.

Hogs.—Choice heavy, \$10.90 to \$11; butchers', \$10.80 to \$10.90; light mixed, \$10.50 to \$10.70; choice light, \$10.70 to \$10.85; packing, \$10.75 to \$10.90; pigs, \$10.15 to \$10.50; bulk of sales, \$10.70 to \$10.85.

Sheep and Lambs.—Sheep, \$7.50 to \$9.10; lambs, \$7.50 to \$10.25; yearlings, \$7.50 to \$9.10.

Buffalo.

Veals.—\$6 to \$11.
Hogs.—Heavy, \$11.25 to \$11.80; mixed, \$11.20 to \$11.80; Yorkers, \$10.90 to \$11.20; roughs, \$10.25 to \$10.50; dairies, \$11 to \$11.15.
Sheep and Lambs.—Lambs, \$7.25 to \$10; a few, \$10; yearlings, \$9 to \$9.25; wethers, \$8.25 to \$8.60; ewes, \$7.50 to \$7.75; sheep, mixed, \$4 to \$8.

British Cattle Markets.

Liverpool and London cables quote live cattle (American) at 13½c. to 14½c., dressed weight; refrigerator beef, at 11c. to 11½c. per pound.

No doubt Dennis appreciated to the full the excellent qualities of Celia, his wife, but he occasionally indulged in a sigh for the liberty of his years of single blessedness. "Yis, 'tis a good wife she makes me," he said to a returned traveler, during whose absence the wedding had occurred. "And we was coorting sixteen years. Aileen an' all o' the rest said 'twas time I married, or Terry Leahy would be getting the prize away from me."

"Well, man, you've no regrets, I hope?" said the friend, who had just enjoyed a delicious supper at the hands of Celia. "She's a fine woman."

"Didn't I tell you that?" said Dennis, impatiently. "The only thought I ever have is wance in a while whin it comes over me that I might 've waited another year, and still have got her; for Terry was not near so high in her estimation, afther all, as thim women made out 't' me."

"A man in love is always hurrying, hurrying, ye mind."—Youth's Companion.

"The late Richard Watson Gilder," said a New York poet, "always opposed the reading of light literature. A poet, he said, could not read such literature without corrupting his literary style."

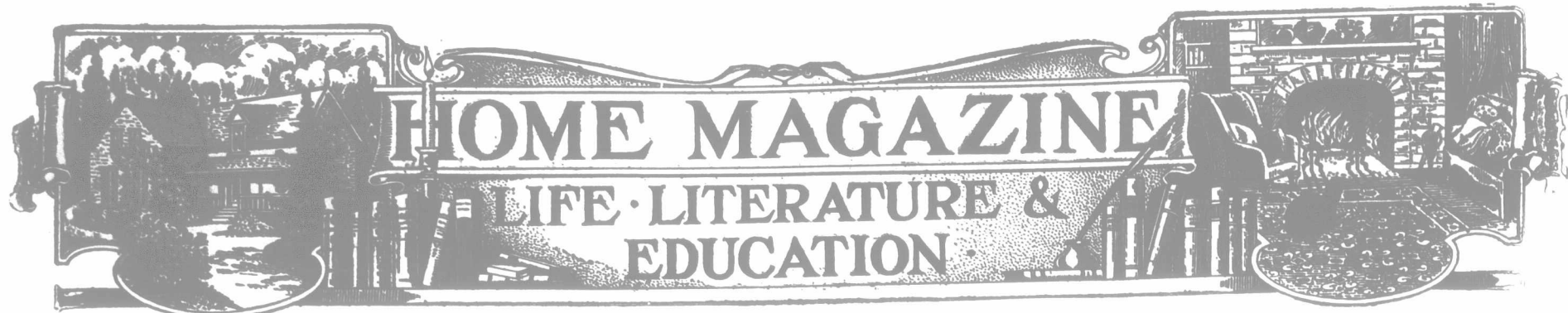
"He once told me that the poet, in this respect, was like Brown's parrot."

"Brown bought a parrot for \$20 from a pet-stock dealer, and a week or two later returned to the shop and insisted that the bird be taken back."

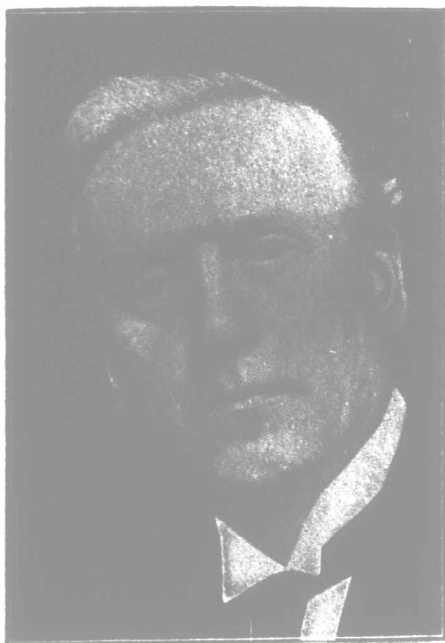
"What's the matter with it?" the dealer asked.

"'W-w-hy,' said Brown, the durned c-c-ritter st-stutters."

Mamma—"Does your ear ache, Robbie?"
Robbie—"No, mamma." Mamma—"Then why have you put cotton wool in it?"
Robbie—"Well, mamma, you keep telling me that what goes in one ear comes out of the other, so I've plugged one of them up."



Men of To-day.



Premier Asquith.

The man at the helm in the political crisis in Britain.

Premier Asquith's demands in regard to the House of Lords are: (1) That the Lords be prevented from rejecting or amending a money bill, leaving the control of finances completely with the House of Commons. (2) That the Lords shall not have the right to kill any bill that has passed the House of Commons. Otherwise that any bill that has been passed by the Commons in three successive sessions shall become a law, provided two years have elapsed from the time the bill was introduced. (3) That the Parliament shall be limited to a term of five years.

The Lords, in deep discussion in regard to self-reform, are evolving various plans, through some of which appears rather patently an endeavor to make such changes as shall practically retain the power and status of the House, while making such concessions as shall placate the public. Lord Rosebery's resolutions are in brief as follows: (1) That a strong and efficient chamber is necessary to the well-being of the State and the balance of Parliament. (2) That a second chamber can best be obtained by reconstituting the House of Lords. (3) That a necessary preliminary to such reform and reconstitution is the acceptance of the principle that possession of a peerage shall no longer in itself give the right to sit and vote to the House of Lords. Subsequently, Lord Hugh Cecil has proposed to accomplish the reform by making the number of members 400, 350 to be appointed by the King from the hereditary Peers, and 50 to be nominated by the Government.

In the meantime, confidence in Premier Asquith, as the man at the helm in the greatest political venture of modern times, is steadily returning.

That the new public-school primer was the subject of a great deal of adverse criticism at the convention of the Ontario Educational Association in Toronto last week, could be a matter of little surprise. Almost everyone who has anything to do with the teaching of young children has recognized that this reader is too

difficult for beginners, that it is lacking in system, and too plentifully provided with rhymes and jingles, which the children readily learn in a singsong "by heart," thus missing the educative value, both in word, recognition and expression. The Educational Convention is a power in things pedagogic, and no doubt the primer will soon have to go. The other readers also came in for a share of criticism.

Halley's Comet, which will soon be visible to the unassisted eye, has visited the earth twenty-four times previously since it was first recorded in 12, B.C. It has at all times been hailed by the superstitious as an evil omen, and flaming swords, rows of battle-axes, human faces with streaming hair, hues of blood, have been described in it by active imaginations. In 837, in the reign of Louis I., a chronicler of France wrote: "In the midst of the holy Eastertide a phenomenon always baleful and of evil portent appeared in the sky. As soon as the Emperor, who was very watchful of such phenomena, had perceived it, he no longer had a moment's peace of mind." In April, 1066, when William the Conqueror was invading England, it was again in evidence, and the historians of the time recorded that, "The Normans, guided by a comet, are invading England." Matilda, wife of William, also made note of the event, by picturing the comet on a piece of tapestry, which may yet be seen at Bayeux.

Most celebrated of all the appearances of Halley's Comet was, perhaps, that of 1456, three years after the capture of Constantinople by the

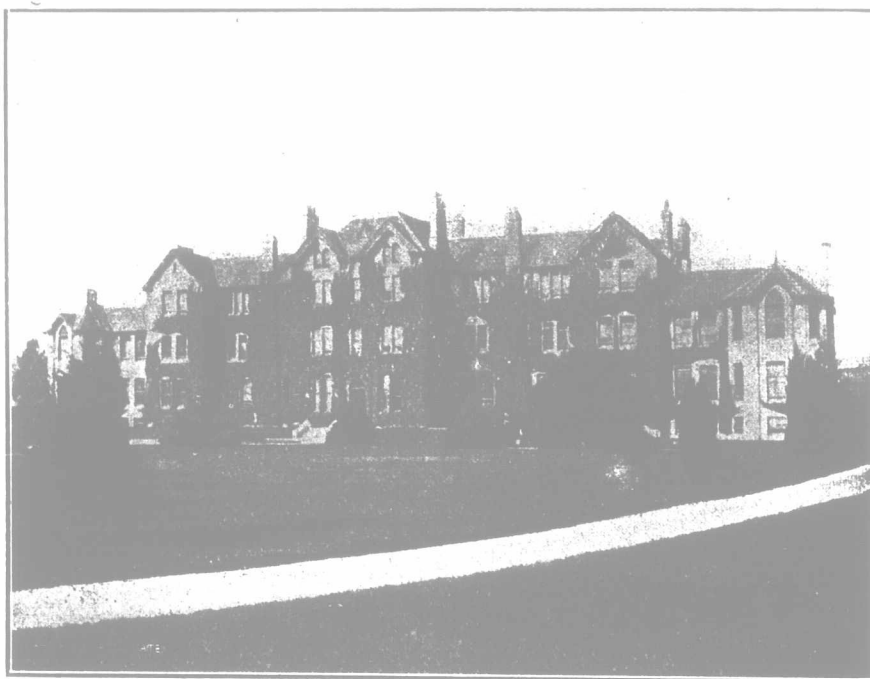
by collision has greatly decreased, and to-day the advent of Halley's comet upon the heavens is generally looked upon as affording one of the rare opportunities of a lifetime to those interested in natural phenomena.

Our English Letter.

VII.

THE GOSPEL OF PREVENTION.
How it is Preached and Practiced at Star Cross.

I have at last been able to fulfil a promise which I had made to myself that during the first fine days of early spring I would certainly take a trip over to Star Cross, with the especial object of visiting an institution which had often before attracted my attention from the window of the railway carriage, but which I had mistakenly understood was devoted to a phase of philanthropic effort other than that in which our Women Workers of Canada have taken and are continuing to take a practical interest, viz., the care and training of the feeble-minded. I remembered that at the annual meeting of our National Council of Women, held at Ottawa in 1908, the report had stated "that from Ontario and the Eastern Provinces had come a strong appeal for the segregation of those whose liberty constituted a menace to our future generations," and that in the statistics given by Dr. Helen MacMurchy, at the request of the Government, the known cases of those requiring isolation and care in the Province of Ontario alone amounted to 1,760, counting men, women and girls; appalling figures, when we con-



Training Institution for the Feeble-minded, Star Cross, Devon, Eng.

Turks. So great was the universal uneasiness of the time, and the terror with which the heavenly phenomenon was perceived, that "some died of fear; others grew sick." Men trembled for the safety of Christianity, and Pope Calixtus III. urged the faithful to repeat the Angelus with greater fervor to ward off the comet and the Turks. As a consequence, the custom of saying this prayer has spread and been preserved.

Since it has become known that comets have orbits, fear of accident

sider that in the near future these figures will be, not can be, doubled and trebled, unless our Government takes immediate steps to prevent such a rapid increase of undesirables, and this is what we have reason to hope they will do.

I recalled, also, that it had been wisely said by a speaker at those Ottawa meetings, that if we had to epitomize in one word the aim of the philanthropic movements of the day, it would be prevention, so as to stop at the source many of the streams of

evil that now fill our prisons and asylums, and blight the healthy growth of our young nation.

With the echo of these words in my mind, I put myself in communication with Mr. Locke, Superintendent of the Western Counties Training Institution, who most kindly arranged that I should see the pupils in every department of their training, and learn every detail of the management of this wonderful home. In this work of beneficence Mr. Locke is assisted by his widowed sister as matron, and if ever work was leavened by love and the greater wisdom which is one of love's best products, it is this work of theirs in the interests of the defective children entrusted to them.

Speaking in approval of the efforts being made in our Dominion for the custodial care of our feeble-minded women in Canada as a protective measure for themselves and the community at large, Mr. Locke said that all who know anything of the question must agree that they should be retained for life, that although the initial expenses would necessarily be great, it would be more economical in the long run, for many capable of contributing to their own maintenance under supervision, had unfortunately not the mental or moral power to stand alone in the world, and this surely, irrespective of worse consequences, is a sufficient argument why measures should be taken to provide for these unfortunates continuous shelter, as well as training for future usefulness.

THE INSTITUTION FOR THE TRAINING OF THE FEEBLE-MINDED.

I am sending some illustrations to "The Farmer's Advocate," in the hope that a place for one or more of them, at least, may be found, to serve as a type of the remainder. These represent the boys and girls engaged in the various branches of the industries through which, if they are able to respond adequately to their training, they can contribute to their own support, even if they cannot become wholly self-supporting in the future. Although the pictures do not appear to convey it, there was hardly a single face, as I saw them, which did not carry its own little message of weakness, its mental lack, showing the need of a stronger hand than their own to guide them; an unspoken plea for forbearance should they find their lessons hard to learn.

The wonderful success which yearly results from the training of these defective little ones is as largely due to the ready response to this plea on the part of their teachers, as to the wise methods employed at the institution as a whole. Each pupil is individually considered, and treated according to his or her mental condition. In some cases, where the senses of sight, hearing and touch are impaired, if not wholly lacking, the difficulties of the instructor are increased fourfold, but as one of the most workable theories in the development of the feeble-minded is constant occupation, or supervised play, with a view to prevent the pupil spending his time aimlessly, there are provided such minor industries as the making of cardboard boxes, the storing of the brooms and brushes made by cleverer fingers than their own, the making up of small bundles of firewood, the twisting of the strands of fibre through the rope-making machine, and sundry simple

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out-of-door tasks, healthful as well as useful. Thus the listless and apathetic are stirred to activity, the mischievous and noisy restored to order, and the gospel of prevention successfully preached and practiced.

Whilst the importance of manual training is emphatically recognized in the education of defectives, scholastic instruction is by no means overlooked. There are some children who seem wholly incapable of learning ordinary school lessons, and who require years of patient effort to enable them to master the alphabet, or to count up to 20; yet if put to a handicraft will, in much less time, learn to make a pair of boots, a suit of clothes or a fancy basket. It is then the best wisdom to withdraw them from schoolwork altogether, and use in their development such powers of mind and body which remain to them. The system followed at Star Cross allows of a chance being given to every one of the 300 inmates to develop along the lines for which they are best fitted. It is not merely a sanctuary in which they can be safeguarded, a school in which the merest germ of intelligence can have its chance of development, but a home in which these waifs of humanity cannot merely be placidly content, but merry and joyous as are their more fortunately endowed brothers and sisters in the outside world.

H. A. B.

Hope's Quiet Hour.

Seeketh Not Her Own.

Charity . . . seeketh not her own.—1 Cor., xiii: 5.

St. Paul holds up the picture of perfect Charity—or Love—in this wonderful chapter. Let us look to-day at one sign of real love—"seeketh not her own." In his letter to the church at Philippi, the great Apostle tells his friends to "look not every man on his own things, but every man also on the things of others"; and he grounds his advice on the example of the Leader of men, Who was not satisfied to be on the Throne of God, but was eager to pour Himself out in self-forgetting service, caring not for His own possessions, but for the good that others might gain through Him.

It is a great mistake to think that unselfishness is scarce. There are plenty of people, well known to the public, who are so eager in their glorious attempts to help their fellows that they are an inspiration to the world.

There is Dr. Wilfrid Grenfell, for instance, who has been much-talked-of lately. He does not consider the hardships on the Labrador coast worth mentioning, as compared with the keen pleasure of spending time and strength and talents in helping poor, ignorant fishermen. In looking not for his own advancement, but for theirs, he has gained world-wide reputation—which he was not seeking—and we cannot doubt that God's outward blessing on his life-work is only the indication of the dearer, richer blessing which makes the heart glad with a joy that can never be expressed in words. Seeking not his own, but others' good, he acknowledges that there has been some effort about the leaving home, but that is soon swallowed up in the surprise of finding, as he says, that "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." From this he argues that God intends His servants to enjoy their work, and considers that if they find it a misery, they ought to do their best to get out of it.

Of course, we all know that the work done unhappily is usually of very poor quality; and yet anyone who is really seeking not his own good, but the good of others, can learn to enjoy any honest work, especially if—like Dr. Grenfell—it is his habit constantly to ask God to direct him and set the daily task plainly before him.

A lady in Ohio spends all her spare time each year in preparing for Christmas. This has been her habit for the last 20 years. She found plenty of willing assistants, as soon as her work became known. Rich children sent dolls and wagons, toy pianos and fire engines—

hosts of treasures for the poor children. In the course of years a band of boys and girls gathered about this lady "Santa Claus." The boys hammered and painted and glued—restoring broken toys to health and beauty. The girls dressed dolls enthusiastically and carefully—with clothes that would "come off."

Careful lists of children and their special "wants" were made out, with the help and advice of those who knew—teachers, nurses, policemen, etc. The infection spread wider and wider as the years slipped past. Some merchants offered toys at cost price, others gave rem-

earnest efforts to be fruitless, found that he considered her pleading had been the strongest earthly instrument in God's hands for his reformation. Seeds sown silently take root in secret darkness long before they are visible to the sower. One who goes weeping on his way, sowing good seed in the soil of a friend's heart, will certainly come again with joy, bearing full sheaves as his reward.

"What is that in thine hand?" said God to Moses. It was only a bit of wood, and yet—used for God, at His command, and according to His directions—it was always enough for the present needs of the great leader and his



Military Drill, Star Cross.

nants of silk and lace for doll-dressing. One box factory gave 700 candy boxes last year, and did not forget to grace the gift with the delightful message: "Thank you for the privilege of contributing."

The children never know where the gifts come from—the Santa Claus mystery is carried out to the full, but the giver has the delight of making hundreds of little hearts very happy. She "seeketh not her own," and so God seeks it for her—is it likely she can miss any good things, when her affairs are His special business? As Walt Whitman says:

"Ah, little recks the laborer,
How near his work is holding him to
God,
The loving Laborer through space and
time."

It opened a way through the sea, or brought water from a rock. If God could use a rod to do apparent impossibilities, He can certainly use you. It is both foolish and wrong to shrink back from any attempt to influence souls for good, foolish to say: "I am not wise enough nor good enough to do anything." Of course you are not—nor is any other man or woman—and yet God often works these marvellous spiritual miracles by means of the helpless hands of tiny children. If you are a rod in the hand of One mightier far than Moses, if you are eager to be used by Him, seeking not wealth or pleasure or reputation for yourself, then He is using you every day. If such be your constant attitude towards life, then you will live successfully—with a success that gives real pleasure



Wood-carving Class, Star Cross.

And those who are trying to secure good for others, succeed far better than they know. Some time ago a lady told me that when she was a child she used all her influence to try to induce a young man, who was a great friend of her family, to sign the pledge. He seemed to be an utter slave to the drink habit, and all her efforts and childish prayers appeared to be powerless for good. Then—quite suddenly—he broke the chain that bound him, and began a new life, which won for him the approval of God and men. It was not until years after this splendid change in his habits had begun that the friend, who had imagined her

to God, and that will shine brighter and brighter when the searching light of Death's angel makes mere worldly success look forlorn as a pile of dead ashes.

What are you living for?—you must have some object for which you are spending these precious years which fly so fast. According to Drummond, a farm or an office is not a place to make crops or money, but to make "men." He says: "All the little things about our daily toil are the framework and scaffolding of our spiritual life." So the successful days are not the days when we have made most money, but the days when we have climbed nearer to God—

when we have trusted Him in disappointment and anxiety, when we have endured pain or sorrow with cheerful courage, when we have forgotten our own wants in unselfishly entering into the joys and sorrows of others. If we are only living for ourselves—even though it be for our own spiritual perfecting—it is doubtful whether there is any profit to the world in our existence here. "No man liveth to himself," says the Apostle. Why, even the little drops of water, the particles of earth and the blades of grass—everything—exist for the sake of others. Shall man—the highest and noblest of God's earthly creations—lag behind in this generous purpose of helping everywhere.

And yet, even the desire of "helping" can become an evil if it is not balanced by other virtues—the virtue, for instance, of "minding one's own business." To offer advice which is not wanted is a common way of doing harm. Tact has been defined as "the art of withholding, on proper occasions, information which we are quite sure would be good for people." And it is possible to be so officious in helping others that we rub them the wrong way; and, instead of getting into touch with them, we rouse their irritation and make them dislike us as meddlers. The "Divine gift of common-sense" is worth a great deal to earnest Christians, who desire to "adorn the doctrine of God" by the outward sign of a considerate tactfulness, which knows intuitively how to get near to the heart of another. Love is the only inspirer of acceptable service to God or man, and Love is instinctively courteous,—looking for good.

"Courtesy is the eye that overlooks your friend's broken gateway, but sees the rose that blossoms in his garden." We too often see—and talk eagerly about—the "broken gateway" (his little defects and faults), and overlook the beauty and fragrance of the blossoming "rose" (his kindness, patience and courage).

"Indeed, we meant well—the world would be a pleasant place to live in if we could also remember that most everybody else means well, too!"—(Margaret Deland.)

DORA FARNCOMB.

The Beaver Circle.

[All children in second part and second books, will write for the Junior Beavers' Department. Those in third and fourth books, also those who have left school, or are in High School, between the ages of 11 and 15, inclusive, will write for Senior Beavers'. Kindly state class at school, or age, if you have left school, in each letter sent to the Beaver Circle.]

The Haunted Hollow.

[Written by Erle D. Radcliffe (age 15), Granton, Ont.]

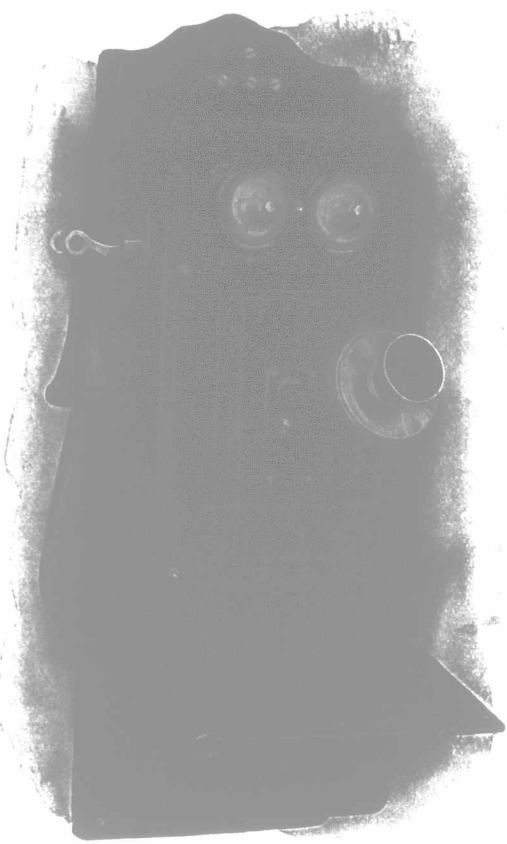
The cold, November wind blew from the east in a steady sweep, across the level plains, around the winding creek, and up the hill crowned with bare woods, and over the other side into Haunted Hollow. The sky was dark with drifting clouds that blew before the wind, but, now and then, whenever the canopy broke, the moon shone out timidly and falteringly as if afraid to shed her silvery rays upon nature in commotion. Whenever the moonbeams shone, they disclosed to view in a shadowy way, the creek, the flats, the wood-crowned hill, and the Hollow, with its white stones, narrow valley, and rugged stream bed, now dried up.

The Haunted Hollow was reputed to be the scene of many a gambol of the spectre folk who frequented it. Long ago, when the country was a wilderness, a poor old traveller had been murdered there, and since then, the people said, he came back often to visit the place.

In the Hollow on this night were two cattle, one an old cow of several years, and a pretty calf, with snowy fur and sturdy legs. They were asleep in the dried-up stream bed, scarcely visible in the deep cut. They were the property of old Ephraim Marsh, an old bachelor who owned the large farm in which the Hollow was situated. Ephraim's chief love was for money and his two dogs, Nip and Rollo, the best dogs in the country. He was a timid man, and al-

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What is the Lesson ?

The lesson to be learned from the experience referred to is that every rural community should own its own telephone and control its own system, and be able to give telephone service at cost, if necessary, in order to make the system complete, by including every possible resident in the district.

If you are interested, and there are hundreds of new companies and associations being formed to erect lines this Spring, write us and we shall be glad to furnish you with full information. Ask for our NO. 2 BULLETIN, which will give you complete instructions in regard to the building and equipping of a telephone line.

Independent Telephones.

Independent telephones are making a great record. Their quality is winning the way to those companies that had been using nothing but other makes. If you are extending your lines this Spring, or adding any telephones to your system, why not give our telephones a trial, and satisfy yourself in regard to their quality? This is the way to make sure that you are getting the best value for your money in the telephone you are now using. We are prepared to stand by the result of your test in actual service. We seek a comparison with other makes. Let us have a trial order; and, in any event, let us quote you our prices.

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The Spring is the time that there is a great demand for telephone construction materials, and we are prepared for the rush that has commenced. We can ship from stock anything in the way of line wire, insulated wires, top pins, side blocks, insulators, etc. We make a specialty of prompt shipments and first-quality goods. Let us quote you if you are wanting anything.

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ways carried a pistol in his pocket; partly to keep himself brave, and partly to defend his wealth in case of need.

On this night, Ephraim was having a hard time to get all his cattle and sheep corralled; Nip and Rollo helped him, but it took a long time, and as soon as he had finished, the dogs struck off into the darkness. Ephraim counted the cows, but found that Whitey and her calf were missing. They would probably be back, so Ephraim went in, lit his pipe and prepared his supper. After supper he smoked two more pipefuls and then went out, lantern in hand, to see if Whitey were back. But Whitey was not back, so he started off to the pasture to find her. Off across the fields he tramped, now calling Whitey, now the dogs, and whistling at intervals to keep brave. No Whitey was visible in the pasture, so, remembering Whitey's tricks of old, he went to the turnip field and to the orchard, but still did not find her. He at last concluded she must be in the woods, so he went that way, up the hill and over the fence into the woods, where the wind whistled through the groaning limbs of the elms, and made the dried leaves skirl ahead and rustle. Far to his right he heard the baying of Rollo, his dog, and now and then Nip's bark could be heard. Far ahead an owl hooted, and Ephraim stopped, shuddered, and tried to light his pipe from the lantern, putting both out.

