

APRIL 15, 1920

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AND HOME MAGAZINE

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Dairy and Cold Storage Com-
missioners
Dept. of Agriculture
Apr. 31, 20

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LONDON, ONTARIO, APRIL 22, 1920.

No. 1439



For Pure Food
—Healthy Food

—Food that Children
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**PURITY
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PURITY FLOUR

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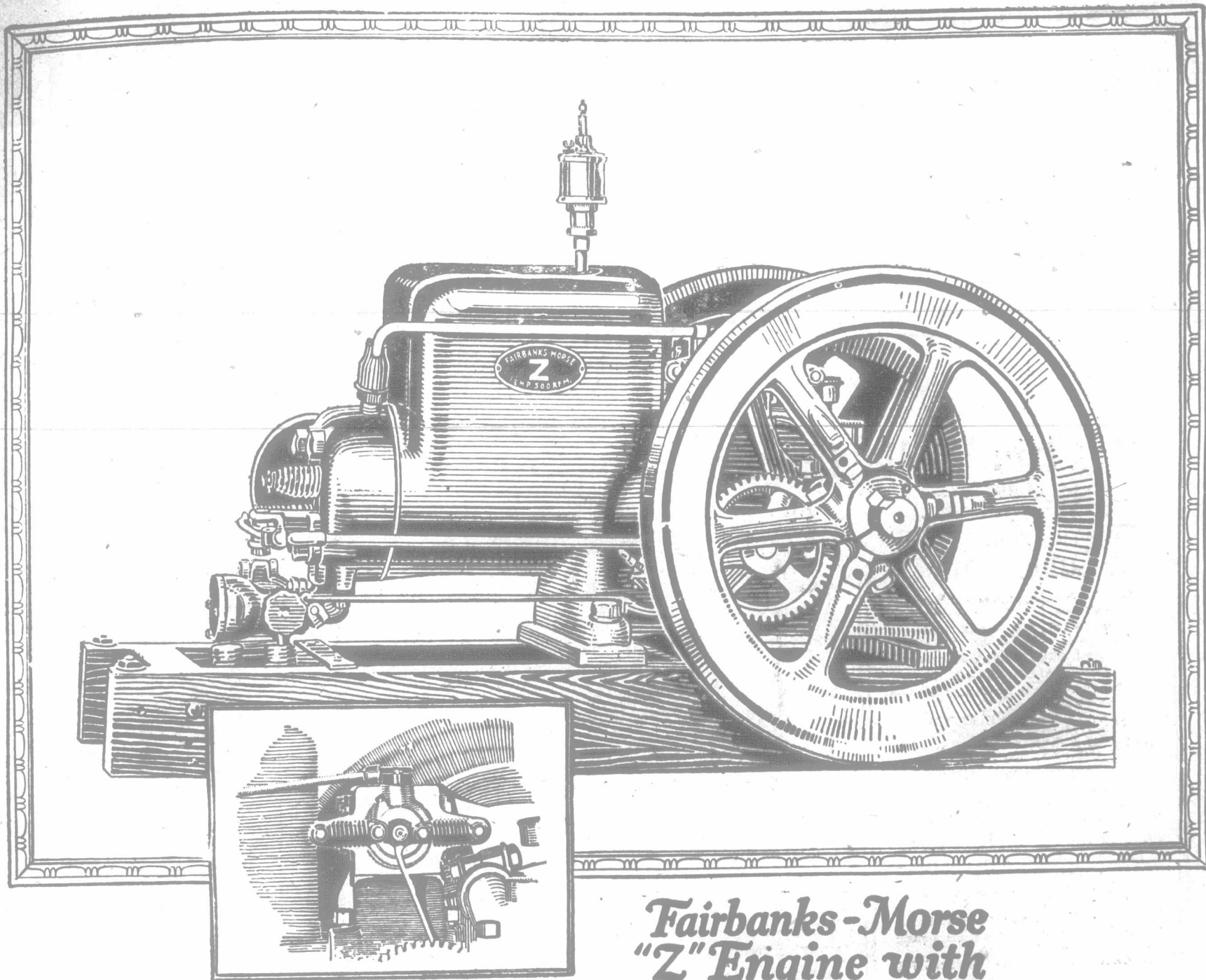
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Your 180 page Cook
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APRIL 22, 1920



*Fairbanks-Morse
"Z" Engine with
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Now-There is Only One Farm Engine

JUST think of the famous "Z" Engine with a Bosch high-tension, oscillating magneto—which delivers a steady succession of hot, intensive sparks. Every farmer in Canada should at once call on the nearest "Z" Engine dealer and see the result of this recent epoch-making combination—FAIRBANKS-MORSE "Z" ENGINE WITH BOSCH MAGNETO. Mechanical perfection, plus power—and right price—to date sold the "Z" Engine to over 250,000 farmers. This quality and quantity production enabled us to contract for a large proportion of the extensive Bosch facilities for making this one possible "Z" betterment, which establishes a new farm engine standard. And all Bosch Service Stations throughout Canada will assist our dealers in delivering maximum engine service.

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Fairbanks-Morse
Co., Limited.

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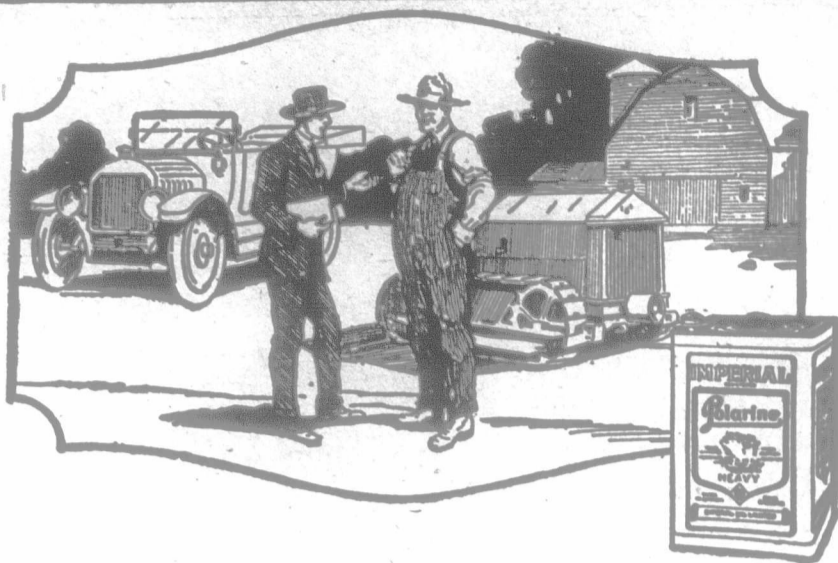
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WATERPROOF CLOTHING
Twenty-Twenty Coat
you bone-dry in wettest weather
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Original fastening
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hands and legs. Sat-
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The Canadian
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Steel Wheels
make your work easier
much easier to load and haul
the farm with a low wagon
won't sink in the soft soil and
the ground or tire out the horses
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Write us now for order-blanks and
particulars about wide tire Steel
Wheels for work about
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eters, 20" to 36"; the
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That Will Grow
Canadian-Grown Seed Corn
or money back if not satisfied
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"This Tells Part of the Story"

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For gasoline-burning engines—automobiles, tractors, trucks.

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For motors requiring an unusually heavy oil.

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For kerosene-burning stationary engines and tractors.

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For open bearings of separators, binders, etc.
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For worn and loose bearings—a thick oil.
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For stationary and portable engines using either kerosene or gasoline.

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For grease cup lubrication—a clean solidified oil.

IMPERIAL ARCTIC CUP GREASE
Made in different consistencies.

Imperial Farm Lubricants are sold in 1 and 4 gallon sealed cans, half-barrels and barrels.

THE fluidity of oil—its body or viscosity—has a lot to do with a machine's performance.

The ease and quietness of a motor's operation, its power, the wear-and-tear on moving and engaging parts, shafts, gears, valves, cylinders, etc.—all are affected by the body of the oil under operation conditions. Oil governs the machine's ability to do its work well, and determines its useful life.

Imperial Farm Lubricants have been developed to meet the requirements of every machine used on the farm. For each type of machine, fuel and service condition, we offer a carefully formulated lubricant that has been thoroughly tested and proved under operating conditions.

To make sure you are using the oil best suited to your automobile and your tractor, consult the Imperial Charts of Recommendations—on display wherever Imperial Lubricants are sold. When in doubt, consult the Imperial Oil Man; or write us.

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Power · Heat · Light · Lubrication
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Alfalfa Genuine Ontario Variegated (Per bush grown).....	\$45.00
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The "M & S" plug is made in all styles to suit every make of car—it is standard equipment on the popular new Overland Model 4.

The "M & S" plug is made in Canada and guaranteed to give complete satisfaction.

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SIMONDS

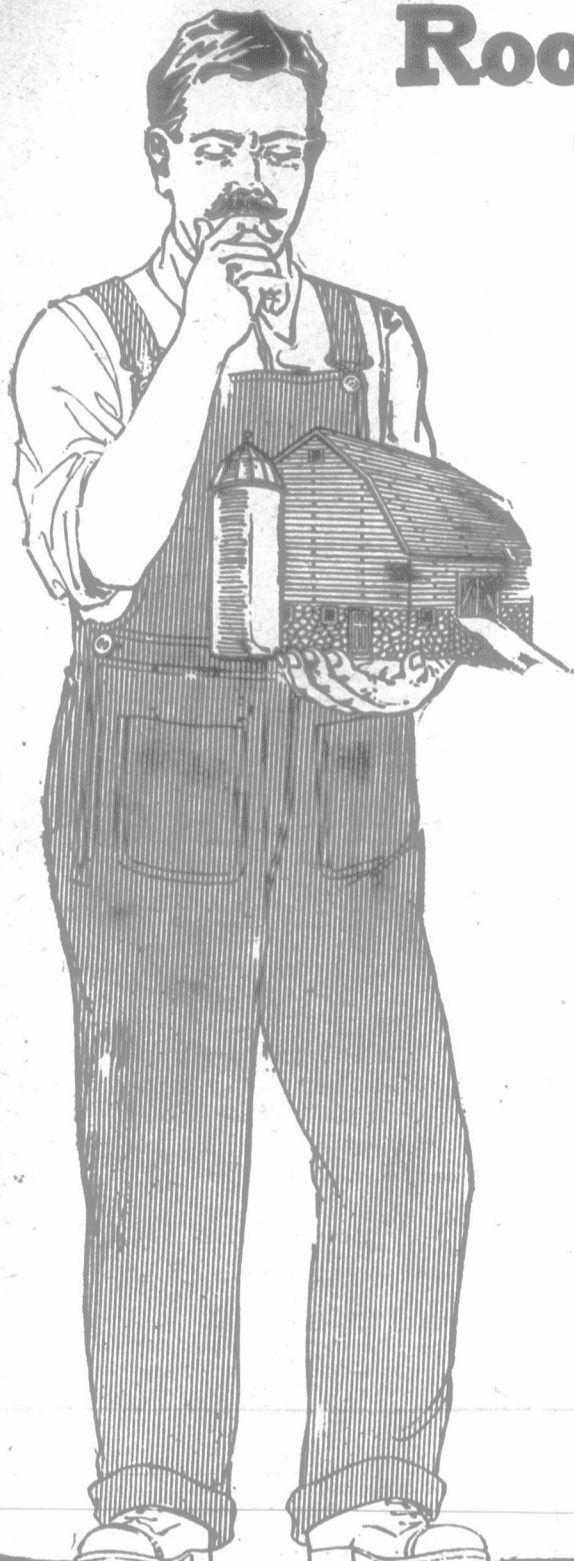
Crescent Ground Cross-Cut Saw No. 13

This is a Champion Tooth, Regular Width Cross-Cut Saw. It is specially ground for cutting hardwood and is known as No. 13 Special for Hardwood. Simonds Saws are guaranteed to cut easier, saw faster, and stay sharp longer than any other brand of saw at any price.

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How you can make money in your spare time in an easy and pleasant way.
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To receive roofing satisfaction whether on a Barn, Warehouse, Railroad Building or large Industrial Plant, consider the following points.

Roofing must primarily give continuous service under every weather condition. It must be easily laid—adaptable to every description of roof. Further, roofing once laid should not become a liability through requiring constant repair.

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withstands hard and continuous wear, and is adaptable to all roof surfaces. Cheapness of first cost, as compared with wood and metal shingles, or slate, and economy of maintenance are some of its principal features.

The base of Neponset Paroid is a high grade rag felt thoroughly impregnated with asphalt, making it positively water-proof and fire-resisting.

It is further reinforced with a talc surface, grey in color; or with a permanent slate surface, red or green in color.

EASY TO LAY—With every roll of Neponset Paroid is supplied sufficient nails and cement with full directions.

Ask the Neponset dealer in your district, or write to us for an interesting booklet, "Roofing Canada."

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"Galt" Adjustable Barn Roof Lights

Provide both Light and Ventilation at a reasonable cost



These Roof Lights are shipped complete, including the glass.

We manufacture everything in the Sheet Metal Line, and we manufacture only the best.

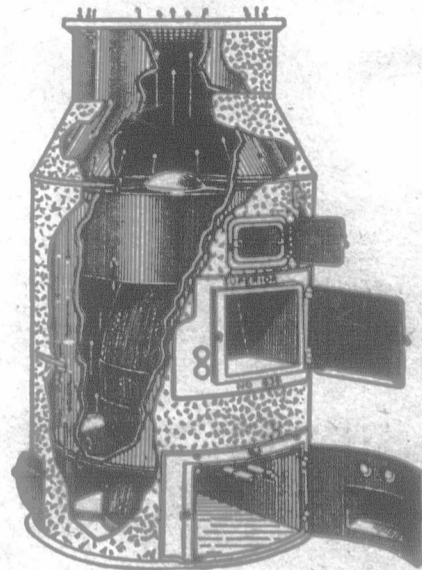
"GALT" Steel Shingles "GALT" Corrugated Sheets
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The Galt Art Metal Co., Limited

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How One Register Does The Work with the

Pilot Superior Pipeless Furnace



The Pilot Superior Combination Register is composed of two sections; the central portion provides for a distribution of the warm air generated by the furnace and the outer section admits the return air to the furnace. By withdrawing the cool air from the building through this outer section, the resistance to the warm air is overcome. This provides space for the rapidly expanding warm air, which circulates in large volume to all portions of the building. A vacuum cannot be created, therefore the warm air fills all the corners from which the cold air is being withdrawn.

Manufactured by
The Hall Zryd Foundry Company, Limited
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The Ontario Mutual, now the Mutual Life Assurance Company of Canada, was founded by a remarkable group of men. Not one of them occupied a prominent position in business or financial circles, nor had they experience in life insurance.

With their extraordinary vision, deep sense of responsibility resting upon them as trustees and in the careful attention they devoted to the affairs of the Company, they laid the foundation upon which the Mutual rests today with its assets of over \$25,000,000, all belonging to the policy holders of the Company.

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Waterloo-Ontario

Ontario Grown Clovers

GOVERNMENT STANDARD

	Per bus.
No. 1 Red Clover	\$45.00
No. 2 " "	42.00
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No. 1 Alsike	45.00
No. 2 " "	43.00
No. 3 " "	42.00
No. 1 Alfalfa (Northern grown)	37.00
White Blossom Sweet Clover, 1st quality	25.00
2nd	23.00
Unhulled White Blossom Sweet Clover	16.00
Yellow Blossom Sweet Clover, choice	24.00
No. 2 Timothy (No. 1 purity)	9.00
No. 2 " "	8.75
No. 3 " "	8.50

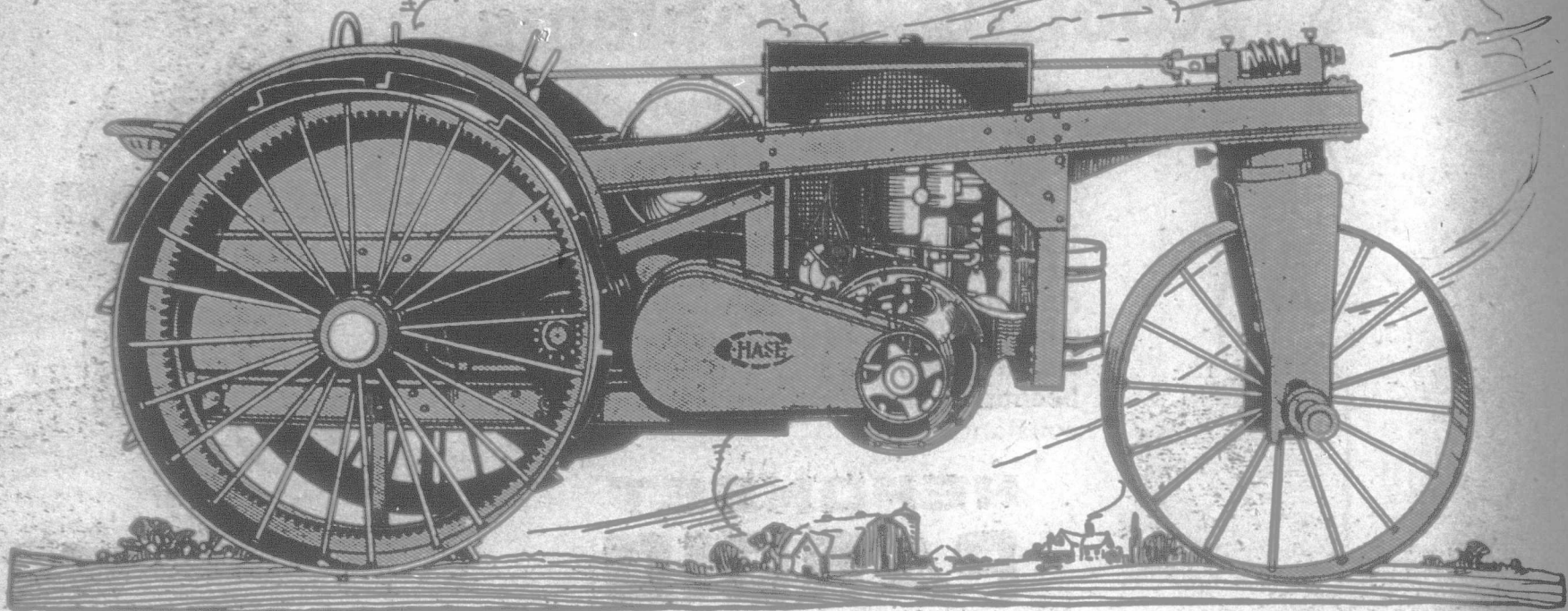
Per bus. of 60 lbs.
Timothy and Alsike Mixed.....\$20.00
Timothy and Red Clover Mixed..... 20.00
On all orders of \$50.00 or over we pay the freight east of Manitoba. Bags extra, at 65c. each. Terms—Cash with order. Ask for samples if necessary.

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Seed Merchants

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Please mention The Advocate when writing

"Built to Build Goodwill"



The Tractor without Differential Gears

A tractor has no more need for differential gears than it has for a fly-net.

Those gears serve no good purpose in a tractor. And they do cause constant trouble, rob the motor of power, and shorten the life of the tractor.

The Chase Tractor has no differential gears. The two rear wheels get equal driving power, turn over at equal speed, apply the force of the heavy-duty motor at its full efficiency.

That means that when the Chase gets into a hole, both rear wheels work to pull it through. When obstacles are met the Chase rides over them. In plowing on the level or on sidehills the side-draft does not pull the Chase off its true course.

The Chase therefore, avoids a very common tractor trouble.

A Trouble-Maker Avoided.

Tractors with differential gears can do their best work only on a straightway pull on level land. The moment one wheel meets an obstacle, the differential throws all the power into the other wheel. So quite often you see such a tractor with one rear wheel dead and the other spinning. That happens when the tractor gets one wheel in a mud hole. The very time when extra driving force is needed the differential gears rob the motor of its power to move the tractor.

The same thing occurs in a lesser degree in all plowing work. For the side-draft tends to place more load on one wheel than on the other and the differential gears throw the power into the other wheel. The tractor with differential gears is more than half of the time a one-wheel-drive tractor.

The Chase Tractor, having no differential

gears, is always pulling evenly on both rear wheels.

For that reason it operates with less power and so saves kerosene.

Gears Waste Power.

But there is another saving of gas from this same feature of Chase construction. Differential gears rob a motor of about 10% of its power. 10% that does the tractor owner no good. The Chase saves that 10% because it has no differential gears.

The Even Pull Saves Money.

Pulling evenly the Chase wears evenly. Lasts longer. Requires less adjustment of bearings. Needs fewer repairs. And, for that reason, stays more steadily "on the job."

As a practical man can see, the whole of the Chase Tractor gives proof of the same sensible, common-sense idea of design in every part of its construction.

Watch it in action and you will see in the smooth-working Chase a quality that you expect only in a high-grade, perfectly-adjusted machine.

Built to Build Goodwill.

Canadians build the Chase—in Canada. Canadians build the Chase that is sold in Great Britain and foreign lands—yes, and also in the United States. The Chase institution was created to establish in Canada a world-wide tractor business founded on Canadian principles of doing business. The men behind it, R. J. and W. J. Cluff, are men with high manufacturing ideals. They are exacting in their demands. They want the men who buy Chase Tractors to make money out of them. They are determined that every customer shall receive the service he requires to keep his Chase Tractor always at its best and always "on the job."

Investigate our Service.

You will find it to your advantage to deal with an institution with these ideas of service. You will find that the Chase Tractor is a piece of machinery that will gladden your eye. If you haven't seen it, be sure to do so. Or, write for illustrated literature and detailed information. We will send it promptly and tell you where you can see a Chase Tractor.

SPECIFICATIONS.

Motor—Buda Model H.T.W. Heavy duty. Tractor type 4 cyl. 4 1/4" bore, 5 1/2" stroke. Set crosswise of frame. Every part readily accessible. Extra large water passages for cooling. Force-feed lubrication, thorough vaporizing of low-grade fuels. Heated and "water washed" air.

Fuel—Specially designed to burn Kerosene or low-grade gasoline.

Drive—No differential gears are used, the drive being direct from the transmission to outer rim of wheel through bull pinions and gears. Both bull pinions and bull gears cut from forged steel and case-hardened.

Transmission—Fully enclosed and running in oil. Myatt roller bearings. Very simple type. Gears accurately machined from high-grade steel.

Chain Drive—Power is delivered to the transmission gears by a wide chain fully encased and running in oil.

Belt Pulley—In direct line with crankshaft—no bevel gears. Located at side—best position for lining up with the machine to be driven.

Control—Driver has unobstructed view. Control levers are simple and easy-working.

Turning-radius—12 feet circle.

CHASE TRACTORS CORPORATION LIMITED
TORONTO - ONTARIO

CHASE TRACTOR

Experience Saves Money in this Maxwell

THE 300,000 Maxwells built to date saves you many a worth while dollar in the new Post-War Maxwell. Those 300,000 saved in many ways.

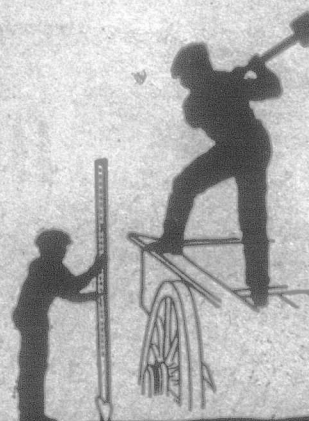


More miles per gallon
More miles on tires

1. They taught "short cuts" in manufacturing.
2. They eliminated all experimental work—you don't have to pay for a single engineering mistake.
3. They developed quantity production which has reduced "overhead."
4. They enabled quantity purchases; and better materials are bought at lower costs.
5. They taught how to build an almost trouble-proof car; you seldom take a Post-War Maxwell to a repair shop.

6. They taught how to get the most mileage out of a gallon of gasoline, a pint of oil and a set of tires.
 7. They taught how to build a car that the less skilled driver would find simple to operate and take care of.
 8. They taught that it was better to build more and take less profit per car rather than build less and take more profit per car.
 9. They taught how to put more and more value in the car without increasing the cost.
- This Post-War Maxwell is next year's car. It contains features developed during the war, many of which will find their way into other cars in the summer of 1920.

MAXWELL MOTOR CO., OF CANADA, LIMITED, WINDSOR, ONT.



Easy to Drive. Holds Firmly in Place.

If you've been accustomed to the back-breaking job of digging post-holes, handling heavy wood posts, filling in and tamping, you'll be delighted with the ease, speed and economy with which

PRESTON STEEL POSTS

are erected. The sharp bevelled point goes in with a few hammer-blows, and the anchor-plate binds the post so firmly that no replacements are required. Haul enough at one load to fence a 40 acre field—drive them in a day—have a good-looking, permanent fence. Write for Folder.

METAL SHINGLE & SIDING COMPANY, LIMITED
PRESTON, ONTARIO

SAVE MONEY!

Bed with Shavings

SANITARY, ECONOMICAL
BEST ABSORBENT

We now have a number of cars on hand that we are obliged to move promptly. Mills in Ontario. Prompt shipment. Write for attractive spring prices.

CANADIAN-AMERICAN LUMBER & MFG. CO., LTD.
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MAIL CONTRACT

Scaled Tenders, addressed to the Postmaster-General, will be received at Ottawa until noon, on Friday, the 14th day of May, 1920, for the conveyance of His Majesty's Mails, on a proposed Thorndale No. 3 Rural Route, from the first day of October next. Printed notices containing further information as to conditions of proposed Contract may be seen and blank forms of Tender may be obtained at the Post Offices of Thorndale, Belton and London, and at the office of the Post Office Inspector, London.

Post Office Inspector's Office,
London, 2nd April, 1920. CHAS. E. H. FISHER,
Post Office Inspector

APPLE TREES at Wholesale Prices

SEND FOR CATALOGUE. NO AGENTS

The Imperial Nurseries,
Ridgeville, Ontario

If It's As Good As the Goodison It Is a Goodison

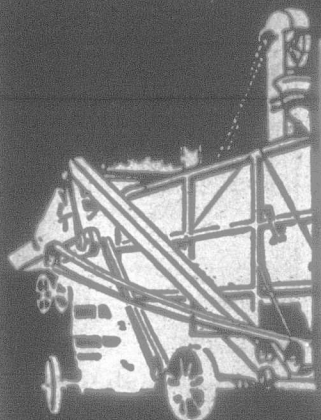
HONEST TO GOODNESS

Goodison Threshers have every advantage of modern design and even many exclusive features possessed by no other separator. But above all others, the sturdy, honesty of the Goodison construction, Goodison performance and Goodison service are the outstanding features.

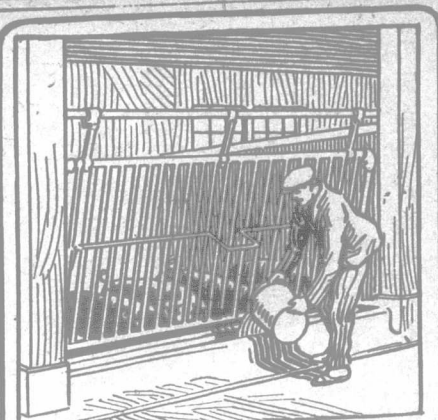
"If it's as good as a Goodison it is a Goodison" Our machines back us up in either statement to the limit.

Own your own Canadian made Goodison. Talk to Goodison owners or ask for our folder, "Goodison Features and Feathers" and convince yourself.

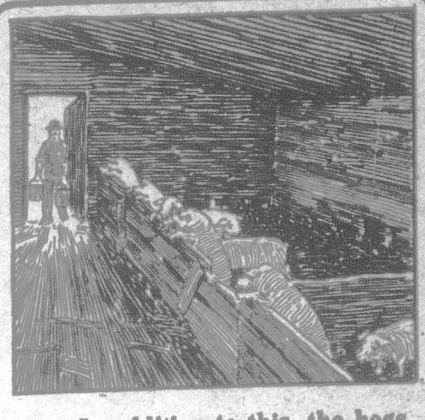
THE JOHN GOODISON THRESHER COMPANY LTD.
Sarnia - Ontario - Canada



1. There is no time to waste these days. If you keep hogs, you can save hours of time by putting in BT steel Hog Pens. See the drawing above. The swinging front enables you to feed the hogs in half the time.



2. This swinging panel does away altogether with the job of straddling the pen, kicking the old sow in the ribs and trying to keep a dozen little pigs away from the trough while you put in the feed.



3. In addition to this, the hogs cannot climb out of BT Steel Pens as they can out of wood pens. Steel pens are more easily cleaned and do not need whitewashing. Fill in the coupon and we will gladly send you complete particulars.

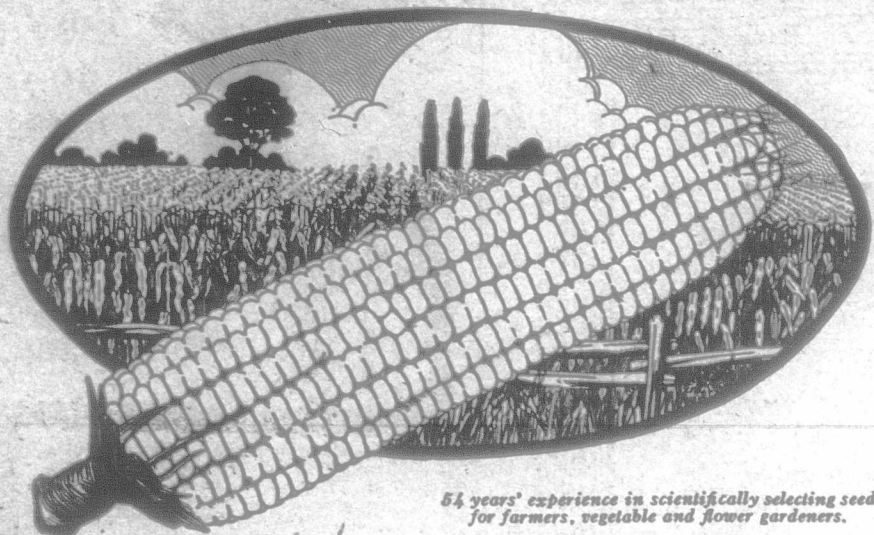


Send this coupon for our 352-page Barn Book. Tells how to plan, build, frame and ventilate the Hog Barn. How to save time, labor and feed in caring for the hogs. It will save you hundreds of dollars and is free.

Beatty Bros. Limited

446 Hill St., Fort St. Ont.

I am building hog barn about.....
I am remodeling hog pens about.....
I keep.....Hogs
My name is.....
My Post Office is.....
R.R. No.....
Nearest Railway Station.....
If you live in Maritime Provinces, please give Lot and Concession. If you live in Western Provinces, please give Section, Township and Range.....



54 years' experience in scientifically selecting seed for farmers, vegetable and flower gardeners.

SEED CORN

OUR Seed Corn is shipped on the cob—because uniformly better results are obtained when this is done. Shelled corn is not always carefully selected and is liable to spoil in the bags before being planted. And it is certain to be more or less injured by the wet spring weather, as Corn absorbs moisture very readily. However, we will supply it shelled if you prefer.

Keith's Seed Corn is similar to all other Keith Seeds—the result of 54 years of successful experimentation in the production of big-yielding varieties at a minimum cost.

SPLENDID VARIETIES SPECIALLY PRIED

	Bush.	Bush.
White Cap	\$3.25	Golden Glow \$3.50
Wisconsin No. 7	3.25	Bailey - - 3.25
Improved Learning	3.25	Longfellow 4.25
Compton's Early	- - \$4.50	

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Keith's Seeds Cost You Less
Our method of selling direct to you—instead of through the middleman—gives you the benefit of the middleman's profits. Get our catalogue and compare the prices with other seed houses.

DIRECT TO YOU NO MIDDLEMAN'S PROFIT

Get Our Seed Catalogue It is FREE

Our 1920 Seed Catalogue will prove invaluable in the selection and planting of your complete crop. It gives in simple, straightforward language, the practical results we have gleaned from 54 years of direct contact with Agriculturists in Canada. It tells you when and how to plant things to obtain the best results, and it shows you how the Keith method of selling direct saves you money. Write for it at once. Address Dept. A

We prepay Railway Freight in Ontario and Quebec on Orders of \$25.00 or more.

GEO. KEITH AND SONS
124 KING ST. E. — TORONTO

It Pays to Buy the Best

It never pays to buy an inferior article. That is particularly true of fencing. The cost of erecting a good fence is not more; it lasts longer, looks better, gives years of satisfaction. Sarnia Farmers' Friend Fencing is made of highest quality, open hearth, full gauge, heavily galvanized steel wire. We positively assert that no better grade of fence wire can be bought than what we use. We have the best powerful looms for weaving fencing, modern equipment for handling, experienced men for operating—in fact, everything is done to produce quality at the greatest economy of production. You get bright, new fencing when you buy the Sarnia, fresh from the loom, shipped direct from factory to user. Thousands of satisfied farmer customers testify to the superior quality of Sarnia Fencing. No middle profits. All explained in our literature, price list and order blanks. They are yours for the asking. Address nearest office.

SARNIA FENCE COMPANY, Ltd.
SARNIA, ONTARIO
WINNIPEG, MANITOBA

FARMERS FRIEND FENCING FROM FACTORY to FARM

Dampness ruins farm implements. Protect them and your purse by using

RAMSAY'S
Wagon & Implement Paint
"The right Paint to Paint right!"
A. RAMSAY & SON COMPANY
Makers of Paint and Varnish since 1842
Toronto MONTREAL Vancouver

Save the surface and you save all! — Ramsay's Varnish

Shield your wife from worry about the future with an **IMPERIAL MONTHLY INCOME POLICY**

The IMPERIAL LIFE ASSURANCE CO. OF CANADA
HEAD OFFICE TORONTO

Like a New Car

THAT'S what you will say when you drive out with your new Lion Brake-Linings.

A special frictioning process makes the Lion grip surely and silently—stops the annoying rattle.

It gives longer wear, resists "rubbing smooth."

Your Garage man can install Lion Brake-Linings. Be sure to order yours by name.

Hamilton Cotton Co., Limited, Hamilton

At all Garages and Dealers

LION Brake-Linings for FORD CARS

MADE IN CANADA Look for the RED LINE

USE METAL SHINGLES for SAFETY and PERMANENCE

The Farmer's Advocate and Home Magazine

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AND
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1866

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LV.

LONDON, ONTARIO, APRIL 22, 1920.

1439

EDITORIAL.

A lamb-like March is never a good omen.

Everyone who keeps sheep should arrange to dip in the spring, at least.

Instead of getting back to the land, Canadians seem to be turning their backs on it.

Make an effort to produce a few roots. There is nothing better for calves and freshening cows.

Make adequate provision against parched and dried-up pastures. A feed shortage in summer is bad indeed.

Feeding and stabling scrub live stock is like putting money into a defunct bank—you get only a few cents on the dollar.

So long as the feed hangs out, don't ruin the pastures by turning the cattle out to grass. Grass lands must be guarded as well as the hay mow.

Senators claim exemption from appearing in court as witnesses or to answer charges. Surely the Senate will not be made a refuge such as that.

The case of the "mystery soldier" (Frank Hall) shows that it's no use losing one's identity. There is always some busy person who will go and find it for you.

The price of potatoes is sufficiently high to suggest a patch of early ones somewhere on the farm. Choose a piece of early land and plant an early variety, such as Irish Cobbler or Early Eureka.

More horses and larger implements is the only solution of the labor problem this spring. Put on more horses and use a cart behind the harrows. Riding in the field will leave one fresher for the chores and necessary work about the buildings.

The Provincial Treasurer, Hon. Peter Smith, has discovered one lucrative source of revenue, namely, the race courses. Mile tracks will be asked to pay \$10,000 a day while meetings are being held, and half-mile courses, \$5,000 per day. Who ever dreamed that these race courses were such valuable assets to the Province of Ontario?

Germany is winding up her alarm clocks with more determination than ever, while we in the new world are gradually getting rid of them and waking at our pleasure. A greater demand for strong-ringing alarm clocks and less demand for short-hour days would indicate a more prosperous future.

The feed situation in Eastern Canada this spring suggests that we do not put too much dependence on outside sources for concentrates. The lack of demand for flour has slowed down milling operations, and, as a consequence, milling by-products are scarce. An ambitious cropping system on every farm is the best guarantee against shortage of feed.

An anti-tuberculosis campaign ought to be gotten under way so it would be in full swing when cattle and live stock go into stables next fall. It is under winter conditions that bovine tuberculosis spreads most rapidly, and herds could be more easily kept clean by weeding out the diseased animals in the autumn before they spread infection to their stable mates.

Agricultural Representatives.