Now he was in a fix. If he went on he would risk meeting the ghost; if he went back, Whitey would be likely to catch cold. He went on a step, stopped and looked around, went on again, only to hit his shin against a stump and tumble into a water hole. He then struck on again in the same halting, hesitating way. The tax on his brain grew greater and greater every step. The hollow was before him now; he could see every stone in a vague way. The owl hooted, nearer this time, and Ephraim started again, his limbs shaking and his whole frame quivering. He clutched the lantern with one hand and put the other on his hat to keep the wind from blowing it away. The baying came nearer and nearer, but it did not console him any, for he was too much afraid to hear it. Every few feet he stopped, and then plunged on again.

Suddenly a stump confronted him, and he stopped short and looked around, and, as he did, he saw what made his body stiffen with fear, his eyes start from his head, and his hair bristle. There in the faint light, coming down the narrow valley and gliding from one side to the other, but still coming nearer, came an object, hazy, silent, awesome, the ghost of the Haunted Hollow. On it came, nearer and nearer, and stopped on a stone just where the deed of years ago took place. Ephraim was by this time almost mad with fear. He strove to yell, but the sound stuck in his throat; he tried to run, but his feet would not move; his lantern dropped from his hand and his teeth chattered. The ghost seemed to realize that it was not yet eleven o'clock, for it never budged, seeming to wait for something. From time to time it moved slightly, and every move made Ephraim's fear increase. The baying of the dogs came nearer and nearer, but to Ephraim they never would come, Ephraim tried to plan an escape, but no opportunity seemed reasonable. If he ran, so would the ghost; if he even moved, the leaves rattled; if he did not run or move, he would be chilled to death.

The time moved on slowly and drearily, every minute seeming an hour to poor Ephraim; the wind swept down the slope and whistled through the trees, the water gurgled in the brook, but still the ghost sat there, and still poor Ephraim shivered and tried to reason out why the dogs did not come, hoping if they did come they would come near enough to call. They were clearly after some game, for their baying was fierce and constant, though miles away as yet.

Suddenly the baying stopped, and Ephraim felt as if it were all over with him. The moon peeped out and shed a silver gleam over the forest, and lighted up in uncertain light the narrow valley, with its dark, swaying trees, black stumps, gray stones, and glinting water. Ephraim felt some better, but so did the ghost, for it proceeded to glide to a position from which it could gain a more distinct view of the valley, namely, to an

old stump. Ephraim thought it might go to sleep, and prepared to run. Time and again he watched it and tried to escape, but just as he was going to move the ghost would give a start and scoot off a few feet and then settle down again. It appeared to be having bad dreams if it were asleep.

Ephraim's terror was gradually growing less, but no person could feel very pleasant in such company. He cautiously leaned against the stump and listened and waited. The woods were silent as death, except for a clank now and then which Ephraim blamed on the ghost, and which the ghost evidently disliked, as it turned about sharply every time it occurred. Ephraim wondered was it ever going to move off, but it appeared quite contented.

All at once there was a great rustling of leaves, and an animal rushed through the forest toward Ephraim, taking his attention from the ghost. As it appeared between the trees, Ephraim recognized a fox, and an instant desire came on him to avenge the loss of his hens. It was, evidently, going to his yard again, and was in a hurry, as it ran with tongue lolling out, ears laid back, and tail rigid. Ephraim thought of the pistol for the first time, and fired after the retreating fox.

With that report, all the woods awoke. The fox gave a howl and fairly flew over the hill; a loud baying proclaimed the presence of Nip and Rollo; and a great clanking announced Whitey as she got up and bawled to her calf, which answered her. And the ghost, the supernatural, awesome ghost, flew over the tree tops with a whirr of wings, in a very unghostly manner, crying, "Whooh! Whooh! Whooh!" at the top of his voice.

Ephraim stood a moment with the smoking pistol in his hand, then slowly pocketed it, picked up the lantern, and, luckily, finding a match, lit both it and the pipe and started off for home, driving Whitey and the snowy calf, and followed by Nip and Rollo frisking around him. He went for some time in silence, then, as the pipe warmed him up, and he saw things in a more cheerful light, he said, "Well, Nip; well, Rollo; if any man in this township had said I was skeered of an old white owl, I would have called him something, but this proves it." And he gave a chuckle.

Some Questions for the Beavers.

No doubt you have noticed that on different mornings, almost as soon as you awoke, you heard "new" birds, one morning a robin, another a song-sparrow, etc. The day before you had not noticed these birds. Here they were all of a sudden. Now, can you tell the reason for this? Where have they been? How did they come to you so suddenly? Which is your favorite bird? Why? Are birds of any use? Of what use? Send answers to Puck.

The Roundabout Club

The Last Competition of the Season.

Results of Competition IV, will be published at an early date.

In the meantime, write on your choice (one topic only) of the following:

- (1) The Fall Fair, and How to Improve It.
- (2) My Library.
- (3) Essay on Spring.
- (4) Wild Birds: Their Relation to the Farmer.
- (5) Frogs and Their Habits.
- (6) Humorous Essay on Weeds.
- (7) The Rural-school Teacher.

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"Yes I have," protested the child, "and they are lined with kittens, too."

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The Ingle Nook

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

Ingle Nook Competition.

"MY VEGETABLE GARDEN."

Exceedingly satisfactory papers on this subject were sent in; in fact, no essay was marked less than 70 per cent. The three highest, however, were placed at 90 per cent. Others, perhaps, gave more detail, but in point of general working principles, terseness, and practicability, these three were considered most worthy of the prizes. The writers are "Nydia," Bruce Co., Ont.; "The Woman with the Hoe," Lambton Co., Ont.; "Graybird," Grey Co., Ont.

In reading these essays, kindly keep the locality in mind. You see, allowance must be made for difference in climate. It is only natural to suppose that seeds may be planted earlier in the south of Lambton County than farther north in Grey County.

Other essays will be published later, as nearly all are much too good to be consigned to the w.-p. b.

My Vegetable Garden.

My vegetable and small-fruit gardens are one, enclosed in a space almost two hundred and fifty feet square. The raspberries, currants, etc., grow at one side; then there are four tracts of land, each two hundred and fifty feet long by eighteen feet wide. The first was an old strawberry bed; the second a new strawberry bed; the third, last year's vegetable garden; the fourth, early-potato ground. Last fall, the old strawberry bed was well manured and plowed, and here the potatoes will grow this year. The new strawberry bed gives us our summer's fruit; the vegetable garden will be planted with strawberries for next year, and the potato ground of last year is my vegetable garden this year. This rotation is practiced year by year. The fertility of the soil is kept up by a liberal application of manure.

The men usually manure and plow the garden in the autumn, then, as early as possible, it is cultivated and harrowed in the spring, and my work begins. I stretch my line to indicate my first row, and, with the garden rake, work up a good seed-bed directly under the line. When ready, I plant my seed and move to the next row.

My seed is nearly all home grown, with the exception of celery, cabbage, cauliflower, and any new varieties I may wish to try. A few of the best-formed onions, carrots, beets and turnips, of the previous year, were planted last spring, and yielded large quantities of seed, of which only the best is kept. There is always a small row of peas, beans and corn grown, from which none are gathered during the bearing season. The choicest seeds are picked from these when ripened, and are kept for seed. Growing your own seed in this way is very interesting, as well as profitable, because, by careful selection, you can secure finer seed than any of our seed houses will furnish.

My garden implements consist of a line two hundred and fifty feet long, tied to two sharpened stakes, which are easily driven into the ground; a trowel, very useful in transplanting; a hoe, a rake, a roller, a wheel hoe, and a small seed drill, holding about one ounce of seed. This little drill is pushed along the tightened line, and it makes the hole, drops the seed, and covers it up. Then go over it with roller, and the garden is planted.

The rows run east and west, and are eighteen inches apart, so that there is sufficient space to cultivate with a wheel hoe. The first and second rows are planted with onions—sets and multipliers; the third, fourth and fifth rows are planted with New Red Wonder onion, carrots and beets. The sixth row, for the first sixty feet, is planted with Early Milan turnips, and the balance of the row is left to be planted with turnips at intervals of two weeks. The seventh row is planted with

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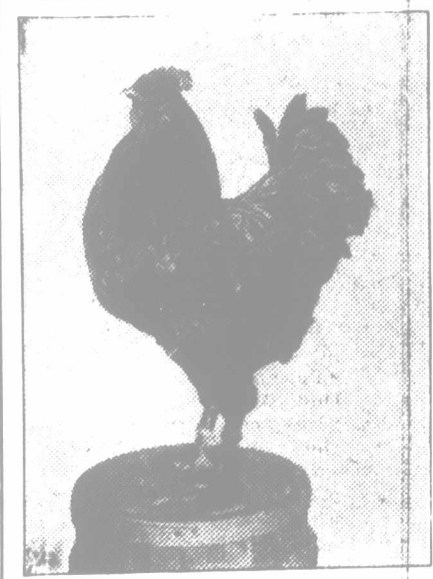
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Windsor Butter Salt

Please Mention this Paper.

radish, lettuce, beans, peas, and corn. The next three rows are reserved to be planted the same as row seven, at intervals of two weeks, until July. The eleventh row grows cabbage and cauliflower. The twelfth row grows tomatoes and celery.

The pumpkins and cucumbers are planted through the potatoes, care being taken not to disturb the vine when digging potatoes. The parsnips are planted between the rows of currants and raspberries, so they may remain in the ground over winter and not be disturbed with the plow. In planting parsnips, radish seeds are put into the seed drill with them, as the parsnips are so slow to germinate, the weeds get a start, but as soon as the radish germinates, cultivation may begin, and the weeds do not get a start.

Experience has taught me that a few seeds of almost every vegetable may be sown as early as the ground can be worked, beans and corn included. If a frost does come, the tender vegetables can be protected by straw or old sacks.

If your seeds do not germinate, and there are vacant spaces, you can transplant any vegetable, and can have all rows complete.

Cultivation is the great secret of a good garden. As soon as growth begins, cultivation must begin. Never let the weeds get a start. If the weeds are held in check each year, they soon decrease. But vegetables need more than keeping down weeds. The more the earth is loosened and kept cultivated, the more the vegetables grow, whether we have rain or not. NYDIA.

Bruce Co., Ont.
As Nydia has noted, horse cultivation is very desirable. Some prefer to have garden rows run north and south.

(Prize Essay.)

I wonder how many farmers' wives are sitting to-day conjuring up visions of their garden that is to be this summer. Rows of tempting beets, mild onions, tomatoes red and juicy, luscious watermelons—everything that makes one's mouth water to think of. But, alas and alack! how much easier do vegetables grow during March, in one's imagination, than during July, in the sun-baked ground. How many of those gardens planned so enthusiastically this spring will contain nothing but anemic vegetables, struggling through a mass of thrifty weeds?

As I have had considerable success with my garden, in spite of the serious handicaps of inexperience, and the usual overwhelming amount of other work that awaits the farmer's wife, perhaps I can give others a few hints which may be of use to them.

In choosing the location for my garden, I decided to have it close to the house, and had it inclosed with a chicken-proof fence, as nothing is more discouraging than to have the hens devour the finest melons, or dig up one's pet early potatoes. By having it near to the house, one can slip out and work during the odd moments that even the busiest farmer's wife sometimes finds.

My garden slopes to the south-east, which adds materially to the warmth of the soil. It is well drained, and, as the soil is a sandy loam, it is easy to work, which is well for me, as I must wage an unceasing war against the weeds that are ever ready to take advantage of any laziness in cultivation.

As soon as the ground is fit in the spring, it is harrowed (it has been plowed the previous fall), and I plant my onion seed, sets, and such early vegetables as carrots, beets, lettuce, cress, radishes, etc. This year, owing to the early spring, I put in these seeds on March 19th. In planting my seeds, I put them in straight rows, the full length of the garden, and have the rows far enough apart to be worked by a horse. Even after using the cultivator, I still find plenty of hoeing to do.

Early in March we started our hotbed, or, more properly, cold frame. In it I planted lettuce and radishes for very early use, besides my tomato, cabbage, cauliflower and celery seeds.

When the weather gives promise of steady warmth, I plant the less hardy seeds, and repeat planting of the earlier vegetables in order to have a succession of these. By soaking the larger seeds (such as beans, peas, corn, etc.) in tepid

CAUGHT In His Own Trap

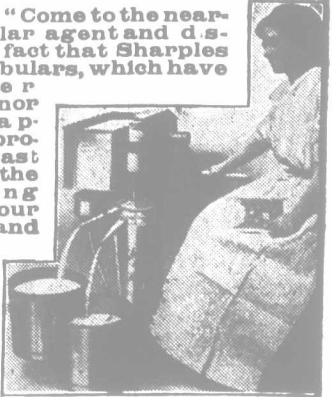
If any maker of out-of-date cream separators tries to trap you by claiming that disks or other contraptions are needed in modern machines, catch him in his own trap.

Say to him, "Come to the nearest Tubular agent and dispute the fact that Sharples Dairy Tubulars, which have neither disks nor contraptions, produce at least twice the skimming force of your machine and are so much easier to clean."

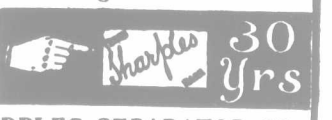
He dare not go, for Tubulars disprove his claims. Yet, by refusing to go, he admits his claims are groundless. He is hopelessly caught in his own trap.

Tubulars are the World's Best. Probably replace more common separators than any one maker of such machines sells. Sales exceed most, if not all, others combined. The manufacture of Tubulars is one of Canada's leading industries.

Catalog No. 198 tells the facts clearly.



SHARPLES DAIRY TUBULAR



THE SHARPLES SEPARATOR CO.
Toronto, Ont. Winnipeg, Man.

SEED POTATOES

EARLY VARIETIES:

- Early Ohio, \$1.50 bag, 35c. pk.
- Early Rose, \$1.00 bag, 25c. pk.
- Early Fortune, \$1.00 bag, 25c. pk.
- Early Eureka, \$1.00 bag, 25c. pk.
- Early Harvest, \$1.00 bag, 25c. pk.
- Early Puritan, \$1.00 bag, 25c. pk.
- Pink Eye, \$1.00 bag, 25c. pk.

LATE VARIETIES:

- Peerless Savoy, 80c. bag, 25c. peck.
- Empire State, 80c. bag, 25c. peck.
- Dibbler's Favorite, 80c. bag, 25c. peck.
- American Wonder, 80c. bag, 25c. peck.
- Green Mountain, 80c. bag, 25c. peck.

Also other varieties too numerous to mention. Write and state what kind you want. We may have them. Cash with order. Sacks 10c. each. All f.o.b. Guelph.

SEED CORN

We have the following varieties for delivery about the 1st of May:

- White Cap Yellow Dent, \$1.25 bush.
- Early Leaming, \$1.25 bush.
- Mammoth Cuban, \$1.25 bush.
- Early Butler, \$1.25 bush.
- Mammoth S Sweet, \$1.20 bush.
- Longfellow, \$1.50 bush.
- Crompton's, \$1.60 bush.
- Salzer's N. Dakota, \$1.50 bush.

All prices f.o.b. Guelph. Bags extra. W. bags, 20c.; X bags, 25c.; 3-bu. bags, 35c. each.

JAMES HEWER & SON
Seedsmen,
90 Macdonnell St. East, Guelph, Ont.

Cowan's

Nut Milk Chocolate

A chocolate confection of rich milk chocolate and fresh shelled walnuts. Simply exquisite. In 1/4 and 1/2 pound cakes.

The Cowan Co. Limited,
Toronto.

When Writing Mention The Advocate

water for a few hours before planting, I hasten their growth several days.

By keeping my early potatoes in the cellar, I find them at planting time with sprouts sometimes a foot long. These I do not break off, but place carefully in the hill and cover, not too deeply. In a few days they are up, and we never fail to have new potatoes by July 1st.

As extreme earliness is one of my hobbies in gardening, I use every plan I know to hasten development, and if the early June or late May frosts come, I must spend the evenings in covering my plants with rhubarb leaves, berry boxes, papers, or earth.

My favorite early tomato is the Rose-dale. In order to raise a few extra tomatoes, I plant the seed in the house during February. When planting my hot-bed in March, I transplant these early tomatoes into the hotbed, and by the time the weather is fit to transplant them into the garden, they are in blossom. By early planting, plenty of cultivation and the pinching off of blossoms after fruit is set, I manage to have ripe tomatoes by July 12th or 15th, while my neighbors are paying 10 cents a pound for theirs, or patiently waiting for them to ripen during August. If you want early tomatoes, beware of those fine, stocky plants you see in the grocery. They are almost invariably late tomatoes that are sold by the grocers in the spring.

In order to have early melons and cucumbers, I put upturned sods in my hotbed, and plant a hill of vines in each sod. These plants do not take kindly to transplanting, and the sod holds the roots so they are not broken in removing from the hotbed. If I find it necessary to water my melon vines during a drouth, I place a four- or five-inch tile in the center of the hill, press the earth up well around its base, and pour the water into the tile. This keeps the ground from baking. However, I depend more on frequent hoeing to preserve the moisture than on water applied in this way.

I also find tile useful for bleaching celery, as the celery is not so likely to rust if bleached in tile as if hilled up with earth.

As I like my garden to be ornamental as well as useful, I put my flower seeds in the rows nearest the house, and I find that they are much better than those planted in less-cultivated ground.

One last word of advice. If your garden rows run east and west, use judgment in planting your vegetables, and do not put plants you wish for early use on the north side of a tall-growing crop, such as sweet corn.

"THE WOMAN WITH THE HOE."
Lambton Co., Ont.

(Prize Essay.)

Dear Dame Durden,—It was something of a coincidence that "The Farmer's Advocate" in which you announced a competition on "My Vegetable Garden" and my garden seeds from the seedman arrived by the same mail. Well, if I have a hobby at all, it is gardening. Flowers, and outside surroundings, as well as vegetables, but as it is vegetables you ask about, so be it.

To begin with, a good garden is half of one's living, and a very important part to boot, inasmuch as vegetables help to clean and purify the blood, tone the system, and keep us generally in good working order throughout the long, hot days of summer, and the other months of the year as well.

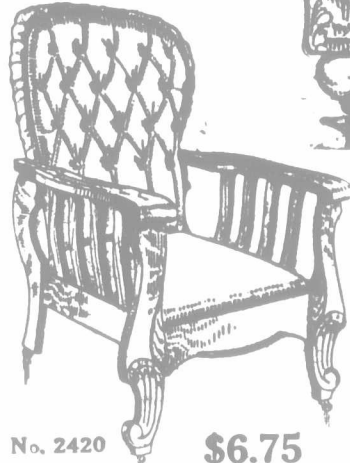
For a good many years now, long before our Institute workers came around and told us how to do, I have sowed my garden stuff in drills. No little, poky beds for me, but good straight rows of decent length, so that the scuffer can be run through them and thus facilitate the keeping down of weeds. My garden lies at my back door, but a little to one side. There is a good Page fence around it, but in the spring I run a length of wire netting along the side that is most liable to be attacked by the poultry. This wire netting I roll up and put away in the fall, to be used again the following spring. I get the men to manure the garden thoroughly every fall and plow it well. In the spring I have it plowed again, and worked up to make a fine seed-bed.

At the finish, I usually get them to ridge it up, like mangel or turnip rows, and then harrow them slightly down again. This leaves the ridges slightly

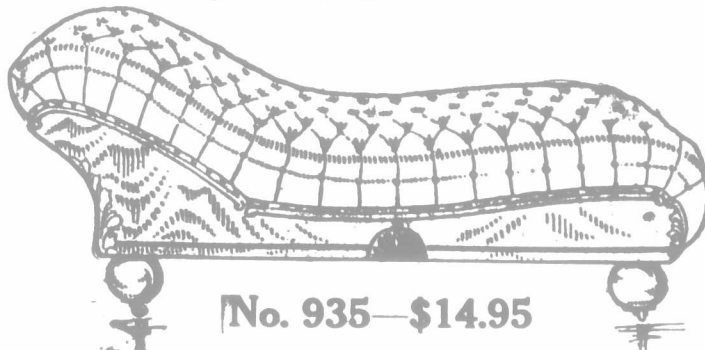
Remarkable Values in Furniture

Just look at these three pieces of furniture—have you ever seen such wonderful value? We are offering these pieces at these very low prices to introduce our large illustrated "Catalogue No. 500 photographic illustrations of the newest furniture are shown in this catalogue. It's a big book full of big bargains. You ought to have it.

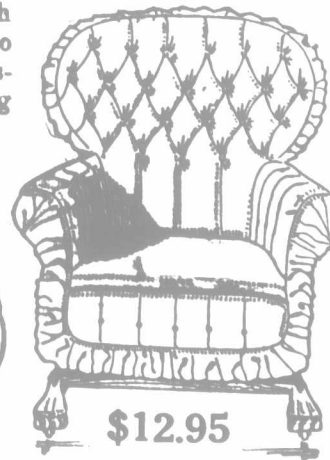
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No. 2420 \$6.75



No. 935 \$14.95



\$12.95

These pieces are in design exactly as shown in the cuts. The Morris Chair (No. 2420) has solid quarter-cut oak frame, upholstered spring seat and adjustable back. Couch (No. 935) has quarter-cut oak show-wood frame, neatly carved, heavy ball feet, full spring edge and deep spring construction, button tufted—a luxurious piece of furniture. The large Turkish Rocker is all-over upholstered with buttoned back, ruffled border and spring seat, mounted on spring platform rocker, base of solid oak.

Each of these pieces is covered in best quality moroccoline—an imitation leather that will wear like iron, and can only be told from the genuine leather by an expert. We guarantee every article as represented or will refund your money if you do not find them so.

The Adams Furniture Co., Ltd.
Canada's Largest Home-furnishers
TORONTO, ONT.

Wind has no terrors

The up-to-date woman whose skin and lips easily chap and burn in the cold winter winds, turns, for quick relief, or as a preventive, to her assortment of

VASELINE

Preparations in Tubes—12 Kinds

Each remedy for special purposes, Convenient, Economical, Sanitary.

VASELINE CAMPHOR ICE

Heals chapped hands and face, cracked lips, cold sores, rough skin, sun and windburn.

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Invaluable internally for coughs, colds, sore throat. **CAPSICUM VASELINE** is better than a mustard plaster and does not blister.

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They are ideal breeding grounds for disease germs.

A coat of Alabastine will destroy every disease germ on the wall. Vermin cannot exist on an Alabastined surface. Alabastine is the most sanitary as well as the most artistic and inexpensive wall covering.

It is a cement, and hardens with age. Its colors are permanent and will not rub off. They give that soft, velvety effect, which can only be produced by Alabastine. Anyone can apply it by following directions. A pail, water, and a flat bristled brush are the only necessities.

CHURCH'S COLD WATER Alabastine

None Genuine without Little Church on Label

FREE STENCILS

We have organized a Decorative Department, and are prepared to furnish FREE COLOR SCHEMES to suit your particular needs, as well as FREE STENCILS, to all users of Alabastine. Write today for particulars. Our advice is FREE. Let us show you how to decorate your Home in Harmony and Good Taste at a moderate cost.

The Alabastine Co., Ltd., 31 Willow St., Paris, Ont.

showing, and I am ready to go to work. The rows are about ten rods long, and I prepare a line of binder twine, and stretch it from end to end along the center of each row. Sometimes I only stretch it part way, and then continue to the end. I like to see the plants coming up in nice straight rows, and it is just as easy to have them straight as crooked, by taking a little extra time.

When I have my line set in place, I take a small piece of stick and go along and mark the row. The depth varies according to the size of seed I am going to plant. I mark one row, sow the seed, and cover it up by hand before going to the next. I plant everything in rows, even the cucumbers and citrons and pumpkins. I mostly have one row each (sometimes more) of parsnips, carrots, beets, etc., half a row each perhaps of lettuce or citron or cucumber. If we sow onion seeds, I get the men to put that in with the turnip drill, perhaps about four rows, with two rows or more of potato onions, or Dutch sets. These I plant in by hand, and always use the line. Then I have a few rows of early potatoes put in with the plow. I leave a couple of rows to be planted later with cabbage and tomatoes. I put large vines, like pumpkins, alongside the sweet corn, or early potatoes, so that when the potatoes are dug, the vines have room to wander, without choking out something else. If the cucumbers or citrons are planted in a row next the cabbage, they will have room to spread through between them without hindering them much. Cucumbers, and such like, can, if wished, be planted in a double row. A garden planted in rows, is easier to keep clean. The scuffer can be run through between them several times before the vines begin to spread, but not after. I usually hoe my garden three times, and often weed between the plants by hand. I take great delight to walk through it in the cool of the evening, after the chores are done, and note how everything is growing. I believe I enjoy as much watching things grow as I do eating them.

And, now, about seeds. Cheap seeds are mostly dear at any price. Sometimes they will grow, but oftener they will not, and it is not only the price of the seeds that we lose, but our whole crop. I always send to a reliable seedsman, and send my order in good time. Sometimes a five-cent package will do, but it is cheaper to buy by the ounce, or in larger quantities if one has a large garden.

I never have any luck sowing seeds early in boxes in the house. I leave it till later, and make a seed-bed outside. Some farmers' wives are afraid to tackle a hotbed made on scientific lines, but a simple seed-bed is made thus. Dig up a

STEADY AS A ROCK! THE SQUARE GEAR Magnet Cream Separator

Skims perfectly sitting on the ground or floor.
The double-supported bowl cannot wobble.

At our expense you can study MAGNET construction in your own dairy.



THE SQUARE GEAR AND DOUBLE SUPPORTED BOWL DOES IT STEADY AS A ROCK

Why not buy a MAGNET at first and avoid trouble.
The MAGNET is fifty years away from the scrap heap.

THE PETRIE MANUFACTURING CO., LIMITED

Head Office and Factory: HAMILTON, CANADA.

Winnipeg. St. John, N. B. Regina. Vancouver. Calgary. Montreal.

You will find its frame strong and rigid.

It is run by square gears, and you know that all good machines are built that way.

Its steel bowl is supported at both ends (MAGNET Patent).

All other separator bowls have only one end steadied.

The skimmer in one piece (easily cleaned) takes out all the butter-fat, and also separates the slime and foreign matter.

The MAGNET Cream Separator delivers good thick cream every day.

The MAGNET Brake circles the bowl, stops it in eight seconds, preventing wear and saves time.

The MAGNET owner can increase the capacity, when he gets more cows, for a few dollars, by changing bowl and skimmer only.

No matter what cream separator a man experiments with or buys, he will finally settle down to the MAGNET, and when he does his separator troubles are at an end.

small piece of land where it is well sheltered from cold winds and such. Get two pieces of board ten or twelve feet long, and as many inches wide, and two shorter pieces for the ends, and nail together. Set in position for the bed, and let the boards go down into the soil a little and bank up a little on the outside. Get two barrowfuls or so of well-rotted manure and throw in and spread flat; then put in about one barrowload of earth from the garden, and as much more of nice black loam from the bush. Rake it all flat and leave it for a week or ten days, to let the weed seeds sprout. If you have started to make your bed in time, you can give it another rake over and leave it a few days longer. About the first of May is soon enough to sow the seeds, and I often don't put mine in till the second week. I have had good cabbage and tomatoes sown on the 15th. Of course, the tomatoes did not ripen, but furnished plenty of green ones. A simple seed-bed, such as this, can be covered on a cold night with the storm windows, which will be off by this time, or a few slats, or a length of wire netting laid across, and the horse blankets thrown over all. The same bed will do for years, with a little extra manure and soil added as needed. Wishing all your readers good luck with their gardens.

Grey Co., Ont. GRAYBIRD.

Some gardeners, even as far north as Grey County, would put in a few seeds at least earlier than she states. Of course, something must be allowed for the character of the spring. Personally, I should want tomatoes at least started much earlier, in house, or hotbed. One seems to want fresh things just as early as possible during the hot summer weather, when the appetite is somewhat "off" anyway. Graybird has, however, written a good, practical article.

Longings for the Country

Dear mother Nature! let me come to thee.

For I have found the city false and vain;

Take me, as in my childhood, on thy lap,
And let me feel thy soft caress again.

Smile on me, with thy sunbeams, sweetly smile,

And sing again those lays I've missed so long;

The thrush's warble, the bluebird's flute-like notes,

The swallow's twitter, and the robin's song.

Sing with the pine trees' sweetly solemn tones,

Thy trembling aspen's voice, scarce audible;

Thy golden willows sighing by the brook,
And whispering reeds, within the shaded dell.

I love the sound of insects in the air,
The hum of bees flitting from flower to flower,

I love the bluejay's wild, defiant cry,
And whip-poor-will calling at evening hour.

But most of all, I love that bird of heaven,

Bobolink, caroling over clover lea;

I fancy it is an angel's voice, sent down
To sing of love and home, and heaven,
to me.

Dear Mother Nature! Thou hast filled the world

With glorious things for those who hold thee dear;

Filling the mind with wonder and delight,

The soul with ecstasy, and holy fear.

Thou callst to virtue by the wayside flowers,

Thou callst to glory by the starlit sky,

Thou callst to generous deeds by summer's showers,

To peace and gentleness, when night draws nigh.

Thou lovest all thy numerous offspring,
None need despair or ever friendless be;

Thou scatterest thy bounties with a lavish hand,

And changing seasons gives variety.

So when my life's long, happy day is done,

And shades of darkness o'er the landscape creep,

I'll come and lay my head upon Thy breast,

Thy tired child, and softly fall asleep.

—P. Foyston.

SIMMERS' SEEDS'

Complete Vegetable Garden Collection

Contains 25 packets of the best Vegetable Seed, sufficient to furnish vegetables throughout the year, and one packet of Flower Seeds, which we will send postpaid to any address in the Dominion of Canada for the extremely low price of \$1.00.

Bean—Simmers' Giant Wax; Beet—Blood Turnip; Cabbage—Vandergaw; Carrot—Scarlet Intermediate; Celery—White Plume; Corn sweet—Cory; Cucumber—Chicago Pickle; Cucumber—Long Green; Lettuce—Simpson's Early; Muskmelon—Montreal Green Nutmeg; Watermelon—Cuban Queen; Onion—Yellow Danvers; Onion—Prizetaker; Parsley—Champion Moss Curled; Parsnip—Improved Hollow Crowned; Pepper—Sweet Spanish; Peas—American Wonder; Peas—Stratagem; Pumpkin—Mammoth; Radish—Scarlet Turnip, White Tipped; Salsify—Mammoth Sandwich Island; Squash—Summer Crookneck; Squash—Hubbard; Turnip—Purple Top, Strap-leaved; Tomato—Early Ruby.

And a packet of Wild Garden Flower Seed Mixture. Also a copy of SIMMERS' VEGETABLE and FLOWER Garden (New Edition), and a copy of our handsome

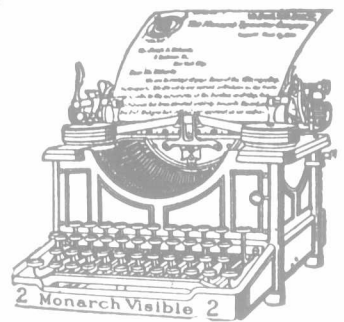
1910 SEED CATALOGUE

which in itself is a mine of valuable information. Don't miss this.

J. A. SIMMERS

Seeds, Plants, Bulbs,
TORONTO, ONTARIO.

Please Remember to Mention "The Farmer's Advocate" When Writing



THE typebar and its connections compose the heart and soul of any writing machine. The typebar of THE MONARCH, mechanically and practically, is perfect, as perfection is counted. Moreover, it is perfectly made. The two make THE MONARCH the world's best typewriter under all conditions and for all purposes.

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WESTERN CANADA FARMS

We make a specialty of Manitoba and Saskatchewan farms—improved and unimproved. We do not deal in blocks or speculative propositions, but we have a lot of nice snaps for individual investors and homeseekers. Full information on application.

E. S. Miller, Ltd., McIntyre Block,
WINNIPEG.

"In choosing his men," said the Sabbath-school Superintendent, "Gideon did not select those who laid aside their arms and threw themselves down to drink; he took those who watched with one eye and drank with the other."

HE GOT RELIEF RIGHT AWAY

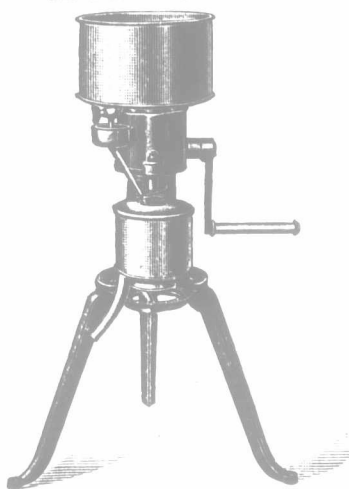
Dodd's Kidney Pills cure Kidney
Disease of Eight Years'
Standing.

That's What they did for William O. Cain, and now he says: "Dodd's Kidney Pills are a great medicine."

Mapleton, Albert Co., N. B., April 4.—(Special).—"When I began taking Dodd's Kidney Pills I got relief right away. I have found Dodd's Kidney Pills a great medicine." So says William O. Cain, well known and highly respected in this neighborhood. And Mr. Cain has a very good reason for making so emphatic a statement. For eight years he was a sufferer from Kidney Disease, and did not seem to be able to get relief.

"Why, I was so bad," Mr. Cain goes on to state, "and my kidneys bothered me so, that if I would go to pick anything off the ground I would fall." But Dodd's Kidney Pills cured him, just as they have cured thousands of other sufferers all over Canada. They never fail to cure Kidney Disease of any kind. Not once, but scores of times, they have vanquished Bright's Disease, the most deadly of all kidney troubles, while every day brings stories of cures of Rheumatism, Lumbago, Dropsy, and Heart Disease, from various parts of the Dominion. Other kidney medicines may cure. Dodd's Kidney Pills always cure.

1910 MODELS.



Style A-E. Capacities. 280-720 lbs. per hour.

Can be operated entirely by a boy or girl.

25 Years' Continued Success

HAS MADE THE

MELOTTE CREAM SEPARATOR

The Choice of Experienced Users the World Over

Before purchasing a separator write us for testimonials and learn what others say of the "Melotte." WE CLAIM that the Melotte does everything that can be done by any separator.

Using less power. Doing the work in less time. Giving better results in every particular.

Our Testimonial Booklet, containing recent statements from users who purchased Melottes fifteen years ago, is sufficient GUARANTEE of the DURABILITY and SUPERIORITY of the "MELOTTE."

DON'T HESITATE. WRITE US FOR PARTICULARS.

R. A. LISTER & CO., Limited, 58-60 Stewart St., TORONTO.

GOSSIP.

The 1910 illustrated Almanac, issued by the Live-stock Journal, London, England, and which may be had from the office of "The Farmer's Advocate" for the low price of fifty cents, postpaid, is choke-full of useful information to dairymen, and breeders of pure-bred horses, cattle, sheep, swine and poultry, comprising, as it does, excellent articles prepared by experts in all these lines. The illustrations are high-class photogravures of notable animals of the various breeds, and the advertisements give the address of reliable breeders of all classes of pure-bred stock. It is a work of over 300 pages, and is excellent value for the price.

A GREAT CLYDESDALE SALE.

The dispersion sale on March 22nd, of the famous Seaham Harbour stud of Clydesdales, at Seaham Harbour, Sunderland, England, drew the largest attendance seen at an event of the kind, possibly since the Merryton dispersion, in 1884, when Prince of Wales (673) was sold for \$4,700. As one visitor put it, "You would have thought there never was to be another Clydesdale sale," so keen was the competition for the animals offered. Buyers were present, or represented, from Canada, Orkney Islands, Scotland, Lancashire, Yorkshire, and all parts of the north country. The highest price of the sale was 1,000 guineas (\$5,110), paid by R. Brydon, Seaham Harbour, for the black, eleven-year-old stallion, Silver Cup (11184), by Baron's Pride. The same buyer also gave the highest price for a brood mare, 405 guineas, for the four-year-old Sylvania, by Silver Cup, and the highest price for a filly, 200 guineas, for the three-year-old Mimosa, by Silver Cup. The black seven-year-old stallion, Gamecock (12583), by Airies Prince, sold for 230 guineas, to W. Ritchie, Old Meldrum. Seventy-seven Clydesdales sold for an average of \$865.

Brantford Roofing

passed the experimental stage many years ago

FULLY fifty per cent. of the concerns manufacturing ready roofing have come into existence during the last few years. Their products are therefore in the experimental stage. Their brands have not been in use long enough to determine their actual value.

Now, Brantford Roofing passed the experimental stage many years ago. It is made by a company which was one of the "pioneers" in the roofing industry. It has a record of many years of satisfactory service behind it. It is worthy of your FIRST consideration when selecting a LASTING roofing material for your home or barn.

On request we will send you a list of those who have roofed their buildings with Brantford Roofing in your locality. Then you can see and learn for yourself how satisfactory Brantford Roofing has proved with your neighbors.

You have your choice of three styles of Brantford Roofing—ASPHALT (silicia finish), RUBBER (smooth finish), CRYSTAL (mineral surface). All three styles have a 99 per cent. pure Asphalt saturation.

Get our Free Roofing Book and Samples. Then choose the style you decide is best adapted to your particular job.

BRANTFORD ROOFING COMPANY LIMITED
BRANTFORD, CANADA

F. W. Ewing, Salem, breeder of Shorthorns, writes: I have had good demand for bulls and have only one for sale. I have just purchased from H. Cargill & Son, a very promising bull, by Blood Royal (imp.), dam Floretta, and am living in expectation of having enough cattle so I can advertise by the year.

SALE DATES CLAIMED.

- April 7th.—A. McQuillan, Guelph, Ont.; Clydesdales.
- April 7th.—G. A. Gilroy, Glen Buell, Ont.; Holsteins.
- April 12th.—Frank Inch, Kerrwood, Ont.; Ayrshires.
- April 20th.—James Benning, Williamstown, Ont.; Ayrshires.
- May 3rd.—T. L. Pardo & Son, Cedar Springs, Ont.; Shorthorns.
- June 7th.—At Guelph, Harry Smith, Hay, Ont., and others; Shorthorns.

THE BENNING AYRSHIRE SALE.

The dispersion sale, to take place on April 20th, of the noted Glenhurst herd of Ayrshires, the property of James Benning, Williamstown, Glengarry County, Ont., should attract the attention of farmers, dairymen, and breeders of Ayrshires throughout the Dominion. It is rarely that a herd of such high-class character is offered at public sale. It is one of the oldest herds in the country, but is by no means old-fashioned, unless large and shapely udders, with good-sized teats, and the capacity to give large quantities of rich-testing milk, are reckoned old-fashioned features. The Glenhurst herd has been kept up-to-date by the use of high-class sires, bred from deep-milking dams, and in type compares well with the best, as also for quantity and quality of milk. This sale affords a rare opportunity to secure first-class money-making milking and breeding stock. See the advertisement, and send for catalogue.



BREEDERS !

Insure your mares and foals against risk of death during foaling. Why take a chance of loss of a valuable mare when a policy in

The General Animals Insurance Company of Canada

will protect you? If you are shipping horses West, we will insure you against loss while en route, from any cause whatever. Write for particulars to

The GENERAL ANIMALS INSURANCE CO., Limited
25 Toronto St. TORONTO.

J. D. REESOR, Manager Western Ontario.
Telephone, Main 4154.

POULTRY AND EGGS

Condensed advertisements will be inserted under this heading at two cents per word each insertion. Each initial counts for one word, and figures for two words. Names and addresses are counted. Cash must always accompany the order for any advertisement under this heading. Parties having good pure-bred poultry and eggs for sale will find plenty of customers by using our advertising columns. No advertisement inserted for less than 30 cents.

BUFF Orpington eggs that hatch; nine chicks guaranteed. Four special pens, \$3 setting. Splendid utility stock, extra heavy layers, \$1 setting. Illustrated catalogue free. Hugh A. Scott, Caledonia, Ont.

BEST laying strain Barred Rocks, large size. Eggs, \$1.00 per 15; \$4.00 per 100. A. E. Donaghy, Colborne, Ont.

BLACK LANGSHANS are an original breed of Thoroughbreds. Eggs, \$3 a dozen. Glenloch Farm, Office, 396 Yonge St., Toronto.

BARRED Rock Eggs—From grand matings. Write for mating list. W. W. Dods, Alton, Ontario.

BUFF Orpington Eggs—From three pens specially selected for good laying and table qualities; headed by strong, vigorous males, from one of Canada's best pens. Fitted for \$1.00; fifty for \$3.00. Orders taken for young stock. Edgar Staples, Bright, Ont.

BEST laying strain Barred Rocks, large size. Eggs, \$1.00 per 15; \$4.00 per 100. A. E. Donaghy, Colborne, Ont.

BARRED Rock eggs, safely packed in Morgan baskets, \$1.00 per 15. C. H. Chalmers, Smith's Falls, Ont.

BUFF Orpingtons—Hellyer and Hoffman strains. Eggs from best pen, \$2 per 13 eggs. Utility pen, \$1 per 13 eggs. John A. O'Dell, 334 St. James St., London, Ont.

BUFF Orpington eggs from London's Best Silver Trophy and Prizewinning winter-laying strain, \$1.50 and \$3.00 per setting. William T. Lawrence, Grey St., London.

BRED-TO-LAY strains of Barred Plymouth Rocks, White Wyandottes and Rhode Island Reds. Send for our beautifully-illustrated catalogue. Free. L. R. Guild, Rockwood, Ont.

BARRED Plymouth Rocks, 237-egg strain; one dollar per setting. Mrs. J. R. Henry, Waterdown, Ont.

BARGAINS—Famous Pride of Ontario strain of Rose-comb Rhode Island Reds, White and Partridge Wyandottes, are prizewinners, record-breaking layers, large, strong, healthy, quick-growers. Circular free. Eggs, special bargain price only \$1.00 per 15. Quantity prices lower; guaranteed satisfaction. Pride of Ontario Poultry-yards, Collville, Ontario.

BARRED and White Rock eggs, \$1 per 15; \$4 per 100. S. L. Jayne, Grafton, Ont.

COLUMBIAN and White Wyandotte Eggs—Dollar twenty-five per setting. Excellent stock. Emerson Tufts, Welland.

CANADA'S best Anconas. Winter layers. Very profitable. Free circulars. Tells all about Anconas and Leghorns. Edmund Carlyle Apps, Box 224, Vice-President International Ancona Club, Brantford, Ontario.

EGGS from pure Indian Runner ducks, 10c each. Single-comb Rhode Island Reds, \$1 per 15. Frank Bainard, Glanworth, Ont.

EGGS—From choice S.-C. White, Brown and Buff Leghorns, S.-C. Black Minorca and White Wyandottes, \$1.50 per 15. Have your order booked early. Mrs. Lovering, Barrie, Ont.

EGGS FOR HATCHING—From heavy-laying strain of pure-bred Black Minorcas. One dollar for thirteen. Ed. Hacker, Beachville, Ontario.

EGGS for hatching—From prizewinning Single-comb White and Rose-comb Brown Leghorns. Extra good layers. Eggs guaranteed fertile. One dollar per fifteen. James Snyder, Wales, Ontario.

EGGS FOR HATCHING—From prize stock; Barred, Buff and White Rocks, Rhode Island Red, Black Minorcas; \$1.00, 13; \$2.00, 30. Light Brahma eggs, 25 cents each. A fair hatch guaranteed. Joseph Forter, Brantford, Ont.

FOR SALE—Six Buff Orpington and twelve Brown Leghorn pullets, \$1.50 each; from prizewinners. Leghorn eggs, \$1 per 15. H. Weston Parry, Princeton, Ont.

GOOD laying S. C. W. Leghorns. Eggs one dollar per fifteen; four dollars per hundred. Martin Robertson, Kent Centre, Ont.

GOOD-LAYING strain Barred Rocks, Rhode Island Red, Rose Comb. Eggs, \$5.00 per hundred. L. Parkinson, R. R. No. 1, Guelph, Ont.

KELLERSTRASS-Cook Strain White Orpingtons. Hellyer's strain Buffs. Eggs, \$1 and \$2 setting. Stock for sale. H. Ferns, 715 William Street, London, Canada.

PURE-BRED Barred Rocks and Buff Leghorns, good color, excellent layers; \$1.00 per 15. William Facey, Tavistock, Ont.

RHODE Island Reds, Rose-comb; bred eleven years from carefully-selected heavy winter layers of large brown eggs. Fifteen eggs, \$1.50. Satisfaction guaranteed. Jno. Luscombe, Merton, Ont.

ROSE-COMB Rhode Island Reds—Have the best of stock and a heavy-laying strain. Eggs, \$1.50 per thirteen; \$2.50 per twenty-six. C. Cuthbert, Alton, Ont.

ROSE and Single-comb Black Minorca pens, headed by yearling cock and cockerels, all pure-bred. Should insure good fertile eggs for hatching; \$2.00 per setting. Just the thing to give new life to the farmers' poultry-yard. \$5.00 will buy a trio of single-comb-cockerel and 2 pullets. Joshua Murphy, Renfrew, Ont.

ROYAL City Poultry Yards—12 years a breeder of White Wyandottes. Five grand pens, all headed by winning males. Eggs for balance of season, \$2.50 per 15. Still a few males and females to dispose of. Also eggs from pen of A No. 1 Buff Orpingtons, \$1.50 per setting. Wm. Wilson, Prop., 219 Grange St., Guelph, Ont. N.B.—My birds have the run of 5 acres, and are full of vigor.

RHODE Island Reds, Rose and Single-comb. White Wyandotte eggs for sale, \$1.50 per 15. For egg production and size, I have good strains. W. A. McMaster, Guelph.

RHODE Island Reds—Rose-comb. Best general-purpose fowl in the market. Eggs for hatching from imported heavy-laying strain. Two dollars for fifteen from number one pen, or one fifty from number two. B. Colwell, Box fifty, Cooksville, Ont.

SINGLE-COMB Black Minorcas—Stock and eggs for sale. Ontario winners and great layers. Satisfaction guaranteed. For particulars write: H. Dunning, Thornton, Ont.

S. C. W. LEGHORN and R.-C. B. Leghorn eggs for hatching, from best of stock, \$1.00 per 15. William Charlton, Iderton, Ont.

SINGLE-COMB Brown Leghorns—Fifteen eggs, one dollar; one hundred eggs, four dollars. Also some fine cockerels cheap. Isaac Reed, Ardrea, Ont., Simcoe County.

S. C. W. LEGHORNS—Eggs for hatching, \$1 per 15. H. McKellar, Tavistock, Ont.

WHITE Wyandottes Exclusively—Bred for heavy eggs production and standard points. Eggs, \$1.00 per 15. Good hatch guaranteed. Thos. F. Pirie, Banner, Ont.

WHITE Wyandottes (Martin and Russell strain), Rose-comb Rhode Island Reds. Eggs, fifteen, \$1.25; thirty, \$2.00. Hatch guaranteed. A. & D. McTavish, Chesley, Ont.

WANTED—A few private farmers to ship me Poultry, Eggs, Dairy Butter, Syrup, and all other farm produce. Will pay highest market price. W. J. Falle, Prince Albert Ave., Westmount, Montreal.

WHITE Wyandottes. Eggs, \$1.25 per setting. O. W. Beaven, Prescott, Ont.

WHITE Wyandotte eggs—From choice matings, \$1.50 per 30 in Morgan crates. W. A. Bryant, Cairngorm, Ont.

WHITE ROCK eggs at \$1.50 per setting; R.C. Rhode Island Red eggs at \$2; also some choice cockerels of both breeds for sale. Howard Smith, Winona, Ont.

WHITE Rocks, Buff Orpingtons. Choice prize-winning strains. Eggs, \$1 per setting. Wm. A. Rife, Hespeler, Ont.

WHITE Rocks—Big, pure white layers, \$1 per setting. O. B. Holden, Beamsville, Ontario.

WHITE Wyandotte eggs, Martin strain, farm raised, fifteen for one dollar; shipped in Morgan egg basket. Order early. Marshall Smith, Palmerston.

\$6 A HUNDRED buys the finest White Leghorn eggs for settings. Original utility birds from Curtiss Bros. E. O. Dunston, Crystal Beach, Ont.

Pleasant Valley Farm offers **WHITE WYANDOTTE EGGS** for hatching from 2 pens of grand winter layers. Large white birds. \$1.00 and \$1.50 per 15, \$4.00 and \$5.00 per 100. G. AMOS & SONS, Moffat, Ont.

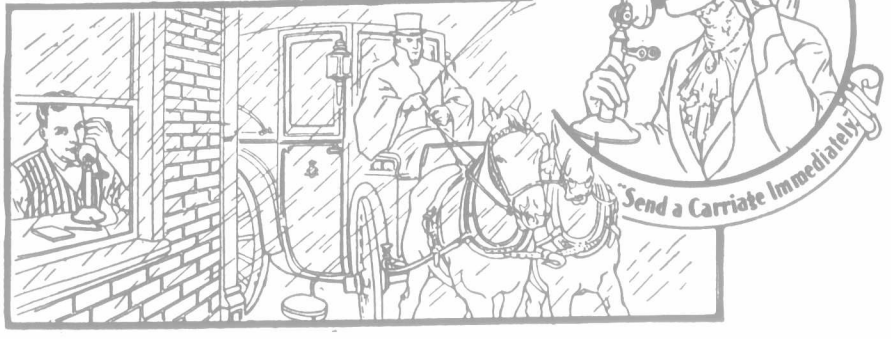
Send your remittances by
DOMINION EXPRESS
MONEY ORDERS
AND
FOREIGN DRAFTS
Payable everywhere.

Rates for Money Orders:

Over \$ 5.00 and under	3c.
Over 5.00 to \$10.00	5c.
Over 10.00 to 30.00	10c.
Over 30.00 to 50.00	15c.

Money sent by
TELEGRAPH AND CABLE.
Issued in all stations of the Canadian Pacific Railway Co.

In Stormy Weather



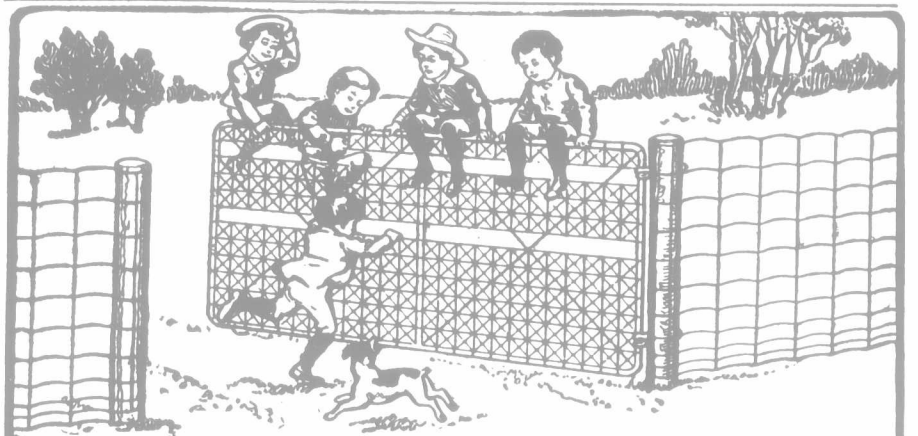
RAIN, mud, snow, sleet, and slush may be avoided by doing your errands over the Bell telephone.

If it be necessary to go outside, you can order a carriage by telephone. If an appointment were better postponed, the telephone somehow fits in just right and smooths things out.

The Bell system reaches every metropolitan center in the country. It renders efficient telephone service through fair and foul weather, day and night, anywhere.



THE BELL TELEPHONE CO. OF CANADA.



PAGE FENCES AND GATES

Styles for all uses—lawns, parks, farms, railways. All heights. Cost less to erect and give better service. Our nearest place will quote you 1910 prices and send you Free Illustrated Booklet. Please ask for it now.
14,000 Miles of Page Fence in use in Canada
73,000 Page Gates in use in Canada
OUR 1910 GATES HAVE GALVANIZED FRAMES
Largest Canadian Makers of Fences and Gates
THE PAGE WIRE FENCE CO., LIMITED
500 WALKERVILLE TORONTO MONTREAL ST. JOHN WINNIPEG VICTORIA
"PAGE FENCES WEAR BEST"

"BT" STEEL STALLS and STANCHIONS

Are an absolute necessity, if you wish to have sanitary, up-to-date stables. With them installed you will have more light and room in your stable, and your cows will be clean and comfortable.
In the recent competition held by the FARMER'S ADVOCATE for the best plans of barns, great interest was taken. This goes to show that farmers are beginning to see how necessary it is to have good stables.
Our new catalogue on barn plans and equipment gives some of the latest ideas and suggestions from the Milk Commission Report, Agricultural Colleges and prominent dairymen. It is free, and will be of interest as well as helpful to you. Write for it to-day.
BEATTY BROS., FERGUS, CAN.

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.

CHEAP SILO.

I want to build a cheap silo; feed for 12 cows. Will you kindly tell me what size to make it; also what material to use, and how much? Can any ordinary carpenter build one? By answering the above questions as soon as convenient, you will oblige me very much.

BEGINNER.

Ans.—We should judge that to feed the twelve cows during winter, and allow some silage to be left over for summer feeding, you would require a silo of about 50 tons capacity. Such a one might be about 11 feet in diameter and 28 feet high. Cheapness being desired, we would recommend a stave silo of pine or hemlock planks, 12 and 16 feet long; that is, two planks, one stood above the other, would make one stave. Joints should be broken by having alternate staves with the long and intervening ones with the short plank at the bottom. The staves should average about six inches in width. By consulting local dealers, you can easily ascertain the cost of material. Besides the staves, you will require about eleven hoops, in half-sections, with projecting threaded ends, over which fit plates and nuts. The hoops may consist simply of round half-inch iron.

GOSSIP.

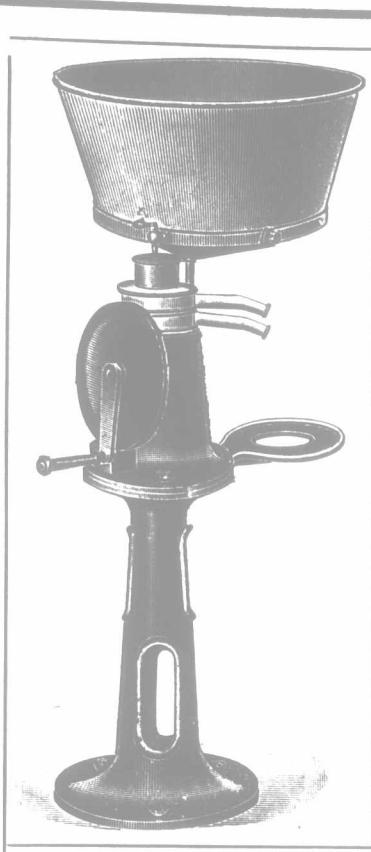
Imported Clydesdale stallions of exceptionally good breeding are advertised for sale by the new firm of Bowden & Mossip, St. Mary's, G. T. R., Ontario, both of whom are first-class judges, and have had extensive experience in importing and handling high-class horses. This firm have also for sale the gray Shire stallion, The Miller (imp.), rising three, and the bay Hackney, Heslerton Performer (imp.).