Some remarks have recently been made which are not altogether complimentary to the Agricultural Representatives in the Province of Ontario, and before one goes too far in his criticisms it would be well to stop and think a little, lest he slander an earnest, hard-working body of public servants. In the spring of 1907, Hon. Nelson Monteith, then Minister of Agriculture, selected six young men to teach agricultural classes in as many high schools throughout the Province, and they were furthermore instructed to aid farmers wherever they found the opportunity and in whatever way they thought wise. This was an experiment, and while the agricultural classes did not prove a success, the Representative, as he came to be called, did. Today, there are forty-nine Agricultural Representatives in the Province serving as many counties or district territories. Other provinces have followed Ontario's lead in this regard, and in the United States a County-Agent system is in vogue which resembles, in principle, the representative system in Ontario. It is possible that, in the effort to man forty-nine offices (a task made more difficult by the war) some mistakes were made; but this we know, the Agricultural Representatives of this Province as a group are quite on a par with their contemporaries in other provinces or in the United States. If there are individual weaknesses in the system it is the Government's duty to brace them up and put in new timber.

As the system grew in magnitude, with large expenditures involved, it became necessary to exercise some directing influence from Toronto. This, to some extent, destroyed initiative but it did not prevent the energetic, resourceful ones from serving well their constituencies, and becoming real agricultural leaders in the counties of their adoption.

During the last Provincial election campaign the U. F. O. indulged in some criticism of the Agricultural Representatives which, as a body, they did not merit; and certain private members of the Legislature have carried even to the House a smouldering ember of that pre-election fire.

We hold no brief for the Agricultural Representatives, but we should like to see them receive the consideration they deserve. Because a Barred-Rock hen has been indiscreet enough to lay an egg which hatches out a speckled chicken, and this egg reaches some rural school pupil through the instrumentality of the Agricultural Representative, the offence or mistake is not of sufficient seriousness to condemn the man or the system.

The work of the Agricultural Representatives is too well known to require comment here, and it is always well to bear in mind that one disgruntled man in a county will be more extravagant in his condemnations than friends of the Representative will be generous in their praise. The service a Representative can render his constituency depends largely upon the attitude of the people with whom he works. Give the Representative some assistance and you have a valuable servant in your community; oppose him with word and deed and you discount his efforts in direct proportion to your own influence.

We should not fail to suggest here, however, that the Agricultural Representatives should, as far as possible, be placed on their own responsibility and be allowed to work out their own destiny in the counties where located. We desire to still further suggest that the Representatives do not depend too much on their organization throughout the county, but make an effort to be present at all farmers' meetings possible. Farmers like to see their Representative at their homes and at public gatherings. Long hours and long drives are the price Agricultural Representatives must pay for success.

Roads and Road Programs.

A great deal of interest this spring has centred in the various road programs of the different provinces. Ontario has mapped out a scheme which involves 1,824 miles of road to be built in five years, at an estimated expenditure of \$15,000,000. Nova Scotia has a five-year program almost as stupendous, proportionately, and other provinces are considering making use of the Dominion Government grant offered to them for road-building purposes. We are certainly behind in our road-building activities but we have awakened with a start, and it is possible that too much enthusiasm, followed by disappointments, may be the result.

At the present time, the location of these proposed highways is exceedingly important, and before short sections are begun the route in its entirety should be gone over and the proper course mapped out. It would be just as well, too, that full consideration be given to local circumstances and requirements and an effort made to locate the through routes so they will serve as great a number of residents along the line as possible. If the Ontario program is complete in twenty years, rather than five, we should not be disappointed. Too much haste this year or next will simply mean that wages will be kept at an abnormally high mark, while the cost of construction material and equipment will soar unreasonably. Not only is Ontario involved in a great road-building scheme, but other provinces are forging ahead, and it is unreasonable to expect that labor, equipment and material can be obtained at anything like reasonable prices to meet the requirements. Should all the provinces forge ahead under these abnormal conditions, we shall have a system of roads costing us two or three times their actual value.

It is the local or purely market roads that are most needed now; the tourists' roads can wait. We have a system of railroads and radials that carry people long distances cheaper and more quickly than one can expect to travel on the highway. We have to pay for the upkeep of these railroads, and we might as well use them for long-distance travelling. As much as we desire good roads we cannot hesitate to urge caution on the part of those entrusted with their building.

What is Wrong?

A North Dakota paper (Fargo Forum) must be given the credit for presenting as true a word picture of the present state of society as any of the thousands we have seen, and Canada must be included in this picture. The question is asked, "What's the matter with America these days?", and the answer is given in the following 13 points:

- Too many diamonds, not enough alarm clocks.
- Too many silk shirts, not enough blue flannel ones.
- Too many pointed-toed shoes, and not enough square-toed ones.
- Too many serge suits and not enough overalls.
- Too much décollete and not enough aprons.
- Too many satin-upholstered limousines and not enough cows.
- Too many consumers and not enough producers.
- Too much oil stock and not enough savings accounts.
- Too much envy of the results of hard work and too little desire to emulate it.
- Too many desiring short cuts to wealth and too few willing to pay the price.
- Too much of the spirit of "get while the getting is good" and not enough old-fashioned Christianity.
- Too much discontent that vents itself in mere complaining and too little real effort to remedy conditions.
- Too much class consciousness and too little democracy and love of humanity.

The Farmer's Advocate AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN THE
DOMINION.

Published weekly by
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Nature's Diary.

By A. BROOKER KLUGH, M. A.

I have recently received from J. N. P., Peel County, Ontario, specimens of three plants for identification. He says that all three species are locally called "Ground Hemlock."

Of these specimens No. 1, is the Tree Club-moss, *Lycopodium obscurum*. This species has a very tree-like habit of growth, as may be seen from Fig. 1, and in this photograph its size may be judged by comparison with the leaves of the Striped Maple in the background. This species occurs in woods from Newfoundland to Alaska. The rootstock is very slender and spreads quite extensively, and the branches arise from it at some distance from one another, thus often giving the appearance of a single rootstock the appearance of a miniature forest. The branches rise from two to five inches from the ground before producing branchlets, and are covered with many rows of curved slender leaves. Like all the *Lycopodium*s this species continues to add to the length of the branches for several years, during which time the main branches continue to grow and put forth other lateral branches. The fruiting spikes are borne singly on the tips of the older branches, and are cylindrical and from one-half to two inches in length. As in the case in all Club-mosses these spikes are made up of scales bearing spore-cases on their inner side, and the spores in these cases are mature in October, so that if at that time the spikes are jarred the yellow spores are shaken out in a cloud.

No. 2, shown in Fig. 2, is the Shining Club-moss, *Lycopodium lucidulum*. This species is quite common in damp woods throughout Canada. Both the common and scientific names of this species are derived from the fact that the leaves, which are large for a *Lycopodium*, are shiny. The habit of growth of this species is somewhat different from that of most of the other Club-mosses, there being neither rootstock nor main stem in the usual sense, but instead the whole plant may be likened to one of the primary branches of other species. When the young plant begins its growth there is at first a single short stem. At length this stem forks at the apex into two equal branches, and these, after lengthening from one to several inches, fork like the original stem, this process continuing throughout the life of the plant. Growth proceeds very slowly, often not more than an inch a year. The stems for a time grow erect, but after some years the weight causes the stem to become decumbent at the base, when it begins to decay. In the meantime, at intervals along the old stem, strong roots have been sent into the soil, and when the process of decay reaches the first fork there are thus formed two separate plants. Subsequently these two plants become four, and so on, a single plant thus ultimately giving rise to a whole colony. The spores of the Shining Club-moss are borne in kidney-shaped sporangia, one of which is formed in the axil

of each of the ordinary leaves near the tip of the stem, instead of being aggregated in spikes as in most *Lycopodium*s. The new leaves of one year become the sporangia bearing leaves of the next year, and thus in time each stem has several zones of sporangia. In addition to reproduction by spores, and by the division of the stem, this species also produces numerous small bulbets in the axils of some of the upper leaves, and these bulbets, when they fall to the ground, grow into new plants.

No. 3, is the American Yew or Ground Hemlock, *Taxus canadensis*, a twig of which with two years' growth is shown in Fig. 3. This is a low shrub, seldom over five feet in height, which is common in woods from Newfoundland to Manitoba. The fruit of this species is red, pulpy and berrylike and contains a single bony seed.



Fig. 1. The Tree Club-moss.

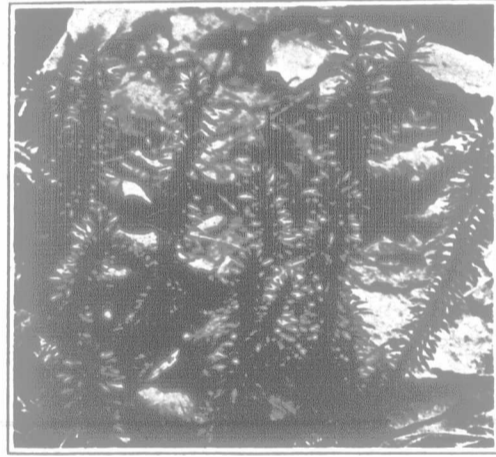


Fig. 2. The Shining Club-moss.



Fig. 3. Twig of American Yew.

The large hare, which I mentioned in a recent "Nature's Diary" as becoming common in some parts of southern Ontario proves to be the European Hare, *Lepus europaeus*. In response to my request for information as to its distribution F. B. Welland, reports it as common in that vicinity and more abundant in the township of Gainsboro, Lincoln Co. F. B. very kindly sent me the ear of a specimen he shot, which is quite diagnostic of the species. I received a specimen of this species from H. W. Aylmer, and another from near Brantford, S. A. L. reports them as common near Queenstown, and W. A. says they are common near Waterdown. As far as I can ascertain they were first noticed in 1915 near Brantford, but so far I have no definite information as to the exact manner of their introduction. They are evidently increasing and spreading rapidly, and since they are proving destructive to crops, they should be kept in check as far as possible by shooting, snaring and, if necessary, by poisoning.

The Golden Age.

By ALLAN McDIARMID.

Just recently I had a letter from a friend telling me of the death of her brother, who had passed, the week before, his fifty-seventh birthday. "The golden age," she quoted. And, when we think of it for a minute, there's the possibility of unlimited truth in the saying.

The happiest time of life is usually, and naturally, the early years, say from five to twenty. Good health and lack of responsibility probably account for it. After that the steady down and sobering process begins and things are not seen in the bright colors that is characteristic of the boy and girl stage of existence. The individual has entered the "School of Hard Knocks" and he begins to see life as a sort of fight in which a large percentage of the combatants are knocked out. In other words, they have failed to achieve their object. The reason for failure in a good many cases being, however, that the point of achievement has a way of continually receding as we approach it. Instinctively we keep wanting what is just beyond our reach. "Man never is but always to be blessed."

But admitting that the first twenty years of life are the happiest is not by any means saying that they are the most valuable. They are valuable in a way, as a sort of means to an end, as it were. We are gaining in them some of the experience that we can make good use of later on. We are making the mistakes that will prevent mistakes when we've got down to the real business of life. Usually men don't make the same blunder the second time, because, usually, men are not absolute fools. Here's where the optimist gets his best argument. Every individual learns something every day and almost every hour. Therefore, the world must be getting wiser—and better.

No, I think we're safe in saying that the years of a man's life that should be of most value to him, as well as to his friends and neighbors, are the years that come to him after the half-century mark has been passed. And, for that reason, this has probably been well named "the golden age." Between fifty and sixty is a sort of "Golden Jubilee" period, as it were, when man should be at his best, both in mind and body.

If he has lived a fairly temperate and decent life there is no question but that his physical powers should be unimpaired. Provided, as I intimated, that he didn't repeat too many of those fool mistakes of his. And as to his mental powers and his general knowledge and ability along this line, there should be no chance for comparison between what he now is and what he was when handicapped by the inexperience of his comparative youth.

Why it is that when we want safe, dependable leaders, in any sort of a crisis, we almost invariably choose men of between fifty and sixty years, or thereabout? Almost every one of the men who directed the course of affairs in the War, that hardly seems to be over yet, were of about this age. Lloyd George, Foch, Kitchener, Haig, French, Clemenceau and Wilson were all what might be called well on in years. Even Germany saw the necessity of putting the responsibility for the nation's fate into the hands of men of years and experience. It didn't do her any good in the end, but it is an illustration of the tendency of humanity to trust to the man who has had time for his school-master.

Up to a certain point life would seem to be reaching towards a sort of climax. And it is during the latter half of it that this climax is reached. As to when the down-hill stage begins, that all depends. It's likely to be held off till pretty near the end of the chapter if the laws of old Mother Nature had any attention paid them during the years that have passed. And it is in the course of this time, when the top of the hill has been reached, that a man can reap the reward of all his hardship. He has, in a way, graduated from his "School of Hard Knocks", in that the "knocks" at least don't come so frequently, and he experiences the happiness and satisfaction that come most surely by way of wisdom and achievement. He sees a certain purpose in everything and he feels that, to a certain extent, at least, he has had his part in fulfilling Nature's plan.

Robert Browning was one of the poets who seemed to take a pleasure in making his readers hunt some time for the meaning that was supposed to be hidden in his words. To the average person he is what might be termed somewhat obscure. But occasionally he emerges into the light and on one of these glimpses we get of him he has expressed the idea we are trying to bring out. This is the way he puts it:

Grow old along with me,
The best is yet to be,
The last of life for which the first was made.

There it is. Comparatively speaking, our early years are only a means to an end. So far as this life is concerned its purpose is fulfilled in maturity. Time, working with the tools of reason, experience and judgment has produced a man. And out of pretty raw material, we will have to admit.

Now the idea we have in mind in connection with the foregoing is simply this; at the present time there is a movement away from the farm. Our farmers are selling out and going to the towns and cities to live. And what class among them are doing this, particularly? The very ones that we can spare the least. The men of experience and mature judgment. Those that could be of most help in the community they are leaving. Their advice and example would be worth money; and more than money, to their neighbors. The man who retires has usually made a success of his business. That is why he is able to quit. But that is also the best

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reason why he should stay where he is. He's too good to lose. A lifetime has been spent gathering knowledge and developing character. Why should he stop just when he is really ready to begin?

Work of some kind is the thing that makes life worth living, or even tolerable, especially to the man who has been brought up on it. And the better the quality of our product the happier we are in its creation. Again, why stop just as we are becoming experts?

Farming is another word for hard labor. I'm good and ready to admit that, or assert it, rather. And for the man who is getting along in years it doesn't get any easier. But it's a snap compared to the different methods for killing time that I have seen retired farmers use after they had gone to town.

Believe me, there is nothing easier than staying in the harness that one has become used to, even if it does rub the skin a little bare in places. And we all are inclined to go into mourning for the horse that dies with his head through the collar.

Growing old is the greatest achievement in life when it is carried through to a successful conclusion.

THE HORSE.

Stick to Type in Horse Breeding.

Probably one of the strongest factors acting against profitable horse breeding, is the failure of breeders to "stick to type." The indiscriminate selection of sires, patronizing a sire because he is owned by a friend whom the breeder wishes to help, failure to study the laws that govern breeding, and an attempt to produce an ideal, all contribute to failure.

Breeding is not a thing of chance. It is governed by certain natural laws, which it is not our purpose to discuss here, but with which every breeder should be conversant. These laws are, unfortunately, not absolute; there are many deviations, some of which are hard to account for. At the same time they act with reasonable certainty, and the breeder who studies them carefully, and exercises reasonable intelligence in mating his mares, while he may be disappointed occasionally, will, on the whole, be favored with a fair degree of success. On the other hand, the breeder who does not give the matter due consideration, does not study, or neglects the laws mentioned, but breeds indiscriminately, without regard to the type or individuality of his mares, will be disappointed in a large percentage of his attempts. The object of every breeder should be to produce something better than the dam. This can be done only by the selection of a sire of the same class, but of better individuality. The use of the word "class" here may lead to confusion, but we cannot use the word "breed" as few of our mares are pure-bred. Hence when we say "a sire of the same class" we mean a pure-bred sire of the breed the mare more strongly favors or some of whose blood she possesses. Hence, if the mare is, to some degree, of Clydesdale or Shire type and individuality, she should be bred to a Clydesdale or Shire stallion, if she be of Percheron type, breed her to a Percheron sire, etc.

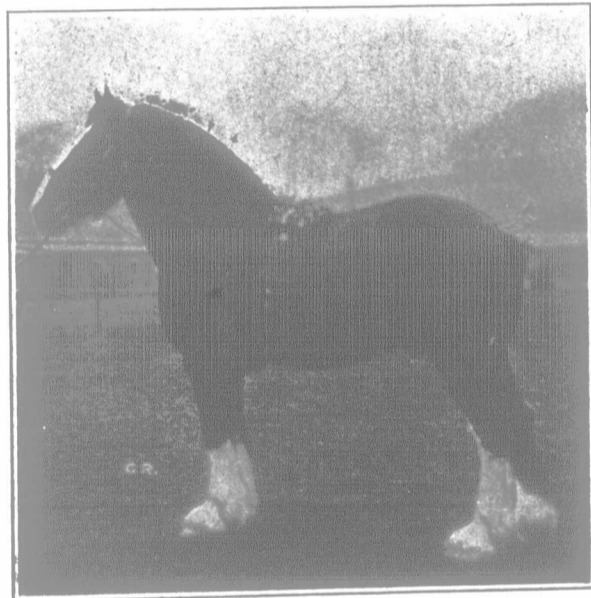
Under present conditions we take it for granted that the intelligent breeder will not patronize an impure or unregistered sire of any breed or class. If we mate mares of composite breeding with sires of like breeding, even though they be typical of the type we wish to produce, we will, in most cases, meet with disappointment, as neither parent has sufficient prepotency to reproduce type with reasonable certainty.

Prepotency (the power to transmit to the progeny the characteristics of the parent) can be acquired only by breeding in certain lines for many generations. Hence the parent of composite or mixed blood cannot possess the necessary prepotency, and, if each parent lacks the essential what we expect the progeny to be? All unprejudiced students of the breeding problem will admit that the Thoroughbred possesses greater prepotency than any other breed of horses, probably greater than any other domesticated animal. Why? Because he has been bred for so many generations without the infusion of foreign blood. Hence, in our endeavor to produce a foal that will be a better animal than the dam, we must select a sire that is not merely a better individual, but one that is pure-bred, and, of course, the longer his pedigree the better. Again, we should not select a sire simply because he is of the breed we want, and has a good pedigree. We must have individuality as well as pedigree, but, if we are forced to sacrifice either for the other, we would sacrifice individuality for pedigree, but this only to a limited degree. Get both if possible. Again I would say "stick to type." If the prospective dam has an infusion of the blood of some draft breed, breed her to the best pure-bred sire of that breed procurable. As regards strict type, we may deviate to some extent; in fact, it is often wise to do so. If the mare does not suit us in this respect, we can improve type in the progeny by the careful selection of a sire. For instance, if she be too high, lacks substance, has too long a back, beefy bone, coarse feathering, etc., select a sire of the blocky type, one with plenty of substance, one with a straight, short, strong back, bone and feathering of good quality, etc. In a few words "select a sire that is good (in fact, may be over-developed) in the points in which the dam is deficient, or, on the other hand, one that is rather deficient in the points in which the dam shows over-development. It is not always possible to get the services of a sire that, in all respects, is exactly what we would select to suit the individuality of the mare, but we should always bear her individuality in

mind, and make the best selection possible. If we have a mare of the class mentioned, and breed as above, we will, in all probability, produce a foal better than the dam, and, if this be a filly, by exercising the same judgment in breeding her, we will still improve the progeny, and so on. But if we keep changing the breed of the sires, even though we keep to the draft breeds, we degenerate instead of improve. The more or less constant change of the breed of sires accounts for the fact that first-class horses of any breed or class are not as numerous as they should be, and this unsatisfactory state of affairs will continue just so long as breeders fail to give the necessary study and intelligent consideration to the breeding problems.

The same general rules apply to breeding horses of the light breeds or classes. Violent crosses seldom give good results, as breeding heavy mares to light sires or vice versa. There have been instances in which such violent crosses have produced valuable animals. Such may be regarded as a calamity, rather than a favorable result, from the fact that one successful attempt tends to encourage further efforts on similar lines, not only by the "lucky" breeder, but by his neighbors, and it will be noticed that where such an irrational proceeding proves successful in one instance, it will prove disastrous in many.

To successfully breed light horses, the same care as to type and individuality must be observed as in the production of the heavier breeds or classes. Where pure-bred dams are owned there should, in the majority of cases, be no question as to the breed of sire to be selected, as in such cases we should "stick" not only to type, but to breed. At the same time, even with pure-breds, there may be cases in which we may be justified in selecting a sire of another breed. For instance, if we have a Thoroughbred mare, and wish to produce a harness horse, we may be justified in mating her with a Hackney. The Hackney gives better results when crossed with a Thoroughbred, or one with considerable Thoroughbred blood, than with any other class except a pure-bred of his own breed. In this case the prepotency of the dam transmits ambition and staying powers, and the sire transmits the action necessary in a heavy harness horse.



Landprint.

The Clydesdale Stallion which won the Glasgow Premium (3 years) at the recent Glasgow Stallion Show.

In some sections, where breeders for years bred their mares to Standard Bred sires with the hopes of producing harness racers, with the idea that a fast stallion of this breed would produce a fast colt out of most any kind of a mare, the usual result was disappointment. To such an extent has this line of breeding been carried on in certain sections that there are many animals of both sexes with a strong infusion of Standard Bred blood that practically belong to no class. They are not fast enough to race, have not size enough for carriage, and are simply useful for drawing a light rig over a good road at a fair road pace. The question is often asked, "How shall we breed these mares with reasonable prospects of producing a useful animal that will have a fair demand at good prices?" This is a hard question to answer. If crossed with a Thoroughbred the progeny will be too small, except for light saddle work. If bred to a sire of her own breed, the progeny will probably be too small for valuable service and not fast enough to race. If crossed with a heavy harness horse, as a Hackney or coach horse, the same fault as regards lack of size, with lack of quality (unless the mare has very good quality) will probably be noticed. Of course, it would be unwise to cross her with a draft horse. What then, can be done? If the mare be too small and too slow to be of value for work or driving purposes, it will be better to not breed her. If she has size but lacks speed and quality, breed her to a big Thoroughbred with the hopes of producing a good big saddle, or a combination horse. If she has both size and quality but lacks speed, breed to a Hackney and expect to produce a heavy-harness horse, but if she has neither size nor speed, even though she be of good quality, she may be bred to a Hackney with the hopes of producing a high-acting cob, or to a blocky Thoroughbred, with prospects of producing a polo pony, but either of these lines of breeding is liable to be disappointing.

WHIP.

Stable Tricks and Vices of the Horse.

BY DR. G. H. CONN.

Probably there are few horsemen who have not had the privilege of observing in some horses, one or more of the vices or tricks that they are commonly subject to. The disadvantages of horses afflicted with any one of the many tricks and vices are loss of condition in the animal, danger in handling on account of injury and the annoyance that they cause, and in some cases the destruction of stable equipment and clothing. Most of these conditions are acquired from association with other animals, while a few may be the result of some disease or injury, and others may result from unkind treatment. These conditions are not as common in work horses as they are in the lighter breeds, but they are of common enough occurrence, to be of considerable importance and a knowledge of the nature of them, may be the means of preventing them in the greater number of animals.

If one is buying an animal from another who has owned it for some time, it is always well to first observe the horse in the stall; pass in beside it, noting its action and behavior. If it is a work animal it is well to observe the harnessing operation. Observe the manger for evidence of cribbing, and the sides and back of the stall for evidence of kicking; if in the winter, make an effort to observe the clothing, to determine whether the animal tears it or not. It might be well to use the comb and brush for a few minutes, to detect any difficulty in grooming. Careful notice should be taken of the animal while being hitched. There are very few tricks and vices but what detract very much from the animal's value, and some of them are so serious as to make the animal almost useless for work purposes, while others render it dangerous to handle the animal.

If animals are kept out of doors as much as possible when not working, it will lessen the liability of learning these tricks. It is also good for the animal as it provides much needed exercise. Idleness with the greater part of the time spent in the stable is conducive to disease, as well as the possible acquiring of tricks and vices.

THE HABIT OF WEAVING.—This is a habit that is noticed very often in race horses and especially in wild animals in captivity. The animal will weave back and forth continually, and at times to the extent that the feet will alternately be raised and lowered to the floor with the movements of the body. This is a nervous condition that may be brought about by some diseased condition; however, there is not, as far as we know, any particular disease that has been credited with producing this habit. It is very possible, however, that this condition may be started in an animal from observing another animal.

Some horses weave constantly, while others weave only a part of the time; it is needless to state that any animal practicing this habit continually is greatly weakened and incapacitated for work. It requires too much energy during the constant weaving. Such animals should always be kept apart from others, so that they do not contract the habit from observation. They should be provided with bedding that will not slip under them, and should be placed in a large, roomy box-stall. If possible, they should be allowed to run in the pasture for some little time, or as much of the time as the weather will permit.

The extent to which the animal is affected by the habit, will determine the disposition of it. If it renders it weak and unable to work, it should be destroyed. If it can work without much inconvenience, and will remain in fairly good flesh while doing so, it may be used in this way.

WINDSUCKING AND CRIB-BITING.—These are by far the most common habits that we find amongst work horses. They lower the selling value of many a good horse to a ridiculous figure, and at the best are very undesirable. However, many of these animals are capable of giving very satisfactory service for years, with no other inconvenience to the owner, than the time and bother of attending to the method of constantly preventing the performance of the act.

A windsucker arches its neck, draws its head toward the breast and gives a gulp, thus swallowing air. The crib-biter accomplishes the same end, but it catches hold of the manger or some other object in order to get a good purchase, and at the time it pulls back a grunt is emitted.

A windsucker cannot be recognized, but the crib-biter can be recognized by its worn-off teeth. In some animals these teeth are worn down almost to the gums. Colic or indigestion frequently result from this habit.

There is no question but what horses will learn both of these habits from observing other horses, and for this reason horses that have acquired these habits should be kept away from all other horses. Many methods have been used to prevent this practice in horses, but many times they outwit the device. They usually desist during the time that the act produces any discomfort, but as soon as they find a way to practice the habit without any discomfort they are performing the act as of old. Many of the practices that were used, were cruel and should not be countenanced at all. Sawing between the teeth, lacing wire between the teeth at the gums, are both cruel and last only as long as the soreness lasts. One of the best methods is to take a wide strap and place around the neck just back of the region where the throat latch rests. This should be buckled tight enough that the horse cannot arch his neck. This will not interfere with breathing, eating or drinking; it should be removed when the horse is working, unless he cribs on the yoke or tongue, and in such cases it may be worn at all times. Muzzles have been tried, but are not as satisfactory as the wide strap. The

horse may be placed in a stall with four blank walls and fed from the floor but this will not prevent wind-sucking, and it is not as practical as the use of the strap. Horses have been known to crib on the toe of a front foot, so the blank walls would not answer all cases even for a crib-biter. Always remove from the other horses. No permanent cure has been found to date.

KICKING IN THE STABLE.—This is a very serious habit as it is apt to injure the animal, destroy the stall, and besides is very annoying. This habit is no doubt worse in mares than geldings; it is practiced most often by the animals when they are idle. Spending the greater part of their time in the open, is a good method of preventing this habit.

Following are some of the many methods of trying to prevent this habit, but none of them are absolutely successful: Padding the portions of the stall that is being struck by the animal, hanging sacks of sand, dirt, etc., where the animal may strike them when kicking, hanging prickly bushes so that they may be struck, and the buckling of a short piece of leather around the ankle to which is fastened a short piece of chain, that will strike the legs when the animal kicks. If no other means will do, the legs may be shackled together. Some animals kick only when the stable is dark; hanging a light in the barn will prevent some horses from kicking. When any of these methods are used, by which the animal can injure itself, careful attention must be given that such injury does not occur.

CROWDING IN THE STALL.—This is a very dangerous habit as far as the attendant is concerned. This consists of the animal forcing the attendant against the side of the stall and holding him there by crowding against him. It is frequently that ribs are broken in this way, or that a foot is mashed by the animal's trampling upon it. This habit is found more often in mares than in geldings, and often during the heat period. Careless handling and roughness during grooming and soreness of the neck or shoulders may all be the cause of this vice. In some animals this habit is only noticed during grooming or harnessing, in others at any time.

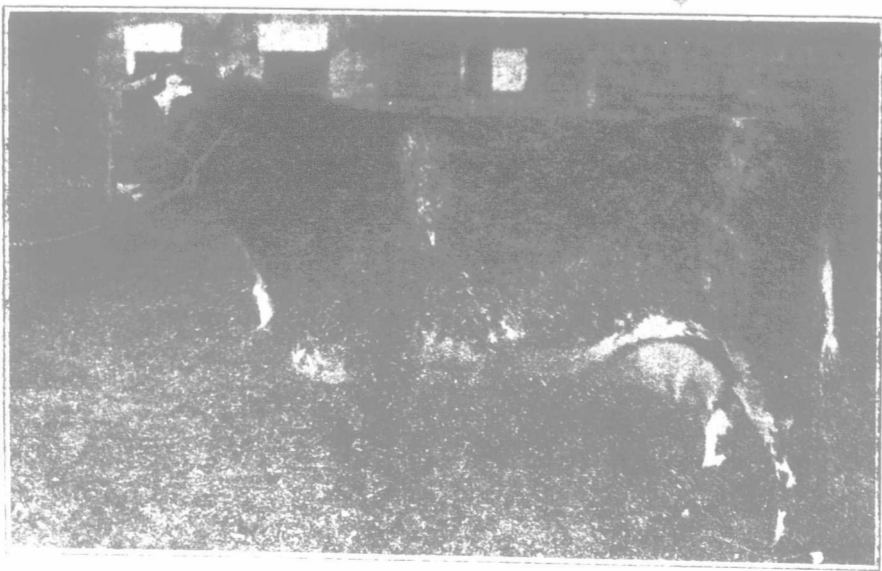
If the animal is very bad it may be necessary to place it in a wide stall and then to place a pole in the stall, and fasten at the manger, far enough from the wall that the attendant can walk in behind it.

BITING.—Occasionally mares and geldings in a playful way will bite the attendant during grooming; this is quite as painful as though done with malicious intent, so it should never be encouraged by tickling with the brush or comb, or any unnecessary procedure. It may be the result of careless grooming or tender-skinned animals, or improper handling of an animal with a sore neck or sore shoulders. If the animal is very vicious a muzzle may be used at all times except during the feeding period. In others the use of a side stick will do very well; it is simply a stick one end of which is fastened in the nose band of the halter and the other to a curcingle around the body.

TEARING THE CLOTHING.—This is one habit that some horses acquire that is very apt to try the owner's patience. It is one that is, as a rule, very hard to control with any satisfaction. It is doubtful if it can be prevented successfully when once fully acquired. The best method of prevention is by the use of a stout leather guard which is fastened to the halter strap that passes under the horse's jaw; this strap must be long enough to reach below the lips, and then the animal cannot get hold of the clothing. A muzzle can also be used, but must be kept in place, during the time the blanket is worn.

GNAWING THE WALLS.—This is an indication usually that the animal requires some minerals, such as lime; many times a lump of rock salt in the feed box, or a regular supply of salt will remedy the trouble. When this does not secure the desired results, the walls may be painted with creosote or tar with some creolin or other objectionable substance added.

EATING MANURE.—This is a very dirty habit, and when once acquired is often very difficult to get stopped. Many times it is an indication of improper feed, or it may be that of indigestion. With this habit it is always advisable to have a thorough veterinary examination of the animal made as soon as possible.



Ev'yo, the Dan of Edgemo Hew, the 10,000 gs. Bull.

LIVE STOCK.

Keep the young stock thrifty.

Do not neglect to dock all lambs nor to castrate all males not intended for breeding purposes.

There should be more money in raising those calves of the beef breeds than in selling them for veal.

Let the spring litter run in the barn yard. Sunshine and exercise aid in keeping the young pigs thrifty.

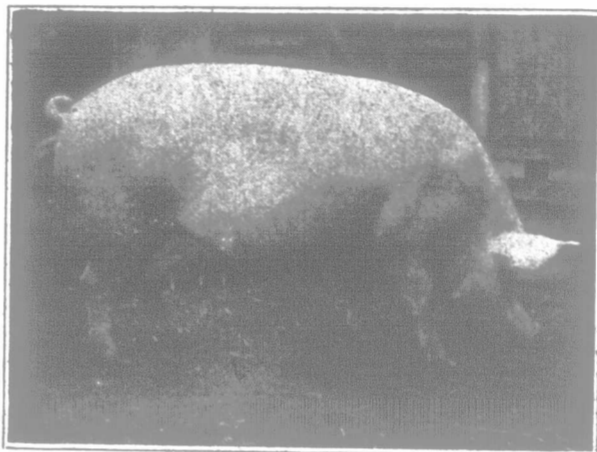
Shorthorns at Uppermill Farm, Iowa, made an average of \$2,096 on 51 head. The top was \$6,200 for a Villager calf.

Too little protein in the ration is the cause of many litters not thriving. If skim-milk is not available try feeding tankage.

If the young calf is put in a pen with calves a few weeks older it will learn to pick at grain and hay more quickly than if it is left in a stall by itself.

The constructive breeder of pure-bred live stock is of much more value to the industry than the man who spends most of his time dealing in pedigreed stock.

Remember that green feed is important in pig raising. Are you planning for a pasture for the pigs this summer? Rape and clover are good pasture crops.



A Champion Yorkshire Sow.

At Lacombe, Alberta, S. Henderson, recently disposed of 45 head of Aberdeen-Angus cattle by auction for an average of \$350. The top price was \$1,200 for a cow.

No one can tell definitely what the cattle market will be next spring or two years from now, but the man who keeps all the good breeding stock his place will carry need not worry much.

Good live-stock feeders are so interested in their animals that they watch every detail, are kind to all charges and practice regularity in all things where the stock are considered.

On the basis of live stock per unit of human population, statistics show, that there has been no comparative increase in the production of cattle, sheep and hogs in Canada during the past decade.

Keep enough stock to consume the products of the farm on the farm but do not keep more than you can keep well. Feeds which cannot be raised profitable on the farm can advantageously be purchased to supplement the home grown feeds.

Provision should be made for feeding these early lambs some grain to supplement the milk ration. A couple of boards nailed across the corner of the pen will permit the lambs gaining access to a feed trough without being bothered by the ewes.

It is the number of pigs weaned that counts rather than the number farrowed. The heavy losses in the litters are due very often to carelessness on the part of the feeder in attending to details during gestation, at farrowing time and while the litter is on the sow.

When a sow is cross at farrowing time it is a good plan to remove the pigs from the pen. They will keep warm in a box and can be put in the pen for a feed several times a day. Once the pigs get strength and the feverish condition of the sow subsides the pigs and their mother are likely to get along fairly well.

The success which some have attained in feeding cattle and in the show-ring may be secured by others. But it requires hard work and stick-to-it-iveness. Many young men of to-day are not willing to pay this price for success. Apparently they prefer, to go with the tide rather than to row up stream.

The following figures compiled by the Live-Stock Commissioner gives the number of head of stock per unit of human population in 1919; cattle 1.12; sheep .38; hogs, .4. In so favored a land as Canada there should be a larger number of animals kept. But, there is not likely to be much increase until consumers who howl about the high cost of living are willing to lend a hand in tilling some of Canada's practically idle acres.

Do Not Neglect the Calves.

There is a tendency to give more attention to the mature stock than to the young things. The calves are very often crowded into dark, dismal corners of the stable where the sun seldom has a chance to send its rays. Sometimes the stalls are not kept as clean as they should be, and it is little wonder that the calves do not thrive. It must be remembered that a neglected calf does not develop into a choice individual when mature. To neglect the calves, or, in fact, any of the young things about the farmyard, is to undermine the success of live stock raising. Light and cleanliness are two things which are essential. If any part of the stable is lighter than the rest, reserve that part for the young calves. Not only will they do better, but the feeder will have a better chance of ascertaining each day the health and condition of the youngsters. Large box stalls are preferable if they are available, and the mangers or feed boxes should be so arranged that they can easily be kept clean and are within easy reach of the animals. With the young calves it is a very good plan to have a separate box for feeding the concentrates. This may be set on a ledge, or hung on to the side of the partition, so that any feed left over may easily be dumped into the manger of some of the older stock. There is nothing which will turn the young things against their feed so quickly as stale feed in the manger. They want it fresh and of first quality. Keep the pens clean. An accumulation of manure soon heats and is not good for the calves to lie on.

Now that warm, sunny days may be expected, it is a good plan to let the calves have a run in the barnyard. The close housing of any kind of stock is not advisable, but then the animals should not be exposed to inclement weather or drafts. Close housing predisposes to disease, and an animal which has been kept in during the winter will chill much more easily than one which has been accustomed to a run in the yard on fine days. It is a mistake to turn the calves out when the weather is unfavorable.

Feed is very important to development. Not only should the calves have plenty of feed, but it should be of the right kind and quality. For the first three or four weeks, whole milk should be fed; some will claim that this is expensive, but in the end it pays, owing to the better start which the calves secure. Tempt the young things with a few oats and a little bran, or with a choice bit of clover or alfalfa hay. The sooner they can be



A Thrifty Bunch of Hereford Calves.

taught to eat the growth and When the calf with rolled ration. The for development moved from another. I above mention good results. as finely-grow and ground t or scalded an is essential, as If you would l look well to t to get a setba they are full g

Castration

Although ing and docking there are yet operations an marketing th block will m than if left en not docked an ing paragraph culture Bulle Sa-kville of castrating an proceed with The impo all male lam being appreci a visit to any will reveal th in this regard ing their hog same farms n Not only are will not settle When the la is the best t then strong e there will be Collect the la which is well make sure th clean. The d disinfectant lower end of expose the te one at a time should not be young lamb i experienced fingers. Pin operation in method is fo teeth, in thi any danger o method for s and most sat disinfectant and prevent a

Docking, and should n have been a uniform app There is les collecting o been remove is very warn becoming in tail, due to t minimized v ewe lambs n week old, p The shock w are quite yo after birth been castrat days before means of a s a half inch covering the is removed stub. Now where it is holding the clean cut. heated, will blunt and t rather than bleeding by rather than ing the use butt of the The docking morning; t and in add hours after performed that clean and some e be benefici flies are lia than ordin

THE FARM.

Hot Air in Parliament.

EDITOR "THE FARMER'S ADVOCATE":
 I wish to express my appreciation of your editorial of April 8, "Talking the Country into Debt". I heartily concur in all you say, and I am of the opinion that nine-tenths of what is said in both Dominion and Provincial Houses is pure "hot air."
 I happened to be in the Dominion House at the time of the debate on conscription, and though this weary debate dragged on day after day, and night after night, not one single thing was brought out that anyone who reads the newspapers did not know months before.

Would not the business of Parliament be far more efficiently conducted if all speeches were printed and distributed to members at least three days before the subject was to be discussed? This would be but little extra expense since the speeches are printed anyway. A member presenting a bill or making a motion should then be given half an hour in which to emphasize the important points in his printed presentation. All extempore speeches should be limited to ten minutes, with a three minute time-limit for replies. The material having thus been printed and in the hands of the members for some days, they should have given it careful consideration, should have come to definite conclusions as to their position in regard to the question, and the matter could be quickly brought to a vote.
 Frontenac Co., Ont.
 RALF RANGER.

clipping the hair from around the scur, one end of the caustic stick is moistened and rubbed on the scur until it turns white. Do not have the caustic too moist. If it happens to run a little, which it will do if too wet; it will cause a nasty sore and in all probability leave a scar. It only takes a few minutes to apply this material, and it will save a good deal of hooking and bruising of the animals when they become more mature. Some claim that when the horns are destroyed this way the mature animal is more liable to bunt the other stock around than if they had been deprived of their horns at say two years of age. However, a mooley cannot bruise another animal like one which has stubs of horns. Not only are the hornless animals safer around the buildings but there is less danger of injury when shipping to market.

Fertilizer Facts and Fallacies.

SOME have contended that the farmer lacks the knowledge and mechanical equipment necessary to enable him to mix his own fertilizer materials successfully. But there is greater force in the argument that the farmer who does not possess sufficient intelligence to undertake his own mixing is equally incapable of judging the relative merits or values of ready-mixed fertilizers from statements of their analyses.

One of the strongest opponents of the practice of "home-mixing", who for years represented a large fertilizer manufacturing firm, admitted to the writer that, in the first year of their operations, prior to the installation of mixing machinery, all their fertilizer mixtures were prepared by workmen equipped simply with shovels and a sand screen.

MIXING FERTILIZERS ON THE FARM.

As may be gathered from the foregoing, the operation is by no means complex, nor is the equipment required elaborate. The mixing may be done on the barn floor or on any other firm floor with even surface. The tools usually employed are a shovel, a screen and a mallet or tamper.

The screen—one having 10 wires to the linear inch will give a mesh sufficiently small for ordinary purposes—serves to separate the coarser from the finer material; the coarse material or lumps may then be reduced by means of the wooden mallet or tamper.

The tamper—a rounded block of wood fitted with a shaft or handle and operated in its vertical position—is a most efficient pulverizer of lumps.

Superphosphate, if well-made, will rarely be found to have become badly caked in the bags and is usually very easily reduced. Nitrate of soda, however, is a crystalline material which tends to harden during storage. Consequently it will generally require to be pulverized by the tamper, before being added to the other components of the mixture. When all the materials of the mixture have been emptied in successive layers to form a heap, the whole should be turned by shovelling, first to one side and then to the other. After turning once, the whole batch should be passed through the screen, in order to aid mixing and to get rid of lumps.

It is desirable that fertilizer mixtures should be applied to the land as soon as possible after their preparation, for, if left in bags over twenty-four hours, the materials may become lumpy, a condition which might necessitate further pulverizing. This is especially true of a mixture of superphosphate with nitrate of soda. The tendency to cake or harden may be lessened or eliminated by the use of bone meal or steamed bone flour to replace from one-third to one-half the quantity of superphosphate. The bone meal or flour would thus act as a "conditioner"—in the terminology of fertilizer manufacture. Of course, the need for a "conditioner" arises only where it may be inconvenient to apply the fertilizer immediately after its preparation or to facilitate its distribution.

FERTILIZER MATERIALS WHICH MAY NOT BE MIXED TOGETHER.

Sulphate of ammonia should never be mixed with basic slag, wood ashes or other substance containing free lime or even carbonate of lime, for the reason that the lime, in combining with the sulphate, would liberate the ammonia which, being a gas, would escape, sometimes with harmful consequences to the operators.

A mixture of superphosphate with basic slag is inadvisable if the super is unduly damp—a condition indicating usually an excess of acid due to faulty methods of manufacture—for the free lime present in the slag will tend to revert the water-soluble phosphoric acid of the super to less soluble forms.

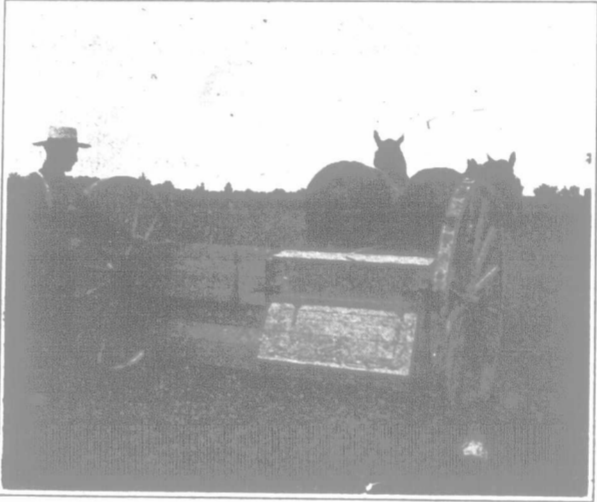
FERTILIZER MIXTURES, THEIR NATURE AND FUNCTIONS.

The manufacturer regards the "filler", "make-weight" or "conditioner" (be it sand, peat, ashes or lime-plaster) as a necessary means of keeping fertilizer mixtures in a dry, loose, friable condition during the time intervening between their manufacture and use, and (2) permitting the manufacturer to produce "cheap" brands. All good quality fertilizers contain an excess of filler, which, at such a low cost of the fertilizer, and in the light of the fact that the farmer should be able to use it as a "filler" to increase the bulk of his fertilizer mixture, acts to render it more economical than the fertilizer which contains a small quantity of filler. It is, therefore, a waste of the purpose.

The farmer should be able to use it as a "filler" to increase the bulk of his fertilizer mixture, acts to render it more economical than the fertilizer which contains a small quantity of filler. It is, therefore, a waste of the purpose.

While it is true that the farmer can mix his own fertilizer materials on a large scale

This is the fifth and last of a series of articles on fertilizers written by B. Leslie Emslie, formerly Supervisor of Investigational Work with Fertilizers at Ottawa. The four previous articles appeared in the issues of the following dates: March 9, March 11, April 8 and April 15. Preserve these numbers and have an up-to-date treatise on the fertilizer question.



A Fertilizer and Lime Distributor.

may be most conveniently and expeditiously performed by a fertilizer distributor, either broadcast or drill, the fertilizing of smaller areas may be quite satisfactorily accomplished by hand. The two-handed sowing "hopper" or "basket" is inexpensive and simple in construction. It may be described as a crescent-shaped canvas-covered frame with waist and shoulder straps attached. Both hands are used in sowing, and, to obtain the proper rythmical motion, it is necessary that the right hand (filled from the hopper) be swung backwards as the right foot advances and vice versa.

In order to ensure the uniform distribution of small quantities—such as topdressings of nitrate of soda—the bulk of the fertilizer may be increased by mixing it with a quantity of loose, dry soil. Certain makes of grain drills, potato and corn planters are equipped with fertilizer-sowing attachments. Some farmers employ successfully an ordinary grain drill for the purpose.

For corn, the practice of putting the fertilizer in the drill is not to be generally recommended, for, if the application be at the rate of 500 pounds or more, per acre, there would be over-concentration of the fertilizer

in close proximity to the seed, tending to restrict the plant's root system and its feeding area. The broadcasting or wider distribution of the fertilizer would encourage a more extensive root system and result in the more uniform growth and ripening of the crop succeeding the corn. Some corn growers follow the wiser practice of sowing only one-third or one-half the total application—say 150 or 200 pounds per acre—with the planter, the remainder being drilled in, between the rows, after the corn is up. The potato planter, which sows the fertilizer continuously along the row, is quite satisfactory in principle, but the method permits the application of the fertilizer at planting time only. Fertilizers, if sown on the surface, excepting hay and pasture lands, should be lightly cultivated or harrowed—never plowed into the soil.

TIME TO APPLY FERTILIZERS.

Time and method, as we have seen, are more or less reciprocal; frequently the one determines the other. The time most favorable for the application of fertilizers depends upon the nature (a) of the crop, (b) of the fertilizer materials, (c) of the soil and (d) of the season or climate.

The Crop.—Spring-sown crops, such as oats, will receive their fertilizing earlier in the season than would be considered opportune for later sown crops, such as corn, potatoes, etc. But, while oats may be fertilized at seeding time, the bulk of the fertilizer for corn, potatoes, mangels or turnips might be applied advantageously a week or ten days prior to seeding time. In fertilizing hay lands the application may be made, in spring, when the ground has dried out sufficiently to permit treading without injury. Fall wheat, of course, may receive fertilizer—perhaps nitrate of soda alone—in the fall as well as in the spring.

The Fertilizer Material.—As compared with superphosphate (acid phosphate), basic slag releases its phosphoric acid so slowly in the soil that, to be duly effective, it must be applied early in spring; indeed some prefer to apply it in the fall preceding. Nitrate of soda, being readily soluble and assimilable, is very suitable for the top-dressing of growing crops, providing a stimulus to growth almost whenever or wherever required. The nitrate should not form a large proportion of a fertilizer intended for application a considerable time prior to seeding, being reserved preferably until growth has commenced.

The Soil.—On very light, permeable soils, particularly those deficient in humus, large applications of nitrate of soda may suffer loss of nitrogen through the inability of the soil to retain moisture. Soils which are very susceptible to drought should receive their fertilizing while they still contain sufficient moisture for dissolving the ingredients.

The Seasons or Climate.—Moisture is required for the solution of all fertilizer materials, and for the transportation of the nutrients to the plant cells. If moisture be lacking at the time of their application,



Mixing Fertilizers in the Barn.

fertilizers cannot largely or wholly as—if not too stored by adeq

In view of also because times sold frac particularly to uses of lime and The purpos to the soil is but may be to soils), to impro less frequently, Prominent expounded new what we have have not yet ch the benefits acc through lack of come acid—a c activities of th encourage—and by an adequat It is significant most likely to d —clover, alfalf nitrogen-gather

The farmer approximate li employing blue cured, in strips a representativ of litmus paper paper being be flat on the bot sample may th and boiled wat soil, added. If ing of the lit mediatly. If, distinct signs present and no blue litmus pa coloring may a of the degree of great care shou litmus paper w paper to redd bottom of the enables the op drawing the s beaker.

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Gypsum, compounds acids; indeed in the creatio of lime, a con latter being on both as a sou potash, may turnips and po a fact mentio Small app acre, may oft use as a fixer mendable. S gypsum will f with the amu wise escape a will not impa

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fertilizers cannot exert their full influence, but remain largely or wholly undissolved and inert until such time as—if not too late—favorable conditions may be restored by adequate rainfalls.

LIME AND LIME COMPOUNDS.

In view of the growth in the practice of liming, but also because of the fact that ground limestone is sometimes sold fraudulently as a fertilizer (this applies particularly to the Province of Quebec) the nature and uses of lime and its compounds merit brief mention here.

The purpose in applying lime or lime compounds to the soil is usually primarily to neutralize acidity, but may be to liberate plant food (potash in heavy soils), to improve the tilth of clays and clay loams, or, less frequently, to furnish lime for crop nourishment.

Prominent scientists have, within recent years, expounded new theories regarding the chemistry of what we have always termed "soil acidity," but these have not yet changed the practice of liming or annulled the benefits accruing therefrom. The fact remains that, through lack of lime in suitable form, certain soils become acid—a condition unfavorable to the growth and activities of the special bacteria which we desire to encourage—and that such acidity may be neutralized by an adequate supply of ground limestone or lime.

It is significant to note, in this connection, that the crops most likely to derive benefit from liming are the legumes—clover, alfalfa, beans, peas, etc.—which carry the nitrogen-gathering bacteria in their root-nodules. The farmer himself may test his soils for their approximate lime requirements by the simple method employing blue litmus paper. The latter may be procured, in strips, from any drug-store. Having obtained a representative sample of the soil to be tested, a strip of litmus paper should be placed in a tumbler, the paper being bent L-shaped, so that the lower end lies flat on the bottom of the glass. A few ounces of the sample may then be poured carefully into the tumbler and boiled water, sufficient to thoroughly moisten all the soil, added. If the soil is very strongly acid, the reddening of the litmus paper will commence almost immediately. If, after the lapse of fifteen minutes, no distinct signs of reddening appear, there is no acidity present and no need for liming. The rate at which the blue litmus paper turns red and the intensity of the coloring may afford a more or less reliable indication of the degree of acidity present. In performing the test great care should be taken to avoid touching the sensitive litmus paper with moist hands, which would cause the paper to redden. The placing of the litmus in the bottom of the tumbler, a method adopted by the writer, enables the operator to observe progress without withdrawing the strip from the tumbler, or laboratory beaker.

The naturally occurring limestone, a carbonate of lime (mild lime)—when ground so finely that at least 50 per cent. will pass through a screen having 100 wires to the linear inch—is the safest and generally most satisfactory form in which lime may be used agriculturally. For the correction of acidity two tons per acre is an ordinary application, but a high degree of acidity will demand more for its complete neutralization.

Marl is another source of carbonate of lime and, though less pure than the high-grade limestone, possesses the advantage of being more easily pulverized.

Ground limestone, if pure, will yield on burning—for every 100 pounds—56 pounds of lime, known also as quick lime or burned lime. The addition of water to quick lime produces slaked or hydrated lime, a fine powdery material. Air-slaking takes place when lime is left exposed to the air, as is sometimes done by putting the lime out in heaps on the field. Both quick lime and slaked lime are caustic and their use tends to promote a too rapid depletion of the humus or organic matter of soils. They should, as a rule, be employed only on "heavy" or muck soils.

The most important influence of lime on clay is in causing a coagulation or cementing together of the clay particles, resulting in a larger-grained, more friable and porous soil.

One ton of quick lime or one and a half tons of slaked lime would be approximately equal, for practical purposes, to two tons of ground limestone.

There are special ground limestone distributors, but the application of the material may be performed by an ordinary manure spreader, broadcast fertilizer sower, or from a wagon by means of shovels. Slaked lime may be applied in a similar manner, but quick lime is more difficult of application. The customary method is to put the quick lime out in small heaps on the field and allow the lime to air-slake before being spread by shovels.

Gypsum, or land plaster, unlike the other lime compounds considered, is incapable of neutralizing acids; indeed its liberal or continued use would result in the creation of soil acidity, since gypsum is a sulphate of lime, a compound of lime with sulphuric acid, the latter being one of the strongest acids known. Gypsum, both as a source of sulphur and as a liberator of soil potash, may influence favorably such crops as clover, turnips and potatoes. Superphosphate contains gypsum, a fact mentioned in article No. 2.

Small applications of gypsum, say 300 pounds per acre, may often prove profitable, but undoubtedly its use as a fixer of ammonia in stables is the more commendable. Sprinkled daily on the floors and gutters, gypsum will form a compound—sulphate of ammonia—with the ammonia of the manure, which would otherwise escape as a gas. The use of gypsum in this way will not impair its other qualities.

FERTILIZER CONTROL.

The reader who has followed this treatise through-

out will have perceived the need for a greater measure of protection being afforded the farmer's interests by stricter Governmental supervision of the fertilizer trade. Why should not the Government exercise some control over the composition and prices of fertilizer materials on the market and enforce measures to effectively restrain perpetrators of fraudulent practices, now permitted to pass unchecked?

The Highland and Agricultural Society of Scotland publishes annually, before the opening of the fertilizer season, a list of the current prices, at certain central points, of the various standard fertilizer materials, showing the cost per unit of the plant food therein. Our farmers have usually no reference on the subject, save the price list of the fertilizer manufacturer.

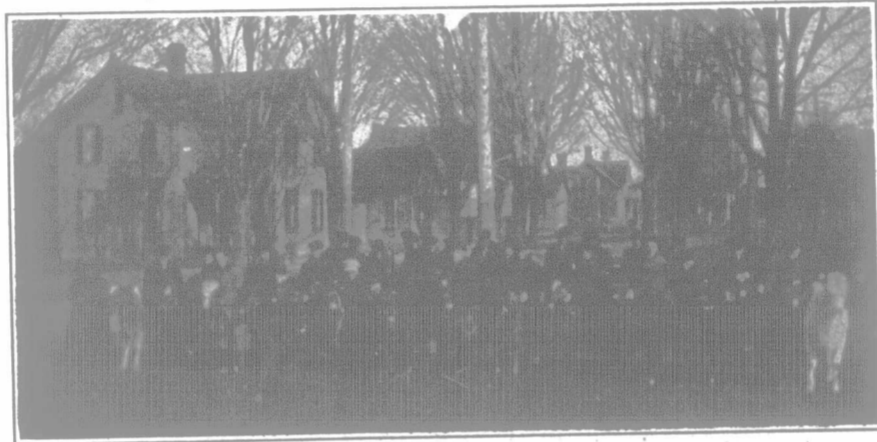
The Dominion Fertilizers Act came into effect in the year 1909 and was administered originally by the Department of Inland Revenue. On the dissolution of that department, in the year 1918, the administration of the Act was transferred, not to the Department of Agriculture where it logically belongs, but to that of Trade and Commerce and, since then, to the Department of Public Health.

The recent revision of the Act is in some respects retrogressive and certainly not in the farmer's interests.

Is it not reasonable to suppose that the Department of Agriculture, occupied as it is with the solution of the farmer's problems, among them those of soil fertility, is the one branch of the public service qualified to administer the Fertilizers Act?

In justice to the farmer and to the conscientious fertilizer manufacturer and dealer, the Federal Department of Agriculture should assume the administration of the Dominion Fertilizers Act (suitably revised), or, preferably, each individual province of the Dominion should, through its Minister of Agriculture, enact and enforce its own fertilizer laws.

(Conclusion.)



Sixteen Calves Distributed by the Bruce County Calf Club.

Odds and Ends.

As a result of the last general elections in Australia the Farmer's Party considerably strengthened its position by electing nine members as against three in the former House. Labor has twenty-eight members and the Nationalists (Premier Hughes' party) 37, omitting the Speaker, so that the Government stands in a precarious position and will need to "carry on" by the grace of the representation of Labor and Agriculture. The legislative battle is over the tariff with the prospect of the high wall enthusiasts being held in check. The Farmer's Party stands for free importation of agricultural implements, and no increases upon other items until shown to be necessary by an impartial tribunal, the Interstate Commission.

New Zealand is suffering from a great dearth of labor, skilled and unskilled, while domestic servants have become practically an extinct species. As in Canada and the United States, farm labor in the Island Dominion is especially short. The Government has resorted to the old expedient of assisting the passages of immigrants (farm laborers with wives) from Great Britain, and providing free passages with a £2 bonus to domestic servants.

A Michigan association of farmers is reported to be maturing plans for the establishment of two completely farmer-owned beet sugar factories. The object is to secure fair prices for the beet crop now said to be prevented by an alleged combination of manufacturers.

The Bolshevik Government of Russia is applying conscription in a new way—on the dictum that he who does not work shall not eat—in order to restore productive industries after 5½ years of destructive fighting. A lot of people have yet to learn that the ills of the world will not be cured by fighting and idleness. Alpha. Middlesex Co., Ont.

A Belated Seeding.

At time of writing, April 15, it is raining and snow is to be seen on the north side of fences and woods. It certainly does not look very spring-like, and at best seeding will be later than usual in this district. Last year seeding was under way in fairly good time, but untimely rains delayed operations and it was well nigh the first of June before some of the spring grain was put in the ground. One should be prepared to speed the seeding once the land is in condition, but it is unwise to put the cultivating implements on clay soil, in particular, if it is at all wet. It is better to bide one's time getting the odd jobs straightened away, in readiness

for seeding. Seed time and harvest have been promised: they have never failed, and there is no use worrying about the weather. Those who are planting spring wheat should get it in as soon as they can in order to get the best results. Oats come next, while barley may be left until the last. Sod may be plowed for peas after the other grains are sown. No one can tell what kind of a season we will have, but it is a safe precaution toward the insurance of a crop to make a good seed-bed so that whether the season is wet or dry one can rest assured that he has assisted nature to the utmost of his ability. We have seen farmers get so anxious when seeding is delayed that they give very little preparation to the seed-bed. They take a big chance in doing this—sometimes they get a crop, and sometimes they do not. The cultivation helps the liberation of plant food for the benefit of the plants, and it also puts the surface soil in condition so that should the season become dry the evaporation of needed moisture will be at a minimum. The best seed available and the best seed-bed that can be made are none too good.

As soon as the spring grain is in, those who are putting in roots should get the land prepared and the mangels sown as soon as possible. Here again the quality of the seed-bed counts for a good deal. During a wet season it may not be practicable to plow the ground. If the land was plowed last fall it will not be necessary, of course, to plow this spring. Manure may be cultivated in and the soil put in fine tilth without the use of the plow. Sowing mangels on the flat is a more common practice to-day than rowing up. If it comes a dry season, it stands to reason that the plants will obtain more moisture when growing on the flat than when in drills. It does make hoeing a little harder, but what of that if a larger crop is obtained? Potatoes and turnips follow the mangel planting, but they may be delayed until early in June if necessary. In fact, turnips sown from the 10th to the 15th of June are likely to be firmer than those sown in May. The roller may be used to advantage in the preparation of the seed-bed, especially if the soil is lumpy, but this is one implement which should be used judiciously. Leaving a field with a smooth surface increases the loss of moisture through evaporation, and also is an aid to soil drifting. The roller may advantageously be used to fine the soil and firm it around the seed, but light harrows should follow at an interval of two or three days. This will form a dust mulch which prevents the moisture from escaping. Where there is a nice, dry surface one may rest assured that there is not much evaporation, but you have possibly noticed that while the surface is dry your footprint will be quite moist. This is due to evaporation of moisture from the smooth surface. It must be remembered that there is not enough rainfall during the growing season to supply the needs of our crops. If they are to attain the maximum growth, they must draw on moisture stored in the soil reservoir during the fall, winter and spring rains. It will be noticed that in a dry season following a comparatively dry winter and spring the crops are much lighter than during an equally dry season following a spring of copious rains. There is great need for the practice of dry farming in Ontario. By this we mean the conservation of soil moisture by proper cultivation at the proper time. The aim of every farmer should be to grow the best crops possible, even though a heavy crop is harder on the soil than a light one. There will, at least, be more fertility to return to the soil if the crops are fed on the farm. Bear in mind that the agriculturist must do his part if he would reap a bounteous harvest.

CANADA'S YOUNG FARMERS AND FUTURE LEADERS.

Bruce County Shorthorn Calf Club.

The calf-club movement is spreading rapidly throughout the Dominion, and it is one which is destined to create a greater interest in the raising and feeding of better live stock. Besides, it gives the boys and girls a little insight into business transactions. The banks are co-operating with officers of the Department of Agriculture and agricultural societies in forwarding the scheme. The Agricultural Representatives have been instrumental in creating an interest in this work in their various counties. Always apostles of good live stock they have instilled into the minds of boys and girls the desire to own and care for a pure-bred animal. Having an animal to call their own, and for which they are responsible, gives the boys and girls a little different viewpoint than when they are looking after "father's" stock. But there is also the tendency toward the creating of a liking for all classes of stock, and, with the development of the boy's animal, father's herd is likely to receive better attention. It is laying the foundation of future pure-bred herds which would otherwise be grades or cross-breeds. It is developing live-stock men who will no doubt be prominent in the show and sale-

ring not many years hence, and it is also likely to develop many good live-stock judges, of which the country is in need.

A calf club has recently been organized in Bruce County by N. C. MacKay. On the 1st and 2nd of April thirty heifer calves were distributed to the members. These calves were of very good quality and the prices ranged from \$190 to \$290, or an average of \$249. These calves ranged in age from eight to sixteen months. They were insured at full value for one year, and the boy gave his note for eight months in payment for the calf. Some of the calf clubs hold a sale to permit the boys to dispose of their calves if they so desire. This, however, is not the intention of this particular club. To buy the calf in the spring and then offer it at public auction in the fall is a dealer's proposition rather than one of constructive breeding. If these calves are of good individuality they should be retained by the boys as foundation stock on which to build pure-bred herds. There may be cases where it is necessary that the animal be disposed of, and undoubtedly arrangements for such sales could be made. The following gives the family to which the calf belonged, the price paid, the name of the purchaser and his address:

Family	Price	Alloted to	Address
Lady Fanny	\$275	A. Young	Tiverton
Miss Syme	190	G. McClinton	Port Elgin
Countess	275	J. & W. B. Scott	Port Elgin
Miss Syme	225	Wm. McDermid	Port Elgin
Miss Ramsden	270	D. McLean	Port Elgin
Countess	290	N. Howe	Paisley
Claret	265	H. Nelson	Port Elgin
Miss Ramsden	250	W. Grant	Paisley
Crimson Flower	250	P. Turner	Paisley
Flora 98th	235	N. Struthers	Tiverton
Matchless	260	K. Foster	Paisley
Lady Mary	265	M. Gowanlock	Chesley
Roan Tulip	280	W. Howe	North Bruce
Secret	225	C. Schnittker	Tiverton
Louise	255	R. McDonald	Paisley
Flora	265	J. S. McDermid	Paisley
Marr Beauty	240	W. Hopper	Paisley
Mag Grot	210	A. Ruxton	Tiverton
Clementine	265	A. Avis	Tiverton
Rosebud	275	Robt. Scott	Port Elgin
Claret	275	G. Hopper	Paisley
Ivy	275	C. Upshall	Port Elgin
Stamford	250	H. McCullough	North Bruce
Flora	270	W. Ribey	Paisley
Ballachan Daisy	280	J. McIntyre	Chesley
Countess	275	F. Gibson	Lorne
Mina	190	R. Hood	Paisley
Mysie	200	A. Gowanlock	Port Elgin
Mina	190	H. Carleton	Tiverton
Mina	210	E. Cumming	Paisley

AUTOMOBILES, FARM MACHINERY AND FARM MOTORS.

Care of the Harness.

EDITOR "THE FARMER'S ADVOCATE":

At the present time harnesses and harness leather are about the most expensive things a farmer has to buy. Yet, on only too many farms the harnesses receive about as little care as it is possible to get along with. Many of us never seem to think of cleaning or repairing a harness, that is judging from appearance at least. Not only is the life of a harness greatly prolonged by proper care, but the time which will be saved and the inconvenient breakages which will be avoided are worth many times the time and effort necessary to fix up the harnesses. Then, there is the matter of appearance. Those who know tell us that it is quite possible to tell a careful, thrifty man by his harness.

The care of harness may be divided into three operations, washing, repairing and oiling.

WASHING HARNESS.

There is no utensil so handy when it comes to this operation as the wash-tub. Get a few pails of hot water, add some ammonia powder and get some soft soap if possible. Soak the harness, after it has been taken apart, for about fifteen or twenty minutes. This will loosen the dirt and make it readily removable with the aid of a scrubbing brush, soft soap and washing cloth.

While each piece of the harness is being washed it is well to watch for weak or worn parts, open seams or keepers which need a few stitches. It is upon the closeness of this examination that the success of the work depends. These parts should be taken to the saddler's shop where they can be repaired or renewed. A great deal of this work might be done at home, but it is questionable whether it pays to do these things by hand when a saddler can do the work better by machine. In drying, harnesses should be hung in a well-ventilated place, and should not be dried over a fire. The temperature should be kept below 100 degrees Fahrenheit.

Just as the tractor will require attention from time to time, so will the various other farm implements. Proper housing is a great factor in preserving machinery. At least a week each year should be set aside, known as farm machinery week, when each farmer can give his implements the attention that secures better service and longer life.

This season's help is likely to be harder to get than ever before, and unless we make every effort to get ahead of our work by preparing for the busy season during the slack time we will be seriously handicapped. With the harnesses in shape we will certainly be a big step closer to the solution of the help problem.

O. A. C., Guelph. L. G. HEIMPEL.

Keeping the Tractor Fit.

During the coming months the tractor will be expected to justify its existence. Good care and prompt repairing are necessary to profitable tractor operation, and the following paragraphs by E. C. Sauve, Farm Mechanics Station, Michigan Agricultural College, contain valuable hints.

A certain amount of time regularly employed should be given to the care and repair of the farm machinery. It is now the acceptable time to investigate the ills of the iron family and remedy them for maximum efficiency.

The tractor, of all modern farming tools, is perhaps the least understood and will be considered first. The tractor, after each year's use, should be given a thorough examination for wear and defective parts. In ordinary usage, connecting rod bearings, piston pin bearings, rings and pistons will show signs of wear, which should be attended to at this time. A competent repair man is desirable for this work, as a job poorly done is worse than no job at all.

For the owner mechanically inclined, the following is a suggested procedure for the adjustment of loose connecting rod bearings. Remove lubrication oil and necessary covers to make connecting rods and crank shaft accessible. With spark plugs removed, place crank shaft so that pistons are about one-half way on their strokes. Grasp the lower end of the connecting rod for one piston and move up and down and also sidewise in a direction parallel to the crank shaft. The up and down motion will indicate the extent of the looseness which requires adjustment. The looseness will be evident. Do in like manner with the rest of the rods. Assuming that all rods are loose, remove cotter keys and loosen nuts, holding caps of bearings to the body of the rods. Adjust one by one by first



Riverdale Rose.

Consigned by M. McDowell to the Canadian National Sale, and sold for \$6,000. Photograph taken when milked out.

removing cap and then removing a liner on both sides of the bearing. The cap is replaced with the remaining liners and fastened rigidly to the rod by means of the bolts and nuts. Considerable care should be exercised in making sure that the nuts are drawn up tightly against the cap and the liners properly placed. Turn the starting crank and note its ease in turning. If it turns too easily, it is an indication that not sufficient liners have been removed. Remove more until, when assembled in place, there will be considerable effort required to turn the shaft. The adjustment is now too tight. Again remove cap, add a thin liner and readjust. This should be the correct setting. If not, repeat the operation.

Now unscrew the nuts by about one turn and proceed to the next connecting rod until all are adjusted. Tighten all caps, replace cotter keys with new ones, replace covers and add the required amount of new lubrication oil. Where there are no liners between the bearing halves, it will be necessary to carefully file the cap to eliminate the looseness. Where thick liners are used, apply the file to the liner for adjustment. Bearing adjustment is not difficult. It requires a little patience and is worth while.

Just as the tractor will require attention from time to time, so will the various other farm implements. Proper housing is a great factor in preserving machinery. At least a week each year should be set aside, known as farm machinery week, when each farmer can give his implements the attention that secures better service and longer life.

THE DAIRY.

Holsteins With Calves Included Make \$606 Average.