Official records of 125 Holstein-Friesian cows were accepted by the American Holstein Association, from March 1st to March 5th, 1910. This herd of 125 animals, of which but a trifle over one-third were full-aged cows, produced in seven consecutive days, 51,543.2 lbs. of milk, containing 1,805.855 lbs. of butter-fat; thus showing an average of 3.51 per cent. fat. The average production for each animal was 412.3 lbs. milk, containing 14.207 lbs. of butter-fat; equivalent to 58.9 lbs. or over 28-quarts of milk per day, and 16.57 lbs. of the best commercial butter per week.

John Lowe, Elora, Ont., breeder of Aberdeen-Angus cattle, writes: This has been a very satisfactory year. I have disposed of all the cattle I can spare at present. There have been no sensational prices, but a living price for both buyer and seller. Have sold the stock bull, Elm Park Ringleader 1817, which has done so much good in our herd, and a good, useful cow and calf, to James A. Brander, Elora, Ont.; a good, young Pride bull, to William French, Alma; a bull for crossing purposes, to Joseph Shoemaker, Elmira; a cow, to Wm. Murdoch, Elora; a promising young bull which, if carried on, should give a good account of himself at the shows, to Kenneth C. Quarrie, Bellwood; a promising young bull, for use in the good grade Shorthorn herd of John Keith, Salem; two choice heifers, Middlebrook Beauty 2852, and Middlebrook Pride 2851, with calf at foot, the right kind for the foundation of a herd, to John D. Maitland, Elora.

Professor William James, of Harvard, recently made this comment upon a very exquisite and very idle millionaire sophomore from New York:

"What time he can spare from the adornment of his person, he devotes to the neglect of his duties."



"STILL LIVING UP TO ITS NAME"

The Premier Cream Separator

"SECOND TO NONE"

For DURABILITY, SIMPLICITY and EFFICIENT SEPARATION. DON'T LET LOW PRICES INFLUENCE YOU. QUALITY COUNTS.

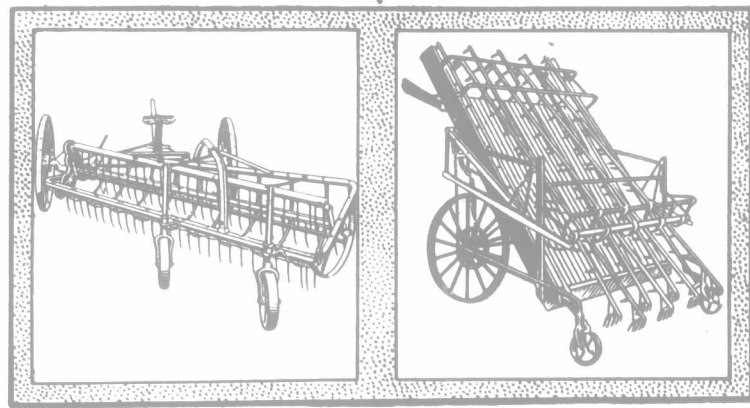
Write us for full particulars.

The Premier Cream Separator Company

659-661 King St., West,

Toronto, Ontario.

EASTERN BRANCH: ST. JOHN, N. B.



Save Time, Money and Labor

With These **DAIN** Implements

The DAIN ALL-STEEL SIDE DELIVERY RAKE

won't whip or toss hay. Won't break off tender, nourishing leaves. The three sets of revolving teeth move slowly and handle hay gently. Shakes off water (after rain) and leaves hay with plenty of air space, so it is cured scientifically. Works around field, like the Dain Mower; leaves 2 swaths of hay upside down in loose continuous windrow, producing quality hay at its best, of the right color, retaining the rich nutritive juices. Rakes cleanly because the reel is on an angle from main frame when raking with the swath—the raker teeth stand straight and point toward ground. Draw straight out of hay, which prevents it wrapping around reel. The Dain All-Steel Side Delivery Rake goes over stumps, stones and other obstructions; operates easily; built to last, of best materials. Does more than any other rake on earth.

The EASY-RUNNING DAIN HAY LOADER

is built of best material; guaranteed to do as we claim. Construction, simplest in the world, and has the lightest draft on earth. Loads from swath or windrow; works without friction, because principal parts are hammock mounted and swing like a pendulum without binding or strain. Rakes operate at exactly the right speed to require least power when working. Gather hay from swath regardless of width of mower; divides swath at your will. Rakes are malleable with spring trip. Pass over all obstructions, spring back and fly into place. Operates close up to fences or ditches. Goes through ordinary farm gate. Elevator adjusts itself readily to light or heavy hay. Only loader made that is free from twisted chains, cog-gearing, drums, cylinder, return carrier, and long crooked crank shaft. Stays in working order; needs fewest repairs. Lasts longest. 2

Don't spend a dollar for any hay-making implement until you get the Dain free catalog. Get this information. It will pay you. Write now.

DAIN MANUFACTURING CO., Limited
 90 DAIN AVENUE, WELLAND, ONT.

Elmwood Holsteins Choice-bred calves for April and May delivery. Sired by imported Ykema Sir Posch and Pontiac Sarcastic, a grandson of Sarcastic Lad. Registered. Delivered. Express paid. Safe delivery guaranteed. E. D. GEORGE & SONS, PUTNAM, ONT.

Well DRILLING & PROSPECTING MACHINES
 Fastest drillers known. Great money earners! **LOOMIS MACHINE CO., TIFFIN, OHIO**



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.

FARM TO RENT—On Blackstone Lake, Parry Sound District; good land and buildings; will rent cheap to good tenant. For particulars apply to J. P. Weeks, Parry Sound, Ont.

FOR SALE—Rubber and leather belting, pulleys, shafting, hangers, iron pipe. All sizes and lengths. Write for free list and prices, stating sizes. Imperial Waste & Metal Co., 7 Queen St., Montreal.

GOVERNMENT Standard Seed—Red Clover, \$9.00; Alfalfa, \$11.50; Mandscheuri Barley, 70c.; Silver Mine White Siberian Oats, 50c.; Golden Vine Peas, \$1.00; bags extra. Ask for samples. The Caledonia Milling Co., Ltd., Caledonia, Ont.

Interested in growing strawberries send for my catalogue; it's free. Tells you how to grow them. Jno. Downham, Strathroy, Ontario.

MAKE your own will; no lawyer required. Bax's correct will form. Full instructions and specimen with form. Postpaid, 25 cents. Copyright owner. Beware imitations. Bax & Co., Dept. 267, Arthur St., Toronto.

TONGUE support for harvesting machines, seed drills, etc.; takes weight of horses' necks; 500 sold in one county. Agents wanted. S. K. Brubacher, Elmira, Ont.

TREES FOR SALE—Over 100,000 evergreens, the biggest and best stock in Dominion. Sizes from 10 inch to 10 feet. Prices range 5 cents and upwards. Shade trees, fruit trees and bushes, flowering shrubs, roses, clematis, etc. Chas. Baker, London, Ont. 'Phone 2222.

WANTED—Experienced man and wife (no children) for work on dairy farm. Wife good cook; wages, \$600 a year with board. Address: G. T. Corfield, Corfield, B.O.

WANTED—By experienced farmer, position as Manager or Head Stockman; thoroughly experienced with cattle, sheep, including pedigree cattle. Apply to S, "Farmer's Advocate," London.

WANTED—Persons to grow mushrooms for us. Small waste space in yard, garden or farm can be made produce from \$15 to \$25 per week. Write for illustrated booklet and full particulars. Montreal Supply Co., Montreal.

WANTED—A married man for a dairy farm. Must be a good teamster, sober, of kind disposition, and able to milk if necessity demands it. Wife willing and able to board from 4 to 8 men. Only AI couple need apply, and preference to one without encumbrances. Situation open April 15 to May 1. Apply Box G, "Farmer's Advocate," London, Ontario.

WANTED—Good general servant for household work on British Columbia farm. Twenty dollars per month the year round. Alex. Lochore, Lytton, B.C.

WE have on hand at present twenty thousand 3-in. tile and a quantity of 4-in. and 6-in., which we wish to dispose of in car-load lots. Correspondence solicited. Bechtels, Limited, Waterloo, Ont.

WANTED—Two married men—a farm hand and a herdsman. Houses supplied. State wages. Apply to J. A. Pettit, Freeman.



Safe-Locked on All Four Sides

Don't make the mistake of thinking that all makes of metal shingles are very much alike. There is a vast difference between PRESTON Safe-Lock Shingles and others.

Unlike other Shingles, PRESTON Shingles do not merely slip or slide together. Instead, they are SAFE-LOCKED on all FOUR sides. The picture above shows how.

Look at ARROW A. See how the sides of the shingles hook over each other. This is on the principle of the "sailor's grip." It is utterly impossible for shingles locked in this way to pull apart. The heavier the strain, the firmer the grip.

Twice as Strong

The top lock of PRESTON Shingles is TWICE as strong as our wonderfully secure side lock. It consists of three thicknesses of sheet steel—see ARROW B.

The top of the shingle is where the greatest strain falls. Yet the top lock of most other metal shingles isn't as strong as the side lock of ours.

ARROW C shows how the shingles above hook over and lock securely to row below.

Nailing Is Protected.

ARROW D shows the method of nailing together the top locks of two adjoining shingles. The top lock of the right hand shingle overlaps the one on the left. The nail goes through both shingles.

All nails on the flange of the top-lock are covered by the shingles on the row above. Thus all nails are protected from exposure to the weather. They cannot rust or work loose. They are there for keeps.

So strong are our locks that there has not yet been a gale

powerful enough to rip off a roof covered with PRESTON Safe-Lock Shingles. The terrific wind storm that swept over Ontario on April 8, 1909 ripped off scores of wooden, metal and prepared roofings. Yet not one of these metal roofs was a PRESTON Safe-Lock roof.

Gale-proof Shingles

So close do PRESTON shingles lay to the sheathing and so secure are the Safe-Locks that even if some of the shingles were not nailed the roof would be solid and wind-tight.

It is utterly impossible to get PRESTON Shingles off the roof in any other way than by removing the nails one by one and unlocking each shingle separately. When you put PRESTON Shingles on your roof they are on to stay.

Snow-proof, too

No snow can be driven up PRESTON side locks and on to the sheathing below. The fold of our top lock closes right down over the end of the side lock. No rain or snow can be forced past this fold of sheet steel, unless you drill a hole through it first.

Just how easy it is for snow or rain to be driven up the side joints of other shingles you can readily see for yourself.

Simply fasten the sides of two ordinary shingles together. Then hold the shingles up and look through the joint. You can see daylight through it. That means there is an unobstructed passage through which rain or snow can be driven by the force of the wind.

Make the same test with PRESTON Shingles. You cannot see daylight through our side locks. That means the ends of our side locks are closed securely against wind and weather.

Generous Folds

The folds of PRESTON Safe-Locks are of such generous size that there is room and to spare for expansion and contraction due to excessive heat and cold.

Note the Safe-Lock Construction of PRESTON SAFE-LOCK SHINGLES

Even the shrinking of the wood sheathing or the heavy strain due to the settling of the building is not sufficient to make any difference to our safe-locks, whereas other shingles will pull apart and leave spaces for leaks.

Patented Construction

You understand now why PRESTON Safe-Lock Shingles are so different in construction from other metal shingles. They will always be different and better, too. We were the originators of the interlocking Shingles. The patents we hold prevent others from making as good a shingle.

British Government Specifications

It is a well known fact that the British Government is the most particular buyer in the world. Ordinary metal shingles could not pass their Acid Test for galvanizing. This test is more severe on the galvanizing than twenty years of Canadian weather. Yet PRESTON shingles will easily pass this test.

PRESTON Shingles are made and galvanized according to British Government Specifications.

Twice the Service

Shingles galvanized according to these specifications are good for twice the service of shingles galvanized in the ordinary way.

Metal Shingle and Siding Co. Limited

Head Office, Queen Street Factory, Preston, Ont.

Branch Office and Factory, Montreal.

Lightning Guarantee, Free

We have been making PRESTON Safe-Lock Shingles for eleven years. In all that time we have never heard of lightning damaging a building roofed with PRESTON Shingles.

So positive are we that a roof of PRESTON Shingles is lightning-proof that we give you a lightning guarantee free. This proves to you our unlimited confidence in the lightning-proof quality of PRESTON Shingles.

Most Quickly Laid.

As PRESTON Shingles are cut accurately to size, and the locks carefully made, they lock together quickly.

A man and a helper can lay 10 squares of PRESTON Safe-Lock Shingles in a day, whereas 5 or 6 squares would be a good average with ordinary metal shingles. If you have a large surface to roof that saving of time and labor means a good deal to you.

Booklet Reward

We have just issued a new booklet, "Truth About Roofing." We should charge something for this, as it contains information of real value to anyone who has a building to roof. But we will send it FREE as a reward to all who cut out, fill in and mail the coupon to us. Just you mail it today, or you'll forget it.

Please send me your new booklet, "Truth About Roofing." I am interested in roofing and would like complete information about PRESTON Shingles, British Government Specifications and Free Lightning Guarantee.

Name _____

P.O. Address _____

County _____

Prov. _____

QUESTIONS AND ANSWERS.
Miscellaneous.

TELEPHONE TRESPASS.

A owns 100 acres of land, 80 rods front, along concession, with two second-growth pines 5 ft. away from fence on his place. The local telephone company put poles 8 ft. away from fence on road, and one of the men engaged by contractor got over the fence on A's farm and trimmed one of those pine trees from bottom 20 ft. up, without A's consent. Can A claim damages from Telephone Co.? If so, how much? One of the directors will swear he would not have his tree destroyed like it for \$25.

Ontario. ROB.
Ans.—It would seem from your statement that the telephone company has exceeded its privileges, and is liable in damages for trespass, and that A is in a position to make claim accordingly. We cannot venture to predict as to what amount would be awarded, as that would be a matter in the discretion of the court.

RAPE WITH FALL WHEAT.

Wishing to sow rape for fall feed, would it do to sow on the fall wheat in the spring, about the time you should harrow it? Would it get too large a top?

O. S.
Ans.—Rape has been successfully sown in spring grain, two or three weeks after seeding, and one would think it should answer as well in fall wheat. In some seasons, it has given trouble through having too large a top, which, cut and bound up in the sheaves, hinders drying. Less trouble from that cause need be looked for when sown about seeding time in wheat. Much, of course, would depend on the strength of the crop. If you try it, kindly report result to us. For our own part, we should much prefer sowing clover, which usually catches well with fall wheat, and which is preferable to rape on account of its soil-improving virtue. Sow rape somewhere else.

CRIPPLED PIGS.

Have a litter of pigs six months old, been feeding ground oats and barley, with skim milk and drink gathered from the house. Some have crippled up on their fore legs; one scarcely able to walk, but all seem to eat well, but crippled ones do not thrive well. Pig-house has a cement floor, but bed is of wood.

D. T. F.
Ans.—The pigs may have rheumatism, but the trouble is more likely caused by indigestion, resulting from heavy feeding and want of exercise. Growing pigs should not be fed on grain alone, though milk is an excellent corrective, and yours have been getting some. One feed of roots per day would be found very wholesome. Your pigs would probably have been all right had they had plenty of exercise and access to earth. Have known crippled pigs entirely cured by being turned out where they could run around. Would advise turning yours out every day, and, besides giving them a chance to get some earth, place some wood ashes, mixed with a little sulphur and salt, where they can get them at will. The bed should be dry.

BUCKWHEAT FOR A CROP.

Have a 12-acre field I intend to fallow this year. I have it covered with manure now. I want to plow it and sow buckwheat for a crop. Please give best method of cultivation for seed-bed; also which variety of seed would be best to sow, Japanese, Common Gray, or Silver-hull? Soil is clay loam and black loam. Please give average yield for a fair season, and when it should be sown.

SUBSCRIBER.
Ans.—The Rye buckwheat, a variety grown extensively in Nova Scotia, has given the best yields in an average of four years' experiments by Prof. Zavitz, O. A. C., Guelph, averaging 32.7 bushels per acre. Silver-hull comes next, yielding 23.5 bushels. While land for buckwheat may be plowed and worked up just before the seed is to be sown, yet a better crop is obtained when cultivation has been begun earlier. Seed-bed should be as for other grain crops, fine and smooth. The crop may be sown in May, but a better time is from the middle of June to the middle of July. Thirty bushels per acre is reckoned a large yield, and from 20 to 25 bushels fair.

Don't Judge a Roofing by its Looks



Most ready roofings look the same. The weather alone finds the hidden weakness.

You can't tell by looks which roofing will last or which will go to pieces in a season.

But you can do this. You can identify from its 300 substitutes the **only** roofing which **has lasted**.

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Fac-simile of the "RUBEROID MAN" on the wrapper and the word "RUBEROID" is stamped every few feet on the underside of the fabric.

Write us for a copy of our **FREE Book**, which gives you valuable information about all Roofings.

WRITE TO-DAY.

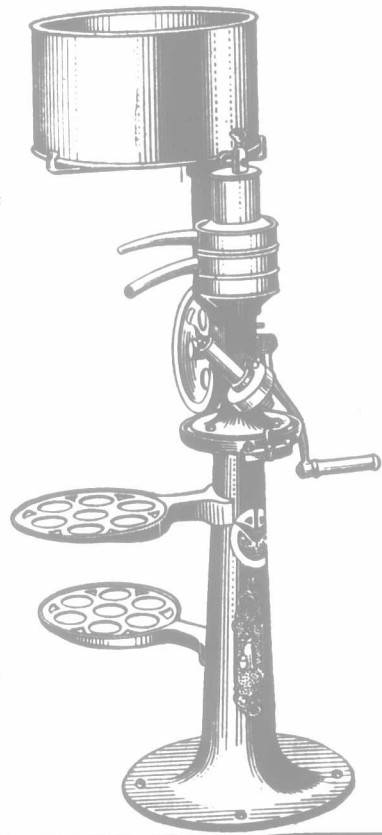
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Manufacturers.

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Dealers Everywhere.

9



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As soon as you have read this advertisement, sit down and write a post card for The Capital book—the book that not only tells the story of the easy-running, cream-saving separator, but that tells how you can put The Capital in your own dairy practically without costing you a cent.

The book also tells all about the wonderful Capital gears, about their perfect meshing and non-wearing qualities—how they run in oil—how an automatic clutch stops them running the minute you let go of the handle—and about how they give the light, three-and-a-half-pound bowl, 7,000 revolutions a minute.

It tells how and why The Capital skims closer—why The Capital wastes less than one-fifth the cream that other separators waste—and then explains how the machine can be made sweet and clean in two minutes after you are through using it.

This book is full of hard-and-fast facts—separator facts—which every dairyman owes it to himself to know; facts which will prove a revelation to the dairyman who is not familiar with The Capital.

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Strong, rigid frame—roller bearings—tight cover.

8 sizes, to churn from 1/2 to 30 gallons of cream.

"Champion" High Speed is the new Momentum Balance Wheel Washing Machine.

If your dealer does not handle them, write us. DAVID MAXWELL & SONS, - ST. MARY'S, ONT.

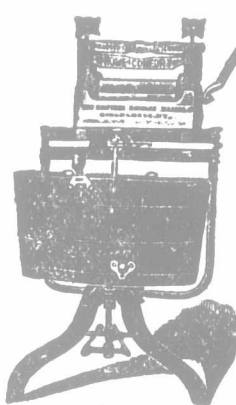
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Situated on the St. Lawrence River one mile west of Prescott, Ont. 210 acres, about 25 acres woods; in fine condition. This is a rare chance for a farmer to go into cattle and dairying. Terms favorable. Apply to

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less clean in double quick time. Six minutes finishes a tubful.

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F. A. D. BACH, Manager.

The 1900 Washer Co., 357 Yonge Street
TORONTO, CANADA

The above offer is not good in Toronto or Montreal and suburbs. Special arrangements for these districts.

QUESTIONS AND ANSWERS. Miscellaneous.

ALFALFA AND TILE DRAINS.

I notice in your issue of March 17th a letter from Jos. Crone, Lambton County. He states that the roots from his alfalfa and apple trees had once blocked his tile. Would be inform us as to what depth his tile were down, as I might say that I have a tile 8 ft. deep, running through my orchard. I was living in hopes that the roots of the apple trees would never bother it.

W. M. F.

Ans.—I put my tile 30 inches deep in the ground; take eight inches off for the six-inch tile would make the depth 22 inches to the top of tile. The soil is a black clay. I think if the tile was a foot deeper the alfalfa roots would go down into the tile under the conditions specified. I have sown alfalfa on tiled ground since that time and have had no trouble with the tile blocking.

JOS. CRONE.

PASTURE FOR LOW LAND.

Will you please advise, through the valuable columns of your paper, Have a large tract of low land that can be flooded at will.

1. What kind of grass would you sow on such land?
2. Would English water grass be a good grass for such?
3. If seeding with English water grass, would you seed by roots or seed?

C. L.

Ans.—I have not had experience with a grass under the name of English water grass. It is probable, that for the land which you describe, Blue Joint would be one of the most suitable. We have not experimented with it at Guelph. I understand it is one of the most suitable grasses for land which cannot be drained, and that it will thrive on soil which is even too wet for Red Top. It sometimes grows naturally in marshes, but can be grown under cultivation. It is said to produce a large amount of nutritious pasture, and to produce a heavy crop of hay, which is relished by animals. It is possible, however, that the land which you have, might give satisfactory results from Red Top, with a small mixture of alsike and white clover.

C. A. ZAVITZ.

FRENCH-CANADIAN HERDBOOK

1. Where can I get a copy of the French-Canadian Herdbook, and what is the price?
2. Are these Quebec breeders all French-speaking people, or do they understand English?
3. Is there much demand for these cattle, and what prices are they bringing?
4. What are the freight charges on pure-bred stock? Would it not be much cheaper by steamboat? Could you publish a score-card for dairy cattle, such as is used by the O.A.C. students?
5. If a cow comes in season two months after service, would you call that contagious abortion? Can anything be done to make a cow hold service if she returns regularly?

SUBSCRIBER.

Ans.—1. Copies of the French-Canadian Cattle Herdbook may be had from the Accountant, National Live-stock Records, Ottawa. Price, \$1.00.

2. Most of the breeders of French-Canadian cattle are French. However, there are some English-speaking also. The French do not speak English, but letters written in that language would be readily answered.

3. There is a fair demand for these cattle. Good stock is dear enough; Cows, from \$100 to \$200; average price would be about \$100 for average animals.

4. The freight would be very much cheaper by steamboat than by railway, unless a carload is shipped. For a score-card for French-Canadian cattle, address Dr. J. A. Couture, 49 Rue Des Jardins, Quebec, Que.

5. The fact of a cow coming in season two months after service would not necessarily indicate contagious abortion. It would rather indicate that she was not impregnated. The most advisable thing to do with a cow which does not hold service though she is served regularly is to get rid of her.

J. A. C.

Some day you'll own an Empire Separator

No matter what make of separator you may own at present—no matter what make you may buy this year—sooner or later you'll get an Empire. The sooner that day arrives the quicker you'll know what a really good separator will do. Judge the Empire from what it has done for others. It will do the same for you.

Empire Cream Separator Co., Sussex, N. B.
Gentlemen:—I have used an Empire Cream Separator for over three years without it costing me a cent for repairs in that time. It runs so easily my little boy six years old thinks it great fun to be allowed to turn it. It is a close skimmer, easily washed, and a marvel of simplicity.
(Signed) H. Dwight Ruggles.
Annapolis Royal.

Empire Cream Separator Co., Toronto, Ont.
Gentlemen:—Ten years ago I bought a No. 5 Empire separator in Montreal from your agent in that place and have used it ever since. The cost during the ten years for repairs, aside from an occasional rubber ring, was 25c for a new point in the end of the spindle. Hemingford, Que.
(Signed) Archie Cleland.

Empire Cream Separator Co., Toronto, Ont.
Gentlemen:—Eight years ago last spring I purchased one of your No. 5 Empire Cream Separators and during those eight years we have run it continuously without spending a cent for repairs, aside from a few rubber rings. We are using the separator today, and it does as good work as ever.
(Signed) James Standish.
Rougemount.

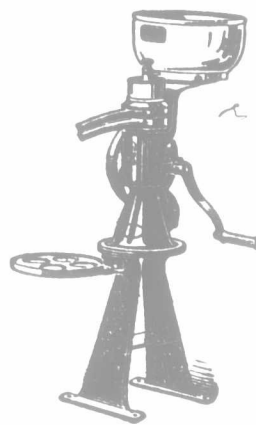
Empire Cream Separator Co., Toronto, Ont.
Gentlemen:—The 325 pound per hour separator I got from you nine years ago has given perfect satisfaction. I have kept 15 cows on an average. It has not cost me one cent for repairs in that time, and is in good running order today.
(Signed) Samuel Gilmour.
Rocklyn, Ont.

Empire Cream Separator Co., Toronto, Ont.
Gentlemen:—After a thorough test of the Empire Separator, I found it to be a first class machine, working well under all conditions. Will make the best job of milk when it is cold of any machine I have seen. ***
(Signed) J. F. McMillan,
Supt. House of Refuge.
Cobourg, Ont.

Empire Cream Separator Co., Toronto, Ont.
Gentlemen:—Having purchased one of your separators over seven years ago, I have much pleasure in recommending it. Have used the separator continually during the seven years, and it has not cost me one cent for repairs.
(Signed) Mark McGee,
Whalen, Ont.

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Provided you tell us the number of cows you keep, also name of this paper, we will send you one copy free of our new 25c book which tells the truth about cone and disc methods of cream separation. Ask for book No. 43. Send for it immediately. Extra copies 25c. 4



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No. 0 Wooden Saw Frame, specially designed for Portable Sawmill work. Takes saws up to 52 inches diameter. Forged Steel Mandrel, 2 7/8 inches diameter. Friction feed of 4-inch paper and iron friction, returned or rigged from 5 to 10 times logs. Substantial carriage can be carried close to outer frame bearings. Standard carriage for rack feed is 16 feet 11 inches long; rope feed 17 feet 6 inches long. Frame extra wide, of heavy red pine stringers, edges bound with heavy iron. Log seats heavy taper movement, and are fitted with our patent upper and lower steel hook Peel Dogs, setting and holding Paws, designed to eliminate lost motion and permit a set of 1-16 inch. and is fitted with heavy cast iron hand-wheel for hand setting. Track 54 feet long. This describes it, as well as many others in detail. Drop us a card to-day.