The Canadian National sale of Holsteins, held at Toronto on April 8 and 9, was a success. The cattle were by far the choicest selection ever consigned to a Canadian sale-ring, and the receipts show they were appreciated. There were, however, between a dozen and fifteen "undesirables" that slipped past the inspection, but despite this the 124 lots catalogued, together with 10 young calves that were born en route, made an average for the 134 sales of \$606.50 each, and brought the total receipts of the auction up to the splendid figure of \$81,285.00, a new high record for consignment sales of any breed in Canada. The sale opened an hour before lunch on Thursday, and while anything that could be called brisk bidding did not get under way until the middle of the afternoon, 63 head were disposed of by 5.30 o'clock for \$33,640, among which was included Riverdale Rose, that broke all previous high-price records for Canada when she went to the bid of John Harvey, of Frelighsburg, Que., at \$6,000. This was a five-year-old cow, a daughter of Riverdale Segis Walker, and her official figures for production were 35.34 lbs. of butter and 738.80 lbs. of milk, in seven days, and 142.22 lbs. of butter and 3,016.80 lbs. of milk in thirty days. She was consigned by Martin McDowell, of Oxford Centre, Ont., and in addition to her splendid record for production she had a combination of size and individuality which would carry her well up to first honors in any show-ring. Her year-old son, Centre View King, also went to a Quebec breeder at \$2,100, and Jessie Segis Walker, a three-year-old half-sister, from a 37.62-lb. dam, went to Mr. Harvey at \$1,700. A one-day-old heifer calf from this cow brought \$580. With this day-old calf included, Mr. McDowell received an average of \$2,147 for his consignment, or a total of \$10,735 for the five head sold. Carmen Baker, of Brighton, Ont., with four head consigned, made the second best average for the sale, and also received the second highest price when Gordon S. Gooderham, of Manor Farm, Clarkson, purchased Rose Echo Segis, a three-year-old daughter of King Segis Alcartra Spofford, at \$5,100. This was a show heifer in every particular, and her official seven-day record, made at two years and four days old, was 26.47 lbs. of butter and 431.70 lbs. of milk. She also milked up to 74.5 lbs. of milk in one day during her test, and she was selling within ten days of calving to the service of Champion Echo Sylvia Pontiac, the best proven son of the great May Echo Sylvia. Mr. Baker received \$7,480 for his four entries, making an average of \$1,870 per head. A. E. Hulet, of Norwich, Ont., and A. C. Hardy, of Brockville, Ont., also made splendid averages, the former breeder making a \$1,039 average on seven head, and the latter \$870 for nine head. Each consignment included a day-old calf, which brought the averages down considerably. Still another consignor whose average almost reached the four figures was that of A. E. Cornwell, of Norwich, who sold nine head, in which were included three calves all under forty-eight hours old, for an average of \$733. The largest purchaser for the two days was Gordon S. Gooderham, of Clarkson, Ont., who took seven head

at an average of \$1,715, and John Harvey of six Frelighsburg, Que., followed a close second with six head, for which he paid an average of \$1,960. American breeders were not present in any large numbers, although there were some fourteen or fifteen of the middle-priced cattle which went to them. Carnation Farms, Oconomowoc, Wis., took the greatest number, although J. B. Jones, of Detroit, Mich., who was the largest American purchaser last year, again secured several for which he paid an average of \$511. The cattle, although not advertised this way, were sold on a sixty day tuberculin re-test guarantee, but very few breeders took advantage of same. Contrary to last year's conditions, the second day saw the keenest bidding, although the top price was made in the first day's selling. Beginning immediately after lunch on the second day, for two and one-half hours the selling was exceptionally brisk, when forty head passed through the ring for \$27,970, making an average of one animal at less than every six minutes at an average price of \$825 each—this is the best evidence as to how the real good stuff was appreciated. Bulls, however, were dull throughout the sale. Scores of breeders remarked that "30-lb. bulls" were worth less money there than were 20-lb. bulls in their stables at home. Females which had no great amount of individuality to recommend them were also dull, and in most cases would have brought more money at any of the smaller club sales of the year. Numbers considered, however, it was an exceptional sale, and the standard of prices obtained should further stimulate the trade in Canada. The

APRIL 22, 1914
 sales of \$200
 with the name
 Princess Orn
 Farm,
 Jessie Segis
 Quebec
 Heifer, Cal
 Riverdale
 Center View
 Daisy Gerbe
 Flora Hill
 Bowman
 Princess Cor
 Witzzyde Eva
 wood.
 Brighton K
 Seaford
 Orndyke Adin
 Par Alcartra
 Echo Hanna
 Pietje Paulin
 Rag Apple
 Woods
 Rivermead
 Denfie
 K. S. A. C. E
 K. S. A. C. I
 Adam
 Het Loo Que
 Rivermead
 Rivermead S
 Manor Segis
 Susie Segis V
 Roycroft Ech
 CON
 Pauline Mar
 Betty Kornd
 Robin
 Grace Abbe
 Mantel Cala
 Wellsland M
 Gold Dollar
 Johanna Wa
 ham,
 Avondale Co
 Sylvia Bloss
 E. S. Pietje
 Bethe
 Avondale Pi
 Hillcrest R
 Princess Ste
 Pietje Butte
 CONS
 Fineview Co
 Meta Paulin
 Sir Sylvia E
 Elmcrest R
 ford.
 Gano's Bess
 Queen Neth
 Beauty Fa
 Bolt
 Con
 Willowbank
 Geor
 Willowbank
 Llenroc Se
 ming
 Changeling
 Egli
 Finderne F
 Princess H
 Cree
 C
 Edith Segis
 Sadie Migr
 Lulu Pontia
 King Korn
 Sadie Segis
 Topsy Flor
 Hartog Flo
 Lizzie Har
 Maud Segis
 Della Joh
 Liske
 Maggie Se
 Pearl Mer
 Manor Seg
 Bessie Pat
 Con
 Prince Me
 Pt.

sales of \$200 or over follow, and are listed together with the names and addresses of the purchasers:

CONSIGNED BY M. McDOWELL.
 Princess Ormsby De Kol, Central Experimental Farm, Ottawa.....\$ 355
 Jessie Segis Walker, John Harvey, Frelighsburg, Quebec..... 1,700
 Heifer, Calif, Carmen Baker, Brighton..... 580
 Riverdale Rose, John Harvey..... 6,000
 Center View King, C. C. Hanson, Dixville, Que..... 2,100

CONSIGNED BY R. M. HOLTBY
 Daisy Gerbe Verbelte, Jas. B. Jones, Detroit, Mich. 715
 Floral Hill Jennie Walker, N. I. Metcalfe, Bowmanville..... 350
 Princess Cornucopia Sadie, Jas. B. Jones..... 360
 Witzzyde Evangeline De Kol, A. Sherrick, Ringwood..... 900
 Brighton King Alcartra, Jno. R. Archibald, Seaforth..... 300
 Orndyke Adirondac Korndyke, Jas. B. Jones..... 870
 Pat Alcartra Walker, J. R. Campbell, Stouffville..... 260
 Echo Hanna Orndyke, Geo. Smith, Port Perry..... 220
 Pietje Pauline Hengerveld, Geo. Smith..... 450

CONSIGNED BY W. F. ELLIOTT.
 Rag Apple Echo Sylvius, M. & W. Schell, Woodstock..... 610
 Rivermead Cassie Cornucopia, LeRoy Siddall, Denfield..... 300
 K. S. A. C. Evangeline De Kol, John R. Archibald..... 650
 K. S. A. C. Daisy Ormsby, J. M. Williams, North Adams, Mich..... 405
 Het Loo Queen Pietje, J. I. Metcalfe..... 380
 Rivermead Korndyke, G. A. Gilroy, Glen Buell..... 300
 Rivermead Segis Pontiac, LeRoy Siddall..... 300
 Manor Segis Mayflower, LeRoy Siddall..... 490
 Susie Segis Walker, Carnation Stock Farms..... 490
 Roycroft Echo Pietje, Oliver Cabana, Alma, N. Y. 270

CONSIGNED BY GORDON S. GOODERHAM
 Pauline Mantel, Howard Norton, Bolton..... 290
 Betty Korndyke Maid De Kol, G. L. Young, Port Robinson..... 230
 Grace Abbekerk, Carnation Stock Farms..... 265
 Mantel Calamity De Kol, John R. Archibald..... 300
 Wellsland Mondamin Korndyke, J. G. Hayward..... 240
 Gold Dollar Belle De Kol, R. H. Graham, Toronto. 205

CONSIGNED BY A. C. HARDY.
 Johanna Waldorf Korndyke, Gordon S. Gooderham, Clarkson..... 630
 Avondale Cornelia Pietje 2nd, G. A. Gilroy..... 520
 Sylvia Blossom, Carnation Stock Farms..... 900
 E. S. Pietje Korndyke Paula, Sherrick Bros., Bethesda..... 1,300
 Avondale Pietertje Walker, M. Drumm, Cobourg..... 375
 Hillcrest Rauwerd Sadie, John Harvey..... 2,000
 Princess Stella Segis 3rd, F. C. Brown, Norval..... 525
 Pietje Butterfly, Sherrick Bros..... 925

CONSIGNED BY MICHAEL A. ARBOGAST.
 Fineview Colantha Butter Girl, Jas. B. Jones..... 610
 Meta Pauline, Jas. B. Jones..... 500
 Sir Sylvia Echo, A. J. Mizen, St. Thomas..... 515

CONSIGNED BY W. H. CHERRY.
 Elmcrest Rosaline Teake, Haley & Lee, Springfield..... 310
 Gano's Bessie Favorit, John Harvey..... 780
 Queen Netherland Posch, John Harvey..... 875
 Beauty Favorit of Elmcrest, Asley Norton, Bolton..... 250

CONSIGNED BY W. C. HOUCK & SONS.
 Willowbanks Walker Pride, Wellington Sager, St. George..... 350
 Willowbanks Prilly Queen, Fred Cowan..... 510
 Llenroc Segis Pontiac, W. R. Cummings, Cumming's Bridge..... 340

CONSIGNED BY L. H. LIPSIT.
 Changeling Segis Veeman, Chas. Grimsley, Eglinton..... 560
 FINDERNE FAYNE WAYNE, Sir J. C. Eaton, Toronto. 350
 Princess Helbon De Kol, A. D. McKay, Moose Creek..... 270

CONSIGNED BY DANIEL B. TRACY.
 Edith Segis Korndyke, Fred Heeney, Ingersoll..... 575
 Sadie Mignone Segis, John Harvey..... 600
 Lulu Pontiac, Baynewood Farm, Romeo, Mich..... 500
 King Korndyke Darkness Keyes, Fred Heeney..... 575
 Sadie Segis Prescott, L. B. Forsyth, Stouffville..... 400

CONSIGNED BY WALLACE H. MASON
 Topsy Flora Tensen, A. E. Hulet, Norwich..... 420
 Hartog Flora Tensen, A. E. Hulet..... 400
 Lizzie Hartog De Kol, Carnation Stock Farms..... 425

CONSIGNED BY ARCHIE MUIR.
 Maud Segis of Elderslie, Geo. Mitchell, Orono..... 1,270
 Della Johanna Abbekerk, A. J. Kennedy, New Liskeard..... 400
 Maggie Segis of Elderslie, A. E. Hulet..... 320
 Pearl Mercena, R. H. Brown, Orono..... 225

CONSIGNED BY G. SEXTON.
 Manor Segis Vincent, A. J. Kennedy..... 310
 Bessie Pauling Abbekerk, A. J. Kennedy..... 450

CONSIGNED BY A. E. CORNWELL & SONS.
 Princess Mercena Echo, J. D. Sibbald Jr., Jackson's Pt..... 700

Colantha Mercena Beulah, Gordon S. Gooderham. 925
 Bessie Posch Colantha, Sir J. C. Eaton..... 2,350
 Carrie Spofford, Sir J. C. Eaton..... 875
 Cornelia Mercena Echo, Carnation Farms..... 460
 Queen Colantha Dewdrop, Central Experimental Farm..... 700

CONSIGNED BY PETER B. FICK.
 Daisy Royalton Calamity, A. J. Kennedy..... 240
 Favorit Fayne, Central Experimental Farm..... 350
 Olive Starlight Pietertje, Gordon S. Gooderham..... 1,025
 King Pietertje Fayne, W. A. Patterson, Agincourt..... 225
 Jean FINDERNE Calamity, A. J. Kennedy..... 380

CONSIGNED BY BERTRAM HOSKIN.
 Fremona Korndyke, Sir J. C. Eaton..... 400
 Flora De Kol Maid 2nd, W. Wilson, Agincourt..... 250

CONSIGNED BY HALEY & LEE.
 Grace Fayne Aaggie, Central Experimental Farm..... 610
 Queen B. B. Fayne, Central Experimental Farm..... 700
 Countess Sylvia Pontiac Cornucopia..... 650

CONSIGNED BY WALBURN RIVERS & SONS.
 Queen Abbekerk Mechthilde, Carnation Stock Farms..... 600
 Pioneer Albino Mechthilde, Carnation Stock Farms..... 1,210

CONSIGNED BY J. W. STEWART.
 North Star Pontiac Echo, H. W. Bean, New Hamburg..... 290
 North Star Reta Clyde, Baynewood Farm..... 510

CONSIGNED BY WM. STOCK & SON.
 Home Farm Katie Lyons, Gordon S. Gooderham..... 500
 Sovereign King Segis Alcartra, Carman Sproule, Moose Creek..... 270
 Alice Prilly Changeling, G. F. Hayward..... 500

CONSIGNED BY W. J. BAILEY.
 Gano Abbekerk Rose, J. V. Bollender, Bethesda..... 410
 Colantha Snowflake 2nd, J. M. Williams..... 350

CONSIGNED BY CARMAN BAKER.
 Flora De Kol Korndyke, Central Experimental Farm..... 820
 Rose Echo Segis, Gordon S. Gooderham..... 5,100
 Patti De Kol Posch, Geo. Smith Port Perry..... 1,150

CONSIGNED BY JOS. PEEL.
 Victoria Isabel, Wilbur C. Prouse, Tillsonburg..... 405

CONSIGNED BY GEO. SMITH.
 Duplicate Pontiac Duchess, Neil Mutton, Brownsville..... 500
 Pontiac Pietertje Duplicate, Sir J. C. Eaton..... 800
 Lovelia Fayne Clothilde, Christopher Cox, Bowmanville..... 1,200
 Johanna Nig, R. M. Holtby..... 610

CONSIGNED BY A. E. HULET.
 Helen's Prince Mercena, Fred Ormiston, Burketon..... 250
 Madam Pauline Sylvia, Gordon S. Gooderham..... 3,150
 Heifer Calif, Gordon S. Gooderham..... 1,175
 Helen Mercena Posch, L. H. Lipsit, Stratfordville..... 430

CONSIGNED BY W. H. CHERRY.
 Annie Shadeland Favorit, W. H. Cherry, Hagersville..... 1,800
 Della Schuyling De Kol, W. C. Stevens, Phillipsville..... 285

CONSIGNED BY A. D. FOSTER & SON.
 Echo Segis Keyes, R. J. Kelly, Ingersoll..... 500
 Echo Lassie, W. C. Stevens..... 490
 General Keyes Segis, A. J. Kennedy..... 400

CONSIGNED BY A. J. CAMPLIN.
 Sylvia Hengerveld Fayne, Geo. Mitchell, Orono..... 255
 Daisy Favorit 2nd, Carnation Stock Farms..... 350

CONSIGNED BY ALLIED STOCK FARM.
 Aaggie De Kol Francys, Fred Cowan, Huntingdon, Quebec..... 380
 Braeside Pontiac Aaggie, L. H. Bertram, Snelgrove..... 200
 Iolena Segis Posch, T. A. Trick, Clinton..... 260

CONSIGNED BY L. C. SNOWDEN.
 Beulah Echo Spofford, Jas. Craigie, Port Credit..... 290
 Pontiac Bridal Rose, F. G. Hayward..... 310

CONSIGNED BY WILBUR C. PROUSE.
 Johanna Dewdrop Keyes, C. C. Hanson, Dixville, Quebec..... 500
 Gray De Kol Colantha, Geo. Mitchell..... 360

Should the Short-Time Test be Continued?

Considerable discussion has arisen as to the relative merits of the short and long-time tests for dairy cows. Each test has its exponents, and it is also certain that each has its merits. Labor conditions mitigate against the long-time test, but it would be better for the industry if there were more R. O. P. tests made. However, the following paragraphs by R. R. Graves, United States Department of Agriculture, contain several arguments that are advanced against the too-frequent use of the short test, and breeders will, no doubt, be interested in thinking them over.

The question whether the colleges should continue to supervise short-time tests of dairy cows should resolve itself into consideration as to whether it is the best method of testing for developing the dairy herds of this country.

The argument, so often advanced, that the great progress made by Holstein-Friesian cattle is the result of the short-time test, does not seem an adequate one, for who can say that this breed would not have made just as great, or even greater, progress had the Holstein breeders shown the same energy in developing and advertising their yearly tests, both as an association and as individuals, that they have shown with their short-time tests, and if they had handicapped the 7-day test, as they have the yearly test, by requiring that every cow must first make a test of the other-kind.

The 7-day test was a good indication in earlier years of what the maximum producing ability of the cow was in the flush of her production. I say it was a good indication then; and I should say it is still a good indication of the maximum milk flow of the cow during the flush of her production. It was also an indication of the fat-producing ability of a cow in her flush until breeders learned the secret of loading their cows with soft fat which would be milked off early in the lactation period. This practice has resulted in cows whose normal per cent. of fat was from 3 to 3.5, producing milk during their short-time tests with a fat per cent. of over 5. Such tests are of course misleading and do not indicate the normal butter-fat producing ability of a cow even in her flush. Even when the 7-day test was run under normal conditions, it did not show what the cow was capable of producing for a year.

The dairy papers, the agricultural colleges, and the extension workers have been teaching for years that the profitable cow is the persistent cow, and that dairymen should be aware of the cow that milks well for a few months only. The best quarter horses are rarely the good horses over longer courses. The number of eggs a hen lays the first month does not indicate how many she will lay in a year. Neither does the cow that makes a big short-time record always make a good yearly record. Statistics have time and again proved this. Yapp of Illinois has made a comprehensive study of the correlation between the amounts of milk produced in 7-day records and yearly records, and of the fat produced in 7-day and yearly tests, in the Holstein-Friesian Advanced Register, and he found the correlation so low in both cases that his conclusion was that it is not safe to attempt to use the 7-day test as a criterion by which to judge semi-official production. Since we are breeding and raising cows for the production of milk and butter-fat for the entire lactation period—yes, for several lactation periods—and since the amount produced in 7 days does not indicate the amount the cow will produce in a year, of what use to us in our breeding operations is the 7-day record?

Values in Holstein-Friesian cattle have been built quite largely on these short-time records, and a discontinuance of the 7-day test undoubtedly would have a depreciating effect on the price of those cattle whose ancestry have only short-time records. But shall the 7-day test, which has little if any value as a criterion of an animal's producing capacity, be continued simply to protect those breeders who have followed that form of testing? Most of the living animals can be given long-time tests, but of course their ancestry cannot be given another chance.

SHORT-TIME TEST NOT NECESSARY TO YEARLY WORK.

Some breeders tell me that if the 7-day test is discontinued many breeders will stop testing altogether. Others say that the breeders who are doing yearly testing in the Holstein-Friesian breed use the 7-day test to determine which cows are capable of being run for a year, also that men who are doing 7-day testing will gradually change to yearly testing.

If the short-time test were really a nursery for the long-time test, then we should expect to find more Holsteins on yearly test in New York, New Jersey, and adjoining states than in all other states, since in these states the short-time test has been longest and most widely used. In fact, however, in a recently published list of cows on yearly test that exceeded certain amounts of fat in July, there were four cows in the Middle West and the Western states for every one in the Atlantic states. The short-time test does not in itself tend to lead breeders to take up yearly work. Neither does the feeding and handling of the cow for the short-time test give a man much experience that will aid him in the long-time work. The man who runs a few cows on yearly test does gain experience that makes him a better feeder and handler of cattle, and as a rule the cows not on test get better attention as a result of this experience. The benefit is not confined to the cows that are being tested. Then, too, there is something about a record being made by a cow month after month that eventually interests anybody about the place, from the boy of the house to the hired man, and it all results in better care of the whole herd.

EXAMPLES IN GOVERNMENT HERD.

It is true that some breeders will not start a cow on yearly test unless she has made a big 7-day record, and that same system has deprived the Holstein breed of many fine records. In our Beltsville (Md.) experimental herd we had several heifers finish yearly records of from 500 to 680 pounds fat during the last year and not one of them made over 15 pounds fat in her 7-day test which she was required to make before her yearly record would be accepted. Two of these heifers made 671 and 625 pounds of fat, and their 7-day records were 12 and 13 pounds, respectively. They would not have been permitted to start their long-time tests in many herds, because of these poor 7-day records.

The prediction can safely be made that the greatest program in dairy cattle breeding in future is going to be through the wider use of the blood of proved prepotent

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of Holsteins, held at success. The cattle ever consigned to a show they were between a dozen slipped past the in lots catalogued, to were born en route, of \$606.50 each, and auction up to the new high record for n Canada. The sale Thursday, and while bidding did not get e afternoon, 63 head \$33,640, among which t broke all previous n she went to the bid Que., at \$6,000. This er of Riverdale Segis for production were os. of milk, in seven 3,016.80 lbs. of milk ed by Martin Mc- nd in addition to her e had a combination would carry her well ring. Her year-old to a Quebec breeder er, a three-year-old went to Mr. Harvey calf from this cow calf included, Mr. \$2,147 for his con- the five head sold, with four head con- age for the sale, and price when Gordon Clarkson, purchased d daughter of King . This was a show er official seven-day days old, was 28.47 lk. She also milked during her test, and selling within ten calving to the service mpion Echo Sylvia the best proven son great May Echo Mr. Baker received or his four entries, an average of \$1,870 A. E. Hulet, of Ont., and A. C. of Brockville, Ont., le splendid averages, ner breeder making e average on seven and the latter \$870 head. Each con- t included a day-old which brought the s down considerably. ther consignor whose almost, reached the res was that of A. well, of Norwich, ld nine head, in ere included three ll under forty-eight d, for an average of e largest purchaser wo days was Gordon erham, of Clarkson, no took seven head John Harvey of ose second with six average of \$1,960. ent in any large some fourteen or which went to them. c, Wis., took the Jones, of Detroit, a purchaser last year, paid an average of dvertised this way, n re-test guarantee, e of same. Con- e second day saw the ice was made in the ediate after lunch half hours the selling head passed through e average of one animal an average price of as to how the real ls, however, were breeders remarked money there than at home. Females iduality to recom- st cases would have smaller club sales however, it was an of prices obtained n Canada. The

sires that have shown by the uniformly superior producing capacity of their daughters and the daughters of their sons that they have the prepotency to improve our breeds. This means that we must know the producing capacity of all of a sire's progeny. Some day we are going to judge the worth of a sire by the uniformity of good production in all his daughters rather than by two or three daughters that have exceptional records while their sisters remain untested or have low records.

ECONOMY OF YEARLY TESTING.

The cost of making the yearly test is brought forward as an argument against yearly testing, especially for the small breeder. It does require the entire time of one man to keep a string of eight or ten test cows going for the year when they are milked three times a day. This additional cost, however, will be more than made up by the increased returns that will result from the increased production of these cows. It is very questionable whether this method of testing is nearly so expensive as that followed under the prevailing system in making the short-time test, when a cow is fitted by expensive feeding for a considerable period before she freshens, and yet is held up in her large milk flow only for a month or so, and is then returned to the ordinary herd routine of feeding and to two milkings a day. Is it good economy to make such use of expensive feeding and fitting?

Then, too, in the yearly test a man carries a string through the year, while in the 7-day testing it is rare that more than two cows in a herd of ordinary size are ready to run at one time, and they are usually held on test from two to three weeks in an effort to get the best 7 days. If eight or ten cows are run on 7 days during the year, this procedure is repeated two to four times. The cost of supervision is no less on 7-day tests, because travelling expenses are usually greater. Those in charge of testing cannot make out a route for 7-day supervisors as they can with supervisors of yearly tests, who can follow a regular route. When a breeder wants a supervisor for a 7-day test, he wants him soon or not at all; he wants him when the cow is just right; and very often the supervisor has to be sent a considerable distance in order to comply with the urgent request for the tester while the cow is just right.

Then the supervisor may be kept at that breeder's farm for a week, or he may be kept there for three weeks. The man in charge cannot tell when this tester will be available for the next test. On the other hand, with the yearly record work, the supervisor starts on a definite route, goes from one place to the next closest, and is at each place a definite length of time. The maximum amount of his time is used with a minimum amount of travelling. As the amount of yearly testing increases, travelling expenses of supervisors will be greatly lessened, and the present cost of supervision of yearly tests will be greatly reduced.

SHORT TEST ENCOURAGES FRAUD.

The temptation and chance for dishonesty is probably greater with the short-time test; at least it is more difficult to check up the short-time testing because there is so little time in which to do it. A cow may make a world's record short-time test and before any one is aware that such a record is being made, the test has been completed. If it were suggested that the testing be repeated after three weeks or a month, as a check, the idea would be ridiculed, because under the conditions of short-time tests very few cows keep up the pace of their maximum week for any considerable length of time. The short-time test gives a greater opportunity to the man with a tendency to be dishonest; it gives more chance for him to "put something over" without being caught. On the other hand, a cow making a large yearly record is watched carefully for several months. She can be tested by many different supervisors. In the case of a majority of the world's yearly records supervisors are even brought from other states for a check on the accuracy of the record of production. Even when only moderate records are made, as a rule not less than three supervisors make tests during the year.

I do not mean to imply that there has been dishonesty in our testing. On the contrary, I believe that exceedingly few of our breeders are dishonest, and that there has been very little fraud in our record work.

Plans Progressing for Ontario Butter Grading.

It seems evident now that the aim of the Ontario Department of Agriculture and the better class of creamerymen to put the manufacture of creamery butter in Ontario on a graded basis will be realized this year, at least with respect to a good part of the output. For several years now efforts have been made by the Department and butter manufacturers to get a market price for graded butter that would be higher than for ungraded and unpasteurized butter. Produce merchants have now agreed to pay a differential of one cent per pound for graded and pasteurized butter provided 50 per cent. of the output is graded. So far creamerymen are responding well and there are 51 creameries in Western Ontario and 14 in Eastern Ontario that have made application for the grading service this year. Over 50 per cent. of Ontario's creamery butter is manufactured in these creameries so that if they all sign the agreement prepared by the Department of Agriculture, creamerymen may rest assured of the stimulus in the way of graded prices for a graded product.

Producers generally are not, of course, directly interested in the producers of the creamerymen, but they

are interested in everything that will tend to bring about improvement in the dairy industry and put the dairy products of Ontario upon the highest market level. Indirectly everything that affects the dairy industry affects the producer and it is one of the signs of changing conditions in agriculture that farmers are taking a livelier interest in foreign and domestic markets than they formerly did. This inevitably means greater progress for eventually all problems find their way back to the producer.

Under the proposed arrangements the Ontario Department of Agriculture will enlarge its present system of butter grading so as to score and, if requested, issue grade certificates for the samples of butter submitted as representative of each churning. These samples will be fourteen-pound boxes of butter, solid pack, and will be paid for by the Department at a graded price per pound which will represent the market value of butter of that grade. These samples will be held for four weeks in order that they may be available to assist in settling possible disputes between buyer and seller. The Dairy Branch of the Department advises creamerymen in part as follows:

"In the main, the score and classification of each sample should apply at the same time to all the packages of butter put up from the same churning and, therefore, bearing the same brand and churning number. We



Treating Seed Potatoes to Prevent Disease.

wish to emphasize here that inferior workmanship in the packing of butter is often responsible for lowering its commercial grade. Hence equal care should be given in finishing each package from every churning.

"In addition to the use of the regular brand of the creamery or of the special 'creamery number' allotted by the Department, the same churning number should be plainly stamped on the upper, right hand corner of all the packages of butter that are put up from the same churning and as soon as they are packed. If the marking be not promptly and properly done there is a danger of a mix up in the identity of the packages and this should, of course, be absolutely avoided. Rubber stamps will be supplied by the Department for making the sample packages, and if so desired these same stamps may be used for marking the other packages from each churning.

"If practicable we recommend the creameries to keep a small sample of butter from each churning for comparison with score and grade returned from the grading station and from the trade. Such samples should, of course, be kept in a cold place in close containers bearing their individual churning number, for the purpose of identification."

HORTICULTURE.

Shall We Treat Our Seed Potatoes?

By PROF. J. E. HOWITT, O. A. C., GUELPH.

The above question is one which every potato grower must decide for himself. It is a matter of dollars and cents. Will treating the seed result in more dollars



Potatoes Spread Out to Dry After Treatment.

in the pocket and net profit at the end of the year? That depends upon several factors, chief among which are the prevalence of certain seed-borne potato diseases, the nature of the soil and whether the potatoes are grown for the very early market.

The seed-borne diseases which may be prevented to a

large extent by seed treatment are: Common scab, black leg and rhizoctonia or black scurf. Common scab on some soils is a very difficult disease to prevent, while on other soils it does not develop, even when scabby, untreated seed is used. The development of scab appears to depend upon the acid contents of the soil. On soils which are slightly acid scab does not readily develop, while on soils which are alkali, scab usually becomes very bad. Thus we find that there are certain farms on which the common scab never proves troublesome and where the treatment of the seed for this disease alone is not a paying proposition. However, on such soils if black leg or rhizoctonia are bad, it may be necessary to treat the seed for them in order to insure the maximum returns.

It is claimed by some of the early-potato growers that treating the seed with formalin delays the development of the crop and that it does not pay when one is striving to be among the first on the market with new potatoes and where a week or ten days decides the profits to be reaped.

If common scab, black leg or rhizoctonia is bad, treating the seed for the main crop should be a paying investment. Formalin gives very satisfactory results with common scab and black leg, but appears to be of little value in the prevention of black scurf or rhizoctonia. Corrosive sublimate will reduce to an appreciable extent the amount of rhizoctonia and will also prevent common scab and black leg. If there is little or no trouble with rhizoctonia, formalin may be used for seed treatment, but if rhizoctonia is causing loss it will be necessary to use corrosive sublimate.

THE FORMALIN TREATMENT FOR COMMON SCAB AND BLACK LEG.

For seed, select tubers free from all signs of rot and bruises and as free as possible from scab, and disinfect them before they are cut by soaking them for two hours in a solution made by adding one pint of commercial formalin to thirty gallons of water. The same formalin solution can be used to treat successive lots of potatoes. Thirty gallons is sufficient to treat from forty to fifty bushels if ordinary precautions are taken not to waste too much of the fluid as each lot of tubers is dipped. Wash all crates and bags, etc., which are used in handling the potatoes with the formalin solution. After the potatoes are removed from the solution they should be spread out on clean grass or clean bags to dry. When troubled with black leg be sure and discard all potatoes showing any signs of rot and when cutting the seed potatoes after treatment with formalin or corrosive sublimate, have two or three knives in a jar containing a strong solution of formalin, one part by measure to ten of water. After cutting into a tuber showing rot inside, drop the knife in the formalin solution, discard the diseased potato and take a fresh knife for the next cutting. If this is not done, the germs, which cause black leg will be spread from the diseased tubers, to the sound ones which are to be used for seed.

THE CORROSIVE SUBLIMATE TREATMENT FOR RHIZOCTONIA SCAB AND BLACK LEG.

Select tubers free from all signs of rot and as free as possible from scab and little black hard lumps on the surface. Soak them, before they are cut, for three hours in a solution of the strength of two ounces of corrosive sublimate in twenty-five gallons of water. Good results have also been obtained by soaking the seed potatoes for one hour and a half in a stronger solution, four ounces of corrosive sublimate to twenty-five gallons of water. In preparing the solution dissolve the corrosive sublimate in a little hot water and then make up the twenty-five gallons with cold water. Fill the barrel or trough with potatoes and then add the solution until the potatoes are covered. Leave for the required time and then drain off the solution into another receptacle. The same corrosive sublimate solution should not be used to treat more than three successive lots of potatoes. One-half pound of corrosive sublimate will make sufficient solution to treat between sixty and seventy bushels of potatoes. After treatment the usual precautions must be taken to prevent the tubers becoming reinfected. Corrosive sublimate can be obtained at any drug store but it can be purchased much cheaper in wholesale lots. Corrosive sublimate corrodes metal and should be prepared in an earthen or wooden vessel. It is dead y poison and should be so labelled and kept out of the way of children and stock.

Even in a dilute solution it is poisonous and potatoes disinfected with it should never be used for food for man or beast. Vessels containing it should be thoroughly washed with warm water before they are used for any other purpose.

ADDITIONAL SUGGESTIONS.

In order to make seed treatment most effective, the following suggestions, when possible, should be adopted.

Practise a rotation of crops. If scab is very bad it is not advisable to plant potatoes on the same land oftener than once in four or five years. Arrange the rotation so that the potatoes are planted after clover sod. The rotting of the clover tops and roots renders the soil temporarily slightly acid and this acidity prevents the development of the scab organism. If scab is troublesome, heavy applications of barnyard manure should not be made with the potato crop, but if necessary, given

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at some other point in the rotation. It is claimed by some potato growers that light applications of straw manure applied directly to the potato crop, do not increase the amount of scab. Avoid alkali fertilizers such as lime and wood ashes as such undoubtedly increase the amount of scab. On the other hand acid fertilizers such as acid phosphate appear to prevent the development of the trouble. Some of our early potato growers claim to get excellent results in the prevention of potato scab by the use of liberal application of acid phosphate.

Vegetable Crops Under Glass.

PART III—CUCUMBERS AND MELONS.

As my experience in growing cucumbers in this country has been limited and being dissatisfied with the cultural methods I have seen, I decided to treat the subject from the English growers standpoint. It is always desirable to know how other people do things as some point may be brought out which might be applied to improve our methods here.

The type of house considered most suitable for both cucumber and melon forcing is narrow and low, known as pits. These pits are from 10 to 12 feet wide, and 9 to 10 feet high inside, with a raised bed of convenient height on either side with path in centre. These beds are constructed after the fashion of a propagating bench and supplied with bottom heat which is under control. In order to train the growth, wires are stretched lengthwise 18 inches from the roof through eyebolts at intervals of 9 inches between wire. The houses are provided with both top and side ventilation.

A suitable soil should contain abundance of plant food, be retentive of moisture and drain freely. Rotten sod and well rotted manure in the proportion of three to one with sufficient gritty material as gravelly sand to drain this will answer well. This is placed on the bench in the form of a mound. Like all members of this family the cucumber does not take kindly to being disturbed, hence seeds are either sown in square pieces of turf or in pots and placed in a warm, moist house, temperature 75 to 80 degrees. When sufficient roots have formed to hold the soil well together they are planted to the benches. The natural habit of growth of all members of this family is to ramble, and any system of training which severely restricts this habit is detrimental. This is true of the English type, and this is the type we will consider. The plants then are set 6 feet apart.

A short stake is set to each to take the growth to the first wire. When plants are 18 inches long or thereabouts the top is pinched off. The resulting laterals are trained along the wires to right and left, and one is taken straight up to continue the main stem. This in turn is pinched and finally the top of the house is reached. In the meantime the lower laterals are trailing along and developing fruits, these laterals being stopped when they slightly overlap the lateral of the neighboring plant. In order to simplify and bring out clearly the system of training followed by the English growers, let me take one of these laterals as an example. The lateral is limited to a length of say 4 feet by overlapping a little. While it is covering the distance a sublateral will be developing at some point near the main stem and this is tied in loosely alongside the lateral. While this is happening, the first fruit is developing rapidly and possibly before the sublateral reaches the point where the fruit is, the fruit has been cut, the foliage on the lateral in the meantime being gradually removed to allow of better light condition to the sublateral. This is followed up until all fruits are cut. The lateral is then removed by cutting it back to the point where the sublateral springs from. This method is repeated throughout the season as there are always plenty of growths to introduce.

By night a temperature of 70 degrees is maintained with an increase of 5 degrees by day with fire heat. This may be increased a few degrees by sun heat before ventilating. Ventilation is given freely during fine weather consistent with the degree of humidity which must be maintained. There is an old saying among gardeners that you cannot drown a cucumber or roast a melon. The soil is kept uniformly moist, but not in a saturated condition. Vigorous syringing with a fine spray early in the forenoon and again in the afternoon is necessary to keep Red Spider and Thrips in check. When afternoon spraying is done the house is closed down to box up a little, but chiefly to make conditions as uncomfortable as possible for Red Spider and Thrips by the high degree of humidity. By day during fine weather frequent dampenings of the floor and surface soil is necessary to maintain the necessary humidity for a healthy growth.

The cucumber is a gross feeder. This may be given in the form of liquid manure or by a topdress of soil similar to bench soil heavily enriched with manure, this form of feeding being repeated as necessity demands. It is well known that the fruits of the English type develop without pollination. Staminate flowers, however, are in abundance; these are removed before the flower opens or as soon after as possible. Red Spider and Thrips are controlled by vigorous syringing and by humid conditions. White Fly is controlled by hydrocyanic acid gas. Mildew is controlled by careful airing, even temperature. Dusting with flowers of sulphur or by fumes from sulphur placed on heating pipes.

MELONS.

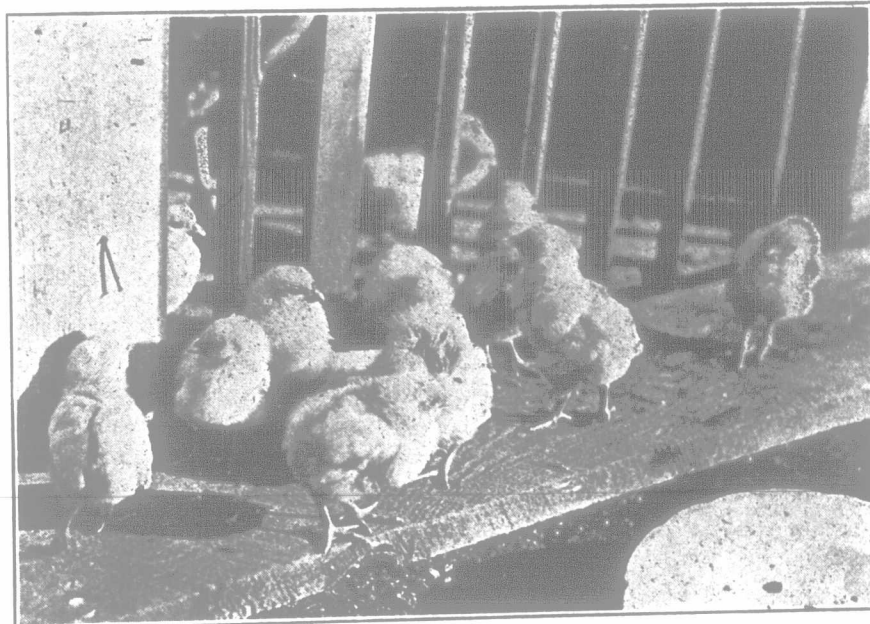
Melons have been almost entirely neglected by commercial growers. I will not attempt to explain why. I am satisfied, however, that melons would be bought up quickly if produced to supply the market during June,

July and August before the frame crop comes in. One commercial concern near Montreal had such a crop some few years ago and the grower told me that it turned out the best paying crop on the place. We have grown them at the college, and the difficulty we experienced was in supplying the local demand. I will outline the culture of this plant as it is handled on private establishments, leaving the commercial grower to modify it to suit his conditions.

The type of house and benches best suited to its culture is the same as mentioned in connection with cucumbers. The methods of seeding are also similar. Well rotted sod of a loamy texture is considered best. This is cut up roughly with the spade, a little bone meal and sand being added if the texture or quality of the loam requires it. No animal manure is added as this encourages rank growth which is not desirable in the early stages of growth. The soil is placed on the bench in the form of a mound for the purpose of having as dry conditions around the neck of the plant as possible to prevent a disease termed "corking" or stem rot which is apt to develop under wet conditions. This is considered so important that many growers use collars which are circles of earthenware on top of mound to set plants in.

Under the system of training practiced the plants are set 2½ feet apart, watered, sprayed with syringe and the house damped down. If ventilation is desirable this is given sparingly until young plants become established. A night temperature of 70 degrees is maintained, with an increase of five degrees during the day by fire heat. By sun heat 80 degrees may be reached before ventilating, provided a proper degree of humidity is maintained. With early and late forcing the question of ventilation during unfavorable weather has to be considered, especially during the setting and ripening periods. For this purpose the ventilator is opened slightly for a part of the day and the desired temperature maintained by fire heat. During fine weather, however, abundance of ventilation is given, consistent with outdoor conditions and the degree of humidity, desired at different stages of growth.

Plants growing in such a high temperature take a lot of water, especially after the plants have covered the space allotted to them and fruits are swelling. A soggy condition however, must be avoided. Where



A Good Hatch from Fertile Eggs Means Added Profit.

collars are used the first four waterings are given inside these, after which water is kept away from the neck of the plants for reasons already mentioned. When fruits are ripening a gradual drying out is desired to give flavor and finish. Vigorous syringing to keep Red Spider and Thrips in check is given morning and afternoon during bright weather with frequent damping of the surface soil and paths during the day. The house is closed down when afternoon syringing is done to box up a little natural heat and make conditions uncomfortable for Red Spider and Thrips on account of the humidity created. Plant food is given in the form of liquid manure or by a topdressing of loam heavily enriched with manure.

There are three methods of training, namely: the one stem carrying two fruits, the two stems carrying four, and the one stem carrying four. The two former I have had little experience with, therefore I will deal with the latter which is the one practised by old country growers. The main stem is taken up the wire to the top of the house, which in houses such as has been described in connection with cucumbers would give a length of 8 feet or thereabouts. In the meantime the laterals on which the fruits form are growing rapidly.