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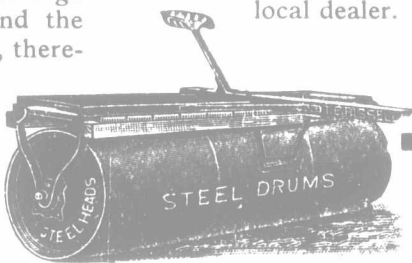
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You'll find the "Bissell" an exceptionally strong, rigid and substantial roller. We guarantee the heavy steel drums not to dent or ding. They will always do their work perfectly. You can enjoy riding on this roller, too. The position of the seat prevents jars and jolts. The horses will prefer to draw this roller. It runs easily. The "Bissell" has large Roller Bearings one-half inch in diameter, and the axle revolves with the drums, therefore it is lighter draft than others. The frame is stiff and strong. The 2-in. axle is solid steel. There is a

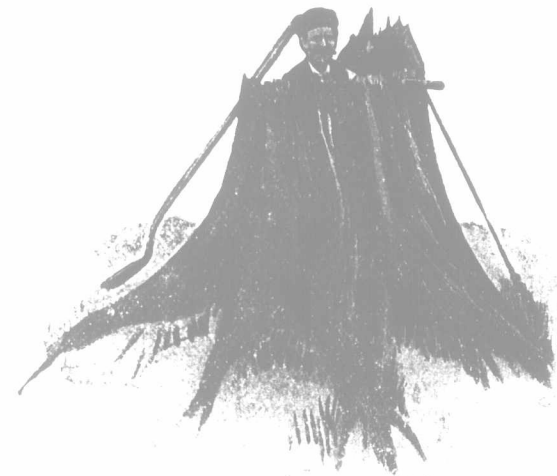
draw-bracket for low hitch. You'll find every desirable feature on the "Bissell." Department W will be glad to send you catalogue explaining detailed construction and showing different styles.

Write us, or see your local dealer.



T. E. BISSELL CO'Y, LTD.
ELORA, ONTARIO.

Now is the Time to Clear Your Land of the Stumps and Boulders Thereon



Stumping Powder

is just the thing to do the work quickly, very little labor, and at small cost.

Watch our issue of April 21st and note results after using STUMPING POWDER.

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HAMILTON POWDER COMPANY

Nearest office to where you reside, TORONTO, ONT., MONTREAL, P.Q., VICTORIA, B.C.
For free descriptive catalogue and prices.

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Hard drawn steel running wires and "The Tie That Binds", give a strength that resists every strain.

Heavy galvanizing protects against rust. Patent Posts are made of No. 12 gauge steel, bent at right angle, to give the maximum strength at reasonable cost. No staples required to put fence on posts—we've attended to that.

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The Standard Wire Fence Co. of Woodstock Limited, Woodstock, Ont. & Brandon, Man.

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A Change of Seed is Always Advantageous.

I am offering 5,000 bushels pure-bred seed potatoes grown from imported English, Scotch and American seed. Extra First Early, First Early, Second Early, Main Crop, Late Main Crop. For prices, etc., address:

W. P. NILES, WELLINGTON, ONTARIO
Grower of Seed Peas, Beans, Potatoes, Oats and Barley.

Please Remember to Mention "The Farmer's Advocate" When Writing

QUESTIONS AND ANSWERS. Miscellaneous.

CROWN GALL IN APPLE TREES.

1. Is there any cure for crown gall in apple trees?
2. If the sick trees were cut down and young ones put in their places, would they be likely to become infected?
3. What treatment would you suggest to rid the ground of the disease?
4. Can Snow apple trees be sprayed to prevent the scab on the apples?
5. Where would one look for the proper directions to follow if spraying is advised?

T. K.
Ans.—1. No. Many trees, however, that have crown gall grow and thrive almost as well as those that are not affected.

2. Yes, unless the holes are made fairly large, the old soil removed and fresh soil from an uninfested place put in, then the trees will be likely to come through fairly well.

3. If the soil is badly infected with the disease it would require several years to free it, but just how long, experiments have not yet been conducted to determine. The growing of grain, clover or root crops would be the best way to gradually work the disease out, and probably about four or five years would be required.

4. Yes.

5. See "The Farmer's Advocate," March 3rd, 1910.
Note.—In setting out apples, pears, cherry, plum, peach or raspberry, examine the roots and crown carefully, and reject any plant that shows signs of galls.

FEEDING HORSE AND COW.

Can you give me (or tell me where I can obtain) the following information:

1. The approximate cost of feed for one cow per annum?
2. What varieties of feed?
3. The approximate cost of feed for one horse per annum?

A. E. W.

Ans.—1. and 2. Conditions vary widely. Some cows are wintered on cornstalks and straw, with a bite of hay toward's spring, and grazed on scant pasture in summer. Others are fed in the winter on silage, alfalfa or clover hay, roots and meal. The latter ration is usually more profitable. We have to consider also whether the cow is to be charged with merely the cost of producing these feeds or their purchase price in town. There is, too, a big difference in size of cows. A thousand-pound cow would probably consume 2½ tons of hay in the winter season, and in summer five months of pasture, commonly rated at about \$1 a month per head, though, personally, we would never let pasture for any such figure, as more net profit can be made from arable land under other crops if good management is practiced. Instead of feeding the cow altogether on hay, she might be given, say, 35 pounds of silage a day, 8 pounds clover hay, a trifle of straw, and an average of, say, 5 pounds mixed meal (including bran), valued, perhaps, at \$1.25 per cwt., or upwards. This would amount in the course of seven months' feeding to nearly four tons of silage, which can be produced at a profit for \$3 a ton. Put the silage at \$12. It is hard to say what the hay should be valued at, but put it at \$8 a ton. This makes an item of \$6.72 for hay. The meal would come to \$13.12. Add in \$5 for pasture, and we have \$36.84. The average cow kept on Canadian farms does not cost this much to feed; if she did she would give more milk. We consider that the quantities of feed indicated could be produced for less than \$36.84 on a well-managed farm. If dry period occurred in winter feed cost would be lessened somewhat. Of course the manure remains to the good, and this is worth much more than commonly credited.

3. Assuming that the horse is stabled practically all the year, a thousand-pound animal would probably need about 3½ tons of hay (though he would eat more if it were given to him), and about two gallons of oats a day, or 90 bushels in the twelve months. A hard-working horse should have more oats. On the other hand, an idle horse in winter will do very well with some clean oat straw instead of all hay.

IF YOU GET CHILLED

there is great danger of colds and grip.

When the blood is impoverished and circulation is poor disease is invited, because the power of resistance is low.

Your blood should course vigorously through your body, carrying warmth and restoring waste. There is then no danger of colds or grip.

HOT BOVRIL renews the blood, nourishes the system, stimulates and warms the whole body.

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VIA TO WESTERN CANADA
CANADIAN PACIFIC

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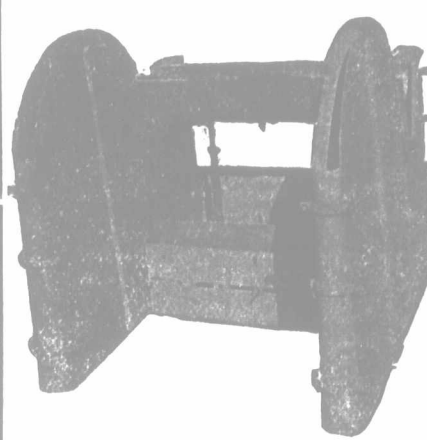
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Adjustable mould for forming concrete mangers, stalls and water-troughs for cattle and horses. Pat. Oct. 24, 1909. For pamphlets, instructions to operate, and for prices, apply to

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The Safe-Lock fence is the latest improvement in the line of Farm Fences. There are three points in which it supersedes other fences:

1st. The stays and the locks are made of No. 9 Hard Wire, therefore they will last as long as any other portion of the fence.

2nd. As the strands are left absolutely straight (excepting the usual coil), they are stronger by two hundred pounds than a "ring" lock fence.

3rd. The lock cannot slip nor separate in any way.

For illustration of these three points see the cut below, showing the "Safe-Lock" in detail.



"Monarch" stiff-stay Fence

Our Monarch is easily the peer of all stiff-stay fences.

All No. 9 hard drawn steel wires.

When making the Monarch, the lock is driven diagonally with the laterals, instead of being

applied by heavy direct pressure at the point of crossing. This heavy direct pressure is responsible for much of the broken-wire troubles of ordinary fences.

Complete explanation furnished in free booklet. If you are wise you'll write for a copy.

WILL YOU ACT AS OUR REPRESENTATIVE?

You can quickly work up a big fence trade in your locality with our line of fencing and gates.

No other agent has two such superior and different fences as

Safe-Lock and Monarch Stiff-Stay.

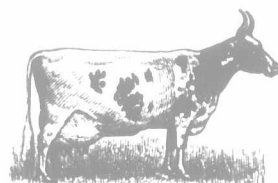
Our agents expect this to be their bumper year. You'll be wise to join them now.

THE OWEN SOUND WIRE FENCE CO., LIMITED
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Great Dispersion Sale!

80 AYRSHIRE CATTLE 80

The celebrated herd of Jas. Benning, Glenhurst Farm, Williamstown, Ont.



Wednesday, Apr. 20, 1910

The Chicago World's Fair champions were bred in this herd. Included are Floss of Glenhurst and her five daughters, a cut of which will appear in a later issue. This herd, founded 50 years ago, is headed by Drongan Mains Guarantee, imp., (26337).

Thirty of the cows have a milk test of 4.06 butterfat. Vehicles will meet the Moccasin and noon express trains at Summers-town, G. T. R. Sale will commence at 1 p. m.

Capt. T. E. Robson,
Auctioneer.

JAMES BENNING, Williamstown, Ont.

Dispersion Sale of Shorthorn Cattle!

The property of T. L. Pardo & Son, three miles west of Cedar Springs, Ont., one of the oldest-established herds in Western Ontario. Positively no reserve. On

TUESDAY, MAY 3RD, 1910

Consisting of the entire herd of 23 females and 8 bulls. Several imported, and nearly all from imported sire and dam. The foundation stock for this herd were selected from the very best herds of Scotland and Canada, with a strong view to milking qualities. Electric cars connect with all M. C. R. and P. M. trains, and will be met at Cedar Springs. Terms: Six months' credit will be given on bankable paper, or a discount of 6 per cent. per annum for cash. Lunch at noon. Sale to commence at 1 o'clock. Catalogue on application.

Capt. T. E. Robson,
McCoig & Harrington, Auctioneers.

T. L. PARDO & SON,
CEDAR SPRINGS, ONTARIO

Please Remember to Mention "The Farmer's Advocate" When Writing

QUESTIONS AND ANSWERS. Veterinary.

MISCELLANEOUS.

1. Horse had leg cut three inches above hoof. It is now healed, but there is a ridge as thick as a man's finger.

2. Horse received a blow on leg half way between hock and fetlock. There is an enlargement all the time, but it becomes larger when he stands.

3. Mare had lymphangitis, and her leg swells above the ankle. P. M.

Ans.—1. Enlarged scars are very hard to reduce. Get a liniment made of 4 drams each of iodine and iodide of potassium, and 4 ozs. each of alcohol and glycerine. Rub a little well into the part once daily, and continue the treatment for a couple of months.

2. Bathe often with warm water, and keep a bandage on when in the stable. After the swelling ceases to increase when standing, if any enlargement remains treat as No. 1.

3. Give a purgative of 8 drams aloes and 2 drams ginger; follow up with 1 dram iodide of potassium twice daily. Give regular exercise, and keep bandage on the leg at nights. V.

UNTHRIFTY HORSE.

I bought a five-year-old horse last summer. He was thin, but healthy looking, and had good spirits. Towards fall he began to fail, and, although well fed, got worse, and I had to stop working him. I thought he had worms, and gave him an ounce of turpentine in a pint of raw oil, and repeated in ten days, but he passed very few worms. About six weeks later he passed about 125 worms, from six inches to a foot in length, but he has continued to get weaker and thinner. J. C. C.

Ans.—I am of the opinion he still has worms, and this is the cause of his unthriftiness. Take three ounces each of powdered sulphate of iron, sulphate of copper and tartar emetic; mix, and give a powder every night and morning. After giving the last powder, feed nothing but bran for about 18 hours, and then give two ounces oil of turpentine in half-pint raw linseed oil. This treatment should rid him of worms. Then get a mixture of equal parts sulphate of iron, gentian, ginger and nuxvomica, and give him a teaspoonful three times daily. Feed well on good hay, rolled oats, and a little linseed meal, with a few carrots or a mangel or two, once daily. V.

Miscellaneous.

HIRED MAN'S HOLIDAYS.

What holidays is a hired man entitled to, he being hired for 9 months, beginning the first of March? He has taken Good Friday off. Is that a holiday or not? CONSTANT READER.

Ans.—In the absence of any agreement concerning holidays, a hired man is entitled to statutory holidays occurring during his term, subject to the doing of usual chores on these days. These holidays for the nine months referred to are all Sundays, Good Friday, Easter Monday, Victoria Day (24th May), Dominion Day, Labor Day, Thanksgiving Day, and any other day that may be proclaimed by the Governor-General or the Lieutenant-Governor as a public holiday.

PLANTING ORCHARD.

1. I am intending to plant an orchard this spring, and would like to ask some advice from you. Am intending to plant 50 Spies and 50 Baldwins for permanent trees, and use other trees for fillers. Am intending to plant each variety separately, as I think it would be more convenient to pick; or would it be better to plant in alternate rows?
2. Had I better plant 35 or 40 feet apart? YOUNG FARMER.

Ans.—1. It would be well to plant not more than two rows of each variety in alternate strips throughout the orchard, so that the Spies may be fertilized from the Baldwins.

2. Seeing that you propose to have fillers planted in, 40 feet each way would in all likelihood be the best distance apart for the permanent trees. In some sections where, on account of soil or climate, apple trees fail to reach the usual size, 35 feet apart would be sufficient, but 40 feet is better usually.

POTATO DIGGER

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Does perfect work. Fully guaranteed. Write for illustrated catalogue of Diggers, Pickers and Sorters. THE HOOVER MFG. CO., Box No. 33, Avery, Ohio. Transfer points—Buffalo, N. Y.; Detroit, Mich.; St. Paul, Minn.; Marshalltown, Ia.; Idaho Falls, Id.; Portland, Ore.; Spokane, Wash.; Winnipeg, Man.; Hamilton, Ont.; Fond du Lac, Wis.



"ELECTRO BALM" CURES ECZEMA,

Also Piles, Burns, Scalds, Chapped Hands and Face.

Gentlemen use it after shaving. This Balm is handled by the best firms, and is highly recommended by those who have used it.

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50c. a Box at all Dealers or upon receipt of price, from
THE ELECTRIC BEAN CHEMICAL CO.,
Ltd., OTTAWA.

"SAVE-THE-HORSE" SPAVIN CURE.



There are no baneful and vicious features attending the use of "Save-the-Horse."
You obtain results without delays, relapses, thickened tissue or suspended uses of the horse.
NO PROMISE OF RESULTS IMPOSSIBLE TO PERFORM OR FALSE TESTIMONIALS TO MISLEAD YOU. YOU CANNOT MISTAKE THE CERTAINTY OF ITS UNFAILING AND UNEQUALLED POWER OR THE SECURITY OF OUR CONTRACT.
Hayre de Grace, Md., Dec. 7, 1909.
Troy Chemical Co., Binghamton, N. Y.
During 1908 I had two horses go wrong, one with a "bone spavin," she was dead lame. The other with two "big spavins" and a big knee.
After reading your advertisement week after week I had Mr. Foley order for me one bottle of "Save the Horse," which I thought I would just simply try. I used it on both cases, following your directions. I gave them both good work and had consumed the one bottle only, which took but 1000 miles. And today I shall say just one word has a capital since the treatment, that they both are as sound as a new dollar and neither one has taken a lame step since. I WANTED WELSH.
Send for copy, booklet & letter to business men & trainers in every kind of case. Permanently cures Spavin, Thoroughpin, Ringbone except last, Curb, Splint, Capped hock, Windpuff, Shoe Bull, Injured tendons & all Lameness. Send for free of cost. Please write to nearest Dealers or Exp. Agent THOY CHEMICAL CO. 148 Van Horn St., Toronto, Ont., and Binghamton, N. Y.

Toronto Spring Horse Show

The Canadian and Military Horse Show

ARMOURIES

April 26, 27, 28, 29 and 30, 1910.

ENTRIES CLOSE APRIL 14TH.

\$6,500 in Prizes.

For prize lists and all information apply to

W. J. STARK, Secretary,

12 Wellington St. East, Toronto, Ont.

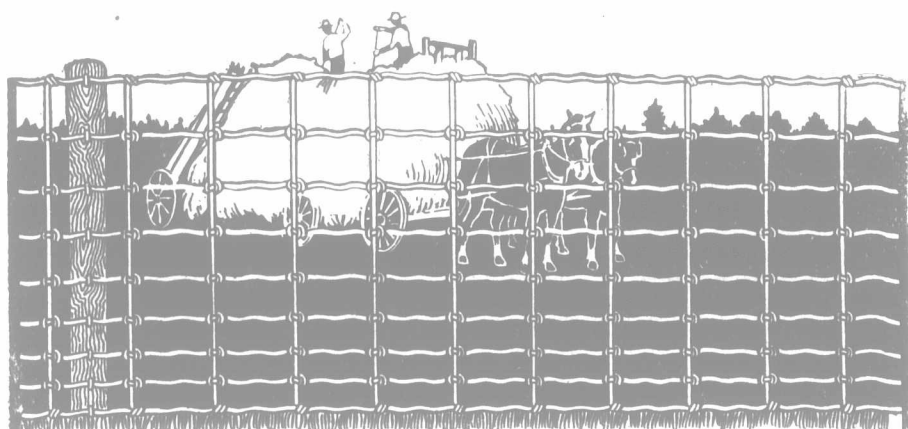
Bawden & Mossip, St. Mary's, Ont.—Clydesdale, Shire and Hackney Stallions, all of which are for sale at reasonable prices. The Clydesdales comprise such horses as King's Friendship (14724), by Hiawatha Godolphin, by Hiawatha; King's Lynn (14204), by Acme, by Baron's Pride; King's Model (14206), by Sir Hugo, by Sir Everard; Hector (14371), by Murchison, by McGregor; Coynechie (14344), by Blacorn Maugregor, by McGregor. Write or come and see WM. MOSSIP, St. Mary's, Ont. Phone connection.

For Sale—Complete Set English Shorthorn Herdbooks, 55 vols., original edition; Dominion S. H. H. B., Vols. 10 to 25, inclusive; also Vol. I Canada H. B.

JAS. A. COCHRANE, Lennoxville, P.Q.

Imp. Clydesdale Stallion for Sale, rising good stock-getter, weighs about 1,800 lbs. Will be sold reasonable and on easy terms. Address:

BOX 225, WEST MONKTON, ONT.



Here's a fence that is strong and springy—remains taut and will not rust—

Peerless the Fence that saves expense

Put a Peerless fence around your farm and you'll get real service.

It will last through years of the hardest kind of use.

It will not rust—and rust is the greatest enemy of wire fencing.

It will not sag—when struck by a wagon or unruly animal it springs right back into position.

Our No. 9 Peerless fence is made of heavy English galvanized wire—all No. 9 gauge.

We tested all kinds of wire and found this English wire the best of all. No other wire we have tested

is drawn and galvanized with such care and thoroughness.

For this reason Peerless Fence will not rust—the spelter never chips off. The fence will last for years.

You can test and know how good any fence is before you buy it. Write for our simple formula for testing wire. We'll also send samples of Peerless Fence to test.

We know there is no fence made that will last as long and give you as much satisfaction as the Peerless Fence. Write to-day for our simple test and samples.

THE BANWELL HOXIE WIRE FENCE CO., Limited
Makers of Farm, Poultry and Ornamental Fence and Gates
Dept. B, Hamilton, Ont., Winnipeg, Man.



20 Imp. Percheron Stallions 20

Our 1909 importation of 20 Percheron stallions, from 1 to 5 years of age, are now in our stables. Up to over a ton in weight. Big, stylish, choke-full of flashy quality, and faultless movers. Prizewinners among them. The best lot ever imported to Canada. All are for sale on terms to suit.

HAMILTON & HAWTHORNE,
Simcoe, - - - - - Ontario.



Maher's Horse Exchange

16 to 28 Hayden Street TORONTO
(Near cor. Yonge and Bloor)
AUCTION SALES of Horses, Carriages, Harness, etc., every MONDAY and THURSDAY at 11 a.m. PRIVATE SALES every day. We have always a large quantity of horses on hand for Auction or Private Sale. We have the biggest and best sale ring and stables in Canada. We hitch and try all horses for out-of-town buyers, and guarantee satisfaction. WE SELL STRICTLY ON COMMISSION.
P. MAHER, Proprietor. GEO. JACKSON, Auctioneer.

CLYDESDALES AND FRENCH COACHERS

We have still on hand a few choice Clydesdale stallions—all young—that for size, style and quality will stand inspection. We have also a few Clyde fillies—imported and Canadian-bred, and two French Coach stallions. Correspondence and inspection invited. Our prices are easy and terms to suit. Phone connection.

R. NESS & SON, HOWICK, QUEBEC.

T. H. HASSARD'S NEW IMPORTATION!

MY NEW IMPORTATION OF
Clydesdale Stallions and Fillies
are now in my stables at Markham, Ont., and, as usual, I have a big range for selection, of a type, breeding and quality seldom equalled, never excelled, by any previous importation. Call and see them. Phone connection.
T. H. HASSARD, Markham, Ont.

CLYDESDALES AND HACKNEYS

We have still for sale several good Clydesdale Stallions; also our prizewinning Hackney Stallion, Blanch Surprise, and a few good Clydesdale and Hackney Mares. All of which will be sold on reasonable terms. Phone connection.

JOHN A. BOAG & SON, Bayview Farm, Queensville, Ont.

ORMSBY GRANGE STOCK FARM, ORMSTOWN, P. QUE.
I have arranged to make a special importation of yearling and 2-year-old fillies this spring for the benefit of those wishing to obtain pedigreed stock at cost price. Those wishing to co-operate with me in this, should write me at once; the saving will be about one-half of the prices charged by agents in Canada.
Duncan McEachran.
My object is to promote Clyde breeding in Canada.

QUESTIONS AND ANSWERS.
Miscellaneous.

THOROUGHPIN.

I have a mare, coming three years old, has a thoroughpin since about two months ago. What is best treatment?
J. G.

Ans.—The mare should not do any heavy work while being treated. Apply, once daily, the following mixture: Three drams each of biniodide of mercury and potassium iodide, and six ounces of water. Clip off the hair and apply as above. After four or five applications, cease for a week or ten days till the soreness passes away, and repeat. This is an absorbent blister, and will not make the part very sore. If necessary, repeat the treatment four or five times.

HIP VS. GABLE ROOF.

I expect to build, this summer, a basement barn, 75 feet by 38 feet, roofing and siding to be corrugated galvanized-iron sheets. Can you inform me what are the advantages or disadvantages of a hip roof over the ordinary gable roof?
AMATEUR BUILDER.

Ans.—The hip roof is preferred by some because they like its appearance better. That, of course, is a matter of taste. In addition, there is much greater storage space under it, with barn posts of equal height. It is preferred by some, also, because its shape, being in the form of an arch, is well adapted for being braced and made rigid, where light timbers are used.

In favor of the gable, as compared with the hip roof, is the fact that fewer shingles are required, that as much room can be secured by simply raising the main plates higher, that the roof is more accessible, and that the style, being simpler, is more pleasing to many.

SOIL FOR GARDEN—WHEN TO START.

1. What kind of land is the best for vegetable-growing? I intend starting to raise vegetables, etc., for canning factory. I have been offered a property of about fourteen acres of sandy and gravelly loam, with some clay. Do you think this would suit my purpose? It is only a few miles from Toronto, and I think perhaps more could be made by marketing the produce there.

2. Do you not think it is too late to start this spring? Could get possession April 1st.
C. L. B.

Ans.—1. Dark-colored sandy loam, with moderately-dry, porous subsoil, is the very best soil for most garden crops. Ease of working and earliness are both important characteristics in soil for garden purposes. The soil in the property you refer to would probably be suitable, if rich enough.

2. Gardeners, of course, have been at work during the winter hauling manure, and in March making hotbeds. It will be too late for such preparation work after April 1st, but many valuable crops could yet be prepared for and grown after this date.

POTATOES ON SOD.

Have five acres of light loam that has been in grass for several years, and which is pretty well run out. I want to sow it to potatoes this year. What depth should it be plowed first? How deep should the potatoes be planted, and how far apart each way. Will eyes give as good results as the whole potato, and, if so, should they be planted singly? Kindly give full information on the subject.
SUBSCRIBER.

Ans.—Plow about five inches deep, and plant potatoes about that depth. They may be planted in rows in the bottom of every third furrow, the sets being placed close up to the heel of the last slice turned. At least a ten-inch furrow should be turned, bringing the rows of potatoes not less than thirty inches apart. The sets should then be planted at least twelve inches apart in the rows. Experiments at Guelph have indicated that best results may be expected from cutting good-sized potatoes into pieces weighing about 1 1/2 ounces each, having two, three, or four eyes in a piece. Sprinkling with land plaster at once, and planting the same day, has been found to be of great advantage.

HORSE OWNERS! USE



CAUSTIC BALSAM.

A safe, speedy and positive cure. The safest, Best BLISTER ever used. Remove all blemishes from Horses. Impossible to produce scar or blennish. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Toronto, Can.

Clydesdales and Percherons



To my many friends, and the public generally, I wish to say that in my stables at Weston, Ont., I have my 1909 importation of 10 Clydesdale and 8 Percheron stallions; a lot that for true draft character, faultless underpinning, choice quality and breeding were never surpassed. Terms to suit and prices right.

J. B. HOGATE,
Weston, Ont., and Brandon, Man.
W. D. COLBY, Mgr.
Weston, Ont.

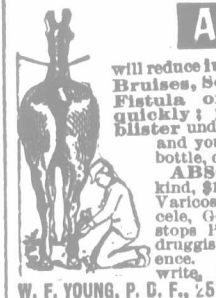


40 YEARS PROOF

You don't need to experiment in treating Spavin, Ringbone, Curb, Splint, Capped Hock, Swollen Joints, Old Sores, or any Lameness in man or beast.

KENDALL'S Spavin Cure

Has been the world-wide remedy for 40 years.
Johnville, Que., Jan. 9, 1908.
I have used your medicine for nearly forty years, and now I take the liberty to ask you to forward one of your books to me. I once had a horse with two Bog Spavins. I tried your Cure and at the end of four months he was as smooth as the day he was foaled.
Yours respectfully, John Smith.
\$1. a bottle—6 for \$5. Get our book "A Treatise On The Horse" at dealers or write us.
Dr. B. J. KENDALL CO., Enoesburg Falls, Vt.



ABSORBINE

will reduce inflamed, swollen Joints, Bruises, Soft Bunches, Cure Bells, Fists, or any unhealthy sore quickly; pleasant to use; does not blister under bandage or remove the hair, and you can work the horse. \$2 per bottle, delivered. Book 7 E free.
ABSORBINE, JR., for man, kind, \$1 and \$2 per bottle. Reduces Variole, Yelva, Varicocele, Hydrocele, Gout, Wens, Strains, Bruises, stops Pain and Inflammation. Your druggist can supply and give reference. Will tell you more if you write. Manufactured only by **W. F. YOUNG, P. O. F., 263 Temple St., Springfield, Mass.**
Canadian Agents: **Lyman's Ltd., Montreal.**

DUNHAMS' PERCHERONS

46 splendid Percheron stallions and mares arrived FEBRUARY 9th. These, added to our present stock, offer intending purchasers the finest collection in America. If you want the best horses, horses with bone, quality, size, action and best breeding, stallions or mares; if you want fair and liberal treatment; if you want lowest prices consistent with good merchandise, visit Oaklawn. Catalog shows the place and the horses.
W. S., J. B. & B. Dunham, Wayne, Ill.

Don't Have a Blind One

Wonderful Discovery "VISIO"
MOON BLINDNESS and all Diseases of the Eye successfully treated with this NEW REMEDY.
Money Back if it fails to cure. \$2.00 per bottle postpaid on receipt of price.
Visio Remedy Ass'n, Dept. C, 1933 Wabash Av., Chicago, Ill.

HIGHLY-BRED CLYDESDALES FOR SALE

Always on hand, stallions, colts, mares and fillies. The champion stallion, "Baron Howes" (13847), was purchased from this stud. Apply:
JOHN R. BEATTIE,
Banrch Farm, Annan, Scotland.

For Sale: A Very Choice Five-year-old Imp. Clyde Stallion

Will weigh a ton, is smooth, a beautiful color, and leaving choice stock.

WM. MEHAREY, RUSSELL, ONTARIO.

For Sale: REGISTERED HACKNEY STALLION, COCK ROBIN.

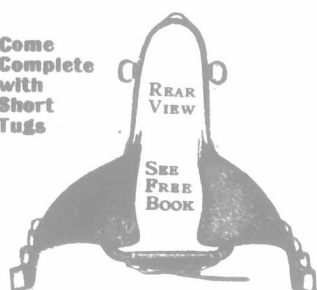
Three years old; 15 1/2 hands; chestnut; hind feet white. Sire Commodore 3rd, imp. (6695), by Chocolate Jr. (4185). Dam Ada Adair (183), by Robin Adair 2nd, imp. (3907). For description, terms, etc., address: **G. W. CLEMONS, ST. GEORGE, ONT.**

All Horse-Collar Troubles Now Prevented or Quickly Cured

Every horse-owner who will now consider the practical in valuable time and horseflesh by using a set of HUMANE HORSE COLLARS to prevent all collar troubles, will certainly buy a set with his spring harness. Or get a set to cure your sore horses while they work. The success of the HUMANE HORSE COLLARS for the past three years proves this. Investigate.

HUMANE HORSE COLLARS

Come Complete with Short Tugs



It is a fact that only one set of HUMANE HORSE COLLARS on a farm will cure up and keep cured of collar troubles all your horses. Don't use "sweat pads"—it's cruel—especially in hot weather—injures your horses; and besides, the sweat pads cost you more than most collars before you get through. You don't need them with these collars. Every set comes complete with short tugs and ready to use—less trouble to put on and take off—and fit any horse perfectly all the time by simple adjustment. Built to last for years by expert workmen, and durable materials.

Don't think of buying your spring harness until you write or fully investigate THE HUMANE HORSE COLLARS. Get our book first.

WHIPPLE HORSE COLLAR COMPANY, LIMITED
Hamilton, Ontario.

Clip Your Horses In the Spring

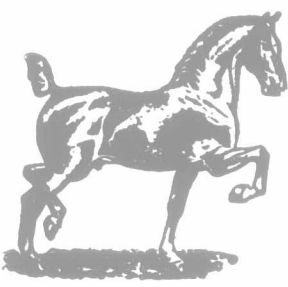


In the spring when your horses are soft and you put them at the hard spring work they sweat a great deal. Their heavy winter coat holds this sweat and it dries out slowly. If left to stand they take cold easily and at night they chill and are liable to all kinds of complaints. If you clip them they dry off fast and there is no question but they stand much less chance of taking cold when dry than if wet. You would not like to stand on a raw spring day or on a chilly spring night with a heavy wet suit on. Neither do your horses. It pays to clip them and blanket, if necessary on cold nights. Your horses dry off much faster, they feel better, rest better, get more good out of their food and do better work. They are better all around. Is it the humane and profitable thing to do. The quickest, least expensive and most satisfactory way to clip with

The Great Stewart Ball Bearing Clipping Machine

The price at your dealer's is \$9.75. This machine turns easy, clips fast and will last a lifetime. We guarantee it for 25 years because the gears are all cut from the work is only solid steel bar. They are made file hard. They are enclosed and protected safe from dust and dirt and they run in an oil bath. Friction and wear are practically done away with. It is the only ball bearing clipping machine. It has 6 feet of high grade flexible shaft and the famous Stewart one nut tension clipping knife. This is the noted knife that will stay sharp longer and clip more horses than any other clipping knife ever made. Price of the complete machine all ready to use is only \$9.75. Get one from your dealer. If he does not have it write us direct.

Chicago Flexible Shaft Co. 110 La Salle Ave., Chicago



UNION STOCK - YARDS Horse Exchange WEST TORONTO, CANADA.

The Greatest Wholesale and Retail Horse Commission Market.

Auction sales of Horses, Carriages, Harness, etc., every Monday and Wednesday. Horses and harness on hand for private sale every day.

The largest, best equipped and most sanitary stables in Canada. Half-mile of railway loading chutes at stable door. Quarter-mile open track for showing horses. Northwest trade a specialty. HERBERT SMITH, Manager. (Late Grand's Repository.)

CLYDESDALES and HACKNEYS

We have for sale a few choice Clydesdale mares, imported and Canadian-bred; also some Canadian-bred Clydesdale stallions. Hackney stallions and mares for sale always. Long-distance phone. Hodgkinson & Tisdale, Beaverton, Ont. G. T. R. and C. N. R.

IMPORTED CLYDESDALE FILLIES

I have still on hand six Clydesdale fillies. They are big, smooth fillies, exceptionally well bred, and their underpinning is the kind Canadian like. I have only one stallion left, a right good one. My prices are as low as any man's in the business. Phone connection. GEO. G. STEWART, HOWICK, QUEBEC.

Imported Clydesdales

My first importation for 1910 has just arrived. Stallions up to a ton in weight, from 1 to 5 years of age. Draft character and faultless underpinning are a predominating feature. Also a few big choice fillies 2 and 3 years of age. WM. COLQUHOUN, MITCHELL, ONT. Phone connection.

WAVERLY CLYDESDALES AND HACKNEYS

My 1910 importation of Clydesdale stallions and fillies, and Hackney stallions and fillies, are now in my barns. One and two-year-old Clyde fillies of a character and quality never before excelled. My Hackney stud was never so strong in high-class animals. All are for sale and prices right. ROBT. BEITH, BOWMANVILLE, ONT.

Clydesdales Home from the Shows

Intending purchasers would do well to see them before buying. Prices moderate. Myrtle, C. P. R. SMITH & RICHARDSON, Columbus, Ont. Brooklin, G. T. R.

Imported Clydesdales

1910 have arrived. They were selected to comply with the Canadian standard, combining size, style, quality and faultless underpinning with Scotland's richest blood. They will be priced right, and on terms to suit. C. W. BARBER, GATINEAU PT., QUEBEC.

CLYDESDALES, Imported and Canadian-bred.

I have on hand 2 Imported Clydesdale Stallions, one 4, the other 5 yrs. old; 2 Canadian-bred Clydesdale Stallions, one 2, the other 3 yrs. old; one French Coach Stallion, 4 yrs. old; one Shire Stallion, and the noted Hackney Stallion, Chocolate Jr. I will sell these horses cheap for quick sale. T. D. Elliott, Bolton Ont.

IMPORTED CLYDESDALES AND HACKNEYS

In my stables at Ingersoll, Ont., I have always on hand Clydesdale stallions and fillies, and Hackney stallions, personally selected in Scotland, for their high-class type, quality and breeding. Let me know your wants. W. E. BUTLER, INGERSOLL, ONT.

QUESTIONS AND ANSWERS. Miscellaneous.

SHINGLES VS. METAL ROOFING

We are making ready to build a barn this summer, about 100x65 feet, and we are a little undecided as to what kind of a roof to put on, whether to get the best cedar shingles or metal roofing. What do you advise?

A. W.

Ans.—Metal roofing has this advantage over shingles, that it furnishes considerable protection from lightning stroke. On the other hand, while the wearing qualities of shingles are known, having been tested for so long, the lasting quality of metal roofing, beyond a certain point, is a matter of conjecture largely, so far as the experience of Canadian farmers is concerned. No unqualified answer can be given as yet.

RATION FOR COWS — GASOLINE ENGINE.

1. What winter ration would you advise for cows that give about 50 pounds of milk a day when on grass. I mean a winter ration from the following feeds: Barley meal, oatmeal, oil cake at \$2.10 per hundred, turnips, clover hay of rather inferior quality, and I can allow one feed of alfalfa per day, also good oat straw, but we do not count on feeding much of it.

2. Is there any advantage to be gained in cutting straw and mixing with meal over uncut straw?

3. Will cattle do as well on meal fed alone, or ought it to be mixed with something? In other words, will they get all the good out of it if fed alone?

4. I am thinking of getting a gasoline engine to crush with, for my own use. What horse-power would you advise? Are they perfectly safe to have around a barn? What are the chief points to consider in buying one? Any other information will be appreciated. Or would you advise getting a windmill? Of course, besides chopping, I intend to use it to cut straw, pulp roots, etc.

BEGINNER.

Ans.—1. To your ration of hay and straw, as proposed, the bulk being rather inferior clover, with one feed of alfalfa daily, and some oat straw to pick over, you might add eight pounds of meal per day for cows in full milk, the meal consisting rather largely of crushed oats, with one-third to one-half barley, and half a pound or so of oil cake per day. Some corn meal might be used to advantage if available at reasonable prices. Vary the amount of meal mixture according to response. Neither alfalfa hay nor oil cake is especially needed to balance the ration in this case, but either, or both, will probably prove profitable in small quantities, nevertheless.

2. Not much. It is perhaps better if one has no silage or roots, to cut a part of the straw and throw the meal on top of this in the manger, but it is a question whether even this is worth while. We have done it, and fancied there was benefit, and, again, have questioned whether there was or not. Probably it would be advisable to do so if the meal were very heavy stuff, and fed without admixture of bran. There is some advantage in moistening or steaming the cut straw to make it more soft and palatable, though whether it pays is a debatable question.

3. See above.

4. A three-horse-power gasoline engine is said to be capable of running an 8-inch chopper, but it is usually wiser to have an overplus rather than under supply of power. There is a certain amount of danger with such engines, but it arises almost altogether from having gasoline about, and not so much from the engine itself. Great care should be taken that there should be no leaks in tank, as gasoline vaporizes readily and the gas is inflammable. Fire-insurance regulations, recommended by the Underwriters' Association of Ontario, are, that for stationary gasoline engine, the storage tank should be 25 feet away from building, and of a capacity of 1 1/2 barrels. In selecting a stationary engine, a medium speed, heavy engine is most suitable, but if a portable one is wanted, it should be a light engine, running at high speed, and compact as possible. Users of gasoline engines are usually enthusiastic regarding them, and prefer them to windmills on account of power being always available.

VALUABLE VETERINARY BOOK FREE



Write to-day for "Veterinary Experience"—a book that will enable you to be your own veterinarian. It is an invaluable treatise on the horse, horse diseases, and the treatments and remedies which cure. Among other things of vital importance to every horse owner, it tells how and why

TUTTLE'S ELIXIR

cures Curb, Splint, Spavin Lameness, Bony Growths, Sprains, Swellings, Shoe Boils and Founder, Distemper and Colic. Also makes the

Best Leg and Body Wash.

Tuttle's Elixir has for many years been the main stay of veterinarians and operators of large stables everywhere.

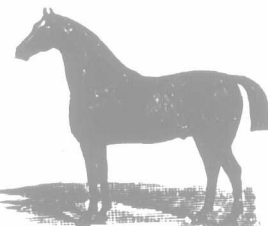
It is quick and sure in action, non-poisonous, cannot injure, pain or bluish the horse. Write for the proofs of our claims. If your dealer doesn't keep Tuttle's, send us his name and 50 cents in stamps, and we will send a large size bottle prepaid. Don't experiment. Get Tuttle's and be sure. Ask also for Tuttle's American Worm and Condition Powders and Hoof Ointment.

Send us your name, address and 2c. stamp now, so we can mail you the Free Book.

TUTTLE'S ELIXIR CO., 205 Beverly St., Boston, Mass.

Dr. Page's English Spavin Cure

For the cure of Spavins, Ringbone, Curbs, Splints, Windgalls, Capped Hock, Strains or Bruises, Thick Neck from Distemper, Ringworm on Cattle, and to remove all unnatural enlargements.



This preparation (unlike others) acts by absorbing rather than blister. This is the only preparation in the world guaranteed to kill a Ringbone or any Spavin or money refunded, and will not kill the hair. Manufactured by Dr. Frederick A. Page & Son, 7 and 9 Yorkshire Road, London, E. C. Mailed to any address upon receipt of price, \$1.00. Canadian agents:

J. A. JOHNSTON & CO., Druggists, 171 King St. E. TORONTO, ONT.

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Agents Coining Money Thousands being sold. Great big money getter for agents. Handy Automatic Hame Fastener. No straps—no buckles—no chains—no freezing of fingers in cold weather. A square deal offer. Horsemen stop—look—listen—buy one—then a dozen. Agent writes, "Hurry up my order—sold out first day." Carry says, "Made \$9.00 yesterday—rush order." This is only one of over 2,000 fast selling articles we furnish agents: Write today—now—for our latest proposition. Headquarters for agents. No experience needed. Just write—we show how. We want agents—crew managers—men or women—all or part time—home or traveling—to show orders for our goods. Write today for FREE SAMPLE. You will make more money than ever before. Costs nothing to investigate—write at once—don't overlook anything else—act quick—time short—let us start you—demand is big—be a Thomas Agent and get the money. THOMAS MFG. CO., 544 Wayne St., Dayton, Ohio.

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Artificial MARE IMPREGNATORS

We GUARANTEE you can get from 2 to 6 mares in foal from one service of stallion or jack. Increase the profits from your breeding stables by using these Impregnators. No experience necessary to use them successfully. Prices, \$3.00 to \$5.00 each prepaid. Popular SAFETY IMPREGNATING OUTFIT, especially recommended for impregnating so-called barren and irregular breeding mares, \$7.50 prepaid. Write for CATALOGUE which illustrates and describes our Impregnating Devices, Breeding Hobbles, Stallion Bridles, Shields, Supports, Service Books, Etc. CRITTENDEN & CO., Dept. 38, Cleveland, Ohio, U.S.A.

Increase Your Profits

Ponies and Driving Horses!

PRESENT OFFERING: 14 PONIES 10 TO 13 HANDS. All guaranteed sound and reliable. Also a few choice young driving horses 15 1/4 to 15 3/4 hands. Matched pairs or single. Sound and gentle. Reasonable in price.

E. DYMENT COPETOWN, ONTARIO.

Amatite ROOFING

Will End Your Roofing Troubles



If you will write to-day for a free sample of "Amatite" the end of your roofing troubles is in sight. After you have submitted it to every test that you can think of, you will be prepared to order it not only for your new buildings, but for your old roofs as well. You will find that it is cheaper to cover them with Amatite than to continue painting and repairing them.

We make a strong point of our "Free Sample" offer because the smallest sample of Amatite speaks for itself. It is more convincing than yards of talk.

There are all kinds of ready roofings on the market—so-called "rubber roofings," so-called "guarantee roofings," so-called "sand surface roofings."

The "rubber" roofings are no more made of rubber than a cow is made of saw-dust. The "guarantees" that are promiscuously handed out with many brands are

THE PATERSON MANUFACTURING CO., LTD.
Toronto, Montreal, Winnipeg, Vancouver.

hedged around with so many provisos that it will take three lawyers to dissect them and find out what they are all about. The "sand surface" has little or no protective value.

The point to remember is that all of these roofings have to be painted every year or two to keep them tight. In other words, it is the paint that protects, and not the roofing. If a man will sit down and figure out exactly what this paint costs, he will find that it is more than the roofing itself. Amatite, on the other hand, has a surface of real mineral matter and we sell the goods on the broad statement that you need never coat or paint this roofing.

You can lay Amatite on a roof and then forget all about your roofing troubles. No painting, no coating, no worry. The man who puts Amatite on his buildings is insured against leaks and trouble for many years.

Free Sample

If you have any doubts about the matter and want to investigate our claims, send for sample and booklet to-day. The sample tells its own story; the booklet is written for practical men. It hits straight from the shoulder.

Address our nearest office.

QUESTIONS AND ANSWERS. Miscellaneous.

STIFFNESS IN PIGS.

I have a number of young pigs a little over three months old, which have been fed on a moderate ration of shorts, with skim milk, and a few mangels chopped up with a shovel. They have been well cared-for, with dry bedding thrown in the nest every day, and pen cleaned every other day. They have also been given a few wood ashes, salt, and cinders from a coal stove, but have not been out of the pen all winter until the other day, when it was warm. They are beginning to go stiff one after another, and finally get so bad they can scarcely get to the trough. I hear of a great number of pigs in this locality affected the same way, many of them weighing over a hundred pounds. It seems like an epizootic.

E. D.

Ans.—It is practically impossible to say what may be the cause of the stiffness in the pigs in question. The ration which has been fed, looks like an ideal one, and the treatment seems to have been all right as well. It is not stated, however, what kind of pen they are kept in. If this inquirer is absolutely certain that his pen is dry, and that the pigs get a reasonable amount of exercise, then I have no idea what may be the cause of the trouble. I am inclined to think, however, that there is probably some lack of ventilation in the building, and the damp weather which we have at this time of year very often causes stiffness in pigs unless they are kept in very dry quarters. If this inquirer has any other place where he could put the pigs, and where they could get considerable exercise, I would advise him to try changing their quarters. One thing is certain, however, those pigs which have become once badly crippled, will never make very satisfactory pigs, no matter how they are treated. His main efforts must be directed towards preventing the continuation or spread of the trouble.

G. E. DAY.

PIGS CRIPPLED.

I have a litter of young pigs, which came in October. They were left with the mother until six weeks old, and thrived well. Then I fed them on skim milk and middlings. About the middle of January, I noticed they were getting stiff on their legs, and did not care to move about or eat. I gave them a drench of salts, ginger and soda, for several days in succession. Some of them seemed to improve a little, but after a few days got bad again. Can you tell me what is wrong with them, and advise me what to do for them?

W. S.

Ans.—See reply by Prof. Day to similar questions in this issue.

TRADE TOPICS.

Re-cleaned red clover seed of the Gold Coin and Excelsior grade, are advertised for sale by E. D. Hubbell & Son, Thamesville, Ont.

JUST WHAT YOU NEED.—If you are the owner of horses, you will understand how important it is to have something on hand to use in case of emergency. Read what George Laidlaw, of Glanworth, Ont., thinks about Absorbine: "I used the first bottle of Absorbine on a mare with a badly-sprained knee, and before I used one-quarter of the bottle she was all right. I am never without it. Now, my stallion, Point Brino, got his fetlock badly cut, and it left a blemish. I applied the Absorbine, and it reduced it. My most recent case was my show mare, Wild Pet. After the fairs, I turned her out, and some hunters scared her, and she sprained her fetlock. First I thought it was broken, but I went at it with hot water and Absorbine, and in three weeks' time she was all right and enlargement all gone. It is the best remedy I ever used." Wind puffs, strains, sprains, bursitis, capped hock, swollen tendons, etc., respond promptly to the use of Absorbine; \$2.00 a bottle. W. F. Young, P. D. F., 258 Temple street, Springfield, Mass. Lymans, Ltd., St. Paul street, Montreal, Que., Canadian agents.

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Any person, however inexperienced, can readily cure either disease with

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—even bad old cases that skilled doctors have abandoned. Easy and simple, no cutting; just a little attention every fifth day—and your money refunded if it ever fails. Cures most cases within thirty days, leaving the horse sound and smooth.

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75 Church St., Toronto, Ontario

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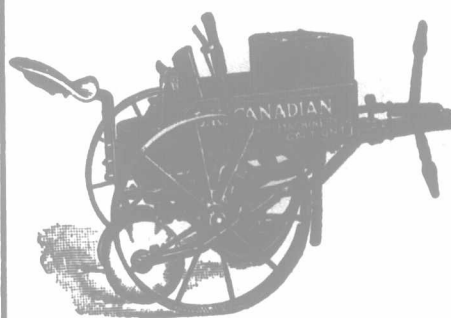


The soothing, healing ointment works a speedy cure of Galls, Cuts, Sores and Wounds. Standard horse remedy of the world. Cures while you work the horse. Buy it and be ready for emergencies. Sold by dealers generally. Trial sample sent for 2c. postage. Get it and test it. Address

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For Sale: Imported Clydesdale Stallion, rising three years; good action, smooth, a well-marked brown.
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1909 MODEL.

With or without fertilizer attachment, opens the trench, drops the seed, covers it, and marks for the next row all in one operation. Does not bruise or mar the seed in any way. One man and team can plant from 4 to 6 acres per day. Write for catalogue.

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145 Stone Road, Galt, Ont.

MIDDLEBROOK ABERDEEN-ANGUS. I am now offering for sale three choice young bulls; also a few females, either bred or with calf at foot to Elmdred, grand champion Angus bull at Toronto last year. JOHN LOWE, Elora, Ont., P. O. and Station

ELM PARK ABERDEEN-ANGUS

At the largest fairs of 1909 in Eastern and Western Canada our herd won over 80 prizes, composed of championships and 1st and 2nd prizes. If you want the kind that win, either sex, write, or come and see them.

JAMES BOWMAN, Elm Park, Ouseley, Ont. Aberdeen-Angus Cattle

7 choice Aberdeen-Angus bulls for quick sale, from 9 to 10 months.

Geo. Davis & Sons, Alton, Ont. HOMESTEAD ABERDEEN-ANGUS

Two extra good bull calves left, 9 and 11 months old; also females, all ages. Will be priced low to sell this month.

WM. ISCHE, Sebringville, Ont. Long-distance Phone.

FOR SALE: SOME NICE YOUNG Aberdeen-Angus Bulls

and some females of all ages. Also a first-class Clydesdale stallion. J. W. Burt, Coningsby, Ont. ABERDEEN - ANGUS

Will sell both sexes; fair prices. Come and see them before buying. Drumbo station.

WALTER HALL, Washington, Ont. Aberdeen-Angus

Young bulls fit for service. Cows with calves at foot. Heifers. If you want anything in this line write: James Sharp, "Tweedhill," Rockside, Ont. Cheltenham Sta., C. P. R. and G. T. R., also Erin, C. P. R.

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Test the truth of this statement by using Potash this year in conjunction with a Phosphatic and Nitrogenous Fertilizer.

Potash is an Absolutely Essential Plant Food, and may be obtained from all leading Fertilizer Dealers and Seedsmen in the highly concentrated forms of

MURIATE OF POTASH AND SULPHATE OF POTASH

Potash promotes maturity, and insures high-class quality of all Farm, Orchard and Garden Crops.

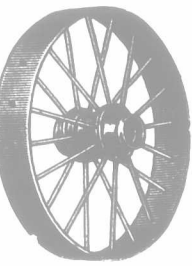
Write us for full particulars and FREE copies of our bulletins, including: "Fertilizers: Their Nature and Use"; "Fertilizing Orchard and Garden"; "The Potato Crop in Canada"; "The Farmer's Companion," etc., etc.

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Dominion Low Wide-tire Steel Wheels are lighter, stronger and cheaper than wooden wheels. Won't break in rockiest roads or coldest weather. Easy on roads and horses. Made on same principle as bicycle—distribute strain equally. Only wheel which can be taken apart and repaired. Nothing to work loose—will last a lifetime. Guaranteed.

With the Dominion Low Handy Wagon one man can do double the work possible with a high wagon. No more high lifting—no more back breaking. Made of finest material, very strong and neat. Low, wide wheels roll easily over ground. Parts arranged for easiest draft. Best for general farm work. Can be changed into platform wagon. Guaranteed. Write for free booklet on Wheels and Handy Wagon.

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With house and stable and plowing done. Easy terms to the right man. An excellent opportunity to get a start in the West. Write immediately for particulars.

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Shorthorns

FOR SALE! Several choice Canadian-bred bulls ready for service; also a good imp. two-year-old bull of the Brawth Bud family. A number of cows and heifers of different ages of right type and quality. Write or call on

H. J. DAVIS,
Woodstock, Ontario.

Long-distance Bell phone. C. P. R., G. T. R. main lines

SHORTHORN BULLS

I have some choice young bulls, from imp. sire and dams. Good ones at reasonable rate. Come and see them. Prices right. Also some choice heifers.

J. Brydone,
MILVERTON, ONTARIO.
G. T. R. and C. P. R. Station.

HAWTHORN HERD OF DUAL-PURPOSE

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For sale: Young cows and heifers; bred right; priced right; and the right kind. Come and see them.

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Court Lodge, Egerton, Kent England. Export pedigree live stock of every description. Owing to rapid increase in business, Mr. L. C. Scruby has been taken into partnership. During the spring months the export of horses will be a specialty. We are at this business all the year round, and can do better for you than you can do for yourself, even if you do come over to do your own business. Send us your orders, and we will do the best we can for you. Nobody can do more.

SHORTHORNS

Choice young bulls and heifers, dark roans and reds. One white bull calf at a bargain. Dams all from a milking strain. A few Shropshire ewe lambs. Write for prices.

JOHN RACEY, Lennoxville, Que.

Bud's Emblem - 63860 - (284905) A.H.B. First-prize aged bull C. N. E., 1909, by that famous champion and sire of champions, Old Lancaster, imp., =5068 -, heads the Old Meldrum herd of **SHORTHORNS**, near Guelph. **A. F. & G. Auld, Eden Mills P. O., Ont.**

Shorthorn Bull—Nonpareil Hero, sired by Nonpareil Count, his dam being a great milker. This 20-month-old bull is choice quality, his dam, of the Flora family, also good milkers. Price, \$125 for quick sale.
J. K. NUX, Rodney, Ont.

When Writing Mention The Advocate

GOSSIP.

The Hoover potato digger, manufactured in Avery, Ohio, is advertised on another page in this paper, by the Hoover Mfg. Company, of that place.

John R. Beattie, Annan, Scotland, in his advertisement in this paper, announces that he has always on hand highly-bred Clydesdale stallions, colts, mares and fillies.

Official records of 151 Holstein-Friesian cows were accepted by the American Holstein Association from February 20th to February 28th, 1910. This herd of 151 animals, of which but a trifle over one-third were heifers with first or second calves, produced in seven consecutive days, 63,443.9 lbs. of milk, containing 2,253.462 lbs. of butter-fat; thus showing an average of 3.51 per cent. fat. The average production for each animal was 420.2 lbs. of milk, containing 14.738 lbs. of butter-fat; equivalent to 60 lbs. or 29 quarts of milk per day, and 17.2 lbs. of the best commercial butter per week. This high average production for a Holstein-Friesian herd, in these official reports, is the result of its larger proportion of full-aged animals; the herd reported in this issue being in that respect more like the usual producing herds used by our farmer-dairymen, since nearly one-half were practically full-aged cows.