The natural habit of the plant is to produce one pair of laterals after another until the top of the house is reached, each pair developing its pistillate flowers in advance of the next pair. Since this is the case it is almost impossible to obtain sufficient pistillate flowers in the proper stages of development to ensure a crop unless some of this is brought about. This plant, although related to the cucumber is totally different in bearing habits. The cucumber produces an unlimited supply of fruit covering the period of its growth. The melon season lasts but a short time, this proving that all fruits

must have been set about the same time. This is exactly what happens, as for instance if one pair of flowers are pollinated to-day and another pair two or three days after, the result is that the first pair takes the lead and seems to drain the whole plant, the other failing to develop. To guard against this, the lower two or three pairs of laterals are pinched back at the first leaf. This encourages sublateral growth and by the time some of those produce pistillate flowers some of the laterals in the upper reaches of the plant will be in the same stage. All four are then pollinated together, thus making possibly a crop of four fruits to a plant. As fruits hang suspended from the wires some support is necessary. Fish nets cut into squares with a stout cord at each corner tied to the wiring make the best possible support. Address by A. H. Walker, Macdonald College, Quebec, at the Ontario Vegetable Growers Convention.

POULTRY.

Nova Scotia Egg-Laying Contest.

We are in receipt of an interesting summary report of the first Nova Scotia egg-laying contest for the period between November 1, 1919, and March 20, 1920. There were thirty pens of five birds each in the contest, and a total of 6,378 eggs were laid. The best hen produced 103 eggs and came from John Retson's winning pen of rose-combed Rhode Island Reds, that laid 422 eggs. In this pen the fewest eggs laid by any hen was 69 eggs during the period of less than five months. The next best hen of the 150 was a Barred Plymouth Rock, owned by N. Doherty, that laid 101 eggs. She belonged in the pen standing third, that laid 314 eggs. The second highest pen was also a pen of Barred Plymouth Rocks that laid 331 eggs and were owned by John R. McMillan. Concerning this competition, J. P. Landry, Lecturer in poultry at the Truro Agricultural College, says: "This production is for the cold weather months of the years and is very gratifying indeed to the Management of this first Nova Scotia Egg-Laying Contest. It demonstrates very fully the quality of poultry kept by the Nova Scotia breeders. During the past winter the flock of hens have come through the very cold weather in exceptionally healthy condition. The mortality among the fowls was only one bird died up to March 20th, in the contest of 150 birds, considering that for 37 days of the past winter the temperature was down below zero and was very trying on the fowls. This record in production is one of the best, if not the very best official record attained in the Dominion of Canada."

Breeding for Profit in the Farm Flock.

The poultry population of Ontario is somewhere in the neighborhood of 11,000,000 head. There are probably 10,000,000 or more hens that average around 90 eggs per year at the highest calculation. At this rate Ontario produces 900,000,000 eggs yearly, which if valued at 50 cents per dozen provides an egg business

amounting to \$37,500,000 annually if all the eggs were sold. Most of the eggs come from farm flocks of from 25 to 200 hens, and at least half the eggs now produced are second grade or bad before they reach the consumer. These figures are only estimates to be sure, but we believe they are fairly close.

Ontario could well afford to keep more poultry, but more important than this is the need for more eggs per hen and a better grade of market eggs. In this article we intend to pay attention only to the problem of getting more eggs per hen and want to bring out a few ideas that were put to us recently by Professor W. R. Graham, O. A. C., Guelph, in a rather startling way. To develop a certain amount of interest in our subject let us begin by quoting the Professor's statement to the effect that any hen that lays 75 eggs in any three months' period is capable of laying 300 eggs per year if she is properly handled. This is not yet a part of poultry dogma nor even proven practice exactly, but it is founded on long years of experience in poultry improvement. If this is true, the farm hen that cackles out 90 eggs per year is a slacker, and only 30 per cent. efficient. It means more than this, it means that the average poultry owner is a long way from being on to his job and is losing dollars every day he lives.

But let's take away any cause for hard feeling by saying that Professor Graham does not claim to be able to make a hen lay 300 eggs per year even if he does get hens that will lay 75 eggs in three months. He says that we do not know how to feed poultry yet, and in the poultry world he has the reputation of knowing pretty well what he is talking about. The following figures will give the reader an idea as to what O. A. C. Barred Rock hens do lay, and then he can compare them with his own:

Age	No. Eggs
March-hatched pullets	175
April-hatched pullets	165
May-hatched pullets	151
Average for pullets	166
Yearling hens	144
Two-year-old hens	127

The average number of eggs laid by hens in the egg-laying competition at Storrs, Connecticut, over a period of five years, is 160, distributed as follows throughout the year. Along with the actual number of eggs we are giving the percentage of production for each month, and the average production at Guelph for all hens and for March-hatched pullets, in percentages of production.

Month	Storrs		O. A. C.	
	No. Eggs	Per cent. Production	All Hens	March-hatched Pullets
November	5	16.6	52.5	63.0
December	7	22.5	50.0	54.9
January	9	29.0	38.7	32.5
February	12	42.8	40.0	40.0
March	18	58.0	46.0	52.5
April	19	63.3	50.0	61.3
May	20	64.5	53.1	56.9
June	18	60.0	55.5	47.5
July	17	54.8	44.7	49.0
August	15	48.4	38.8	45.1
September	13	43.3	36.0	27.0
October	7	22.5	41.5	47.2

Looking at the first figures given we see that the old or two-year-old hens lay fewer eggs per year than the younger ones, and yet they laid nearly 40 more eggs than the average farm hen. Why? The farm flock commonly contains a good percentage of pullets and yearlings which makes all the more difference between what is being done and what could be done with our farm flocks.

How can we account for the difference between 90 eggs from the farm hen and 175 eggs from March-hatched pullets, to say nothing of 300 eggs from many of the same pullets if we only knew how to handle them? Professor Graham gives the following factors as being responsible for the low average production:

- Lack of Breeding.
- Date of hatching.
- Age of hens.
- Insufficient culling.
- Poor Sanitation.
- Improper feeding.
- Lack of interest.

There is no particular need for discussing lack of breeding, because this is probably the easiest factor to handle. Already a great deal has been accomplished through the distribution to school children of eggs from bred-to-lay hens and improvement is being steadily secured in this connection. There are no arguments that can sensibly be advanced against better bred poultry, because through eggs for hatching and the use of good males, marked improvement can be cheaply and quickly secured.

The date of hatching is also open to control, because the evidence is so overwhelming in favor of early hatching that no one who is at all interested will fail to try for early-maturing pullets by having them hatched early. The figures first given show a difference of 24 eggs per pullet per year between March and May hatched birds.

The age of the hens in the flock has also an effect that can be shown and is somewhat generally appreciated. The farm flock commonly contains hens of all ages in spite of the fact, as shown by results at Guelph, that pullets will lay 40 eggs more than two-year-old hens, and 20 or 25 eggs more than yearlings.

So far we have accounted for only part of the difference between 90 and 175 eggs. The latest-hatched chickens lay 150 eggs and the oldest hens lay 127 eggs or 40 more than the farm hen. Apparently then, through culling, proper housing and good feeding by owners who are interested in their flocks, farmers should be able to increase the average production per hen by approximately 40 eggs. Of these four factors lack of interest will keep one from practicing the other three, because if a man is not interested in a thing he will not do it very well. Still, these things mean money, and if you hand a person a dollar he will be interested enough to take it. Lack of interest is probably the hardest factor to get around, and is so important that it holds everything else back.

Culling is on the same plane as discharging an employee who is not earning his board, but it is not nearly so often done. There is nothing to lose by it and everything to gain. With the knowledge of how to tell a good layer now at the disposal of poultry-keepers, it is not even as difficult to cull a flock properly as it is to dust each bird for lice, but it is a striking thing that many farmers will waste feed on birds largely because they are hens rather than because they lay eggs.

Housing and sanitation have values in egg production just as well as in milk production, or the health of human beings. People cannot work unless they have a clean, comfortable place to live, and neither can a hen. A hen must work to lay eggs. She must have plenty of fresh air and plenty of room for exercise.

Hens that are sickly cannot lay many eggs, and cleanliness is a great aid to health.

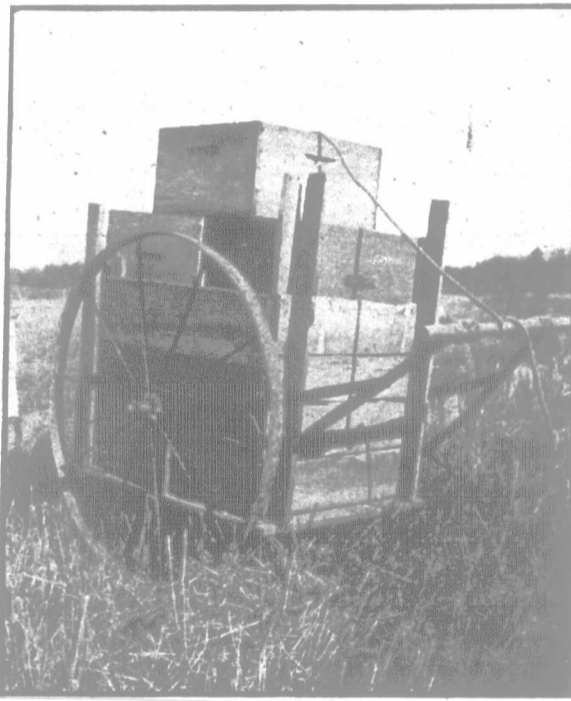
The revenue from the average farm flock is small, but it need not be insignificant. A farm of 100 acres can well carry 100 hens. It is by no means a super-human task to get each hen to lay 125 eggs, and at 100 eggs each with eggs at fifty cents a dozen the egg value alone from the flock would be over \$400 yearly. In all probability enough poultry would be sold to pay for eggs eaten, so that such a revenue should be worth while working for as a side-line on the farm.

THE APIARY.

Bees and Poison Sprays.

The following is an address given by L. Caesar, Provincial Entomologist, before the annual convention of the Ontario Beekeepers' Association, and should prove of interest to all who raise either bees or fruit:

For many years there has been much controversy as to whether spraying fruit trees while they are in bloom will kill bees or weaken bee colonies. I have, as far as time permitted, looked over the literature on this subject and find that F. M. Webster, one of the most famous of American Entomologists, conducted careful experiments by spraying raspberries, apples, plums and crab apples with Paris green while in full bloom and placing colonies of bees close by. Some of the trees and hives were completely enclosed by cheesecloth so that the bees could not escape. The conclusion he came to was that Paris green thus used, killed not only the bees themselves, but also the brood or larvae. Traces of arsenic were found on the dead bees on analysis.



A Handy Cart for the Bee-keeper.

A. J. Cook, a Michigan Entomologist, reports several cases where colonies situated close to apple orchards, sprayed while in bloom for the plum curculio, were either destroyed or greatly weakened by the poison. In 1914, C. W. Woodworth, Professor of Entomology in California, placed a colony of bees in the middle of a 40-acre orchard and then sprayed the whole orchard while in bloom with arsenate of lead. The results he states were inconclusive, very few of the bees being killed, and the colony very little, if any, weakened. One of your own members whose orchard I have sprayed several times visited, told me that he sprayed his orchard while in full bloom, and could not see any evidence of injury to his colonies. Last year James Troop, an Indiana Entomologist, planned an extensive experiment to test this matter. I have not yet heard the results of this year's work, but last year's tests he stated indicated that bees may be killed by poison sprays applied to trees in full bloom. We see, therefore, that some experimenters say the danger of poisoning by spraying during bloom is very small, while others are convinced it is very great.

My own view, obtained chiefly by a process of reasoning, is that under favorable weather conditions there must be a great danger of bees becoming poisoned, because even though in most blossoms, at least of the apple, the poison probably does not reach the nectaries, these being protected by the ring of stamens and the pistils, yet the poison is upon the stamens, exposed pollen and tips or stigma of the pistils, as well as upon the petals. Hence, the bee is forcing its way down to the nectaries comes into contact with some of this poison and will thus gather small particles of it on its legs along with the pollen. Then this pollen is removed and fed to the larvae, and some of them will be poisoned. Should there be wet weather soon after the spraying this will wash off much of the spray. Moreover, if the bees, because of unfavorable weather, do not feed for a few days after spraying, new bloom may open and thus be the chief attraction, so that it will be the earliest and latest bloom they worked upon and not the middle bloom, thus avoiding poison.

For two possible reasons, the poison used to-day, arsenate of lead, may not be nearly so dangerous to bees as the former poisons, Paris green and London purple; first, these latter were much quicker acting and nearly so adhesive as arsenate of lead and so would more readily be gathered upon the insect's body, legs and mouth parts. In any case, most of the statements of serious injury I have been able to find were where Paris green was used.

Seeing that there is an element of doubt as to the injury done by spraying during full bloom, a further question arises as to whether there is any good reason for spraying at such a time. If you will look at our spray calendar you will find that the regular sprays which we recommend for apples are, first, just as the buds are ready to burst or are bursting; second, just before the blossoms open; and third, immediately after the blossoms have all or nearly all fallen. When 80 per cent. of the bloom is off, the bees have left the orchard for better feeding grounds. Now these dates were all based upon a study of the way to obtain the best results in securing clean fruit, and not with the thought of avoiding danger to the bees. I have no hesitation in saying that it is a mistake from the standpoint of economy, and is quite unnecessary for the best results to use a poison when the bloom is out. Once perhaps in ten years we find a season when the weather is very cold and backward for a couple of weeks after bloom has begun, and in such a case it would pay to use a fungicide, either lime-sulphur or Bordeaux mixture, during the blooming period, but no poison should be added to this because it is only increasing the cost of the spraying, since a poison must be used in any case as soon as possible after the blossoms fall.

I am quite in favor of the law against using a poison spray during bloom. If any two parties are in dispute on the necessity of such a spray and will refer the matter to me I feel confident I can persuade the offender that he is gaining nothing by breaking the law, and persuasion is, of course, usually better than force.

Now let us pass to the question of sweetened poison and sweetened poison baits and their effect upon bees. It will be good news to anyone who was anxious on this point to learn that further investigations have shown that for the apple maggot and the cherry fruit flies, two very destructive insects, sweetening of any kind is not only not necessary but is even injurious, because it adds nothing to effectiveness and causes the mixture to wash off much more quickly than where it is not added. We now recommend for these flies only arsenate of lead and water. A fungicide may be added if desired, but no molasses. I may say, however, that bees, in my observations extending over eight years, never fed upon these sprays, probably because they were applied at a time when there was plenty of flowers to satisfy their needs.

For Rose Chafer—an insect that occurs in June and early July, but only in very light and sandy places where there is much waste land—a sweetened poison spray is occasionally used, and is the only thing that will save the grapes from destruction. I have heard no complaints of bees being injured in such cases.

There remains then, only the sweetened poison baits used for destroying grasshoppers and army worms. These are made of Paris green, bran, molasses, lemons or oranges and water. They are applied very lightly over infested fields and always very early in the mornings for grasshoppers and very late in the evenings for cutworms and army worms. In the case of grasshoppers, the fields usually are very old pastures or fields where there are no flowers or where the flowers have been eaten off by the grasshoppers. Cutworms usually act among vegetables where, also, there are no flowers at the season of attack. I have several times made these baits and applied them and have made tests to see whether it attracts the bees, but have never seen them feeding upon it. As the result of a suggestion in my letter, Professor Junter, of Kansas, made a series of elaborate tests on this same point, and he also finds that there is not the least danger to bees though a whole county be treated with the mixture. In my opinion, therefore, the whole danger to bees comes from the spraying of fruit trees and bush fruits when in full bloom; and this is quite unnecessary and not in the interests of economy or the best results to the fruit.

Paint in the Apiary.

EDITOR "THE FARMER'S ADVOCATE":

When a man has dug deep into his pocket-book to pay for a bunch of new hive-boards and bottom-boards he begins to doubt that it pays to paint said articles. "Let them go," says he, "until the price of paint comes down a little."

If one stops to consider, however, that the more valuable an article is the more important it is to protect that article, he sees things in a different light. Moreover, if it paid to protect hive-bodies cheaply bought with paint cheaply bought, then it equally pays to protect hive-bodies dearly bought with paint even if one has to pay dearly for it.

There are two great reasons for painting; preservation of the wood, and appearance of the apiary. No one doubts the wisdom of the first, but some would consider the latter of very minor importance. It is not. Appearance is a matter of morale. You can work better, faster and easier in a neat, attractive apiary than you can in a "sloppy" one,—and so can your hired man.

Paint for preservation and you get the neat appearance automatically. Of the four boards composing the

hive body, the ends are especially liable to decay on open surface particular at as much as surplus out taught to p working the hand-hold, the surplus p

Where the paint, the fo time. Require inch or 6-inc let the spike width of, a Bore a small and a simila the spool or and fasten t in the board work freely.

Make a this merry-g how much n than the sid Then one tw you, and so Middlesex

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Ontario pendit

The Ho delivered t Tuesday, Ap of raising r tax on race \$5,000 per day for mil (which have and 3, inc companies. Treasurer s for the fisca estimated r total estima including or to these es be included statute, wh and the "fu dimension tures and r is shown H placed mos

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The G Teachers' a should have ing to the result that dollars less ment of th toward a c expenditure 000,000, of war expen Treasurer removing have been ear-n ment he sa ture on cap a deficit or expenditure institution A state shows tota made up of 205,142.45

hive body, two must of necessity be so placed that the ends are exposed to the weather. This is the spot most liable to decay, dampness easily lodging in the rough open surface. A good method in painting is to pay particular attention to these ends, "filling" them with as much paint as they will hold, and brushing the surplus out over the rest of the side. The writer was taught to paint first the exposed ends, then any cracks, working the paint well in, next to brush carefully in the hand-hold, finishing that particular side by brushing the surplus paint over the remaining surface.

Where there are a large number of hive-bodies to paint, the following little "kink" may save you some time.

Requirements: one old, high, kitchen stool, one 4-inch or 6-inch spike, a spool with a hole big enough to let the spike work freely in it, and a board about the width of, and a little longer than, your hive-body. Bore a small hole in the centre of the seat of your stool, and a similar one in the centre of your board. Place the spool on the stool and the board on top of that and fasten the three together with your spike, the hole in the board being large enough to allow the spike to work freely, without allowing the head to go through.

Make a stack of bodies, say three or four high, on this merry-go-round, and you will be surprised to see how much more quickly one can paint the side of a pile, than the sides of the same number of bodies separately. Then one twist of the hand, and the other side is before you, and so on.

Middlesex Co. SIMON SMITH.

FARM BULLETIN.

Ontario Has Estimated Total Expenditure of \$23,606,000 for 1920.

The Honorable Peter Smith, Provincial Treasurer, delivered the budget speech in the Legislature on Tuesday, April 13. The striking difference in methods of raising revenue are chiefly as follows: 1, increased tax on race tracks from \$1,250 per day for all tracks to \$5,000 per day for half mile tracks, and \$10,000 per day for mile tracks; 2, much heavier succession duties (which have been outlined previously in these columns); and 3, increased revenue from banks and insurance companies. The statement presented by the Provincial Treasurer showing estimated receipts and expenditures for the fiscal year ending October 31, 1920, shows total estimated receipts amounting to \$20,211,378.88, while total estimated expenditures are placed at \$17,932,830.33, including only \$888,000 capital expenditure. In addition to these estimated expenditures, however, there must be included the ordinary expenditures provided for by statute, which last year amounted to \$5,673,719.60, and the "further supplementary" estimates, of unknown dimensions. A comparison of the proposed expenditures and receipts in 1919 and 1920 on ordinary account is shown herewith in order that the matter may be placed most comprehensively before the reader.

The Honorable Mr. Smith stated that he had only held office for four months, and had found a large-sized job awaiting him. He said he thought the Government had met every deputation that ever visited a former Government, and that these had apparently gone home and brought back all their friends as well. He referred to the deficit shown by the public accounts of the late Government, and pointed out that the Provincial Treasurer last year, the Hon. Mr. McGarry, had pointed out then the probability of a small deficit which would, Mr. Smith said, have actually amounted to \$632,000 had the old system of presenting the accounts been followed. Some changes had been made in the manner of handling revenue from lands, forests and mines. It was considered that part of this revenue should be credited to capital account, especially timber dues which had as early as 1905 been treated in this way, but had in 1911 been transferred to ordinary or current account. Both political parties, said the Minister, had apparently favored the proposed method of treating this revenue while in opposition. He also proposed to charge colonization roads to capital account. This amount for 1919 was \$1,077,862.76, while the amount of revenue from lands, forests and mines credited to capital account for the same year was \$787,394.35. The amount of revenue from this source credited to current account was \$1,968,341.96, this being the total cost of operating the Department.

The Government owes about \$1,500,000 to the Teachers' and Inspectors' Superannuation Fund, which should have been established as a separate fund according to the Act of 1917, but this was not done, with the result that the deficit in 1919 appears about a million dollars less than it really should be. The establishment of this fund will, therefore, tend to this extent toward a deficit for the present year. The total war expenditure of the Province was something over \$10,000,000, of which \$1,813,225.65 represents a deficit of war expenditures over war receipts. The Provincial Treasurer mildly criticized the late Government for removing the one mill war tax, which he felt would have been perfectly justifiable and acceptable if it had been ear-marked especially for education. The Government he said had endeavored to keep down the expenditure on capital account, but he was not worrying about a deficit on ordinary account because such fundamental expenditures as those for education, health and public institutions must be maintained at all costs.

A statement of assets and liabilities of the Province shows total liabilities amounting to \$116,777,923.92 made up of direct liabilities of \$97,572,781.47 and \$19,205,142.45 indirect liabilities. The former include

Government bonds and stock, treasury bills, railway certificates, university certificates, municipal securities, etc., while the latter are bonds guaranteed by the Province, among which are \$7,860,000 for the Canadian Northern Ontario Railway Company, \$1,240,000 for the Toronto and Hamilton Highway Commission, and \$8,000,000 for the Hydro-Electric Power Commission. Assets in addition to resources amount to \$113,219,422.25, made up of the following principal items: Bank balances, \$7,678,267.90; T. & N. O. Railway, \$22,334,918.30; Hydro-Electric Power Commission, \$36,232,121.26; Buildings and Land they stand on, \$23,065,959.40; Central Ontario Electric System, \$41,243,185; municipalities' indebtedness under the Ontario Housing Act, \$1,945,851.12; and outstanding on timber dues, \$1,200,000. Taxable property in Ontario is actually assessed by municipalities for more than \$2,000,000,000, while our resources are estimated very roughly at \$503,000,000 made up as follows: Pine timber, \$132,000,000 (said to be a wild guess); pulpwood timber, ties, poles, hardwood, etc., \$225,000,000; mining lands and profits, \$100,000,000; agricultural lands, \$15,000,000; water powers, \$20,000,000; sand, gravel, etc., \$1,000,000; District of Patricia, area of 146,000 square miles (timber, fisheries, furs and mining possibilities), \$10,000,000.

hardships and who appear to be interested solely as they find themselves faced with an administrative problem which they must deal with. That relief was necessary in some cases seems proven by the report of the Commission and by the decision of the Government to act for the most part on that report. The soldier settler can now use his option as to whether he goes or stays. These seem to be the essential facts. Where then should the blame be placed? Why the political character of the discussion; for such it has been to a considerable extent — largely between Conservatives and Liberals with the Government sitting back and listening, or members taking part in the discussion purely as individuals? The answer to the last question is unfortunately only "politics," but the answer to the first is more difficult. We believe that the late Government, or rather the Honorable Howard Ferguson, who takes full responsibility for the whole scheme can only be blamed in any large sense for a mistake in judgment when the colony idea was put into effect, particularly in Northern Ontario. "Every tub on its own bottom" is a good old saying which we believe would apply to pioneering in Northern Ontario with particular force. No doubt the late Government were actuated by the best motives in deciding to establish a colony at Kapuskasing, but

ESTIMATED CURRENT RECEIPTS AND EXPENDITURES, PROVINCE OF ONTARIO, YEAR ENDING OCT. 31, 1920.

Receipts.			Expenditures.		
Item	1919	Estimated 1920	Item	1919	Estimated 1920
Dominion Subsidy and Grant	\$2,396,378.88	\$2,396,378.88	Civil Government	\$1,165,864.27	\$1,544,988.98
Interest	363,154.66	300,000.00	Legislation	315,768.16	333,616.00
Lands, Forests and Mines	1,968,341.93	2,600,000.00	Administration of Justice	653,530.56	832,796.00
Education	70,505.68	70,000.00	Education	3,302,487.91	4,299,672.43
Agriculture	219,789.73	175,000.00	Public Institutions	2,693,875.52	3,223,886.82
Game and Fisheries	703,938.20	700,000.00	Colonization and Immigration	67,661.30	211,271.53
Provincial Secretary	1,521,717.62	380,000.00	Agriculture	1,101,065.16	1,303,395.71
Motor Licenses	1,580,105.61	1,850,000.00	Hospitals and Charities	782,589.71	770,252.32
Casual Revenue	1,454,372.29	500,000.00	Repairs and Maintenance	348,365.41	343,541.76
Insurance Department	80,512.96	90,000.00	Colonization Roads, Maintenance	140,062.87	90,000.00
Succession Duty	3,516,592.37	4,000,000.00	Games and Fisheries	477,003.75	307,200.00
Law Stamps	142,889.25	150,000.00	Highways Department	114,725.52	169,111.48
Corporation Tax Act	1,707,935.28	2,500,000.00	Attorney-General's Department	129,131.86	117,150.00
Fire Marshall's Act	46,071.01	2,600,000.00	Provincial Secretary's Department	352,250.13	393,102.65
Interest	2,036,969.54	2,085,497.03	Treasury Department	131,471.93	404,701.55
War Tax Act	2,085,497.03	5,140,176.35	Miscellaneous	432,447.86	298,260.64
Balances and Deposits	5,140,176.35	1,000,000.00	Hydro-Electric	202,537.49	709,906.60
Amusements Tax Act		600,000.00	Public Buildings and Works	705,345.43	5,673,719.60
Ontario Temperance Act		300,000.00	Statutory Expenditure	5,673,719.60	5,673,719.60
Public Institutions		600,000.00	War Expenditure	1,491,722.87	
			Charges, Crown Lands, Lands, Forests and Mines	1,180,947.57	1,417,569.60
			Department of Labor		274,406.20
Total Ordinary Receipts	\$19,904,772.04	\$20,211,378.88	Total ordinary Expenditure	\$21,464,574.88	\$22,718,549.93

THE KAPUSKASING SOLDIER SETTLEMENT.

A great deal of valuable space might be occupied in dealing with the remarks of members during the debate on the report of the Kapuskasing commission if space was warranted. We do not consider that it is warranted or that anything would be gained by a presentation of the numerous ideas brought forward. Nearly everyone can form opinions on almost any subject if a certain amount of information is presented upon which one can focus his attention, and particularly, provided it has political significance, if one belongs to or is an adherent of a particular political party or group. "The Farmer's Advocate" representative has listened carefully to nearly every speech during the debate and has endeavored to sift out the grains of justice from the political chaff. The only reason we attempted to do this much, even, was because the discussion involved two very important factors, namely, the just, fair and honorable treatment of returned soldiers and the probable future of the great and undeveloped regions in Northern Ontario, four times the size of older Ontario and inhabited by 300,000 people according to figures given by the Honorable Howard Ferguson. The main facts appear to be that the scheme was started in response to pressure for some type of land settlement scheme by the Province in view of the fact that Ontario had supplied a large percentage of men in the Canadian army. Out of 700 or 800 applications by men who wanted to be included in the scheme, 500 or 600 were weeded out as unfit to undergo the rigors and hardships of pioneering experience. Of all the men who entered the scheme 102 were still in the colony when the Commission investigated, and, in response to an invitation, 63 of these gave evidence. Of these 63 there were 18 who said they would stay on any- way and 17 others who would stay, presumably under somewhat better conditions. The remaining 39 gave no evidence. There appear to be records of over 200 soldier settlers from whom no complaints have apparently been received, who have settled in Northern Ontario as individuals in the ordinary way and are not a part of the colonization scheme. The late Government apparently had every good intention of making the colony a success, treating the soldiers well. This much seems to be freely admitted by the present Government, who merely responded to requests for relief from alleged

aside from the question as to whether returned men should be re-established in civil life in groups or colonies, there is the fact that the more natural and efficient method of securing permanent soldier settlers in our newer regions would be to allow only such men to attempt it as have the hardihood to "go it alone", as individuals. If we have correctly interpreted the discussion and fairly sized up the situation, nothing more need be said. If we have not, nothing would be gained by enlarging the question, because the unfortunate nature of the affair can well be over emphasized, although not denied. Premier Drury has said that the scheme will have cost all told about a million dollars and that the whole scheme was badly conceived and worse managed. We have already said that we thought it conceived in mistaken judgment but it certainly could not have been either conceived or managed in a better cause.

PROPERTY QUALIFICATIONS SIMPLIFIED.

The principle of the Bill regarding property qualifications for candidates in municipal elections was passed last week after the first division of the session, and, incidentally, the first division which the Farmer-Labor Government has experienced. The vote was brought about by an amendment introduced by the member from Sudbury, which would give the Bill a six months hoist. This amendment was lost on a vote of twenty-three to seventy-one. Those favoring the amendment consisted of all of the Conservative members, with one exception, about five Liberal members, and one Farmer member, the member from East Lambton. With these exceptions, farmers, labor members and Liberals voted solidly in favor of the principle of the Bill which, according to the idea expressed by Premier Drury, will make the household the unit in municipal affairs rather than the ownership of property.

A very unfortunate handling of the temperance question was evidenced in the House when the motion of the member for North Lanark requesting that a referendum be taken on the importation of strong liquor into Ontario, was brought up for discussion. The member for North Lanark was, it is generally understood, acting on his own responsibility as a private member when he brought this important matter up for discussion. It is everywhere recognized that it is one

of the most difficult problems the Government has to deal with and it is by no means certain how the House will view the matter. Certain it is that there is wide difference in opinion, and quite a number of members incline to the view that the Government should take the responsibility for all measures dealing with this question. The Government takes the stand that they will not go beyond the will of the people, as expressed by the Referendum of October 20, 1919, and are prepared apparently to vote on matters introduced by private members, solely on their responsibility as members of the House. The unfortunate nature of the affair last week arose out of the fact that the member for North Lanark, altogether inexperienced in parliamentary procedure and none too well able to handle this particular subject in debate, began to read his speech which he had had prepared by a lawyer. This was objected to by a Conservative member and ruled out of order by the speaker. The member for North Lanark would have been permitted to continue had he been willing to give the name of the lawyer who prepared the brief he was reading, but this he would not do and was finally, after much joy on the part of the Opposition as well as some vexation on the part of the speaker, and undoubted humiliation on the part of the Government, forced to take his seat. After some manoeuvring and further excitement in which the Attorney General figured, not altogether to his satisfaction, the debate was adjourned and will, we believe, be continued this week, probably on Tuesday, April 20.

Bill No. 125, introduced by the Hon. F. C. Biggs, Minister of Public Works and Highways, as an amendment to the Judicature Act created considerable discussion and was laid over, at the suggestion of the Prime Minister, for further information. This amendment would provide for trial by jury instead of by the common judge in case of damage suits against municipalities. This practice was in force up to 1896, and the attempt to revert to the practice of that time was strongly opposed by most of the Conservative members of the House, and by practically all members from the City of Toronto, who maintained that Toronto would be practically called upon to maintain a jury all the year round. The Minister of Public Works said that in many cases damage actions have cost from twenty-five to forty per cent. of the taxes intended for roadwork in municipalities, some counties being forced to pay as high as from fifty to seventy-five thousand dollars in this way. The single judge, he maintained, is not familiar with road conditions and the municipalities suffer unduly. Some degree of protection for the municipality would be secured, he thought, if trial was by jury because there would be a certain percentage of rural men on the jury.

THE AGRICULTURE COMMITTEE DOES GOOD WORK.

The Agricultural Committee of the House has been doing some very good work during the last two or three weeks. It has considered several bills, including the act respecting the practice of veterinary science, and the act respecting the establishment of community halls and athletic grounds, as well as some amendments to the sheep and dog act and the questions of immigration, farm labor, and the agricultural representatives. Some mention has already been made of the Veterinary Bill, and it is sufficient now to say that the present Bill should very satisfactorily protect the live-stock industry of Ontario from the injurious effect of poorly trained and incapable veterinarians. Only those veterinarians who are graduates of veterinary colleges, or other institutions approved by the Minister of Agriculture, will be allowed to practice for fees in the Province of Ontario, unless they have been practicing for a period of at least five years prior to the present time.

The Community Hall and Athletic Field Act is a new Act based on the Community Hall Act of 1919, and provides that the Minister of Agriculture may grant aid to municipalities up to twenty-five per cent. of the cost of construction or purchase, or a maximum of \$2,000 in any one case, for the erection of community halls and the laying out of athletic fields in connection therewith. Grants may be made for the establishment of more than one hall or athletic field in any one township, and the ownership shall be vested in the corporation of the township, which may issue debentures to pay for the expenditure as provided by the Municipal Act. An athletic field three acres in extent is required, but is not necessary immediately adjoining the community hall, if there should be a suitable school grounds or park within reasonable distance. Petitions signed by more than one-half of the ratepayers in a school section, or adjoining school sections, are sufficient, when presented to the municipal council, to bring about the passage of a by-law for the purpose of the Act. Debentures issued by the municipality shall be redeemed by the school section or school sections asking especially for the hall or athletic field, but the township shall guarantee the bonds issued on behalf of these sections. The community hall and athletic field shall be under the management of a council of seven, composed of two members of the council and five members of local organizations selected from among the officers of those local organizations, which are either religious or fraternal. Thus it seems evident that neither farmers' clubs, women's institutes, community welfare associations, or any other local organization, can get Government assistance directly for the establishment of community halls. If such aid must be made by and the grant is to be made to the municipality itself.

A very interesting discussion took place on two occasions with respect to amendments to the sheep and dog act which was introduced by the late Government in 1918. The result of that discussion was that in a great many instances the dog tax levied by townships is not sufficient to pay the loss due to the killing of sheep. This is particularly true where

villages, towns or cities are adjacent to rural municipalities where sheep are common, and where dogs from the villages and towns create a great deal of damage by worrying or killing sheep, for which the rural municipality must pay. Some objection was raised to any attempt to change present conditions, because it was argued that municipalities in some cases secured considerable revenue from the dog tax and suffer very little loss from claims of sheep injury. It was pointed out that the dog tax was given to the municipalities in the first place as a guarantee against sheep losses, and an amendment will probably be put through which will provide for the pooling of all dog taxes in the county treasury from all municipalities which are in the county for county purposes. This will probably be optional with each country, but in cases where it is adopted it will mean that the dog tax of the village or town would also go into the county treasury and assist in paying for loss by damage to sheep by dogs. A considerable discussion also arose with regard to the desirability of having all dogs tagged. At present there is legislation on the statute books providing for the control by the municipality of all dogs running at large, but the difficulty is that dogs that stay at home in the daytime and run at large at night are the ones that do the damage. The argument is put forward that there are very few cases of damage to sheep where the dog can be traced to his owner, and the result is that the municipality always has to pay, instead of the owner of the dog. Those in favor of tagging all dogs argue that if a dog were tagged and were shot in the act of worrying or killing sheep it could easily be determined who owned him, and the owner forced to pay.

Foot and Mouth Disease Again Breaks Out in England.

We are advised by F. Torrance, Veterinary Director General, that an outbreak of foot and mouth disease has been detected in Norfolk County, England, and consequently the issuing of permits for the importation of cattle, sheep, other ruminants, or swine from England will be indefinitely postponed. This disease has been lurking in different parts of England for some time, and has caused a great deal of inconvenience to breeders on this side of the Atlantic, who are desirous of importing stock. By the time one outbreak is cleaned up the disease appears in another district. It is important that the regulations regarding importations be strict. Canada is free from this disease and every effort should be made to prevent infectious diseases from gaining a foothold in the Dominion.

Professor Wade Toole Remains at O.A.C.

The announcement was made some weeks ago in these columns that Wade Toole, Professor of Animal Husbandry and Farm Superintendent at the Ontario Agricultural College, had resigned and had accepted the position of Managing Editor of The Farmer's Advocate and Home Journal of Winnipeg. Considerable water has flowed under the bridges since then and strong representations have been made to have Professor Toole retained at the College. Professor J. B. Reynolds, the new President, and Hon. Manning Doherty, Minister of Agriculture, have both expressed a desire to have Prof. Toole remain, and their hands have been considerably strengthened by the strong representations made by stockmen and agriculturists generally. Feeling that Professor Toole's work in Ontario had only just begun, and that he was too valuable a live-stock authority for the Province to lose, John Weld, Manager of the Wm. Weld Company and President of The Farmer's Advocate of Winnipeg, Limited, has consented to release him from his agreement with The Farmer's Advocate and Home Journal. As a result of these recent developments, Professor Toole will remain at the O. A. C. to continue the work he has been so ably conducting during the last two years.