Whenever possible, the breeder ought to inspect personally the animal he selects as a herd boar, but when unable to do this, and he has no competent representative, he should endeavor to make the best selection possible by mail by detailing his needs, and the deficiencies of his sows. Ordering by mail should be considered a last resort, to be done only when the purchaser cannot buy near home, or for other good reasons is unable to give personal attention to the selection. When that is the case, the purchase should be made from a breeder known to be reputable and the needs of the buyer and the price he figures on paying should be definitely stated in the letter as the attitude of one who expects the best possible for his outlay. All men who have had much to do with the selling of pure-bred boars are familiar with the buyer who insists that "you must get him down as low as you can—he must be cheap, as I have written to a number of other breeders." A man of this stamp is likely to want a boar of almost impossible make-up for a very small sum. He is less likely to do well in his purchase than the man who will frankly state the type of boar he needs and the amount of money he can afford or intends to invest. The chances are, too, that the latter procedure will bring much the better treatment.—From Coburn's "Swine in America."

TRADE TOPICS.

Three stamps postage will secure the "Marlin Book" of 136 pages, with handsome art cover, and packed with information for gun lovers, and giving full description of all Marlin repeaters. Write, mentioning this paper, to The Marlin Firearms Co., 113 Willow St., New Haven, Conn.

The good results of carefulness in selection of roofing material are illustrated by three farmers along one of the railroads in Kansas. One farmer came from the East, and took up the first homestead. At once, he built a large barn, and roofed it with shingles. In the beginning of the second fall, just after harvest, some sparks from a passing locomotive fell on his roof, and the farmer lost both barn and crop. The second man took the adjacent farm and roofed his barn with tin. Instead of painting when it was needed, he left it till spring, by which time the tin had rusted through and leaked with every rain. The third man, poorer than the rest, first built a rough shack for his crop, and covered it with tar paper. When this became brittle and cracked, he began an investigation into the roofing question, and, when building his larger barn, covered it with Genesco Ready Roofing, made by the Barber Asphalt Paving Co., of natural asphalt from Lake Trinidad. Since then, most of the farmers in his vicinity are said to have followed his example.

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No man need be weak, no man need suffer from the loss of that vitality which makes life worth living. He can be made strong, magnetic, forceful and light-hearted, confident of his power both in business and society, free from spells of despondency, nervousness, lassitude and brain wanderings. I have a certain cure for Nervous Debility, Varicocoele, Rheumatism, Lamé Back, Stomach, Liver and Kidney complaints, in my world-famous Dr. Sanden Electric Belt with Electric Suspensory, and I will give it absolutely free until a cure is effected. How can I do this? For two reasons. I have the certain knowledge that my Belt will cure, and I have confidence enough in mankind to wait for my money until I prove it. This is what every doctor should do, but I am the only one who has a remedy that will stand such a crucial test. For 40 years I have been curing thousands every year, and have made a tremendous success doing business on this basis. NOT ONE PENNY IN ADVANCE OR ON DEPOSIT, and if I fail it costs you nothing whatever. All I ask is that you pay me the usual price of the Belt when cured. I will leave you to be the judge, and will take your word for results, or for cash I give full wholesale discount. Forty years' continuous success has brought forth many imitators. Beware of them. You can try the original, the standard of the world, free until cured, then pay for it. Call, or send for one to-day; also my two illustrated books, giving full information, free, sealed, by mail.

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The Aspinwall No. 3 Potato Planter is not a two-man machine. It only requires one man, saving you the extra man's wages. It is lighter draft, too. And will plant one-third faster. No other potato planter can compare with it in accuracy. The Aspinwall No. 3 drops over 99 per cent. good. And does it without slightest injury to the seed. We've put seed through the planter over fifty times and it produced as good results as seed planted by hand. No change of pickers required for different sizes of seed or different distances of planting.

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Maple Hall Shorthorns

Are bred on most fashionable Scotch lines, and are of high-class individuality. For sale are 6 young bulls from 6 to 10 months of age. A low, thick, sappy lot. Also 10 yearlings and 10 two-year-old heifers. Show material in this lot. Telephone connection.
DAVID BIRRELL & SON, GREENWOOD P. O., ONT., CLAREMONT STATION.

IRVINE SIDE SHORTHORNS

3 bulls fit for service; 1 fifteen months' roan from imp. sire and dam; 1 thirteen months' roan from imp. sire and English Lady dam; also 10 yearling and two-year-old heifers. Write us, or call and see us before buying. **J. WATT & SON, Salem P. O., Ont., Elora Sta**

CHOICE SCOTCH BULLS

FOR SALE, HERD-HEADING QUALITY.
H. SMITH, R. R. 3, Hay, Huron Co., Ont. Farm adjoins Exeter, on G. T. R.

SALEM SHORTHORNS!

Young bulls and heifers, sired by the great show and breeding bull, Jit Victor (imp.), at **J. A. WATT, SALEM, ONT.** ELORA STATION, G. T. R. and C. P. R. Long-distance Telephone.

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Liver Complaint Cured.

Mr. J. B. Rusk, Orangeville, Ont., writes: "I had been troubled with Dyspepsia and Liver Complaint and tried many different remedies but obtained little or no benefit. A friend advised me to give your Laxa-Liver Pills a trial, but I told him I had tried so many 'cure alls' that I was tired paying out money for things giving me no benefit. He said, 'If they don't help, or cure you, I will stand the price.' So seeing his faith in the Pills, I bought two vials, and I was not deceived, for they were the best I ever used. They gave relief which has had a more lasting effect than any medicine I have ever used, and the beauty about them is, they are small and easy to take. I believe them to be the best medicine for Liver Trouble there is to be found."

Price 25 cents a vial or 5 for \$1.00, at all dealers, or will be sent direct by mail on receipt of price.

The T. Milburn Co., Limited, Toronto, Ont.

QUESTIONS AND ANSWERS. Miscellaneous.

INFORMATION ON BEEKEEPING

Could you please give me any information on how to manage bees, or where one might send for an instruction book?

J. K. K.

Ans.—You will find much of value in this connection in forthcoming issues of "The Farmer's Advocate." A, B, C of Beekeeping and Langstroth on the Honey Bee are two good books for beginners. Price, through this office, \$1.50 and \$1.60, respectively.

CORNS ON HORSE'S FEET.

What is the best thing to do for corns? Horse, six years old, has one at the heel on the inside of foot, under the shoe. He walks sound, but goes lame when he trots.

H. R. B.

Ans.—Remove the shoe, pare well out, and apply poultices for two or three days. When lameness ceases, shoe so as to relieve pressure upon the affected quarter. A bar shoe is sometimes used for this purpose.

POSSIBLY TUBERCULOSIS.

What is wrong with my hens? They get so that they cannot walk; they seem to have no use of their legs, and I kill them and throw them away. I feed oats once a day and wheat once a day. Lots of fresh water every day, lots of grit, oyster shells, burnt bones and charcoal, and feed sulphur once in a while. Keep house well cleaned out once a week. Lots of shavings to scratch in.

J. H. M.

Ans.—The trouble may be but leg weakness, which is due to overfeeding, and from which fowls will recover, but it may be tuberculosis. If so, no treatment will avail for the sick birds, but those unaffected should be kept separate, and be allowed plenty of fresh air and sunshine. Fowls that die, or are killed, should be burned or buried deeply. Precautions have been outlined in the Poultry Department not very long since. It would be well to ascertain definitely the cause of the trouble by expressing a dead bird to the Bacteriologist, O. A. C., Guelph, or to Dr. C. H. Higgins, Pathologist, Department of Agriculture, Ottawa. Send also a letter explaining symptoms, conditions, etc.

STOCKING A FARM.

What capital will it take to stock a 120-acre farm in Ontario, within sixteen miles of a good market town, possession to be given on the first of January? The stock is to consist of three Clydesdale mares, a Hackney mare, from eight to ten good dairy cows, a brood sow, six or eight young cattle and fifty hens. Also all the implements required on the farm, and necessary feed and seed.

YOUNG FARMER.

Ans.—Any figures that may be given, it will be understood, are but estimates at best, and probably leave something out of the reckoning. But, as will be seen, it costs something to stock a farm at the high prices prevailing:

3 grade Clydesdale mares, at \$200.	\$600
1 grade Hackney mare	175
10 cows, at \$42.50	425
6 young cattle, at \$20	120
1 sow	20
50 hens, at 50c.	25
Binder	135
Mower	50
Wagon	70
Other implements, such as plow, harrow, part share in a manure spreader, cultivator, with seeder attachment, rake, roller, horsefork, forks, spades, hoes, harness, etc.	180
Feed for four months	250
Seed	90
	\$2,140

No allowance has been made for market rig or buggy and single harness, nor for house furnishings. Many other little requisites also may be thought of. The implement account could doubtless be much lessened by dispensing with a binder, hiring one when needed, and by purchasing serviceable articles at auction sales, but with all the reduction possible, probably \$2,000 would be needed to make a fair start.

Wear Ruthstein's STEEL SHOES

Absolute Protection Against Colds, Rheumatism, Stiffness, Discomfort No More Blistered, Aching Feet GOOD-BYE to CORNS and BUNIONS!

Off With the Old, Rough, Wrinkled Leathers! On With the Comfortable STEEL SHOES!

There's more good wear in one pair of Steel Shoes than in three to six pairs of the best All-Leather Shoes. And comfort! The very first time you slip your feet into Steel Shoes they feel fine. They need no "breaking in." And the longer you wear Steel Shoes the better you like them, for they keep your feet warm, dry and comfortable—though you work bottoms and sides force them to keep their shape. No warping, no twisting, no leaking possible. And they are as light as any ordinary work shoes.

How Our 1910 Model Steel Shoes Are Made. The Wonderful Steel Bottoms

Steel Shoes solve the problem of the Perfect Work Shoe for all time to come. The soles of Steel Shoes are stamped out of a special light, thin, rust-resisting steel. One piece of seamless steel from toe to heel. As a further protection from wear, and a means of giving a firm foothold, the bottoms are studded with adjustable steel rivets. The adjustable steel rivets of the 1910 model Steel Shoes add the finishing touch of perfection. Practically all the wear comes on these steel rivets. When steel rivets wear down you can instantly replace them with new rivets. And the rivets at the tip of toe and ball of foot are the only ones that wear. Steel Shoes never go to the Repair Shop, for there's nothing to wear but the rivets. And the Steel Soles shed mud almost as easily as they shed water. The cost is only 30 cents for 50 extra steel rivets. No other repairs are ever needed. The uppers are made of the very best quality of pliable waterproof leather, and firmly riveted to soles. There is greater strength and longer service and more foot comfort in Steel Shoes than in any other working shoes in existence. It's in the steel and the pliable leather, and the way they are put together.

Low Prices on Steel Shoes

Sizes, 5 to 12. 6 inches, 9 inches, 12 inches and 16 inches high. Steel Shoes, 6 inches high, \$2.50 a pair; better grade of leather, \$3.00 a pair; extra grade of leather, black or tan color, \$3.50 a pair. Steel Shoes, 9 inches high, \$4 a pair; extra grade of leather, black or tan color, \$5 a pair. Steel Shoes, 12 inches high, \$5 a pair; extra grade of leather, black or tan color, \$6 a pair. Steel Shoes, 16 inches high, \$6 a pair; extra grade of leather, black or tan color, \$7 a pair.

One Pair Will Outwear 3 to 6 Pairs of Leather Shoes

The comfort of Steel Shoes is remarkable. Their economy is simply astounding! Practically all the wear comes on the rivets in the bottoms, and the rivets can be replaced very easily. Don't sweat your feet in rubber boots or torture them in rough, hard, twisted, shapeless leather shoes. Order a pair of Steel Shoes today. Sizes, 5 to 12.

Order Steel Shoes Today!

We strongly recommend the 6-inch high, at \$3.50 a pair, or 9 inches, at \$5, as they give best satisfaction for general service. In ordering, state size shoe you wear. Enclose \$3.50 a pair for 6-inch high, and the best and most comfortable working shoes you ever wore will promptly be shipped to you. Your money refunded if Steel Shoes are not exactly as represented when you see them. Send today!

N. M. Ruthstein, Sec'y and Treas. STEEL SHOE CO., Dept. 369 Toronto, Canada. Main Office and Factory: Racine, Wis., U. S. A. Great Britain Factory: Northampton, England.

Order Blank for Steel Shoes

Steel Shoe Co., Dept. 369 Toronto, Can.

Gentlemen: I enclose _____ for \$_____

In payment for _____ pair Steel Shoes,

Size _____

Name _____

Town _____ Province _____

County _____

Dealer's Name _____

Throw Away Rubber Boots, Felt Boots and "Arctics!"

Rubber or felt boots heat the feet and make them sweaty and tender. Nothing more uncomfortable or more harmful to the feet. One pair of Steel Shoes will outlast at least three pairs of felt or rubber boots.

A man who wears Steel Shoes doesn't have to own three different styles of working shoes. No arctics or felt boots necessary.

Secret of Steel Shoe Elasticity

Steel Shoes have thick, springy Hair Cushion Insoles, which are easily removable for cleansing and airing. They absorb perspiration and foot odors—absorb the jar and shock when you walk on hard or stony ground. They keep your feet free from callouses, blisters and soreness.

Steel Shoes Save Doctor Bills

Wear Steel Shoes and you need not suffer from Colds, Rheumatism, Neuralgia, Lumbago, Stiffness of the Joints and other troubles and discomforts caused by cold, wet feet. Keep your feet always warm, dry and comfortable in Steel Shoes. They protect your health and save doctor bills, while adding to your comfort.

275 BURLINGTON SHORTHORNS 275

3 Choice Imported Scotch Shorthorn Bulls—yearlings.
1 Imported 2-year-old Bull, red—an extra sire.
10 Bulls, 9 to 16 months old—all by imported sire.
30 Choice Young Cows and Heifers—mostly bred or have Calves at foot. Long-distance telephone. Farm 1/4 mile from Burlington Jct. Sta., G. T. R. J. F. Mitchell, Burlington, Ont.

SCOTCH SHORTHORNS—Eight extra good young bulls, from 10 to 15 months old; 20 choice cows and heifers, forward in calf or with calves at foot. Prices reasonable. Inspection invited. W. G. PETTIT & SONS, Freeman, Ont. Farms close to Burlington Jct., G. T. R.

INVERNESS SHORTHORNS I can supply Shorthorns of all ages, with richest Scotch breeding and high-class individuality. W. H. EASTERBROOK, Freeman, Ont.

Imp. Scotch Shorthorns—When looking for Shorthorns, be sure to look me up. Young bulls fit for service, and females all ages; bred in the purple, and right good ones. A. C. Pettit, Freeman, Ont.

Maple Leaf Shires, Shorthorns, Hampshire Hogs 1- and 2-yr.-old Shire stallions, females from yearling fillies up; Shorthorns, both bulls and heifers; a choice lot of young Hampshire pigs, both sexes, beautifully belted. PORTER BROS., APPLEBY P.O., BURLINGTON STA. Phone.

30 HEIFERS AND 29 BULLS PRESENT OFFERING.

Bred right, made right and at prices to make you feel right. Come early and get your choice. List of these, with catalogue, will be mailed to those who ask for them.

H. CARGILL & SON, CARGILL, ONT.

VALLEY HOME SHORTHORNS AND BERKSHIRES If you want a first class Shorthorn bull or heifer come and see what we have, or if you want a show animal with a choice pedigree we have them. For description of herd see Xmas Number of The Farmer's Advocate, on last page. S. J. PEARSON, SON & CO., MEADOWVALE, ONT., P. O. AND STATION, C. P. R.

Please Remember to Mention "The Farmer's Advocate" When Writing

Do You Intend Building a House, Barn, Greenhouse or Silo?

Send us your list of LUMBER (rough or dressed), LATH, SHINGLES, DOORS, SASH, TRIM, or anything in woodwork for building construction, and we will quote you promptly.

John B. Smith & Sons, LIMITED, TORONTO, ONTARIO. Established 1851.

A. Edward Meyer

P. O. Box 378, Guelph, Ont., Breeds SCOTCH SHORTHORNS Exclusively. Twelve of the most noted Scotch tribes have representatives in my herd. Herd bulls; Scottish Hero (imp.) = 55042 = (90065) 295765 A. H. B.; Gloster King = 68703 = 283804 A. H. B. Young stock for sale. Long-distance phone in house.

Scotch Shorthorns

At Toronto Exhibition this fall yearling bulls bred by us won 1st and 3rd in class and junior champion. We also bred the sire of these bulls. The grand champion steer at Guelph was sired by a bull of our breeding. We have 10 young bulls for sale now, bred the same. Write for breeding and prices.

John Miller, Brougham P. O., Ontario. Claremont Stn., C. P. R., 3 miles.

Willow Bank Stock Farm SHORTHORNS AND LEICESTERS.

Herd established 1865; flock, 1848. The great Duthie-bred bull, Imp. Joy of Morning = 32070 = and the Missile bull, Royal Star = 72502 =, heads my herd. Choice selections to offer at all times in both bulls and females.

JAMES DOUGLAS, CALEDONIA, ONTARIO.

Shorthorn Cattle

Would price my stock bull, Star Prince = 53900 =. Red; also one yearling bull, a winner in Toronto and London. Females of all ages. Some very good heifers in nice condition. All reds or good roans.

J. T. GIBSON, DENFIELD, ONT.

Spring Valley Shorthorns

Herd headed by Clipper Chief (imp.) = 64220 = (94673). If you want to get an imported bull, or a good Canadian-bred one to head your herd, be sure and write, or come and see them. Long-distance telephone.

KYLE BROS., AYR P.O., ONT.

HIGH-CLASS SHORTHORNS

I have on hand young bulls and heifers of high-class show type, pure Scotch and Scotch-topped, sired by that sire of champions, Mildred's Royal. If you want a show bull or heifer, write me.

GEO. GIER, Grand Valley P.O. and station, also Waldemar station.

Shorthorns and Leicesters.

For sale: Choice-bred young bulls, and a number of 1 and 2 year-old heifers. All got by Imp. sires, and out of grand milking dams. And Leicester rams and ewes of all ages. W. A. Douglas, Tuscarora, Ont., Caledonia Station.

SHORTHORNS BERKSHIRES

One choice young Lady Fanny bull for sale—good herd header; also several young heifers. A few prizewinning Berkshires, both sexes. Write or come and see them. Prices moderate. ISRAEL GROFF, ELMIRA, ONTARIO.

Bone Spavin

No matter how old the blemish, how lame the horse, or how many doctors have tried and failed, use

Fleming's Spavin and Ringbone Paste

Use it under our guarantee—your money refunded if it doesn't make the horse go sound. Most cases cured by a single 45-minute application—occasionally two required. Cures Bone Spavin, Ringbone and Sidebone, new and old cases alike. Write for detailed information and a free copy of Fleming's Vest-Pocket Veterinary Adviser

Ninety-six pages, durably bound, indexed and illustrated. Covers over one hundred veterinary subjects. Read this book before you treat any kind of lameness in horses.

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PILES CURED at HOME

by New Absorption Method.

If you suffer from bleeding, itching, blind or protruding Piles, send me your address, and I will tell you how to cure yourself at home by the absorption treatment; and will also send some of this home treatment free for trial, with references from your own locality if requested. Immediate relief and permanent cure assured. Send no money, but tell others of this offer. Write to-day to Mrs. M. Summers, Box 821 Windsor, Ont.

MERTON LODGE HOLSTEINS.

I am offering my entire crop of spring calves, sired by a son of De Kol the 2nd Butter Boy the 3rd. I also offer a few young cows and heifers sired by a son of Hengerveld De Kol, the greatest sire of the breed; also a number of high-grade calves sired by our imported Bull, Butter Boy Calamity.

W. W. GEORGE, Crampton, Ont.

STILL GREATER!

Grace Fayne 2nd Girl just completed a test of over 30 lbs. butter in 7 days. dam Grace Fayne 2nd is also dam of Grace Fayne 2nd Homestead, world's record, 35.55 lbs., and Grace Fayne 2nd Sir Colantha, who heads the Homewood herd; sire's dam, Colantha 4th Johanna, 35.22 lbs. Young stock for sale. **M. L. & M. H. HALEY, Springford, Ont.**

EVERGREEN STOCK FARM offers choice young Holstein Bulls, from 10 to 11 months, sired by Sir Mercena Favorite, whose dam and gr. dam averaged 80 lbs. milk per day, and 24.60 lbs. butter per week. Their dams also in A. R. Also choice females for sale. **F. E. PETTIT, Burgessville, Ont.**

DON'T Buy a HOLSTEIN BULL till you get my prices on choice goods from thirteen months down, from best producing strains. "Fairview Stock Farm." **FRED ABBOTT, Harrietsville, Ont.**

The case concerned a will, and an Irishman was a witness. "Was the deceased," asked the lawyer, "in the habit of talking to himself when alone?" "I don't know," was the reply. "Come, come, you don't know, and yet you pretend that you were intimately acquainted with him?" "The fact is," said Pat dryly, "I never happened to be with him when he was alone."

Follow this advice.

Quaker Oats is the best of all foods; it is also the cheapest. When such men as Prof. Fisher of Yale University and Sir James Crichton Browne, LL.D.-F.R.S., of London spend the best parts of their lives in studying the great question of the nourishing and strengthening qualities of different foods, it is certain that their advice is absolutely safe to follow.

Professor Fisher found in his experiments for testing the strength and endurance of athletes that the meat eaters were exhausted long before the men who were fed on such food as Quaker Oats. The powers of endurance of the non-meat eaters were about eight times those of the meat eaters.

Sir James Crichton Browne says—eat more oatmeal, eat plenty of it and eat it frequently.

QUESTIONS AND ANSWERS.

Miscellaneous.

AILING DUCKS.

I have a flock of ducks. This morning I found one dead and several more sick. The dead one I opened, and found the entrails sound, except the lungs, which were very small, and covered with white spots, and also very spongy. Instead of being loose, like the liver, they were matted to the backbone, and I could not get them off. I shall be much obliged if you could inform me the cause of death and what I should do to the remaining flock.

A NEW SUBSCRIBER.

Ans.—It is impossible to say positively what is the trouble with the ducks, but the condition of the lungs revealed by post-mortem examination point strongly to tuberculosis. Nothing can be done for the sick birds, but they should be separated from the remainder of the flock. As preventive measures for the unaffected birds, nothing is better than abundance of fresh air and sunlight. Burn, or bury deeply, all that die.

We would strongly advise you, if any more ducks should die, to send the body of one for examination to the Bacteriological Department, O. A. C., Guelph, or to Dr. C. H. Higgins, Pathologist, Department of Agriculture, Ottawa.

LANDLORD AND TENANT.

I rented a farm of a man for five years. I have been on it for two years. My neighbor burned a fence down by the sparks that escaped from his engine passing along the road. My landlord wanted me to put it up. I refused to build it. He gave me notice to leave the farm. I have got 8½ acres of rye planted. It is a very stony farm. It took me ten days to plow and get out stones, and to draw them off, and to sow the rye. I put two bushels to the acre so as to get a good crop to plow down for planting potatoes. It was not for harvest. The landlord will not pay me for it because I had rye on the same field last year. I planted it for manure. Can I get pay for seed and labor? If so, in what way?

Ontario.

Ans.—Not if you leave without obtaining payment, or, at least, having same secured. If your lease is in the usual form, your landlord was not in a position to give you an effective notice to quit the farm before the end of the term, and you ought not to leave it until you have received, at his hands, a fair and reasonable settlement.

SEEDING DOWN WITH BUCKWHEAT—SOWING ALONE—LITTLE HAY FIRST YEAR.

Have a field which is well suited for alsike, which was quite bad with wild oats last year. As I would like to get it seeded to alsike, and also kill the wild oats, I was wondering if I could seed it down with buckwheat for nurse crop.

1. Would you advise this; if so, state about what time in June to sow, how much seed per acre of each, and whether spouting or broadcasting would be best?
2. Would clover and timothy catch with the same treatment, on quite heavy clay land?
3. Would red clover and timothy, sown alone this spring, grow to be fit to cut for hay this summer?

W. P. S.

Ans.—1 and 2. We have had letters from correspondents stating that they have good success in seeding to grass with buckwheat for a nurse crop. Such an experience is worth more than a dozen speculations, yet it seems somewhat unlikely that a crop such as buckwheat, which is used for smothering out weeds, would be a favorable one for the growth of small seeds such as timothy or clover. The chances are that, while there might be good success at times, yet it could not be counted on always. If trying it, would endeavor to sow by the middle of June, using three pecks of buckwheat, and about five pounds of alsike per acre. Buckwheat is usually sown broadcast.

3. There would probably be a light cutting of hay towards the end of summer from clover and timothy, sown alone this spring, but unless the season should be very favorable it would not amount to much.

Make a big profit from every Cow \$4.50

Do you know what your cows are doing? Do you know which ones are profitable—which ones are eating their heads off? It will pay you to get rid of the robber cows.

The Automatic Milk Scale and The Facile Jr. Babcock Tester

will show you in a short time which cows in your herd are paying a profit.

The Automatic Scale is made especially for weighing milk in the pail. There is a screw when the pail is on the hook. Then when the pail of milk is placed on the hook this indicator gives the exact net weight of the milk. It has another indicator that records the same as any spring balance so it can be used for weighing anything up to 30 pounds—larger sizes weigh up to 120 pounds.

The Facile Jr. Babcock Tester is designed especially for use in the dairy and on the farm. It is extremely simple in construction and operation. The working parts consist of but two cut gears and they are enclosed in a cast iron case to keep them free from dirt and to prevent their catching clothing, towels, etc. It turns easily without vibration or jar. It is sent complete with glassware, bottle brush, acid and full directions for use. It will pay you to have this scale and tester whether you milk three or thirty cows.

Our free catalog shows everything for milk dealers and dairymen at lowest prices.

W.A. DRUMMOND & Co.
175 KING STREET E. TORONTO, ONT.

CENTRE AND HILLVIEW Holsteins

140 head, 45 females in R. O. M. Herd headed by Brookbank Butter Baron, Bonheur Statesman and Sir Sadie Cornucopia Clothilde. The average of dam, sire's dam and grandam is: milk in 7 days, 66.85 lbs.; butter in 7 days, 30.58 lbs. We have bulls born Mar., '09, to two weeks old for sale, from Record-of-Merit dams. Long-distance telephone. **P.D. Ede, Oxford Centre, Ont. Woodstock Sta.**

Fairview Herd

offers for sale a son of Rag Apple Korndyke. His dam is a daughter of Pontiac Korndyke, with an A. R. O. record of 13.08 lbs. butter in 7 days at two years. Price, \$150.00.

E. H. DOLLAR, Heuvelton, N. Y.
NEAR PRESCOTT.

Lakeview Holsteins.

One service bull and several bull calves for sale, sired by Count Hengerveld Fayne De Kol, whose sire has five daughters averaging over 30 lbs. of butter in 7 days, and 120 lbs. for 30 days, and whose dam, the dam of Grace Fayne 2nd's Homestead, with 35.55 lbs. in 7 days, testing over 5% fat. These young bulls are from A. R. O. cows, an extra smooth and well marked lot. **E. F. OSLER, BRONTE, ONT.**

The Maples Holstein Herd

of Record-of-Merit cows, headed by King Posch De Kol. Nothing for sale at present except choice bull calves from Record-of-Merit cows. Also one or two good cows.

IMPERIAL HOLSTEINS

Head your herd with a son of the champion Canadian butter-bred bull, Tidy Abbecker Mercena Posch. Dam and sire's dam average 28 lbs. butter in 7 days, 110 lbs. in 30 days; 4.90 fat.

WALBURN RIVERS FOLDEN'S, ONTARIO

W. H. SIMMONS, New Durham, Ont.



Silver Creek Holsteins

Fayne Segis Clothilde, his 7 nearest dams' records average 27 lbs. For sale are young stock of both sexes, sired by bull with high official backing and out of Record cows.

A. H. TEEPLE, Currie's P. O., Ont., Woodstock, Sta. Phone connection.

HOLSTEINS AND YORKSHIRES

R. HONEY, Brickley, Ont.
Northumberland Co.

Offers a choice lot of heifers and sows ready to mate; also orders taken for the coming crop of calves from Prince Posh Calamity Bleske and R.O.P. cows.

High-class Holsteins

Head of herd, Pietje Korndyke Lead. Two nearest dams average 26.09 lbs. butter in 7 days. His sire's dam, Pietje 22nd, has a record of 31.62 lbs. butter in 7 days. Present offering: now booking orders for bull calves sired by above sire and out of A. R. O. dams.

WM. C. STEVENS, PHILLIPSVILLE, ONT.



Stonehouse Ayrshires

all ages. Am now booking orders for bull calves.

Hector Gordon, Howick, Quebec.

Springbank Ayrshires!

Canada's leading herd of Record-of-Performance Ayrshires. Big records, big cattle, big udders and big teats. Over 50 head to select from: 13 yearling heifers, 7 yearling calves. All in good condition. **A. S. TURNER, RYCKMAN'S CORNERS, ONT. 3 Miles South of Hamilton.**

Hillview Ayrshires!

For sale: Females of all ages, bred for dairy purposes, with large teats, deep milkers, and large in size. Also a few extra good young bulls on hand. Winchester station, C. P. R.

A. Kennedy & Son, Vernon, Ont.
"HILLSVIEW FARM."

CHERRY BANK AYRSHIRES!

Now is the time to order your bull calf, sired by Netherhall Milkman, the first-prize aged bull at Canadian National Exhibition, Toronto, and champion of the breed at Ottawa in 1909. Can fill orders for yearling bulls fit for service, or last fall calves. Females any age. Nothing but the best is our motto. Satisfaction guaranteed. Visitors welcome. **P. D. McARTHUR, North Georgetown, Que. ¼ mile from Howick station.**



AYRSHIRES AND YORKSHIRES

Can fill orders for car lots of Ayrshires, or for good grade dairy cows. Young bulls, cows, heifers or calves of choice breeding. Orders taken for imported stock for 1910. A few young Yorkshires. Write us for anything you need in above lines.

ALEX. HUME & CO., MENIE, ONT.

Trout Run Ayrshires

My present offering is several heifers and cows in milk, a number of heifer calves, 3 young bulls fit for service, one of them from imp. sire and dam; dam's record 45 lbs. a day. My herd are heavy producers and critically selected. Am also offering 20 Toulouse geese at \$4 and \$5 a pair.

WM. THORN, Lynedoch, Ont.

When Writing Mention The Advocate

Springhill Ayrshires

Headed by two bulls whose dams have the highest official records in Scotland. Order a bull calf out of our best cows.

Robt. Hunter & Sons, Maxville, Ont.



STOCKWOOD AYRSHIRES

Are producers of milk testing high in butter-fat. In my herd I have a range of selection, either imp. or Canadian-bred, of either young bulls or females, unexcelled in Canada. Price and terms to suit purchaser.

D. M. WATT, ST. LOUIS STA., QUE.

HILLCREST AYRSHIRES

Bred for production and large teats. Record of Performance work a specialty. Fifty head to select from. Prices right.

FRANK HARRIS, Mount Elgin, Ont.



Ayrshires

Four young bulls, all bred on dairy lines, out of famous dams; fashionable in color, as well as in breeding. Will be sold worth the money. Females all ages.

N. DYMENT, Clappison's Corners, Ont.

QUESTIONS AND ANSWERS.
Miscellaneous.

SELLING STRAW.

A bought a farm from B last fall, A to take possession this spring. B has sold all his stock, and has still some straw remaining. Can he sell this straw off the place, there being no reservation in the agreement? ENQUIRER.

Ans.—Yes; but the sale and removal of the straw pursuant thereto must take place prior to the time for delivery of possession of the farm.

MASTER AND SERVANT.

A hires B for \$25 a month for eight months during the summer, there being no more bargain than this.

1. Can B take holidays when he chooses, without asking for them?
2. Can B force A to let him put in the lost time, there being several days?
3. Can B collect his wages, due him, after he refused them?
4. What would be the rules about Sundays under these circumstances. Must B do chores on every Sunday morning, or can he have every other Sunday free from chores?

Ans.—1. Only the regular statutory holidays.
2. No.
3. It is probable that he can, but we cannot say definitely without knowing more of the circumstances.
4. He is obliged to do the chores every Sunday, unless the matter has been otherwise arranged by agreement.

FEEDING EWES.

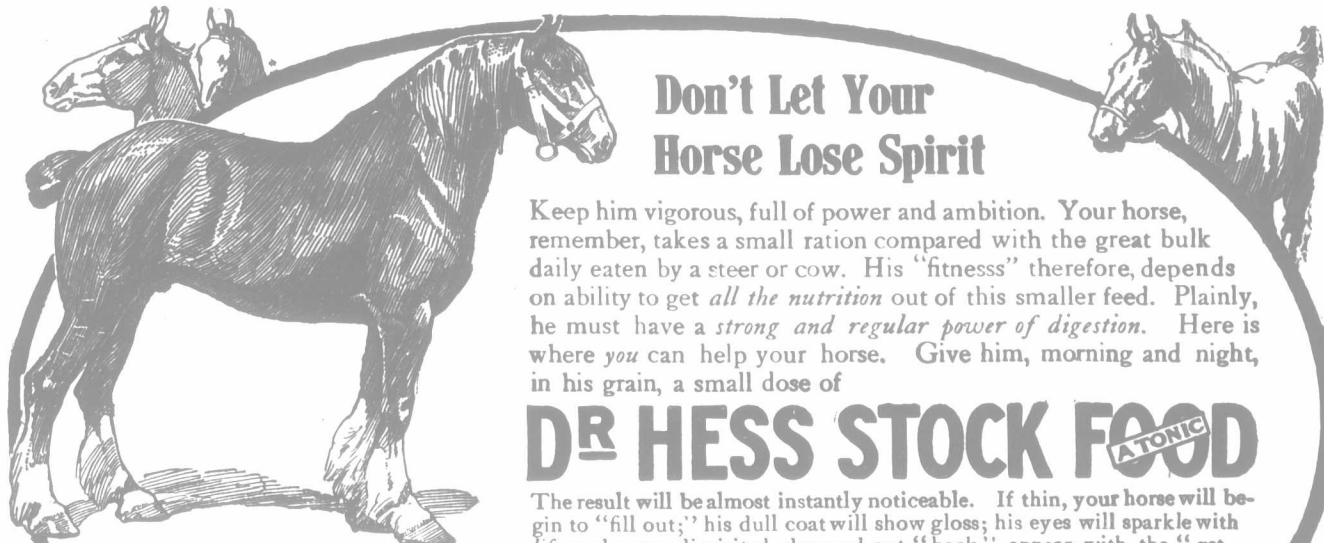
1. I ask for advice in regard to feeding ewes that are coming in this month and next. Have been feeding clover hay all winter till about three weeks ago, began to feed some oats and bran, about eight quarts of mixture, to 9 ewes, and some mangels and potatoes.
2. Would you advise giving whiskey to weak lambs? F. M. S.

Ans.—1. If you are continuing the feeding of clover hay, with the addition of the oats and bran mixture, and a few roots, we consider the feeding fairly good, though the grain ration might well be increased by one-third; we cannot speak from experience as to feeding potatoes. We should feed those very lightly, if at all.
2. Some shepherds have faith in a little whiskey for a very weak lamb, especially if it has been severely chilled. If given it should be in very small quantity, mixed with warm milk of the ewe. We do not advise its use, and never used it. The cause of your last year's lambs dying may have been owing to the ewes not being fed liberally enough, and being short of milk. If the lambs had goitre it may have been the cause.

EGG-EATING HENS.

Can you advise some way of stopping hens from eating their eggs. They have been fed on fall wheat, buckwheat, corn and poultry food; had coal ashes and oyster-shell. They seem to scratch in their nest and break their eggs. I think that is the way they got started eating their eggs.

Ans.—If you can catch the culprits, cut off their heads at once, or at least separate them until you can dispose of them to advantage. Very dark nests, approached by the hen from a narrow passage between nest and wall are advisable if you can persuade the hens to use them. Perhaps your nest lining is composed of material containing grain or seeds that cause the birds to scratch for it. If so, choose some clean straw that will offer them no inducement to scratch. Trap nests have been tried that allow the egg when laid to roll down an incline to a padded receptacle out of the hen's reach. We have never tried these, and would think them difficult to make so that they would work surely, unless all litter were omitted from the nest, in which case the hens might not choose to use them. Some correspondents, however, have reported good results. Of course the hens should be fed meat and bone meal, in addition to the oyster-shell; at least until they get out on a range and have a chance to pick up insects. Stuffing a few shells with mustard might be tried, but it is doubtful whether a cure can be thus effected.



Don't Let Your Horse Lose Spirit

Keep him vigorous, full of power and ambition. Your horse, remember, takes a small ration compared with the great bulk daily eaten by a steer or cow. His "fitness" therefore, depends on ability to get all the nutrition out of this smaller feed. Plainly, he must have a strong and regular power of digestion. Here is where you can help your horse. Give him, morning and night, in his grain, a small dose of

DR. HESS STOCK FOOD

The result will be almost instantly noticeable. If thin, your horse will begin to "fill out"; his dull coat will show gloss; his eyes will sparkle with life, and your dispirited, dragged-out "hack" appear with the "get up" of a prize winner. All because Dr. Hess Stock Food acts upon

his digestive organs, gives them strength and tone, and relieves minor ailments. Improving condition, increasing growth and milk production by improving digestion, is "The Dr. Hess Idea." The dose is small and is fed but twice a day. Sold on a written guarantee.

100 lbs. \$7.00; 25 lb. pall \$2.00. Smaller quantities at a slight advance. Duty paid. DR. HESS & CLARK, Ashland, Ohio, U. S. A.

Also Manufacturers of Dr. Hess Poultry Pan-a-ce-a and Instant Louse Killer.

Free from the 1st to the 10th of each month—Dr. Hess (M. D., D. V. S.) will prescribe for your ailing animals. You can have his 86-page Veterinary Book free any time for the asking. Mention this paper and inclose 2c. stamp.

DR. HESS POULTRY PAN-A-CE-A

Give a little of Dr. Hess Poultry Pan-a-ce-a to your laying hens every morning; and don't forget the growing chicks, or the old fowls you're fattening to sell. Pan-a-ce-a is a wonderful help—in fact, it's the necessary basis on which to build a successful poultry business. It increases the hen's power of digestion so that a large percentage of her food goes into eggs and flesh—that means economy and profit. In the same way (by aiding digestion) it helps the little chick and the old fowl. It also cures Gapes, Cholera, Roup, etc. A penny's worth feeds 30 fowls one day. Sold on a written guarantee.

1½ lbs. 35c.; 5 lbs. 85c.; 12 lbs. \$1.75; 25 lb. pall \$3.50. Duty paid.

Send 2 cents for Dr. Hess's 48-page Poultry Book free.

INSTANT LOUSE KILLER KILLS LICE

HELP FOR WEAK, BROKEN DOWN MEN AND WOMEN

Worry--Worry--Worry! It's Not Work But Worry That Kills!



It's true that hard work has laid many a man on the shelf, but for every man who has been put out of commission by hard work hundreds have been sent to the scrap heap through some sort of dissipation or excesses.

Disease also has played its part in making the thousands of nervous and physical wrecks we encounter every day.

Never mind the cause; it's the condition that confronts us.

Give me a man who has lost his health and vigor through any cause, who lacks the strength and energy of a Manly Man, and I can restore his vitality, build up his strength and vigor, and give him back the energy and ambition of Youth!



My Electric Belt is a Natural remedy, a time-tried remedy! Its powerful current enters the body through cushioned electrodes, without shock, stinging or burn, and, properly arranged for each case, its wonderful force is sent direct to any weakened organ, any weakened part of the system.

For hours at a time—in the daytime—in the evening; or, better still, during the night while you sleep, my Belt saturates your body with its wondrous vitalizing power. I can prove to you that my Belt does all I claim for it. Is not the word of honest men and women who freely sent me their testimony good evidence.

Dear Sir,—I have used your Belt since last November, and I feel much better. The emissions have stopped entirely. I am well pleased with the Belt. It has proved all you claimed it to be. DANIEL CHATTERTON, Cobalt, Ont.

Dear Sir,—I had intended to write to you before and let you know how I have been. I cannot praise your Belts too highly, as I certainly have enjoyed life these last three months. My nerves have settled down and my stomach is almost cured. I can eat things now of which I never could take for over two years, and am weighing the best I have for two and one-half years. I have not felt a particle of womb trouble for over a couple of months, so I feel I am almost cured. MRS. A. E. McLEOD, 697 Francis St., Woodstock, Ont.

To those who are tired of paying without results, and to those who doubt if anything will help them, I make this offer. If you will secure me my

PAY WHEN YOU ARE CURED

I will let you have my Belt without paying me one cent in advance. My Belt is the true cure for Indigestion (Dyspepsia), Constipation, Headache, Drowsiness, Rheumatism, Neuralgia, Lumbago, Sciatica, Weakness of the Back, Weakness of the Nervous System, Sleeplessness (Insomnia). It restores lost vitality. It corrects every sign of mental impairment and physical breakdown in men and women.

FREE BOOK

Call at my office and let me explain my Belt to you. If you can't do this, cut out this coupon, send me your name and address to-day, and I'll mail you, closely sealed, my elegantly illustrated 80-page book, which is FREE. My FREE BOOK for women is now ready. All men and women who are interested in recovering their health should read these books, for they point the way to Health and Happiness.

DR. M. S. McLAUGHLIN,
112 Yonge St., Toronto, Can.
Gentlemen,—Please send me, prepaid, your Free Book.
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ADDRESS
Office Hours—9 a.m. to 6 p.m. Wednesday and Saturday until 8.30 p.m.

PLEASE MENTION THE FARMER'S ADVOCATE.

Heart Trouble Cured.

Through one cause or another a large majority of the people are troubled with some form of heart trouble.

The system becomes run down, the heart palpitates. You have weak and dizzy spells, a smothering feeling, cold clammy hands and feet, shortness of breath, sensation of pins and needles, rush of blood to the head, etc.

Wherever there are sickly people with weak hearts Milburn's Heart and Nerve Pills will be found an effectual medicine.

Mrs. Wm. Elliott, Angus, Ont., writes:—"It is with the greatest of pleasure I write you stating the benefit I have received by using Milburn's Heart and Nerve Pills. I suffered greatly from heart trouble, weakness and smothering spells. I used a great deal of doctor's medicines but received no benefit. A friend advised me to buy a box of your pills, which I did, and soon found great relief. I highly recommend these pills to anyone suffering from heart trouble."

Price 50 cents per box, or 3 boxes for \$1.25, at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

VANCO Lime Sulphur Solution

carries more active sulphur in solution than other brands, and is the most effective spring spray for San José Scale, Aphid, Bud Moth, Apple Scab, Leaf Spot, Pear Scab and similar parasites and fungi.

VANCO is a clean, uniform solution, free from sediment. One barrel makes 12 for spring or 50 for summer spray.

\$3.00 per bbl. f.o.b. Toronto.

VANCO Lead Arsenate

is rapidly replacing Paris Green for Codling Moth, Potato Bugs and all leaf-eating insects. Easier to spray, stays on longer, and kills more.

VANCO Lead Arsenate contains 15% to 16% Arsenic Oxide and 40% moisture average.

10 to 13c. per lb., according to quantity. Write for our free Booklet on Spraying.

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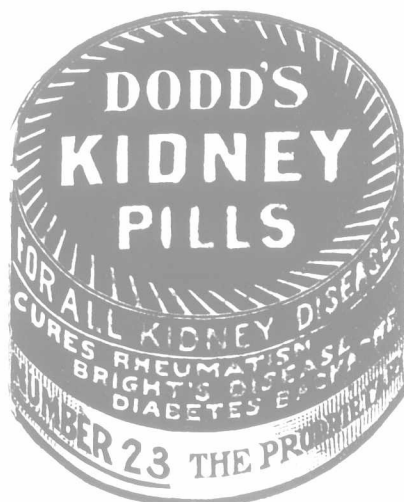
Richard le Gallienne, the noted poet, was entertaining a group of magazine editors at luncheon in New York. To a compliment upon his fame, Mr. le Gallienne said lightly:

"But what is poetical fame in this age of prose? Only yesterday a schoolboy came and asked me for my autograph. I assented willingly. And to-day, at breakfast time, the boy again presented himself.

"Will you give me your autograph, sir?" he said.

"But," said I, "I gave you my autograph yesterday."

"I swapped that and a dollar," he answered, for the autograph of Jim Jeffries."



QUESTIONS AND ANSWERS. Miscellaneous.

PAYING OVERDUE MORTGAGE.

Mortgage drawn for five years has run ten years, interest paid. If mortgagor wants to pay mortgage, is he legally bound to give notice, and if so, how long?

Ontario.

Ans.—No, unless there has been an express agreement between the parties that notice should be given.

FARM AND MAIL BOX.

A advertised his farm for sale and mentioned rural free mail delivery in the advertisement. B bought the farm from A, and, after settlement, A wants extra pay for the mail box, which is installed on the highway at end of lane. As it is on the highway, A claims it does not belong to the farm. A also claims rural free mail delivery consists only in delivery without a mail box.

1. Would A have rural free mail delivery without a mail box?

2. What would be the difference in regard to the mail box belonging to the farm, whether erected on the highway or inside of fence?

3. Has A a legal right to sell the mail box under these circumstances?

Ontario.

Ans.—1, 2 and 3. We think that, having regard to the circumstances generally, and especially the fact of the advertisement which, we presume, led to B's purchasing, A was wrong in demanding additional money for the mail box, and ought not to insist upon such extra payment. We do not think that he could legally enforce same.

OYSTER-SHELL SCALE.

I read the article on the oyster-shell scale, by L. Caesar, February 24th, in "The Farmer's Advocate." Our apple trees are nearly all affected with this pest. I did not know such existed until last fall, when one of the men who packed my apples drew my attention to the same. It seems to be confined more to the lower branches, and the bark gets loose and peels off. The man who drew my attention to it, advised me to take a hoe some day in the early part of summer, after the leaves were all out after a heavy rainstorm, while the trees were damp, and scrape all this loose bark I could off. Then take a weak lye, made the following way: 1 quart hardwood ashes, put in a pail and fill up with hot water; when this was cold I was to take a whitewash brush and go over the trunk and lower limbs of the tree, just as if I were whitewashing the tree. I would like to know if this would harm the trees, also if I could use instead of the above preparation, the lime and sulphur Mr. Caesar speaks of in "The Farmer's Advocate" of February 24th. I could not spray my trees, but I could use the whitewash and sulphur with the whitewash brush, as the man told me to use the lye.

Ans.—In reply to the inquiry as to whether one could kill the oyster-shell scale by scraping off the bark with a hoe in the early part of the summer after the leaves were out while the trunk was still moist after a heavy rainstorm, I may say that this scraping would be of considerable value, and that if he were to put on the potash lye in the way he suggested, especially if it were put on about the middle of June, he would undoubtedly kill the scale wherever he touched them, and would not injure the trees. A good thick whitewash, made simply of fresh lime and water, and applied with an old broom, or a brush, would be just as cheap, and rather more satisfactory. The reason that it acts well shortly after the first of June is that the eggs hatch out about this time, and the young are very easily killed by almost any caustic substance, such as the lye or the whitewash. He can tell when the young hatch out by simply observing when the little, tiny creamy-white insects are crawling around. They hatch during a period of about five days and then settle down, and the lime would act on them any time for a couple of weeks after they hatched. The lime-sulphur could be put on in the same way, but the whitewash, in this case, seeing that he has no spray machine, would be simpler to make up and would give first-rate results.

L. CAESAR.

Shear Your Sheep this Way

and get at least 20 cents worth more wool from each one. Take the fleece off in one unbroken blanket and do not cut or injure your sheep as with the old hand shears. Do away, too, with tired, swollen wrists. You can do all of these things and do them easy by using this

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The Champion Flock. The Oldest Importers. The Largest Breeders in America.

See American Oxford Down Record. We are offering a number of first-class yearling ewes from imported sires, and bred to champion imported ram; also a number of ram and ewe lambs. Prices reasonable. HENRY ARKELL & SON, Arkell, Ont. Arkell, C. P. R.; Guelph, G. T. R. and Telegraph.

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For sale: Young sows bred and ready to breed; boars fit for service; also young pigs farrowed in March and April. Imp. sires and dams. Pairs not akin. C.P.R. and G.T.R. Joshua Lawrence, Oxford Centre P. O., Ontario.

SUNNYSIDE CHESTER WHITE HOGS. I am now offering some very choice young things of both sexes, of breeding age. A few Shropshire sheep of both sexes. A number of Bronze turkeys and toms, and Red Cap cockerels and pullets. W. E. WRIGHT, Gleanworth P. O., Ont.

OHIO IMPROVED CHESTER WHITES.—Largest strains. Oldest-established registered herd in Canada. Young sows in farrow. Choice pigs 4 weeks to 6 months old. Pairs furnished not akin. Express charges prepaid. Pedigrees and safe delivery guaranteed. E. D. GEORGE, Putnam, Ont.

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With very nearly 100 sows in breeding, of modern type and high-class quality, our herd will stand comparison with any in Canada. We are always in a position to fill large or small orders with despatch. Long-distance 'phone. JAMES WILSON & SONS, FERGUS, ONT.

Willowdale Berkshires! Nothing to offer but suckers, and three extra choice young sows, bred to farrow May and June. Be quick if you want one. J. J. WILSON, Importer and Breeder, Milton P. O. and Station. C. P. R. and G. T. R.

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FOR SALE: Young sows due April and May, by imp. boar, dams by G. Willis' Choice, Canada's Champion boar in 1901-2-3-5; also choice pigs, both sexes. Two yearling Shorthorn bulls, Syme and Lavender families, and six choice heifers and heifer calves. Prices right. Bel 'phone. A. A. Colwill, Box 9, Newcastle, Ont.

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GET SEVENTY-EIGHT POUNDS OF STEEL TO THE SQUARE

SO put it squarely up to the next fellow who tries to sell you some roofing "as good as Oshawa Steel Shingles." Ask him to agree in writing to replace the roof free if it gives any trouble within the next quarter-century.

Then watch him dodge. See him evade. Hear him tell about Mr. Somebody, of Somewhere, who roofed a barn with his roofing in 1884 and it's a good roof yet. Hark to him ask if that doesn't make you feel safe.

Tell him it doesn't prove what the Pedlar Guarantee does prove. Because that guarantee is your absolute protection against roof troubles for twenty-five years to come.

There is your roof-insurance for the future. There is a binding promise to give you a new roof entirely free, to put it on the building for you free, and to guarantee it for another twenty-five years, if your roof of Oshawa Galvanized Steel Shingles gives any roof trouble within twenty-five years from the day it's on.

There is \$250,000 capital back of that guarantee. There are 48 years of honorable reputation back of that guarantee. And there is the biggest business of its kind in the British Empire back of that guarantee.

So it is plain common sense for you to refuse to buy any roofing that is not guaranteed. And the only kind that is guaranteed is this kind we make — Oshawa Galvanized Steel Shingles. Guaranteed for 25 years. Actually good for a century.

This is the Roofing For Your Money

Oshawa Galvanized Steel Shingles make the roof you can best afford for any building. They cost but five cents a year per square. (A square is 100 square feet). They are stamped from heavy sheet steel—28 gauge steel. Then they are thickly galvanized. That means they are coated with zinc—the rust-defying metal—in such a way that the zinc is driven right into the steel. It cannot flake off, as it would if this galvanizing were done the ordinary way.

Thus these Oshawa Shingles require no painting. They will not rust. They cannot possibly leak.

So you are sure you will have no bother with your Oshawa-shingled roof, once it's on the building. You can depend on that; and you can doubly depend on it because you have the guarantee. Hand it to your banker or lawyer to keep for you; and know that it is good for a new roof right up to the last day of the twenty-fifth year—if the first one gives any trouble whatever.

Cost Far Less Than Wood Shingles

You must pay about the same price per square for ordinary wood shingles. They will cost you more to lay, because it is a quick and simple job to roof with Oshawa Steel Shingles, and it is no easy job to lay wood shingles right.

And the wood-shingled roof will need repairs every year or two. Probably it will leak from the start. And it will be no real roof at all at the end of ten years, at the most.

You can be certain that an Oshawa-shingled roof will outlast a wood-shingled roof ten to one. Thus it costs but one-tenth as much.

This is the Roof That Really Protects

Oshawa-shingled roofs are not merely weather proof roofs. They are fire-proof roofs. They are wind-tight roofs. They keep buildings cooler in summer and warmer in winter.

And the building covered with Oshawa Steel Shingles is safe against lightning—far more so than it would be if it fairly bristled with lightning rods.

Put these Oshawa Shingles on a building, following the simple, plain directions that come with them, and you have a roof that is handsome enough for a city hall and that absolutely protects.

Practically an Oshawa-shingled roof is one seamless sheet of tough galvanized steel. Not a crevice for moisture to get through. No way to set fire to it. No chance for the wind to worry it. Dampness cannot gather on the under-side of it. It needs no painting. And you need not worry about it needing any repairs, for twenty-five years at least.

Isn't that kind of a roof for you? Isn't that kind of a roof worth more than it costs? Isn't it the only roof you ought to consider?—since it is the only roof of which all these things are true.

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Sample Shingle Free

WITH the book will come a sample of the Oshawa Shingle itself. It will interest you to study it. You will see the actual construction. You will see that the Pedlar Improved Lock, on all four edges of the shingle, makes it certain that moisture never can get through any Oshawa-shingled roof. You will see how the Pedlar process of galvanizing drives the zinc right into the steel so it never can flake off. You will be in no doubt about which roofing after you have studied this shingle.

Send for it and the Book and Guarantee—Send now.



OSHAWA STEEL SHINGLES are made of 28 gauge steel, specially toughened and heavily galvanized to make them rust-proof. Thus they weigh about

seventy-eight pounds to the square. With the box about 88 pounds to the square. When considering metal shingles always learn the weight of metal per square offered and be sure that the weight is of the metal only.

Make the weight test yourself. First be sure the scales are accurate. Then unbox a square of Oshawa Shingles and weigh them. Note that the weight averages 78 pounds without the box.

Don't go by the box weight. Some boxes weigh fourteen pounds or more.

G. A. Pedlar

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