Summer Milk Price Determined.

A satisfactory summer price for market milk was arrived at last week after several conferences between the Toronto milk producers and the distributors. The distributors offered \$2.60 per can for the four months of May, June, July and August, and we understand that in future there are to be eight instead of seven winter months, so far as the price of milk is concerned. It was agreed that a flat price of \$2.60 per can for the four summer months was not desirable, so that more or less arbitrary prices were agreed on for each month, which it was calculated would average \$2.60 per can for the four months. Allowing three pounds of butter-fat per can and 70 cents per hundred pounds for skim-milk, the following prices were arrived at: May, \$2.80 per can for milk and 70 cents a pound for butter-fat; June, \$2.30 for milk and 53 cents for butter-fat; July, \$2.60 for milk and 63 cents for butter-fat; August, \$2.70 for milk and 66 cents for butter-fat.

There is some discussion now as to whether or not a Commission will be appointed by the Provincial Government to investigate the milk question. It is argued that a commission appointed now could only secure results that would be applicable for a very short time, and that a more permanent arrangement would be the appointment of a permanent milk committee that would assist in adjusting prices from time to time. It is also argued with regard to the cost of production, that no commission would be in a position to secure even as much information as is now in the hands of the Department of Farm Management, O. A. C., Guelph. It is just possible that this Department will make a study of this summer to round out its figures as

regards milk production, and work out some formula or sliding scale which can be adjusted from time to time and used as the basis for determining milk prices. No definite announcement as to what will be done in this connection has been made yet by the Hon. Manning W. Doherty, Minister of Agriculture, but it is expected that the matter will be settled shortly.

EDITORIAL.

Zone System a Menace to Agriculture.

Indications that the Federal Government propose securing increased postal revenue by the introduction of the zone system of postal rates, bring all interested in agriculture face to face with a condition which should be met with the strongest possible protest and fought to a finish. Every Canadian citizen realizes that Canada must raise greatly increased revenues during the coming years, but no dangerous proposals such as the introduction of the zone system of postal rates should, in the interests of the country at large, be even tentatively considered. Such a drastic innovation would mean the absolute penalizing of subscribers to any technical or religious paper published more than three hundred miles away. Farm papers are excellent examples of journals, the subscribers to which will be penalized to a considerable extent by the establishment of zone rates, over and above any general increase in rates. "The Farmer's Advocate" has been published continuously since January 1866, and during the past fifty-four years, has beyond any possibility of doubt, contributed very materially to the advancement and progress of agriculture because of its national viewpoint and influence. The farm press is undeniably the strongest force in Canada for progressive agriculture and the very fact that farmers themselves are now progressing through organization and improved business methods, is the strongest possible tribute to the steady and wholesome national influence of the press; and especially the farm press which is devoted particularly to agriculture and the elevation of rural thought and action.

It should not be necessary to recall for the Government the fact that agriculture is Canada's greatest industry, based upon our most important and stable asset, the land. Nor should it be necessary to prove beyond the mere assertion, the fact that farming as a business is a family proposition largely, tending, unless steered by some wholesome influence such as a national sympathetic press, to become sectional in thought and action rather than national as it should be. The very climate and natural barriers of the country prove to anyone conversant with agriculture, obstacles that must be overcome and that can only be successfully overcome through the instrumentality of a nation-wide press. The adoption of zone rates would remove one of the most wholesome influences of the agricultural press in that its ability to speak for the people on the farms of Canada would be practically destroyed. The pernicious effect of any such ill-considered plan to raise revenue or lighten the burden of the railroads that carry our mail should be recognized at once by every earnest Canadian citizen, and most of all by the Government itself.

Far better would it be to eliminate from the mails some hundreds or thousands of tons of useless Government matter that now clutter them. Wholesale distribution of Government reports and documents costs immense sums, for which, apparently, subscribers to useful journals are to be called upon to pay. It is undeniable that few people read the reports and that thousands of homes are brightened, broadened and assisted by the wholesome journal. The Government itself as far back as 1886 definitely established the principle that Canadian agriculture stands in direct need of national agencies for the furtherance of agricultural education. At that time the Dominion System of Experimental Farms was inaugurated and it has since been greatly, although in many respects still inadequately expanded, until now the entire cost is well over a million dollars per year. This vast and useful system for the securing of reliable scientific and practical data is markedly dependent for the distribution to the farming public of the results and information secured, on the agricultural press. Farm paper offices are flooded constantly with results of experiments conducted and no one realizes more than an agricultural official of the Government, how much the Department of Agriculture owes its success with the people to a national farm press. The idea is preposterous that farmers get their new information and up-to-date methods from Government bulletins and reports. They get from the farm press practically all that is taken from the printed page. If agricultural material from bulletins and reports were not sifted out and presented to farmers by the press in simple form, very few would get it at all. Every conscientious Government servant engaged in agricultural work of any kind invariably looks to the agricultural press for a national viewpoint of agricultural problems; and there are few who do not regard it as their most ready and accurate means of keeping in touch with farm opinion and farm problems. To say that the viewpoint of the press should be restricted to a 300-mile limit in a country like Canada would be like saying that the Federal Government itself should restrict its responsibility to the densely populated centres, leaving those in sparsely settled regions to shift for themselves. We hope the officials of the Post Office Department who desire to impose such restrictions upon a section of the Canadian Press can be brought to believe in the justice and sincerity of our contentions.

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EAST END.—The total receipts from January 1 to April 8, inclusive, were 9,776 cattle, 8,667 calves, 9,816 hogs and 3,973 sheep; compared with 12,022 cattle, 8,802 calves, 9,722 hogs and 5,653 sheep, received during the corresponding period of 1919.

Montreal.

Horses.—Demand for horses was fairly active during the last week, both from the city and country. Carters are preparing for the opening of navigation and the increased demands made upon them from that time forward. Farmers are also making preparations for spring work on the farm, and are enquiring for good plugs. Prices showed no change of consequence, being: Heavy draft horses, weighing from 1,500 to 1,600 lbs., \$250 to \$350 each; light draft, \$200 to \$250; light horses, \$125 to \$175 each; culls, \$75 to \$100 each; and good saddle and carriage horses, \$175 to \$250.

Dressed Hogs.—There is no disposition toward lower prices in the market for hogs and prices showed rather an advancing tendency. Fresh-killed, abattoir-dressed hogs were 29c. per lb., while country dressed were 27c. per lb.

Poultry.—Receipts from the country were almost nil and cold-storage stock was unchanged, being 53c. to 54c. per lb. for turkeys and 38c. to 40c. for chickens.

Potatoes.—The market for potatoes continued to advance gradually and Quebec white stock was quoted at \$4.75 per bag of 90 lbs., carloads, track, with 25c. to 50c. added in a smaller way, ex-store.

Maple Products.—The make is now practically over and the quantity harvested is said not to have been particularly large though some report otherwise. Prices were firm, syrup being \$3.25 per gallon tin and sugar being 32c. to 35c. per lb.

Eggs.—Prices for eggs were down to 50c. and 51c. per dozen and it begins to look as though stocks would be put into store at not far from that level. Receipts were fairly large and very few if any eggs are now arriving from the United States.

Butter.—The market showed very little change in tone during the last week. Receipts from the country are rather larger than at this time a year ago and prices were a shade lower than for the previous week being 59½ to 60½ cents per lb. for finest fall makes, and 1c. below this range for undergrades.

Cheese.—Small cheese were selling at 28c. for local account and sales of cheese for export were reported at 26c. to 27c. per lb.

Grain.—Carloads of No. 2 Canadian Western oats were quoted at \$1.19 per bushel, No. 3 being \$1.15, and extra No. 1 feed; No. 1 feed being \$1.14 and No. 2 feed \$1.13 per bushel, ex-store.

Flour.—The market for flour was unchanged, being \$13.40 per barrel, in jute bags, car lots, ex-track, for Manitoba spring wheat flour, and \$10.75 for Ontario winter wheat flour. Broken lots brought higher prices. White corn flour was \$10.90 in broken lots.

Millfeed.—Car lots of bran were quoted at \$51.25 per ton, in bags, shorts being \$58.25, ex-track, less 25c. per ton for spot cash, millers' prices. Dealers quoted pure barley meal at \$78 per ton, cornmeal at \$80, dairy feed at \$68, and stag feed at \$64.

Baled Hay.—Car lots of No. 2 timothy hay were selling at \$30 to \$31, No. 3 being \$28 to \$29 and clover and clover-mixed \$26 to \$27 per ton, ex-track.

Hayseed.—The market for hayseed was steady. Timothy seed was 17½c. to 20c. per lb.; red clover, 65c. to 77c.; alsike, 68c. to 78c.; sweet clover, 40c. to 45c.; and alfalfa, 58c. to 60c. per lb.

Hides and Skins.—Steer and cow hides were 28c. per lb.; bulls, 22c.; calf-skins, 63c. to 65c.; graded kips, 30c.; sheepskins, \$4 each; clips, 50c. each, and horsehides, \$10 each.

Chicago.

Cattle.—Compared with a week ago: Beef steers, steady to 50c. higher; she stock, mostly steady to 25c. lower; canners steady; bulls, strong to 50c. higher; calves, \$1.50 to \$2 higher; feeders, nominal. Hogs.—Top, \$16.50; bulk, \$15 to \$16.25.

Sheep.—Top woolled lambs, \$21.50. Compared with a week ago, 1 cubs and yearlings mostly \$1 higher, and sheep, 75c. to \$1 higher.

Toronto Produce.

Receipts of live stock at the Union Stock Yard, West Toronto, on Monday, April 19, numbered 248 cars, 4,464 cattle, 802 calves, 3,987 hogs and 91 sheep and lambs. The cattle market opened active at steady prices but slowed up around noon and prices were around 25 cents lower. Best steers of twelve to fourteen hundred pounds each sold at \$15. The real top was \$15.25 for six head averaging 1,262 pounds each. Cows and bulls were steady; best cows were \$11 to \$12; best bulls were \$11 to \$11.50. Calves were strong at \$1 to \$1.50 higher. Best veal brought \$20 to \$21. Sheep and lambs were steady. Hogs were strong, selling for \$20.50, fed and watered.

Breadstuffs.

Manitoba Wheat.—(In store Ft. William). No. 1 northern, \$2.80; No. 2 northern, \$2.77; No. 3 northern, \$2.73.

Manitoba Oats.—(In store Ft. William).—No. 2, C. W., \$1.08¼; No. 3, C. W., \$1.04¼; extra No. 1 feed, \$1.05¼; No. 2 feed, \$1.01¼.

Manitoba Barley.—(In store Fort William). No. 3 C. W., \$1.71¼; No. 4, C. W., \$1.51¼; rejected, \$1.42¼; feed, \$1.42¼.

Ontario Wheat.—f. o. b shipping points according to freight)—No. 1 winter, per car lot, \$2 to \$2.01; No. 2 winter, per car lot, \$1.98 to \$2.01; No. 3 winter, per car lot, \$1.92 to \$1.93; No. 1 spring, per car lot, \$2.02 to \$2.03; No. 2 spring, per car lot, \$1.98 to \$2.01; No. 3 winter, per car lot, \$1.95 to \$2.01.

American Corn.—(Track, Toronto, prompt shipment.) No. 3 yellow, \$2.05, nominal.

Ontario Oats.—(According to freights outside).—No. 3 white, \$1.05 to \$1.07.

Buckwheat.—(According to freights outside)—\$1.65 to \$1.70.

Rye.—(According to freight outside)—No. 3, \$1.83 to \$1.85.

Peas.—(According to freight outside)—No. 2, \$3.

Barley.—(According to freights outside)—Malting, \$1.80 to \$1.82.

Manitoba Flour.—(Toronto)—Government standard, \$13.25.

Ontario Flour.—(In jute bags, prompt shipment)—Government standard, \$10.50, Montreal and Toronto.

Millfeed.—Car lots, delivered, Montreal freights, bags included)—Bran, per ton, \$51; shorts, per ton, \$58; good feed flour, per bag, \$3.75 to \$4.

Hay.—(Track, Toronto)—No. 1, per ton, \$29 to \$30; mixed, per ton, \$25.

Straw.—(Track, Toronto)—Car lots, per ton, \$16 to \$17.

Hides and Skins.

Hides f.o.b. country points.—Beef hides flat cured, heavy, 22c. to 25c.; light 25c. to 27c.; green hides, heavy, 20c. to 22c.; light, 24c. to 26c.; deacon or bob calf, \$2.50 to \$3; horsehides, country take-off, \$8 to \$10; No. 2, \$8 to \$9; No. 1 sheepskins, \$2.75 to \$3.75; yearling lambs, \$1.75 to \$2.50; horse-hair, farmers' stock, 40c. to 42c.

City Hides.—City butcher hides, green flats, 25c.; calf skins, green flats, 50c.; veal kip, 30c.; horsehides, city take-off, \$8 to \$10.

Tallow.—City rendered, solids in barrels 15c. to 17c.; country solids in barrels, No. 1, 12c. to 15c.; cakes No. 1, 15c. to 17c.

Seeds—Wholesale.

Seeds.—Following are the prices that wholesalers were paying for alsike and clover at country points; alsike, No. 1 fancy, bushel, \$33 to \$34; No. 1, \$32 to \$33; No. 2 choice, bushel, \$31 to \$32; No. 3 bushel, \$29 to \$30.

Red Clover. No. 1 fancy, bushel, \$34 to \$35; No. 1 bushel, \$33 to \$34; No. 2, bushel, \$31 to \$32; No. 3 bushel, \$29 to \$30. Sweet clover No. 1 fancy, \$21 to \$22; choice, \$19 to \$20.

Seeds—Retail.

Dealers quote the following retail prices for clover and timothy seeds. Red clover, high grade No. 1, Government, \$18 per bushel; No. 2 Government, \$15.00 per bushel; No. 3 Government, \$12.00 per bushel. Alsike, high-grade, No. 1 Government, \$15.60 per bushel; No. 2 Government, \$13.80 per bushel; No. 3 Government, \$11.40 per bushel. Alfalfa, high-grade, No. 1 Government, \$39 per bushel; alfalfa, Canadian-grown, No. 1, \$12 per bushel; sweet clover white blossom, fancy, \$29.40 per bushel; sweet clover white blossom, choice, \$27.60 per bushel. Timothy, high-grade, No. 1

Government, \$11.52; No. 2 Government, \$10.32 per bushel.

Farm Produce.

Butter.—Butter kept stationary during the week, selling as follows, wholesale: Fresh-made creamery squares, 68c. per lb.; creamery solids at 66c. per lb.; and choice dairy at 55c. to 60c. per lb.

Eggs.—New-laid eggs again declined in price, selling at 48c. to 50c. per dozen, wholesale.

Cheese.—Cheese also kept stationary, wholesale. The old at 32c. per lb., and new at 29c. per lb.

Maple Syrup.—The first car of maple syrup for this season arrived on April 13 last, and had such a demand it was all sold by noon at the following prices: Imperial gallon, \$3.25; wine gallon, \$2.75; quarts, \$18.50 per case 2 dozen; 8-lb. tins, \$21 per case; maple sugar 40c. per lb.

Poultry.—Receipts were light and prices did not vary in poultry. The following prices being quoted for liveweight and dressed varieties to the producer. Liveweight prices—Chickens, 30c. per lb.; chickens, milk-fed, 35c. per lb.; ducklings, 40c. per lb.; hens, under 4 lbs., 30c. per lb.; hens, over 5 lbs., 38c. per lb.; roosters, 25c. per lb.; Guinea hens, per pair, \$1.25.

Dressed.—Chickens, young 35c. per lb.; chickens, milk-fed, 40c. per lb.; ducklings, 40c. per lb.; hens, under 5 lbs., 32c. per lb.; hens over 5 lbs., 35c. per lb.; turkeys, 45c. per lb.; roosters, 25c. per lb. Guinea hens, \$1.50 per pair.

Wholesale Fruits and Vegetables.

On account of the railway strike in U. S., wholesale fruit and vegetable stocks are rapidly becoming depleted, and unless there is a settlement soon, the shortage will be very serious here.

Extra fancy Ontario spy apples reached a new high level here, when a small shipment of eight barrels brought \$14 to \$15 per bbl.

Potatoes, steadily advanced until they sold at the almost prohibitive price of \$6 per bag; with seed potatoes bringing \$6.50 per bag.

Buffalo.

Cattle.—The railway strike, with the railway companies placing an embargo on live stock to all of the markets, had the effect of dwindling down receipts at Buffalo materially last week, as the result of which a very uneven and erratic market prevailed. Local killers needed quite a few handy cattle to meet the regular demand of local retail butchers, who buy on fresh beef and the result was that in some instances, with the very scant supplies that came in, some sales on steers and heifers looked as much as \$2 to \$2.50 per hundred higher, a fair kind of handy steers selling up to \$16. A good, strong trade was had all week on the medium and commoner kinds. Trade was very bad on milk cows and springers, there being several loads here that were held over from the week before and these are all in the yards. Receipts came mainly from New York State points, being trucked in. Some few loads crept in from Western States and Canada. Offerings for the week totalled 1,575 head, as against 4,150 head for the previous week and compared with 5,725 head for the corresponding week a year ago. Quotations:

Shipping Steers.—Canadians—Best heavy, \$12 to \$12.75; fair to good, \$11 to \$11.50; medium weight, \$10.75 to \$11; common and plain, \$10 to \$10.50.

Butchering Steers.—Yearlings, fair to prime, \$12 to \$13.50; choice heavy, \$12 to \$12.50; best handy, \$11.25 to \$12.75; fair to good, \$11 to \$11.50; light and common, \$9 to \$10.

Cows and Heifers.—Heavy heifers, \$11 to \$12; best butchering heifers, \$10.50 to \$11; good butcher heifers, \$9.50 to \$10; fair butchering heifers, \$8 to \$9; light, common, \$6 to \$7; very fancy fat cows, \$10.50 to \$11; best heavy fat cows, \$9.50 to \$10; medium to good, \$8 to \$9; cutters, \$5.50 to \$6.50; canners, good, \$4.50 to \$5.25.

Bulls.—Best heavy, \$9.75 to \$10.25; good butchering, \$8.50 to \$9; sausage, \$8 to \$8.50; light bulls, \$7 to \$8.

Stockers and Feeders.—Best feeders, \$9.50 to \$10; common to fair, \$8 to \$9; best stockers, \$8 to \$8.50; fair to good, \$7.75 to \$8.25; common, \$6 to \$7.

Milkers and Springers.—Good to best, small lots, \$110 to \$135; in carloads, \$90 to \$100; medium to good, small lots, \$85 to \$100; in carloads, \$75 to \$85; common, \$50 to \$55.

Hogs.—Receipts by rail, as a result of the Switchmen's strike, were exceedingly light last week, grand total being 4,400 head, as compared with 20,037 head for the week before and 22,900 head for the same week a year ago. Only a few decks of light hogs were received from the west and these were taken by local killers at \$18 and \$18.25. Balance of the offerings were state hogs that were brought in by wagons and trucks and prices on these were steady all week, the good handy kinds bringing from \$17.50 to \$18, heavy grades ranged from \$16.50 to \$17, pigs sold around \$17 and roughs \$13 to \$13.50.

Sheep and Lambs.—Only 2,500 head were received last week, as compared with 17,367 head for the week previous and 15,100 head for the same week a year ago. Offerings were mostly from state points and prices were high. Woolled lambs sold up to \$23, equaling the former record and clipped lambs reached up to \$21 and \$21.50, latter price being the highest in the history of the trade for shorn stock. Sheep were scarce all week and trade on these was firm, few odd head of shorn ewes bringing as high as \$14.

Calves.—Calf receipts also showed a big falling off, the run last week being 2,700 head, as against 5,393 head for the week before and 6,300 head for the same week a year ago. The fore part of the week showed top veals selling at \$19, but by the end of the week choice lots reached up to \$23, few selling Thursday as high as \$23.25. On the throwouts or culls sales ranged from \$18 down.

Victory Bonds.

Following were the values of Victory Bonds on the Toronto market, Saturday, April 17: Victory Bonds maturing 1922, 99 to 100; Victory Bonds maturing 1927, 99½ to 100½; Victory Bonds maturing 1931, 98¾ to 99¾; Victory Bonds maturing 1933, 100½ to 101½; Victory Bonds maturing 1937, 102 to 103.

Sale Dates.

May 4, 1920.—Frank Boyle Estate, Milliken, Ont.—Holsteins.

May 12, 1920.—Elgin Pure-bred Holstein Sale, St. Thomas, Ont.

May 20, 1920.—Ayrshire Cattle Breeders' Association of New England, consignment sale, Springfield, Mass.

June 2, 1920.—Can. Aberdeen-Angus Association, Exhibition Grounds, Toronto, Ontario.

June 3, 1920.—Hood Farm, Inc. Lowell, Mass.—Jerseys.

June 9, 1920.—International Sale of Milking Shorthorns, Euclid, Minn., U. S., A., R. R. Wheaton and A. E. Palmer.

June 9, 1920.—Sunnybrook Farms Holstein Dispersal, North Toronto, Ont.

June 10, 1920.—Second National Ayrshire Sale, Springfield, Mass.

June 15, 16, 17 and 18, 1920.—Live-Stock Breeders' Association of the District of Beauharnois, Limited, Ormstown, Que.

June 24, 1920.—David A. Ashworth, Denfield, Ont.—Ayrshires, Horses, Yorkshires, etc.

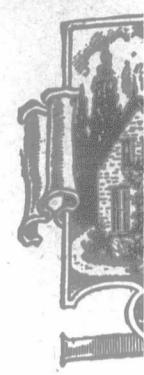
New York Aberdeen-Angus Sale Postponed.

Due to the railroad strike the Aberdeen-Angus sale to be held at Albany, New York, on April 20th has been postponed and the date of the sale will be announced in these columns in the next issue.

Improving Every Year.

EDITOR "THE FARMER'S ADVOCATE": "The Farmer's Advocate" arrived a few days ago, and was really a treat. I notice the quality of the paper has improved, and many of the illustrations are exceptionally beautiful; yet your subscription price (unlike that of most papers and magazines) has not advanced. You deserve every encouragement in your work, and I trust this year may be one of especial prosperity for you. Peel Co., Ont. P. KIRKWOOD.

"Your husband has been ill," said the caller. "Yes," replied the little, worried-looking woman, "he has been feeling very badly. I do my best to please him, but nothing seems to satisfy him." "Is his condition critical?" "It's worse than critical," she answered, with a sigh, "It's abusive."



The Ma

Ye ho, for the For the spirali With his full-t Like joy-beam His happy tril Ye ho, for the

Ye ho, for the For the smile For the little For the streng And the know Ye ho, for the

Letter

WE have part of connect portufe.

Sensation M Lobanoff jew

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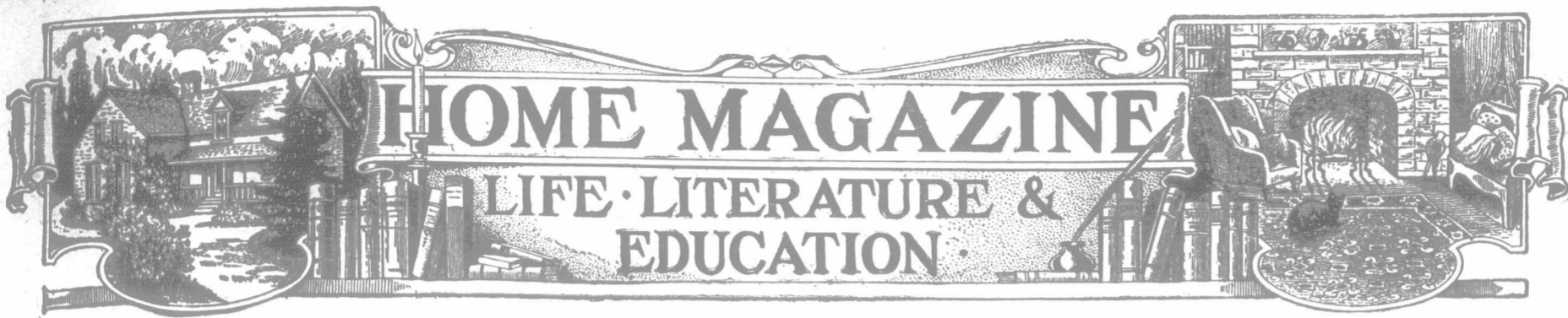
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Seated in or six jewel through who before bein auctioneer, Paris for th shrieking, r mens of th looking, dig with charm voice.



The Man at the Plow!

BY RUTHELE NOVAK.

Ye ho, for the song of the lark;
 For the spiraling lark with his song;
 With his full-throated praise so strong!
 Like joy-beams from the sun
 His happy trillings run!
 Ye ho, for the song of the lark!

Ye ho, for the smell of the loam;
 For the smile of the new-born day;
 For the little house over the way;
 For the strength to plow
 And the knowledge how!
 Ye ho, for the smell of the loam!
 —Contemporary Verse.

Letters From Europe.

HELEN A. RUSSELL.

WE have had two sensations in this part of the world lately, each one connected with a woman and a fortune.

Sensation Number 1—The sale of the Lobanoff jewels.

Sensation Number 2—The marriage of an enormously wealthy American widow to a Greek Prince.

There died recently in Lausanne at a very advanced age a Russian Princess who had amassed a huge fortune in the form of jewelry and precious stones. This marvellous collection was sold at auction in Lausanne, and was an event of such extraordinary importance that it drew jewelers and dealers in precious stones from all parts of the world. It is said to have been the biggest and most important sale of jewelry which has every taken place in Europe. The sale lasted a week, and the prices soared so high that the market value of precious stones has been tremendously increased everywhere.

The collection Lobanoff consisted of 250 magnificent, costly, glittering ornaments each a work of art, ranging in size from a diamond stud to a diamond-studded diadem. Pearls and diamonds were most numerous, but there was also a wonderful display of colored gems: Emeralds as green as Ireland and nearly as big; sapphires of a ravishing blue, rubies and turquoises and topazes in fact, a gorgeous sunset was there in miniature. Each article, no matter how small, contained very costly stones.

In the collection were 33 necklaces, each one composed of pearls, or of diamonds, or of the two combined. There were 93 brooches, some of them as big as belt buckles—much bigger, in fact, such as a spray of diamond-studded rose leaves. There were 19 bracelets, 15 pairs of ear-rings, 13 pendants, 32 rings (some of them watch rings), and there were many magnificent tiaras, and special ornaments galore—all of an eye-dazzling brilliancy, artistic in design, and of an exquisite workmanship.

The sale took place in the Palace Hotel at Lausanne, and attracted enormous crowds of onlookers, of which I was one.

It was quite an imposing spectacle. Every seat in the large hall was filled, hundreds of people were standing up, and detectives and gendarmes were on the watch everywhere. The stairs leading to the hall were sentinelled, and every person who passed up or down subjected to close scrutiny.

Seated in a row on the stage were five or six jewelry experts from other cities, through whose hands every article passed before being put up at auction. The auctioneer, a Frenchman, who came from Paris for the purpose, was not one of the shrieking, ranting, going-going-gone specimens of the brotherhood, but a tall, fine-looking, dignified, gray-haired gentleman, with charming manners and a pleasant voice.

At one side of the stage, wedged safely in between the table and the wall, was a solemn young man whose duty it was to fish up diamonds and pearls from the Lobanoff treasure-box which he guarded. Someway he suggested to me that legendary infant accredited with so much wisdom known as Little Johnny Horner, who, with the aid of his thumb (and I presume his four fingers, although they are not mentioned in the historic transaction) pulled out from the interior of his Christmas pie the most extraordinary luscious plums.

I don't know why the young man guarding the Lobanoff treasure-box suggested to me the sagacious Little Johnny—one can't always tell why—unless it was because he was in a corner and was continually putting in his thumb (and likewise his four fingers) and pulling out rich "plums" of jewelry.

My friend and I reached the sale a bit late and were obliged to perch on a table in the rear of the hall. But a table seat has advantages—it enables one to see over the heads of the audience in chaos. So we had an excellent view of the assembly in which nearly every nationality in Europe was represented. As far as I know there were no German buyers, most of the bidding being carried on by representatives of the big jewelry firms in Paris, London, New York, Rome and other cities.

One would never suppose, judging from the high prices paid for the Lobanoff jewels that this was a hard-up, after-the-war, weary, topsy-turvy world, menaced with Bolshevism, and threatened with every known and unknown epidemic. It made one with a thin purse absolutely gasp to see costly pearls and diamonds passed around as if they were common glass beads, and then knocked down for a fabulous price. For instance, a magni-

ficent pearl necklace containing 71 perfect pearls arranged in three rows and graded, the largest one being bigger than a much over-grown cherry stone, was sold to a Paris jeweler for 533,500 francs (\$102,965). The same afternoon a modest little pearl necklace brought about \$19,000, and a small watch \$21,000 plus several hundreds.

It was quite thrilling to hear the bidding. As the sale lasted a week we dropped in several times just to have a look. We saw two pearl studs sold for \$6,580, and a little brooch for about \$7,000. A small hand mirror decorated with brilliants which had belonged to Catherine the Second of Russia went for \$4,246. A diadem was snapped up for \$13,000 plus some hundreds, and a pair of ear-rings brought about \$20,000.

For a week or so no person talked of anything but the Lobanoff sale, and of the woman who had collected all these marvellous jewels.

Who was she?
 She was a Russian Princess closely related to the Imperial family of Russia. She was married at sixteen and—so the story goes—became a widow the same day and the possessor of untold wealth. Young, beautiful, rich and brilliant, she was naturally much admired, and lived a life so full of thrills and variety and interest that if written up it would make a most absorbing romance.

Having inexhaustible wealth at her command she began to collect works of arts and objects of historical interest, which she placed in her wonderful palace in Moscow—a palace reputed to be a veritable marvel of Slavic luxury and elegance. She had also a magnificent residence in Paris, a beautiful villa in Menton, in the French Riviera, and a charming villa in Vevey. It is owing to the latter fact that her history possesses so much interest for the people of this district, as she has resided in Vevey ever since the War.

She seldom appeared on the street in Vevey, but when she did everyone turned to look at her, and strangers asked, "Who is that remarkable looking woman?" She was tall and bulky and wore rather extraordinary clothes, very

time had in her employ a huge Cossack whose duty it was to take the dogs out walking on the peaceful streets of Vevey. The appearance of this war-like Russian was so terrifying that children fled at his approach, and as the town authorities objected to having an armed Russian parading the village streets, he was not allowed to appear in uniform.

During the War a pet dog of the Princess died, and she paid two thousand dollars to have it embalmed and sent back to Paris to be buried in the dog cemetery there. This, at a time when ordinary mortals were finding it hard to get enough food, caused considerable feeling against her. This may have been the same dog she took out in her carriage one day, adorned with a magnificent pearl necklace.

Another of her fads were wigs, of which she had about sixty.

Although blessed by nature with a plentiful supply of hair she preferred shop tresses of a golden color varied in tint to suit the time and the occasion. She had worn golden wigs for twenty years, and wore them up to the time of her death. There were wigs for outdoor wear, subdued in tone, and wigs for indoor wear more brilliant; there were wigs for morning, wigs for noon, wigs for evening, and, I suppose, wigs for going to bed in, although the last statement is mere supposition on my part. There were wigs for all sorts of occasions, public and private, big and little, formal or informal, those for real swell electric-light functions being as bright as sunbeams. Imagine this dazzling head-gear surmounted by a flashing tiara!

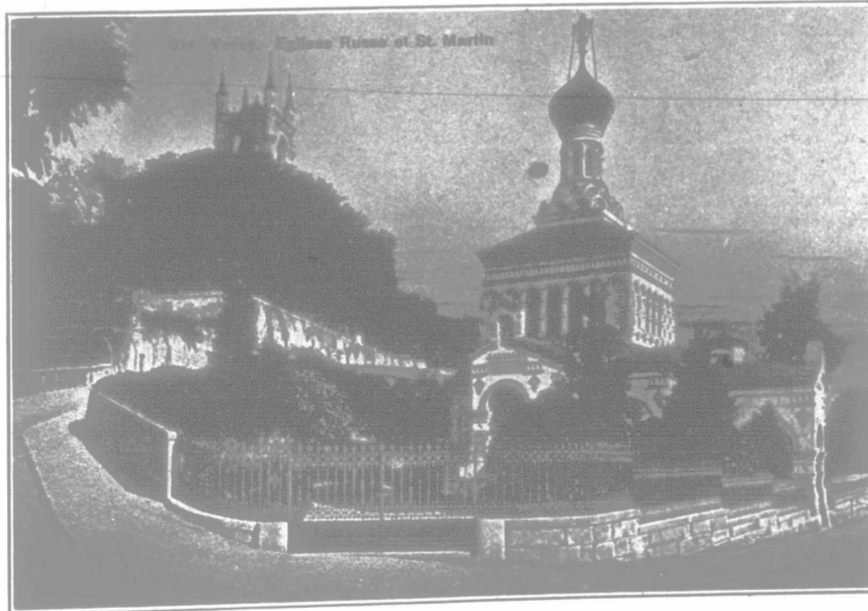
These wigs were all made in the same style and a special maid detailed to look after them. Although the Princess was a semi-invalid and spent half of the time in bed, she changed her wigs several times a day and had always beside her a hand-mirror in which to regard herself.

"What became of all those golden wigs?" I asked a Vevey hairdresser.

"They were all burned up," she said, her face assuming a mournful expression. "Wasn't it a shame! And such lovely hair—some of it cut from the heads of children—so fine and lovely."

The Princess having been in her early days a beauty, took great care of her complexion. It is said she washed her face daily with eggs, and followed it up by a milk bath, and massage and face cream and powder and rouge and all the rest of it, but probably did no more than many other semi-invalids with nothing to do. Some play Patience with cards; others try to preserve their vanishing beauty. It's all a matter of taste and vanity.

The other sensation was the marriage, in the beautiful little Russian church in Vevey, of an enormously rich American widow to an impoverished Greek Prince. The bride was Mrs. W. B. Leeds, widow of the multi-millionaire Tin-Plate King of the United States; the groom was Prince Christophore, youngest brother of ex-King Constantine of Greece. It is currently reported that Mrs. Leeds was worth forty millions, and that she settled twenty millions on the Prince before their marriage—a nice little sum which, if he is careful, will enable him to live in luxurious idleness, free from the cark of monetary cares for the rest of his days.



Russian Church, Vevey, Switzerland.

rich, but unlike the prevailing styles. She always wore a huge hat with a wide rim from which hung a veil reaching to her shoulders. She walked very slowly, and was always accompanied by her white-haired secretary—a Swiss, who has been her secretary and business manager for thirty-eight years.

She led a very secluded life, seldom leaving her private apartments, owing to a heart affection from which she suffered and which was eventually the cause of her death.

It is said she was very kind-hearted and generous, and did a tremendous lot for her unfortunate countrymen, but always in an unostentatious manner.

Strange stories are current here regarding her eccentricities.

She had a passion for dogs, and at one

The Prince is only thirty-two years old; his bride is fifteen years his senior.

Dame Gossip says that all this talk about its being a love-match is pure "bunkum," that it was simply a commercial transaction. The Prince yearned for money,—the widow yearned for a title. So he got the money and she became a Princess. Many Americans here express great disgust over the affair and absolutely refuse to believe there is any romance in it. One ardent American declared it was a crime, a positive crime to buy a Greek prince with good American dollars that should be used for American needs, and not gambled away in Europe. Some ladies expressed great scorn of the Princess-bride and wondered if she was quite right in the head. But the prevalent European view seemed to be that the Prince was a good business man and had made a good bargain.

Vevey probably never had such an influx of royalty as on the day of the wedding, which took place on a Sunday afternoon. The civil marriage took place in Geneva the day before. A line of 20 or 30 autos came whirling along from Montreux through the streets of Vevey to the Russian church which had been magnificently decorated for the occasion. The walls of the interior were completely hidden by white roses, and all the other floral decorations were white.—Must have cost a small fortune.

The royal family of Greece, with the exception of the ex-King Constantine and his wife, and the reigning king—were all present. The ex-King, who lives in Switzerland now, sent his special priest to perform the ceremony, which was all in Greek and lasted over an hour. During the ceremony crowns of gold were held over the heads of the bridal pair according to the Greek custom. These crowns were so heavy that the royal youths detailed to hold them up were soon exhausted and had to be replaced by other royal youths.

The bride, be it noted, wore a wonderful diamond tiara which had been purchased at the Lobanoff sale, and was reported to be the most magnificent one in Europe.

We stood on the pavement near the church and watched the bridal party filing out. In spite of their titles and royal blood and "swell" clothes they were an ordinary-looking lot, and had it not been for their names and their glittering jewels we would not have looked at them twice.

Your Health.

"MEDICUS."

Protein Requirements of Adult.

PROTEINS (meat, eggs, fish, cheese, curds, etc.) do not furnish much heat or energy. The hired man has the fixed delusion that he has to have meat three times a day, "something to stick to his ribs." This is all a mistake. Adults should only eat meat once a day. The man who works the hardest should be supplied with fats and carbohydrates (sugar, starch, etc.) What did we send to our boys in Flanders and France to take with them on their long marches? Was it meat extracts? It was candy, or, better yet, chocolates, because chocolates contain fat as well as sugar. The boys could do more work, stand more exposure and hardships, and go longer without food when supplied with chocolates than with any other food. The chief function of the proteins in adults is to replace the muscle or flesh used up in work, replace the "wear and tear" of the body. They supply little heat or energy. You can compare the proteins to the cylinder oil in your motor car. The oil reduces the "wear and tear" of the bearings, the gasoline furnishes the heat or energy. Which is used in greater quantity? Gasoline, of course. Some cars carry 20 or 30 gallons of gasoline and only a gallon or even less of oil. So with the hired man; his diet should consist largely of carbohydrates (sugar, starch, potatoes, rice, etc.) and fat, and meat not oftener than once a day. On the other hand the growing boy should have all the meat he wants.

The lumber-jack requires more heat and energy than the average workman, because he often works in zero weather and requires a lot of heat to keep him warm, and secondly he works hard. Let us look at his diet:—fat pork (which is perhaps 90 per cent, fat and 10 per cent, pork), beans (which contain about 23 per cent, protein as well as starch), and molasses

(which is almost wholly sugar, a carbohydrate).—So you see the man who works hardest lives largely on fats and carbohydrates together with a small proportion of protein.

"The boss" of the lumber camp knows his food chemistry. Meat is the most expensive part of any diet, and one of his many problems is to supply a suitable substitute that will be cheap. Beans and peas—the legumes—are very rich in protein. In fact, beans contain more protein than beefsteak. The lumber-jack gets part of his meat as fat pork (with a question mark after the pork sometimes) but the greater part as beans. And thus "the boss" beats the H. C. of L.

Too much meat for the adult is harmful. You can usually recognize the person who is very fond of meat to the exclusion, more or less, of other things. "Meat keeps up your strength."—But that is a snare and delusion. Excessive meat-eaters are usually not strong, easily tired. They are thin, have cold hands, are nervous. They complain of the cold. "They were not intended to live in a old country."

At one time it was taught that rheumatism was caused by uric acid, which comes from meat. This has been entirely disproven. Excessive meat does not cause rheumatism. Bright's disease was also blamed to an excessive meat diet, but some recent research studies at the University of Michigan has cast some doubt on this theory.

High blood pressure results from heavy meat eating. The relationship of cancer to a meat diet will be discussed at some later date. I might state here that, according to some recent investigations, cancers have been cured by diet alone.

Excessive meat diet is decidedly harmful to patients with goiter (Grave's Disease).

Making Poor Gardens Rich.

GARDEN soil must be at least fairly rich else it will give very poor results. Well-rotted manure, or fresh manure turned under in the fall so that it will mellow during winter, is the very best enricher, as it provides both plant-food and humus. Sometimes, however, so much manure is needed for the fields that there is a tendency on the part of the "men folk" to let the garden go without. This is very poor economy, since there is nothing that pays better, for both pleasure and health, than a good garden. When there is poor health, there is poorer work in the fields. Poor work means poor results, less money. Therefore the garden pays even from a financial standpoint. "Q. E. D."—See?

Certainly some of the stable manure should be saved for the kitchen garden. But the amount spared for it may be helped out in a variety of ways. Some people, for instance, use commercial fertilizers. They are helpful but rather expensive, so are passed over here in favor of other kinds that can be made at home. And perhaps this is the place to say that not an ounce of anything that can be turned into fertilizer should be wasted. There are many things that can be utilized in this way, and, while sparing more manure for the fields, will soon make a wonderful difference in the garden.

Among materials other than stable manure which may be put on poor garden to make it rich, is forest loam. A few loads of this put on each year will soon alter the character of a small garden very greatly.

It is not possible, however, for everyone to get forest loam easily, so the next best thing must be done: that is to add any material that will decay and so add humus to the soil. Green weeds, for instance, which sometimes persist in growing up in out-of-the-way corners, should never be permitted to shrivel up and dry out. If cut down and dug under they will disappear with amazing rapidity, and add humus and plant food to any soil with which they are mixed. Straw also decays rapidly. So do vegetable parings of all kinds, grass clippings, cobs and husks of green corn, all the various items roughly classified as garbage. True, on a farm most of these are fed at once to animals or hens; if not so used they should most certainly be dug under or go to the compost heap, for there is no fertilizer better for the soil.

The Compost Heap.

The compost heap may be made in any out-of-the-way corner of the garden,—all the better if it is screened by bushes, tall sunflowers, or vines. Dig a pit there, and into it throw all waste things that will rot. Pour water on occasionally, and add a very little lime from time to time to correct undue acidity. . . . A last point: *Be sure* to fit the pit with a close cover that will keep flies from breeding in the heap or feeding on it, and will also shut in any offensive odor that may be generated. In time the mass will be resolved into a fine black substance that may be wheeled off to the garden beds to be transformed into wonderful flowers or delicious radishes, lettuce, and other vegetables.

Leaves that fall on the lawn in autumn should never be burned. Rake them up and put them into little trenches made for the purpose in the garden; or pile them on the compost heap. Enough leaves are burned every fall to grow vast quantities of vegetables. As rotting always produces acids and tends to make the soil sour, if the leaves are dug under lime will have to be applied from time to time, but care must be taken not to put on too much, as that will "burn out" vegetation. A bushel or two of fine slacked lime scattered over an ordinary small garden once in 3 or 4 years will be sufficient.

Wood Ashes and Hen Manure.

A little wood ashes can very profitably be applied to soil when preparing the seed-bed. Also a little can be raked in as a top-dressing from time to time after the plants are well established. The secret of tender vegetables is rapid growth, and this will help. So will weak liquid manure applied when the soil is wet. Hen manure is a very powerful fertilizer. All hen-droppings should be gathered from the hen-house and kept perfectly dry. As they are so "strong" it is a good plan to pulverize them and mix them with several times as much dry earth, then apply about the plants or between the rows as a top-dressing, working the mixture in carefully so that the roots of the plants will not be injured by the rake or other implement used.

Remember always that the way to make poor garden soil rich is to keep constantly adding decaying material to it, and constantly cultivating it. Make a deep rich seed-bed, keep enriching it from year to year, and during the summer employ frequent surface cultivation to conserve the moisture and keep it about the roots of the plants, where it should be.

The Women's Institute and the School.

The trend of activities of the Women's Institutes in rural districts show that many of them are filling the same purposes in the country as the Home and School clubs in the cities.

Seymour West Institute meets the children and teachers at the school for social afternoons, and at these gatherings they discuss plans for improvements. Last fall the teacher asked the Institute members to bring home suggestions from the annual convention. As a result they now have folk dancing in the school.

Wicklow Institute has three schools in its district, and they have formed three Progress committees. During the war the women helped the children to make scrap books for the soldiers and to do other "war work." One of their interests just now is the distributing of seeds and plants for school gardening. At Christmas time they gave the school a homemade candy treat.

Moose Hill Institute has formed a sewing class for the girls, teaching them not only the fundamental stitches, but how to cut, fit and put garments together.

Fisherville supplied three schools, an average of sixty pupils a day, with hot cocoa for their noon lunch through the months of January, February and March.

Shelden has interviewed the school board with the purpose of getting better drinking water and sanitary arrangements for the school.

Carp has taken the matter of having the pupils supervised at the noon hour. They have also arranged to have a local doctor and a dentist give the school a regular medical and dental inspection.

Walton Institute has been instrumental in putting two women on the school board. They started the school fair in

the section, planted trees and shrubs on the school grounds on Arbor Day, and have asked their county Agricultural Representative to show the moving picture films on Medical Inspection. They are working for a consolidated school.

Madoc Institute has already voted \$100 toward a school nurse, whom they hope to have in the district next year.

Reabro has installed a swing and other playground equipment on the school grounds.

Paisley assisted the school in buying a piano and has had wash basins installed in the school. Ripley Institute and Holyrood each have supplied the school with basins and sanitary towels.

Conmee at Kakabeka Falls bought an organ for each of two schools in the district and had water tanks, curtains, reflector lamps and dishes put in each school.

Tyrone has supplied a drinking fountain and a First Aid kit to each of the three schools in the district.

Erindale Institute used its influence to have a second teacher engaged in the school, also to have good drinking water provided and a dependable caretaker employed.

Port Colborne has provided First Aid kits for each of twelve school rooms.

Appin held a social evening in the town hall and invited teachers and trustees from three schools to discuss medical inspection and hot lunches.

Upper Hamilton presented the school with a flag, and with two shields for annual competition in general school work.

Cottam has organized a Sports Club, and has arranged for a tennis court, basketball, etc.

Elphin and Trafalgar have installed drinking fountains in all their schools in their districts. Trafalgar also has arranged a sewing contest for the girls.

Thomasburg Institute had the school redecorated last summer at a cost of \$175. They raised the money by giving a play. Codrington gave \$25 for prizes to each school fair in the district.

Port Dover and Ayton have each provided their schools with playground outfits.

The Fashions.

How to Order Patterns.

Order by number, giving age or measurement as required, and allowing at least ten days to receive pattern. Also state in which issue pattern appeared. Address Fashion Department, The Farmer's Advocate and Home Magazine, London, Ont. Be sure to sign your name when ordering patterns. Many forget to do this.

POSITIVELY NO PATTERNS WILL BE SUPPLIED EXCEPT THOSE ILLUSTRATED.

When ordering, please use this form:—
Send the following pattern to:

Name.....

Post Office.....

County.....

Province.....

Number of Pattern.....

Age (child or misses' pattern).....

Measurement—Waist..... Bust.....

Date of issue in which pattern appeared.....

3184. Child's Dress.

Cut in 4 sizes: 4, 6, 8 and 10 years. A 6 year size will require 3 yards of 36-inch material. Price 10 cents.

3177-3164. A Stylish Costume.

Waist 3177 cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Skirt 3164 cut in 7 sizes: 24, 26, 28, 30, 32, 34 and 36 inches waist measure. To make the costume for a medium size will require 7¾ yards of 38-inch material. The width of skirt at its lower edge is 1¾ yard. TWO separate patterns 10 cents FOR EACH pattern.

3186. Girl's Dress.

Cut in 4 sizes: 8, 10, 12 and 14 years. A 12-year size will require 3¼ yards of 44-inch material. Price 10 cents.

3183. A Dainty "Lingerie" Garment.

Cut in 4 sizes: small, 32-34; medium, 36-38; large, 40-42; and extra large, 44-46 inches bust measure. A medium size will require 5¼ yards of 36-inch material. Price 10 cents.

2976. A Boy.

Cut in 4 sizes: 4, 6, 8 and 10 years. Size 4 requires 1½ yards of material. Price 10 cents.

3163. A Girl's Dress.

Cut in 7 sizes: 7, 8, 9, 10, 11, 12 and 14 years. The width at lower edge is 1¾ yard. Price 10 cents.

3170. Juniors' Dress.

Cut in 3 sizes: 10, 12 and 14 years. Size 16 will require 3 yards of material. Price 10 cents.

3160. Ladies' Dress.

Cut in 7 sizes: 36, 38, 40, 42, 44, 46 and 48 inches bust measure. The width at lower edge is 1¾ yard. Price 10 cents.

3173. Boy's Dress.

Cut in 4 sizes: 4, 6, 8 and 10 years. A 10-year size will require 44-inch material. Price 10 cents.

2974. A Girl's Dress.

Cut in 4 sizes: 4, 6, 8 and 10 years. Size 4 requires 36-38 inches bust measure. The width at lower edge is 1¾ yard. Price 10 cents.

2789. Child's Dress.

Cut in 5 sizes: 4, 6, 8, 10 and 12 years. Size 4 requires 1 yard, for 6 years 1¼ yards, for 8 years 1½ yards, for 10 years 1¾ yards, for 12 years 2¼ yards. Price 10 cents.

3156. Princess's Dress.

Cut in 4 sizes: 4, 6, 8 and 10 years. Size 4 requires 36-38 inches bust measure. The width at lower edge is 1¾ yard. Price 10 cents.

3177. A Girl's Dress.

Cut in 4 sizes: 4, 6, 8 and 10 years. Size 4 requires 36-38 inches bust measure. The width at lower edge is 1¾ yard. Price 10 cents.

3177. A Girl's Dress.

Cut in 4 sizes: 4, 6, 8 and 10 years. Size 4 requires 36-38 inches bust measure. The width at lower edge is 1¾ yard. Price 10 cents.

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3177. A Girl's Dress.

Cut in 4 sizes: 4, 6, 8 and 10 years. Size 4 requires 36-38 inches bust measure. The width at lower edge is 1¾ yard. Price 10 cents.

2976. A Practical Suit for the Small Boy. Cut in 4 sizes: 3, 4, 5 and 6 years. Size 4 requires 2 1/4 yards of 44-inch material. Price 10 cents.

3163. A Pretty Gown. Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 will require 7 5/8 yards of 38-inch material. The width at lower edge of skirt is 1 3/4 yards. Price 10 cents.

3170. Junior's Dress. Cut in 3 sizes: 12, 14 and 16 years. Size 16 will require 4 3/4 yards of 36-inch material. Price 10 cents.

3160. Ladies' House Dress. Cut in 7 sizes: 36, 38, 40, 42, 44, 46 and 48 inches bust measure. For a medium size, 6 yards will be required of 36 inch material. The width of the skirt at lower edge is about 2 yards. Price 10 cents.

3173. Boy's Suit. Cut in 4 sizes: 4, 6, 8 and 10 years. A 10-year size will require 2 3/4 yards of 44-inch material. Price 10 cents.

2974. A Good Work Apron. Cut in 4 sizes: Small, 32-34; medium, 36-38; large, 40-42; and extra large, 44-46 inches bust measure. Size 38 will require 5 5/8 yards of 36-inch material. Price 10 cents.

2789. Child's Set of Short Clothes. Cut in 5 sizes: 6 months, 1, 2, 3 and 4 years. Size 2 will require for drawers, 1 yard, for petticoat 1 7/8 yards, for dress 2 1/4 yards, of 36-inch material. Price, 10 cents.

3156. Pretty Lounging Robe. Cut in 4 sizes: Small, 32-34; medium,

36-38; large, 40-42; and extra large, 44-46 inches bust measure. A medium size will require 5 5/8 yards of 36-inch material. Price, 10 cents.

3182. Girl's Dress. Cut in 4 sizes: 6, 8, 10 and 12 years. An 8-year size would require 1 7/8 yards of material 27 inches wide for the gümpe, and 2 1/2 yards for the skirt. Price, 10 cents.

3157. Misses Dress. Cut in 3 sizes: 16, 18 and 20 years. Size 18 will require 4 3/8 yards of 44-inch material. The width of skirt at its lower edge, is about 1 3/4 yards. Price, 10 cents.

3167. Child's Dress. Cut in 4 sizes: 4, 6, 8 and 10 years. Size 8 will require 3 5/8 yards of 27-inch material. Price 10 cents.

3162-3181. A Becoming Business Costume. Waist 3162 cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Skirt 3181 cut in 7 sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure. The width of the skirt at lower edge is 1 3/4 yards. It will require 3 1/2 yards of 40-inch material. The waist will require 3 yards of 36-inch material. TWO separate patterns 10 cents FOR EACH pattern.

2488. Dress for Misses and Small Women. Cut in 3 sizes: 16, 18 and 20 years. Size 18 requires 5 yards of 36-inch material. The skirt measures about 1 7/8 yards at the foot. Price, 10 cents.

3172. Girl's Dress. Cut in 4 sizes: 8, 10 12 and 14 years. A 12-year size will require 4 1/2 yards 36-inch material. Price 10 cents.

3161. A Handy Apron. Cut in 4 sizes: Small, 32-34; medium, 36-38; large, 40-42; and extra large, 44-46 inches bust measure. For a medium size 4 1/4 yards of 36-inch material will be required. Price 10 cents.

3171. Child's Play Garment. Cut in 5 sizes: 1, 2, 3, 4 and 5 years. A 4-year size will require 2 3/8 yards of 36-inch material. Price 10 cents.

3175-3174. A Pretty Costume. Waist 3175 cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Skirt, 3174 cut in 7 sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure. The width of the skirt at lower edge is 1 3/4 yards. For the entire dress in a medium size 6 1/4 yards of 36-inch material will be required. TWO separate patterns 10 cents FOR EACH pattern.

3185. Girl's Dress. Cut in 4 sizes: 4, 6, 8 and 10 years. For a 6-year size, 2 3/8 yards of 42-inch material will be required. Price, 10 cents.

2800. A Comfortable Breakfast Costume. Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires 4 5/8 yards of 38-inch material. Width of skirt at lower edge, is about 2 yards. Price, 10 cents.

3165. Child's Night Dress. Cut in 5 sizes: 1, 2, 3, 4 and 5 years. A 4-year size will require 3 1/8 yards of 27-inch material. Price, 10 cents.

3169. Ladies' Dress. Cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. A medium size will require 6 3/4 yards of 40-inch material. Width of skirt at lower edge, is 1 3/4 yards. Price, 10 cents.

3159. Girl's Dress. Cut in 4 sizes: 2, 4, 6 and 8 years. For a 6-year size 3 1/2 yards of 27-inch material will be required. Price, 10 cents.

3178. A Simple House Dress. Cut in 7 sizes: 34, 36, 38, 40, 42, 44, 46 inches bust measure. A 38-inch size will require 6 yards of 36-inch material. Width of skirt at lower edge is 2 yards. Price, 10 cents.

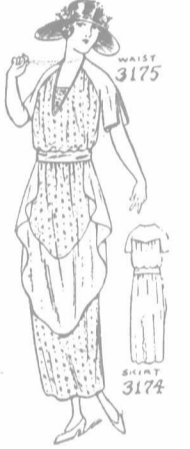
3180. Girl's Dress. Cut in 4 sizes: 8, 10 12, and 14 years. For a 10-year size it will require 3 1/4 yards of 42-inch material. Price, 10 cents.

3166. Misses' Dress. Cut in 3 sizes: 16, 18, and 20 years. Size 18 will require 5 1/8 yards of 36-inch material. The width of skirt at lower edge is 1 5/8 yards. Price, 10 cents.

2969. Child's Play Dress. Cut in 5 sizes: 2, 4, 6, 8 and 10 years. Size 6 requires 2 yards of 36-inch material. Price, 10 cents.

3168. An "Easy to Make" Apron. Cut in 4 sizes: Small, 32-34; medium, 36-38; large, 40-42; and extra large, 44-46 inches bust measure. For a medium size 5 1/2 yards of 27-inch material, will be required. Price, 10 cents.

2808. Girls' Dress. Cut in 4 sizes: 6, 8, 10 and 12 years. Size 8 requires 3 1/2 yards of 27-inch material for the dress, and 3/4 yard for the bolero. Price, 10 cents.



and trees and shrubs on s on Arbor Day, and county Agricultural how the moving picture inspection. They are solidated school. has already voted \$100 rse, whom they hope ict next year. staled a swing and quipment on the school he school in buying a wash basins installed Ripley Institute and supplied the school itary towels. beka Falls bought an two schools in the di- r tanks, curtains, re- dishes put in each ed a drinking fountain to each of the three ct. e used its influence to cher engaged in the good drinking water dependable caretaker as provided First Aid ve school rooms. social evening in the invited teachers and e schools to discuss and hot lunches. presented the school with two shields for n in general school nized a Sports Club, for a tennis court, falgar have installed in all their schools in Trafalgar also has ontest for the girls. itute had the school mer at a cost of \$175. ney by giving a play. \$25 for prizes to each strict. Ayton have each pro- s with playground

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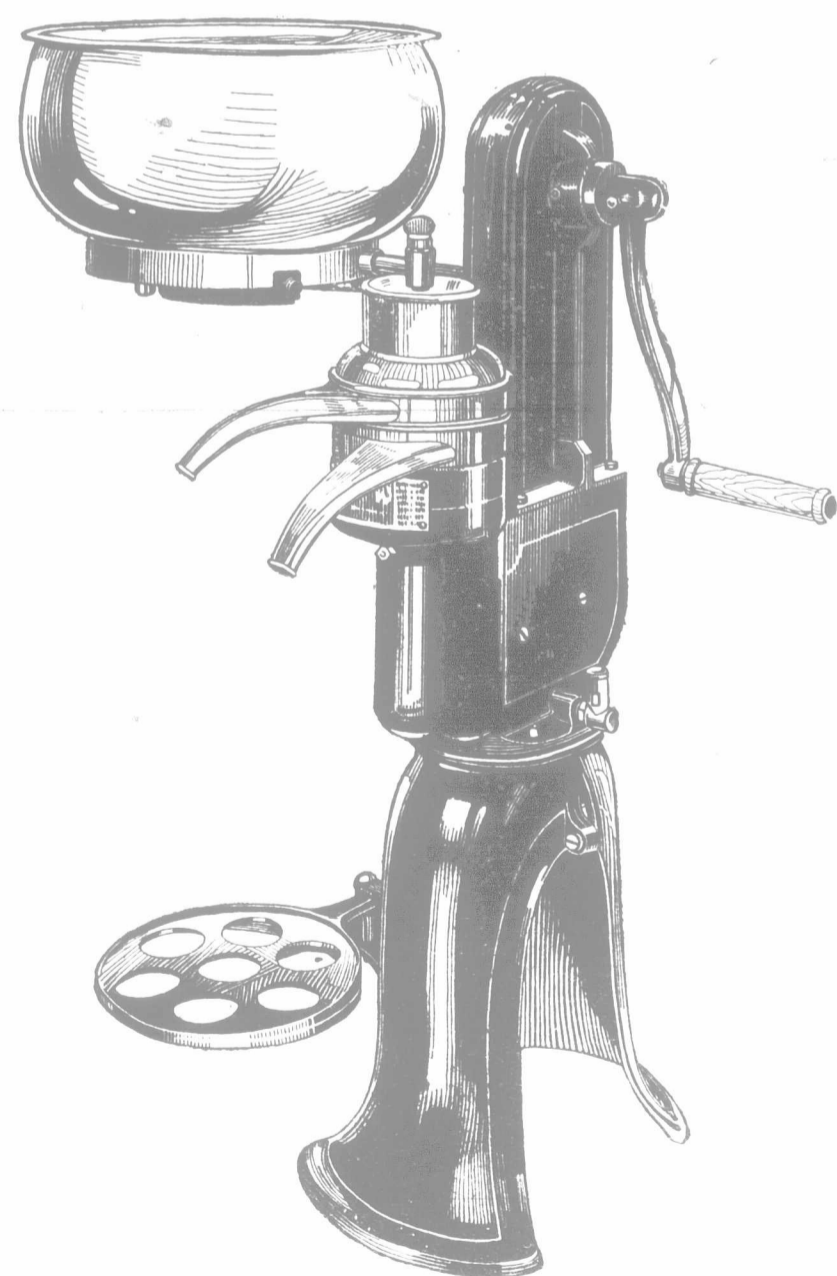
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0, 12 and 14 years. require 3 1/4 yards of ice 10 cents. Lingerie" Garment. all, 32-34; medium, and extra large, easure. A medium 4 yards of 36-inch ents.



No Cream Lost on This Farm!



THIS farmer owns a Renfrew Cream Separator. That means that he gets absolutely full value for his milk, cream and butter. There is no possibility of a loss.

The Renfrew—widely known as the closest skimming separator—gets 99.99 per cent. of the butter-fat! That has been proved by the Government Dairy School tests. It is a truly remarkable achievement, and is an unsurpassed record.

It is obvious that such close skimming means bigger profits to the owner of a Renfrew.

Furthermore, it is a hard, steady worker. A Renfrew owner never worries about a breakdown, or breakage of any part.

It Is Sturdily Built

and will last a life-time. Year in, year out, it will toil steadily along, never causing trouble.

It is made throughout of the highest grade material, accurately manufactured and very carefully fitted. The patented clutch, for example, enables the gears to stop while the bowl is running down. That prolongs its life. From the standpoint of durability and cost per year of service its owners estimate that it is a 33 1/3% better investment than an ordinary separator.

Self-Oiling System

The working parts of the Renfrew are enclosed in an oil-tight, dust-proof housing. No oil can escape to drip down the spouts or on the floor, and the oiled parts run silently and smoothly. Four times a year it is necessary to replenish the Renfrew's oil supply. Think how clean and easy-running it is.

It is Easily Cleaned

The wide open bowl and smooth-polished steel discs are very easily scalded and rinsed.

The crank is high—just in the right place to make it comfortable to operate.

Because of the anti-splash milk-can, the milk cannot splash out. The can is low—that means fewer backaches. That is a point much appreciated by women. Users of the Renfrew get

Firmer; Better Butter

and more of it, because of the exclusive, wide open bowl with the curved wing centre-piece. The milk is distributed to the discs in thin, even sheets. The fat globules go through unbroken.

One Renfrew user wrote us recently to say that he passed sour and curdled milk through his separator, and got 2 1/2 pounds of butter from it, and that he thought it got all the butter-fat there was in it.

It was invented by a Canadian, is made in Canada by Canadian workmen, and Canadian money finances its production.

Write us for catalogue, tests, and other particulars.

The Renfrew Machinery Company, Limited

Branches:—Montreal, P.Q.; Sussex, N.B.
Milwaukee, U.S.A.

Head Office and Works: Renfrew, Ont.

Other Lines: Renfrew Handy Two-Wheel Truck Scale
Happy Farmer Tractor, Renfrew Oil Engine.

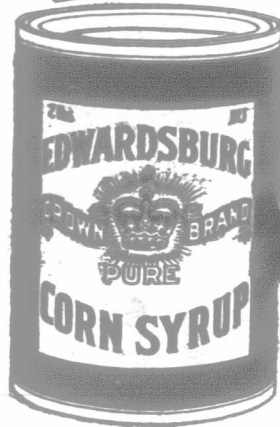


As a ready-made sauce

EVERY little now and then one's appetite gets balky—it demands something light yet tasty, palatable but nutritious. Blanc Mange, Custard, Cereal or Corn Starch pudding just fills the bill—when enhanced with **CROWN BRAND Syrup**. It's the convenient golden sauce—ready-made.

"The Great Sweetener" adds that tastiness, that dash of flavor without which such dishes are insipid. Every meal is a new opportunity for "The Great Sweetener."

Aunt Mary



In 2, 5 and 10 pound Tins

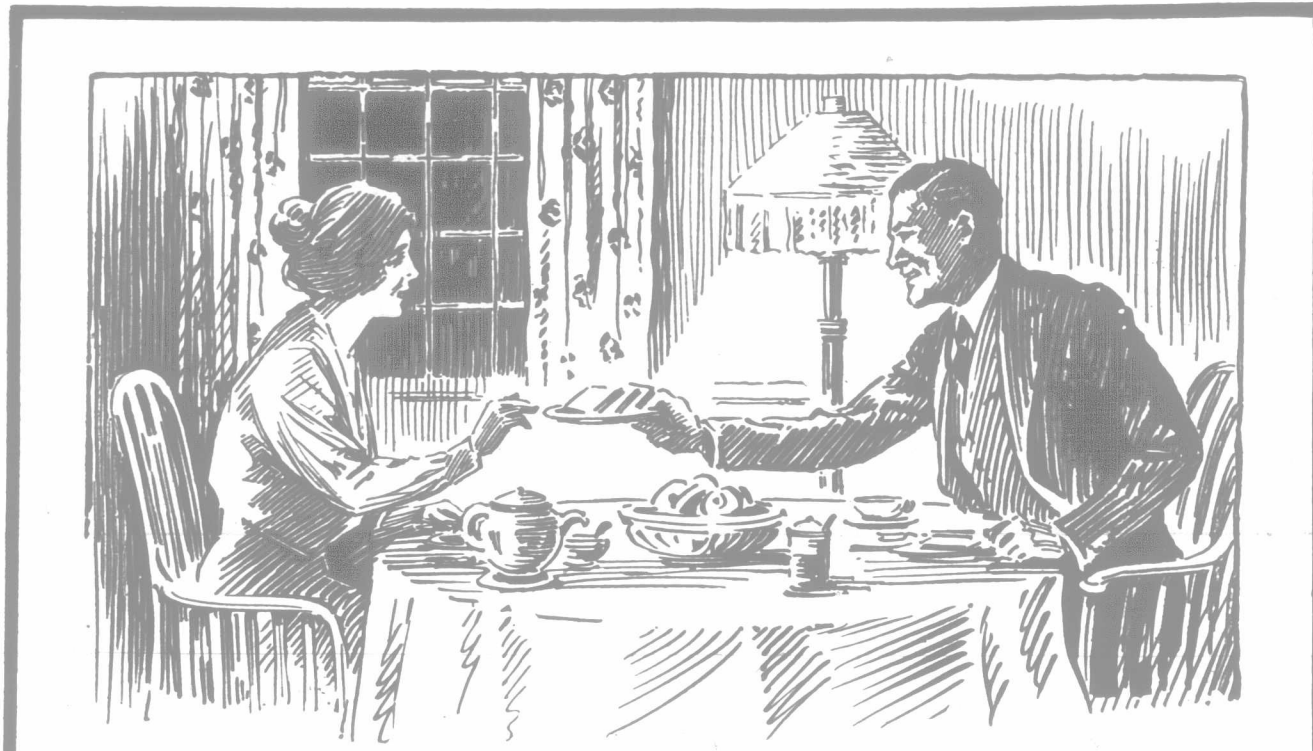
If you have not yet discovered "The Great Sweetener," if you have used CROWN BRAND Syrup only as a spread for Bread or Griddle Cakes, try it now as the convenient, ready-made sauce for dainty desserts.

THE CANADA STARCH CO., LIMITED
MONTREAL

Manufacturers of "LILY WHITE" Syrup,
BENSON'S Corn Starch, and MAZOLA Oil for cooking and salads

Crown Brand Syrup

for Cooking, Baking, Candy-making



But He Was Wrong

"Say! This is great bread. Did your Mother send it over, Mary?"

No! Indeed, she did not! Baked it myself this morning.

"It's exactly like your Mother's. You'd better cut another plateful, dear. Some bread!"

"Thank you, Jimmie. It is good, isn't it? It's the flour that makes this bread so good. It is perfectly wonderful!"

"Why, what is this wonder flour?"

"Mother's old favorite—"

Extra strong in gluten—the invisible part of the wheat berry that does such a lot in producing good bread, and milled from the best hard wheat in the cleanest modern mills. Cream of the West flour will make the finest flavored, bulgiest loaves imaginable.

Cream of the West Flour

The Campbell Flour Mills Co., Limited
affiliated with
Maple Leaf Milling Co., Limited
Toronto and Winnipeg



When writing advertisers will you kindly mention The Farmer's Advocate

Hope's Quiet Hour.

Unseen Yet Known.

Jesus saith unto him, Thomas, because thou hast seen Me, thou hast believed; blessed are they that have not seen, and yet have believed.—S. John 20:29.

On Easter Day, in the early morning, the beloved disciple stood in wondering awe within an empty tomb. He saw no vision, only the linen cloths which had been wound round and round the body of his Master. They were undisturbed, showing that no one had removed them, but rather that the Risen Jesus had passed mysteriously through their folds. S. John did not have any special revelation on that Day. Mary, weeping at the sepulchre, saw the Lord alone. He appeared to the other women and to S. Peter. Two other disciples walked and talked with Him that afternoon. The following Sunday He revealed Himself with special emphasis to the Apostle who had refused belief in the Resurrection. But the Apostle who was especially loved by Christ was not singled out for any special revelation. His was the greater privilege of walking by faith instead of sight. His was the blessedness of believing though he did not see.

Our Lord was very patient with the doubts of the discouraged but loyal-hearted S. Thomas; and yet there was a gentle rebuke in the words of our text. The man who loved his Master wholeheartedly was not left in the darkness of uncertainty, but the friend who not only loved but believed—without waiting for visible proof—was more "blessed."

In these days men and women are tremendously interested in the secret life beyond the Veil of death. They rush in great multitudes to consult professed "mediums". They seem quite convinced that it would be a far more blessed thing to believe in the survival of those who have passed out of sight, because they have "seen" then, than to be like S. John, who believed that Christ was risen before he saw Him.

With loving earnestness the Risen Jesus tried to convince His terrified friends that He was really in their midst. They thought they saw an Apparition—an unclothed Spirit—so He showed them the pierced hands and feet, asked them to handle Him and feel that He had real flesh and bones. Then He asked for food—asked in order to convince their troubled hearts—and did eat in their sight. But we can fancy the smile given to the friend who did not require outward and tangible proof, the disciple who believed in his living Lord before he saw Him.

It was the Great Teacher Himself who declared—through Abraham—that men who refused to hear Moses and the prophets would not be persuaded though one should rise from the dead.

S. Thomas refused to believe without unmistakable proof. He wanted his Lord to conquer death; but it seemed a thing incredible—too good to be true—that He who had died should still be alive.

We are amazed and incredulous when we stand beside the Cross. If the Father be just, loving and All-mighty, how is it that He does not send legions of angels to rescue His holy and beloved Son? The Cross seems to us too bad to be true. We can't understand it when we see a loyal friend of God tortured in body or soul. Pain,—the undeserved agony of the innocent,—is hard to reconcile with the love and power of our Father—God.

But the triumph over death is different. Instinctively we feel that it should be! If Death could hold Life prisoner, then we should fear that the Judge of all the earth had been as unrighteous as Pilate.

If you have a splendid friend who has been accused of a dreadful crime, and you are sure in your inmost heart that he could not have committed it, then you do not need proof (outward and visible proof) of his innocence. You do not even need his own assertion of "Not Guilty." The people who do not know his heart of gold may need clear proof, but you can give him the joy of knowing that you still believe in him, in spite of circumstantial evidence which seems strong against him. You are "blessed," for your confidence in him is unshaken.

So, if we have real faith in the love and power of God, we know that the death of a dear friend is not the end. "While there is life there is hope," is true enough.

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APRIL 22, 1920



COOKERY COLUMN.

COCOA BISCUIT

- 2 cups flour
- 4 teaspoons baking powder
- 1/4 teaspoon salt
- 2 tablespoons sugar
- 4 tablespoons Cowan Cocoa
- 3 tablespoons butter
- 2/3 cup milk

1. Mix and sift dry ingredients.
2. Rub in the butter with the tips of the fingers.
3. Add milk gradually, mixing to a soft dough.
4. Toss on floured board.
5. Roll lightly to one-half inch in thickness, cut into small biscuits.
6. Bake in a hot oven 12 to 15 minutes.



Send for recipe booklet to THE COWAN COMPANY LIMITED TORONTO

PIMPLES ITCHED AND BURNED

Face Was Badly Disfigured. Cuticura Soap and Ointment Healed.

"Small red pimples and black-heads began on my face and my face was badly disfigured. Some of the pimples festered while others scaled over and there were places where the pimples were in blotches. They used to itch and burn terribly. I saw an advertisement for Cuticura and I tried them. They stopped the itching and burning and I used four cakes of Soap and three boxes of Ointment which healed me." (Signed) Miss V. A. Hayne, Stormont, N. S., Dec. 26, '18.

Soap 25c, Ointment 25 and 50c. Sold throughout the Dominion. Canadian Depot: Lyman, Limited, St. Paul St., Montreal. Cuticura Soap shaves without mug.

Day-Old Chicks

Strong and vigorous, the kind that live and grow. Our strains are the best. Leghorns are Gillispie and Oldham Farm stock; Wyandottes, Martins; R. I. Reds, Footman; Barred Rocks, O. A. C., and Anconas, Sheppard's. 50,000 is our capacity for this season. Write for catalogue and price lists. We guarantee safe arrival.

QUEEN CITY HATCHERY
Lansdown Crescent and Danforth Ave., Toronto, Ontario

When writing please mention Advocate.

But there is still life, and therefore we still have hope, even when one we love has moved forward and left the cold body—(like the grave-cloths of Christ)—empty in our sight. Like S. John we see the empty dwelling deserted by the living spirit, and "believe" still.

When our Lord raised to life again the son of the widow of Nain, it was because He "had compassion on her." It was for the same reason, we can hardly doubt, that He raised the little daughter of Jairus and His friend Lazarus—because He had compassion on their bereaved relatives.

Were they glad to return to this life, I wonder! If you were allowed to question one who had passed through "the little golden gate that opens into Paradise," perhaps you would hesitate before you asked God to send that freed soul back into this world of pain and sorrow.

As you can't see, then you can rise to the blessedness of believing in the dark. You can believe in the love of One who cannot make a mistake. You can refuse in utter scorn, to believe that Death is stronger than Love, or that God is helpless in His own world.

A few hours before His death our Lord spoke of that event as a passing incident. He made His plans for the future, as if death were nothing more than a short night's rest. With serene indifference to the great enemy, He made His appointment with the disciples, saying: "After I am risen again, I will go before you into Galilee."—S. Matt. 26:32.

Death did not discourage His plan, for the Easter message, given by an angel to the women to deliver to the disciples was: "Behold, He goeth before you into Galilee; there shall ye see Him."

As they ran to bring the disciples word they were met by the Lord Himself, who gave them the same message: "Go tell my brethren that they go into Galilee, and there shall they see Me."

The light of Easter Day was not to be permitted to die out. It was not a festive illumination but the rising of the Sun—the light of common days. Day after day, as we live the outwardly commonplace life (the unexciting life in Galilee) the unseen Christ walks beside us, filling our hearts with mysterious gladness.

It is the unseen life that makes all the difference between two women who "grind together at the mill," or sit together at the same table. Two men may be working in the same field; and one day may see only the earth and sky, while the other rejoices in the continual presence of of the Friend Who has said: "I will love him, and will manifest myself to him."

In the rush of city life He might be forgotten by the disciples, but Galilee was their home, as it had been His for years. Evidently He was confident of returning after death to His old home. And yet there are people who seem to think they are nearer departed friends in the cemetery than in the home! Why should we seek the living among the dead? Why should we only believe when we see signs and wonders, and hear strange words spoken by mediums?

There is nothing unnatural or uncanny about our Christian religion. Each heart must live an unseen life, which is veiled from the closest earthly friend; and each heart needs the perfect sympathy which Christ offers unreservedly to His friends. He is always ready to accept the invitation of penitent sinners, and to invite them to be His guests at His table.

When an earthly king visits a place he makes his abode with the rich and the famous. But the King of Kings chooses His friends for real and unseen wealth, and is glad to break bread with the poorest person who really wants Him. Bethlehem and Nazareth were little and despised yet into them came forth One Who should be the "Ruler in Israel; whose goings forth are from of old, from everlasting."

DORA FARNCOMB.

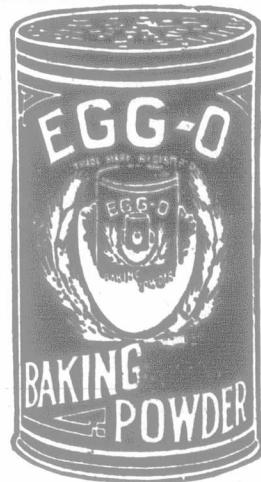
The Sheik-ul-Islam at Constantinople has appealed to all Moslems urging them to a holy war upon Kemal Pasha and his nationalists, who have set up a Government at Angora. The Sultan, Mehmed VI of Turkey, is throwing all his power against the nationalists. During the week fighting has taken place between the forces of Kemal and the surviving Armenians besieged at Hadjin. Armenians are reported to be fighting the nationalists also at Hassan Beyley and at Ekbej.

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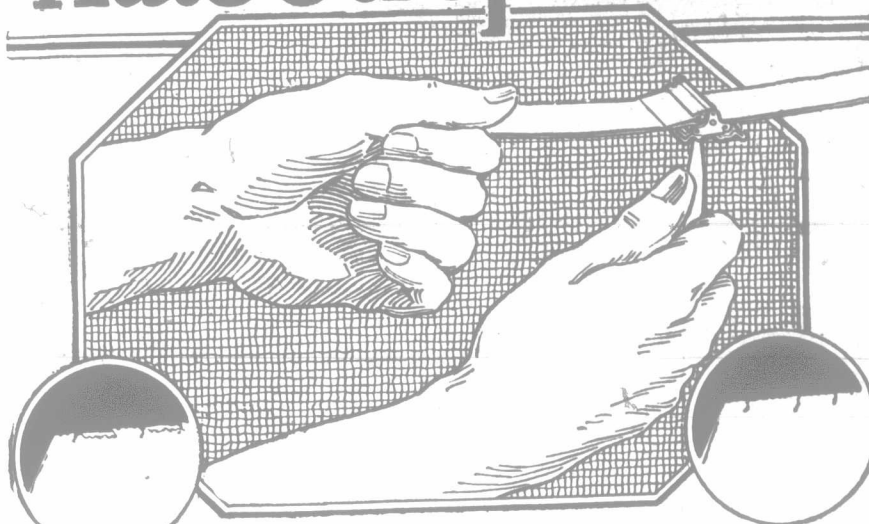


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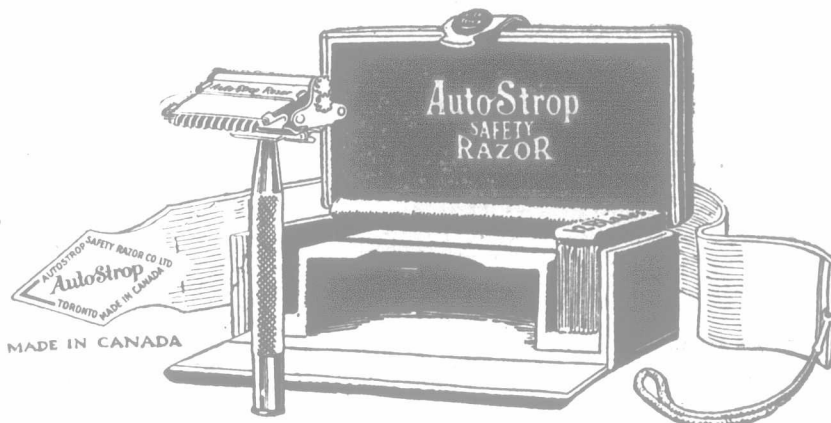
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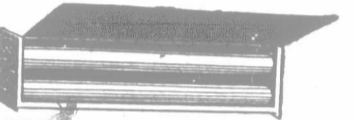
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Serial Story

"His Family."

BY ERNEST POOLE.

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CHAPTER XXXIV.

But the quiet was dark to Roger now. Each night he spent in his study alone, for instinctively he felt the need of being by himself for a while, of keeping away from his children—out of whose lives he divined that other events would soon come forth to use up the last of the strength that was in him.

And Roger grew angry with the world. Why couldn't it let a man alone, an old man in a silent house alive for him with memories? Repeatedly in such hours his mind would go groping backward into the years behind him. What a long and winding road, half buried in the jungle, dim, almost impenetrable, made up of millions of small events, small worries, plans and dazzling dreams, with which his days had all been filled. But the more he recalled the more certain he grew that he was right. Life had never been like this! The world had never come smashing into his house, his very family, with its dirty teeming tenements, its schools, its prisons, electric chairs, its feverish rush for money, its luxuries, its scandals. These things had existed in the world, but remote and never real, mere things which he had read about. War? Did he not remember wars that had come and gone in Europe? But they hadn't come into his home like this, first making him poor when he needed money for Edith and her children, then plunging Deborah into a struggle which might very probably ruin her life, and now taking Laura and filling her mind with thoughts of pagan living. Why was every man, woman and child, these days, bound up in the whole life of the world? What would come of it all? A new day out of this deafening night? Maybe so. But for him it would come too late.

"What have I left to live for?" One night with a sigh he went to his desk, lit a cigar and laid his hand upon a pile of letters which had been mounting steadily. It was made up of Laura's bills, the ones she had not remembered. Send them after her to Rome for that Italian fellow to pay? No, it could not be thought of. Roger turned to his dwindling bank account. He was not yet making money, he was still losing a little each week. But he would not cut expenses. To the few who were left in his employ, to be turned away would mean dire need. And angrily he determined that they should not starve to pay Laura's bills. "The world for the strong, eh? Not in my office!" In Rome or Berlin or Vienna, all right! But not over here!

Grimly, when he had made out the checks, Roger eyed his balance. By spring he would be penniless. And he had no one to turn to now, no rich young son-in-law who could aid.

He set himself doggedly to the task of forcing up his business, and meanwhile in the evenings he tried with Edith to get back upon their former footing. To do this was not easy at first, for his bitterness still rankled deep. "When you were in trouble I took you in, but when she was in trouble you turned her out, as you turned out John before her." In the room again vacated, young George had been reinstated. One night Edith found her father there looking in through the open doorway, and the look on his massive face was hard.

"Better have the room disinfected again," he muttered when he saw her. He turned and went slowly down the stairs. And she was late for dinner that night.

But Edith had her children. And as he watched her night by night hearing their lessons patiently, reading them fairy stories and holding them smilingly in her arms, the old appeal of her motherhood regained its hold upon him. One evening when the clock struck nine, putting down his paper he suggested gruffly,

"Well, daughter, how about some chess?"

Edith flushed a little. "Why, yes, dear, I'd be glad to." She rose and went to get the board. So the games were resumed, and part at least of their old affection came to life.

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But only a part. It could never be quite the same again.

And though he saw little of Deborah, slowly, almost unawares to them both, she assumed the old place she had had in his home—as the one who had been right here in the house through all the years since her mother had died, the one who had helped and never asked help, keeping her own troubles to herself. He fell back into his habit of going before dinner to his daughter's bedroom door to ask whether she would be home that night. At one such time, getting no response and thinking Deborah was not there, he opened the door part way to make sure. And he saw her at her dresser, staring at herself in the glass, rigid as though in a trance. Later in the dining room he heard her step upon the stairs. She came in quietly and sat down; and as soon as dinner was over, she said her good-nights and left the house. But when she came home at midnight, he was waiting up for her. He had foraged in the kitchen, and on his study table he had set out some supper. While she sat there eating, her father watched her from his chair.

"Things going badly in school?" he inquired.

"Yes," she replied. There was silence.

"What's wrong?"

"To-night we had a line of mothers reaching out into the street. They had come for food and coal—but we had to send most of them home empty-handed. Some of them cried—and one of them fainted. She's to have a baby soon."

"Can't you get any money uptown?" he asked.

"I have," she answered grimly. "I've been a beggar—heaven knows—on every friend I can think of. And I've kept a press agent hard at work trying to make the public see that Belgium is right here in New York." She stopped and went on with her supper. "But it's a bad time for work like mine," she continued presently. "If we're to keep it going we must above all keep it cheap. That's the keynote these days, keep everything cheap—at any cost—so that men can expensively kill one another." Her voice had a bitter ring to it. "You try to talk peace and they bowl you over, with facts on the need of preparedness—for the defence of your country. And that doesn't appeal to me very much. I want a bigger preparedness—for the defence of the whole world—for democracy, and human rights, no matter who the people are! I'd like to train every child to that!"

"What do you mean?" her father asked.

"To teach him what his life can be!" she replied in a hard quivering tone.

"A fight? Oh yes! So long as he lives—and even with guns if it must be so! But a fight for all the people on earth!—and a world so full of happy lives that men will think hard—before ever again letting themselves be led by the nose—into war and death—for a place in the sun!" She rose from her chair, with a weary smile. "Here I am making a speech again. I've made so many lately it's become a habit. I'm tired out, dad, I'm going to bed." Her father looked at her anxiously.

"You're seeing things out of proportion," he said. "You've worked so hard you're getting stale. You ought to get out of it for a while."

"I can't!" she answered sharply.

"You don't know—you don't even guess—how it takes every hour—all the demands!"

"Where's Allan these days?"

"Working," was her harsh reply.

"Trying to keep his hospital going with half his staff. The woman who was backing him is giving her money to Belgium instead."

"Do you see much of him?"

"Every day. Let's drop it. Shall we?"

"All right, my dear—"

And they said good-night.

In the meantime, in the house, Edith had tried to scrimp and save, but it was very difficult. Her children had so many needs, they were all growing up so fast. Each month brought fresh demands on her purse, and the fund from the sale of her belongings had been used up long ago. Her sole resource was the modest allowance her father gave her for running the house, and she had not asked him for more. She had put off trouble from month to month. But one evening early in March, when he gave her the regular monthly check, she said hesitatingly:

"I'm very sorry, father dear, but I'm



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afraid we'll need more money this month." He glanced up from his paper:

"What's the matter?" She gave him a forced little smile, and her father noticed the gray in her hair.

"Oh, nothing in particular. Goodness knows I've tried to keep down expenses, but—well, we're a pretty large household you know—"

"Yes," said Roger kindly, "I know. Are the month's bills in?"

"Yes."

"Let me see them." She brought him the bills and he looked relieved. "Not so many," he ventured.

"No, but they're large."

"Why, look here, Edith," he said abruptly, "these are bills for two months—some for three, even four!"

"I know—that's just the trouble. couldn't meet them at the time."

"Why didn't you tell me?"

"Laura was here—and I didn't want to bother you—you had enough on your

mind as it was. I've done the best I could father dear—I've sold everything, you know—but I've about come to the end of my rope." And her manner said clearly, "I've done my part. I'm only a woman. I'll have to leave the rest to you."

"I see—I see." And Roger knitted his heavy brows. "I presume I can get it somehow." This would play the very devil with things!

"Father," Edith's voice was low. "Why don't you let Deborah help you? She does very little, it seems to me compared to the size of her salary."

"She can't do any more than she's doing now," was his decisive answer. Edith looked at him, her color high. She hesitated, then burst out:

"I saw her check book the other day, she had left it on the table! She's spending thousands—every month!"

"That's not her own money," Roger said.

"No—it's the money she gets for her fads—her work for those tenement children! She can get money enough for them!" He flung out his hand:

"Leave her out of this, please?"

"Very well, father, just as you say." And she sat there hurt and silent while again he looked slowly through the bills. He jotted down figures and added them up. They came to a bit over nine hundred dollars. Soon Deborah's key was heard in the door, and Roger scowled the deeper. She came into the room, but he did not look up. He heard her voice:

"What's the matter, Edith?"

"Bills for the house."

"Oh," And Deborah came to her father. "May I see what's the trouble, dear?"

"I'd rather you wouldn't. I'm not going to tell you."

"Why shouldn't she see?" Edith tartly inquired. "Deborah is living here

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—and before I came she ran the house. In her place I should certainly want to know.

Deborah was already glancing rapidly over the bills.

"Why, Edith," she exclaimed, "most of these bills go back for months. Why didn't you pay them when they were due?"

"Simply because I hadn't the money!"

"You've had the regular monthly amount."

"That didn't last long—"

"Why didn't you tell us?"

"Laura was here."

Deborah gave a shrug of impatience, and Roger saw how tired she was, her nerves on edge from her long day.

"Never mind about it now," he put in.

"What a pity," Deborah muttered.

"If we had been told, we could have cut down."

"I don't agree with you!" Edith rejoined. "I have already done that myself! I've done nothing else!"

"Have the servants been paid?" her sister asked.

"No, they haven't—"

"Since when?"

"Three months!"

Roger got up and walked the room. Deborah tried to speak quietly:

"I can't quite see where the money has gone."

"Can't you? Then look at my check book." And Edith produced it with a glare. Her sister turned over a few of the stubs.

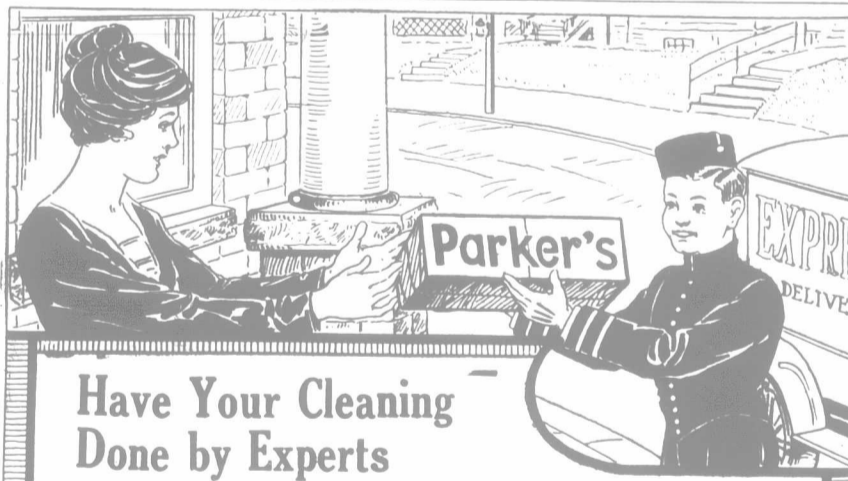
"What's this item?"

"Where?"

"Here. A hundred and twenty-two dollars."

"The dentist," Edith answered. "Not extravagant, is it—for five children?"

"I see," said Deborah. "And this?"



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"Bedding," was Edith's sharp response. "A mattress and more blankets. I found there weren't half enough in the house." "You burned John's, didn't you?" "Naturally!" All at once both grew ashamed. "Let's be sensible," Deborah said. "We must do something, Edith—and we can't till we're certain where we stand." "Very well—"

To be continued.

Current Events

Seven thousand cattle have been destroyed in Alberta because there was no feed.

The farmers of Prince Edward County (Ont.) are talking consolidated schools, and votes are to be taken at Wellington.

A "Be Kind to Animals Week" was held recently at St. Thomas, Ont., under direction of the Humane Society.

The Prince of Wales left Honolulu on April 14, on the battle cruiser *Renown*, proceeding to Australia.

"Overall Clubs," as a means of combating the H. C. of L., are becoming fashionable in the United States. The members pledge themselves to wear denim overalls until the price of clothing is reduced.

The Supreme Allied Council is being held at San Remo, Italy, this week.

Shortly after the release conditionally, of a number of Sinn Fein prisoners on hunger strike from Mount Joy prison, the military and police of Dublin made a raid and arrested over 100 Sinn Feiners. The public is speculating upon the reason.

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No. 7400	7 line wires, 40 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 5, 6, 6, 7, 7½, 8½. Per Rod	65c	68c	70c
No. 7480	7 line wires, 48 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 5, 6½, 7½, 9, 10, 10. Per Rod	67c	71c	73c
No. 8420	8 line wires, 42 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 6, 6, 6, 6, 6, 6. Per Rod	72c	75c	78c
No. 842	8 line wires, 42 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 6, 6, 6, 6, 6, 6. Per Rod	77c	80c	83c
No. 8470	8 line wires, 47 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 5, 6, 7, 8, 8, 9. Per Rod	73c	76c	79c
No. 847	8 line wires, 47 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 5, 6, 7, 8, 8, 9. Per Rod	80c	83c	86c
No. 935	9 line wires, 35 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 3, 3, 3, 4, 5, 5, 6, 6. Per Rod	84c	89c	92c
No. 948	9 line wires, 48 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 6, 6, 6, 6, 6, 6, 6. Per Rod	88c	92c	96c
No. 9481	9 line wires, 48 inches high, uprights 13 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 3, 4, 5, 6, 7, 7, 8, 8. Per Rod	\$1.00	\$1.04	\$1.08
No. 9500	9 line wires, 50 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 4, 5, 6, 7, 8, 8, 8. Per Rod	81c	85c	88c
No. 950	9 line wires, 50 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 4, 5, 6, 7, 8, 8, 8. Per Rod	88c	92c	96c
No. 1050	10 line wires, 50 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 3, 3, 3½, 4½, 5½, 6½, 8, 8, 8. Per Rod	95c	99c	\$1.04

MEDIUM HEAVY "IDEAL" Fence

Made throughout of Hard Steel Wire, evenly Galvanized. Carried in stock in 20, 30 and 40-rod rolls.

No. 630	6 line wires, 30 inches high, uprights 16½ inches apart. All Hard Steel Wire, evenly galvanized. Spacing 4, 5, 6, 7, 8. Per Rod	40c	41c	42c
No. 641	6 line wires, 41 inches high, uprights 16½ inches apart. All Hard Steel Wire, evenly galvanized. Spacing 7, 7, 8, 9, 10. Per Rod	41c	42c	43c
No. 6410	Same as Style No. 641 with uprights 22 inches apart. Per Rod	38c	40c	41c
No. 726	7 line wires, 26 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 3, 3½, 4, 4½, 5, 6. Per Rod	44c	45c	47c
No. 7261	Same as Style No. 726, but with uprights 8 inches apart. Per Rod	52c	53c	55c
No. 7266	Same as Style No. 726, but with uprights 6 inches apart. Per Rod	57c	59c	61c
No. 742	7 line wires, 42 inches high, stays 13 inches apart. All Hard Steel Wire. Spacing 6, 6, 7, 7, 8, 8. Per Rod	49c	52c	54c
No. 834	8 line wires, 34 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 3, 3½, 4, 4, 5, 6½, 8. Per Rod	52c	54c	55c
No. 936	9 line wires, 36 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 3, 3½, 4, 4½, 4½, 5, 5½, 6. Per Rod	55c	56c	59c
No. 949	9 line wires, 49 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 4, 4, 5, 6, 7, 7, 8, 8. Per Rod	61c	62c	64c
No. 1150	11 line wires, 50 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 3, 3, 3, 4, 4, 5, 6, 7, 7, 8. Per Rod	70c	71c	73c
No. 1448	14 line wires, 48 inches high, uprights 18 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 2½, 2½, 2½, 2½, 2½, 3, 3½, 4, 5, 5½, 6. Per Rod	82c	83c	86c

"IDEAL" Poultry Fence

Top and bottom wires No. 9, all others No. 13. Carried in stock in 10 and 20-rod rolls.

No. 1848	18 bar, 48 inches high, cross-bars 8 inches apart. All Hard Steel Wire, evenly galvanized. Spacing, from bottom up, 1½, 1½, 1½, 1½, 1½, 2¼, 2¼, 2¼, 2¼, 3, 3, 3½, 3½, 4, 4½, 5. Per Rod	\$1.00	\$1.05	\$1.10
No. 2060	20 bar, 60 inches high, cross-bars 8 inches apart. All Hard Steel Wire, evenly galvanized. Spacing, from bottom up, 1½, 1½, 1½, 1½, 1½, 2¼, 2¼, 2¼, 2¼, 3, 3, 3½, 3½, 4, 4½, 5, 6, 6. Per Rod	\$1.10	\$1.15	\$1.20

"IDEAL" Lawn Fence and Lawn Gates

Write for Price List and Catalogue.

Improved "IDEAL" Farm Gates

Horizontal wires all No. 9, only 6 inches apart. Uprights No. 12 wire, 6 inches apart. Diagonals No. 13, furnish a strong, close mesh chicken-proof and pig-proof. New patented brace tightener and latch—the biggest gate improvements in years.

Length, feet	Height, inches	Old Ontario south of North Bay	New Ontario and Quebec	Nova Scotia, New Brunswick, Prince Edward Island
3	36	\$4.00	\$4.20	\$4.40
3	42	4.25	4.45	4.70
3	48	4.50	4.75	4.95
3½	36	4.25	4.45	4.80
3½	42	4.50	4.75	4.95
3½	48	4.75	5.00	5.25
4	48	5.00	5.25	5.50
4	36	8.00	8.75	9.00
10	42	8.50	8.95	9.35
10	48	8.75	9.20	9.65
12	42	9.00	9.45	9.90
12	48	9.50	10.00	10.45
13	48	9.75	10.25	10.75
14	48	10.25	10.75	11.30
16	48	11.00	11.50	12.00

Improved "IDEAL" Stock Gates

Wire filling No. 9 throughout, same as Heavy "IDEAL" Fence. No fence filling used. Each wire put in by hand.

Carried in stock in following sizes only:			
12 feet long, 51 inches high, each	\$9.00	\$9.45	\$9.90
13 feet long, 51 inches high, each	9.25	9.70	10.20
14 feet long, 51 inches high, each	9.50	10.00	10.45

Fence Supplies, Brace Wire and Barb Wire

Ideal Steel Posts, 1½x1½x7' long	\$0.60	\$0.65	\$0.68
Ideal Fence Stretchers, each	12.50	13.75	14.20
Hand Stretcher, each	1.50	1.65	1.75
Universal Post Hole Digger, each	3.50	3.50	3.60
Galv. Staples in 25-lb. boxes	2.20	2.30	2.40
Galv. Staples in 100-lb. boxes	7.00	7.90	8.20
No. 9 Brace Wire, per 25 lbs.	1.90	2.30	2.30
No. 9 Coiled Spring Wire, per 100 lbs.	6.80	7.10	7.40

Barb Wire

4-pt. 4" Galv. Cabled, per 100 lbs.	\$7.35	\$7.60	\$7.90
4-pt. 6" Galv. Cabled, per 80-rod spool	6.20	6.45	6.70
2-pt. 5" Galv. Cabled, per 80-rod spool	5.90	6.15	6.40

The "Ideal" Catalogue tells you all about "Ideal" Fence, the quality of material used, how it is made, etc. Read it carefully. The "Ideal" line is complete in every way, and prices to-day are remarkably low on this high-grade product. You cannot allow this opportunity to go by without ordering your fencing requirements. "Ideal" Fence will please you.

Our Guarantee—"Ideal" Fence is guaranteed to be made as exactly as represented. If you are not satisfied with "Ideal," return it at our expense and get a new lot or your money back. This guarantee covers everything—no conditions—no loop-holes. Reference—The Canadian Bank of Commerce.

ORDER FROM YOUR NEAREST WAREHOUSE

Ideal Fence and Spring Co. of Canada, Limited, Windsor, Ont.
435 Coristine Building, Montreal, Quebec

1050 McDougall Street

POULTRY AND EGGS

Condensed advertisements will be inserted under this heading at four 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 60 cents.

BUFF ORPINGTON EGGS FOR HATCHING—excellent laying strain; \$3 per fifteen. N. Cathcart, Stanley's Corners, Ontario.

BARRED ROCKS—LAYING STRAIN—SETTING \$1.50. Mrs. Berry, 52 Queen Street, Guelph, Ont.

BARRED ROCKS, O. A. C. STRAIN—EGGS \$1.75 per fifteen, \$9 per hundred. Large, well-barred hens and grand layers. A. A. Lamont, Brussels, Ont.

BARRED ROCK HATCHING EGGS, PURE-BRED STRAIN, 15—\$2.00. Woodycrest Farm, Perth, Ontario.

BABY CHICKS, ANCONAS, AND LEGHORNS \$13 per fifty, \$25 per hundred, delivered. Mating list ready, order now. G. A. Douglas, Ilderton, Ont.

BRED-TO-LAY BARRED ROCKS—ONE seventy-five per setting, five dollars per fifty. Henry Hooper, Guelph, Ont., 83 Nottingham St.

BABY CHICKS, HATCHING EGGS—BARRED Rocks, White Rocks, White Wyandottes, Silver Wyandottes, White Leghorns, Rhode Island Reds. Incubator capacity 9,000. Satisfaction guaranteed. Write for price-list. Tay Poultry Farm, Perth, Ont., Box 244.

BARRED ROCK EGGS—FIFTEEN, \$2.50; thirty, \$4.75; fifty, \$7.50; \$14 hundred. From well-barred and grand laying hens. Order direct from this advertisement. W. Bennett, Box 43, Kingsville, Ont.

BARRED ROCKS—OUR STRAIN OF Barred Rocks are noted for laying; as winter layers there is nothing can beat them. Eggs \$2.00 per setting, six dollars for 50, ten dollars for 100. Central Ontario Poultry Yards, Colborne, Ontario.

BARRED ROCKS, MAMMOTH SIZE, AND extra good laying strain. Eggs—\$2 for 15; \$3.50 for 30. Mrs. W. B. Annesser, Tilbury, Ont.

BABY CHICKS GALORE—WHITE LEG- HORNS—Beautifully illustrated free price list. Long-established business. Bradley Linscott, Leghorn Specialist, "Seven Acres," Brantford.

DAY-OLD CHICKS, FROM CHOICE PENS White Leghorns and Barred Rocks; May and June delivery. Twenty-five and thirty dollars per hundred. Express charges paid and safe delivery guaranteed. Eggs two dollars per fifteen. E. E. Charlton, Ilderton.

EGGS FOR SALE—WHITE WYANDOTTES, silver cup winners; three dollars per 15. A. F. Waddell, Stratford, Ont.

EGGS FOR HATCHING, FROM BRED-TO- LAY Barred Rocks; two dollars per fifteen. Wm. L. Hills, Wheatley, Ont.

EGGS FROM EXHIBITION STOCK—BUFF Orpingtons \$3.00 15. Andalusians—Pen 1—\$5.00; 2, \$3.00; 15. Guaranteed hatch. E. E. McCombs, Fenwick, Ont.

EGGS FOR HATCHING AND DAY-OLD chicks. Pure O. A. C. bred-to-lay Barred Rocks and White Leghorns. Eggs—\$10.00 per 100, or \$2.00 per setting. Geo. L. Faull, St. Williams, Ont.

HIGH-CLASSED BARRED ROCKS, BARRED to the skin. Large, healthy fowl. Yearling pullets weigh eight pounds. Bred from prize-winning stock for the last fifteen years. Excellent layers. No separate pens, all have free range. Every customer used the same. Eggs for hatching \$1.75 per 15. R. A. Cowan, R. R. No. 2, Streetville, Ont.

HATCHING EGGS—BROWN'S BRED-TO- LAY Rose Comb Rhode Island Reds, good stock. Fifteen eggs, two dollars; thirty, three-fifty; ten dollars per hundred. Robt. J. Brown, R. 2, Cornwall, Ont.

PEKIN DUCK EGGS FOR HATCHING— Twelve dollars hundred. David Haugh, 3 Plains Road, Todmorden.

PARTRIDGE ROCKS, BUFF LEGHORNS, Hatching eggs \$1.50 per setting. R. H. Crosby, Markham, Ont.

ROSE-COMB RHODE ISLAND RED FROM good winter laying strain. Two dollars for fifteen. Alex. McKinney, Erin, Ont.

RHODE ISLAND WHITES—BOTH COMBS, Meat, eggs, beauty. Stock and eggs for sale. Send for mating list. Dominion Poultry Yards, 288 St. James St., London.

SINGLE AND ROSE COMB RHODE ISLAND Red and Barred Rock eggs from exhibition stock; \$3.00 per fifteen. Choice red cockerels \$5.00. James Mackness, Chatham, Ont.

S.-C. RHODE ISLAND REDS, GOOD COLOR, selected pen, winter layers. Choice bred-to-lay S.-C. White Leghorns. Eggs \$1.75 per fifteen. W. E. Willson, Aurora, Ont.

SINGLE-COMB WHITE LEGHORN EGGS for hatching (Wyckoff Strain). Seven dollars per hundred; one twenty-five per fifteen. Chas. Bartlett, Arkona, Ontario.

UTILITY POULTRY FARM—YEARS OF careful breeding have made our S.-C. Comb White Leghorn Baby Chicks the best in Canada. Order early and avoid disappointment. T. G. Delamere, Prop., Stratford, Ont. G. O. Aldridge, Manager.

WHITE WYANDOTTES—HEAVY LAYING strains my specialty. Eggs \$3 per fifteen, \$5 per thirty. Frank Morrison, Jordan, Ont.

WHITE WYANDOTTES—EGGS FOR HATCH- ING, from Martin bred-to-lay strain; \$2.50 per fifteen. A. C. Phipps, R. 4, Caledonia, Ont.

WHITE WYANDOTTE GUELPH CHAM- PIONS 1919. Hatching eggs, \$3 per 15; \$5 per 50. Chicks, 35 cents each. Good type. Heavy layers. R. Trivett, Newmarket.

FOR SALE—VERMONT FARMS, FOR IN- FORMATION write Whitcher & Cobb, Hardwick, Vt.

The Living-Room.

I wish we had a living-room; don't I wish it though!

A room that I could live in and enjoy. Jimmy's folks have got one in their brand-new bungalow;

I tell you, Jim's a mighty lucky boy. Lots of windows, lots of sun, curtains pulled aside—

Ones that, you know, help the sun to shine—

Cheerful chairs to sit in and a couch that's soft and wide.

So different, their house is, from mine, Wish we had a living-room in our house!

Went past Jim's the other night, couldn't keep away;

Stood across the road where I could look; Living-room was lighted up almost as bright as day.

Jimmy had an armchair and a book. No one thought to draw the blinds; guess they didn't care

If people saw, they wouldn't run and hide.

It made the dark seem cosy as I was standing there

It didn't seem like peeping and I sighed, "Wish we had a living-room in our house."

Auntie says a living-room is nothing but a fad;

And drawing-rooms once were plenty good enough.

Our drawing-room's like a funeral; you can't help feeling sad

When you see those chairs of black and shiny stuff.

If you saw those window-blinds pulled down to meet the floor,

And daylight worse than dark could ever be.

It gives you chills in summer just to stand inside that door,

I guess you'd say, and mighty quick, with me,

"Oh, I wish we had a living-room in our house."

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.

Veterinary.

Paralysis.

Cows are fed on corn stalks, oat and wheat straw. One lost the use of fore legs. I raised her several times with sling but she could not stand. She also lost use of hind legs. She ate well until she calved, then failed and died in a day and a-half. I have two more apparently affected the same way.

Ans.—The symptoms indicate that the trouble is caused by something taken in the food, probably in the corn stalks. Feed no more of this. Purge each with 2 lbs. Epsom salts and 1 oz. ginger and follow up with 2 drams nux vomica and 1 dram iodide of potassium 3 times daily. Feed on hay, chopped oats and straw and raw roots. Keep as comfortable as possible and turn from side to side 2 or 3 times daily.

SUPERIOR BARRED PLYMOUTH ROCK EGGS FOR SALE

From 5 Best Bred-to-lay Families in Both Countries.

Pen No. 1.—Thompson's Imperial Ringlet hens, imported in the eggs, headed by Mr. Coldham's (Kingston, Ont.) Pedigreed Ringlet Cockerels, sired by Parks' \$1,000.00 bird, U. S. A., first dam—hen No. 71 laid 70 eggs in 72 days in mid-winter, 260 brown eggs of standard weight in one year. Price, \$5.00.

Pen No. 2.—Parks' Superior Ringlet strain, imported in the eggs. Of all bred-to-lays, Ringlets are supreme. Price, \$5.00.

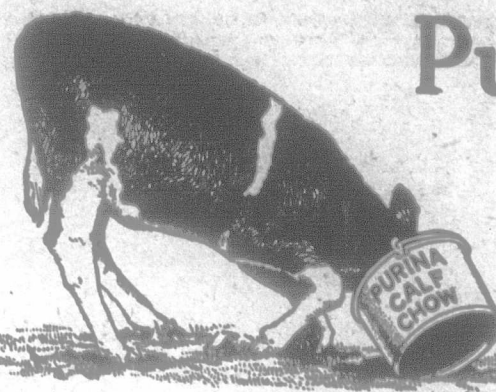
Pen No. 3.—The large, dark bred-to-lay strain of Rileys, imported in the eggs. As show birds, they have won the highest awards in U. S. A. Price, \$4.00.

Pen No. 4.—Thompson's large bred-to-lay strain, imported in the eggs, medium light in color, with quality and utility. Price, \$3.00.

Pen No. 5.—The O. A. C. bred-to-lay strain of Guelph; a hardy, handsome fowl, extra good winter layers. Price, \$2.00.

15 per setting. Infertile eggs replaced at half price. Pullet or cockerel bred eggs as desired. Express prepaid.

A. H. CROZIER, Box 16, Meadowdale, Ont.



Purina Calf Chow

Is Different

Yes, it's unlike any calf meal on the market.

- 1st. It's different because it's better.
- 2nd. Every ingredient is a pure feed of recognized value, no "phony" products of unknown worth. It does not contain anise, or any appetizer. Calves eat it as greedily as they do whole milk.
- 3rd. It does not scour; blood flour is one of the important ingredients, which insures freedom from scours.
- 4th. Easy to feed, no boiling, just mix with warm water.
- 5th. It is balanced just like whole milk. Calves thrive from the first on Purina Calf Chow and it keeps them making gains without sickly periods. It is used by many of the best dairy farms in the country to raise the finest calves.
- 6th. But it is cheap enough to use on any calf, costs less than half as much as milk feeding. So easy to feed that boys or girls are assured of success.

Stop in and talk it over with your local dealer.

THE CHISHOLM MILLING CO., LIMITED

Manufacturers of Purina Feeds in Canada.

TORONTO

40-HOLSTEINS-40

IN

Complete Clearing Sale

The entire herd belonging to the Estate of the late Frank Boyle, Milliken; selling at the farm, 1 1/4 miles from

UNIONVILLE, ONTARIO
TUESDAY, MAY 4th 1920

To enlarge the sale, W. F. Elliott consigns six head

This is undoubtedly one of the select small offerings of the year. The cattle are with three exceptions, all under seven years of age and all carry the strongest combination of breeding and individuality. Following is a partial summary of the offering:—

Ten daughters of **King Pontiac Artis Sylvia**

This is a son of King Pontiac Artis Canada and Inka Sylvia 6th 29.04 lbs.

Eight daughters of **May Sylvia Pontiac Cornucopia**

This is May Echo Sylvia's daughter's son, sired by Spring Farm Pontiac Cornucopia, he being a son of K. P. Pontiac Lass 44.18 lbs.

Ten daughters of **Sir Echo Johanna Cornelius**

This young bull is from a 32.26-lb. 4-year-old daughter of Pietje 22nd son and his sire, King Echo Sylvia Johanna is also the sire of Carnation King Sylvia the \$106,000 bull.

The females of breeding age are all in calf to the service of one or the other of the latter two bulls, and the calves at foot will also be sons or daughters of these young sires. If you want foundation material don't miss this sale. There is absolutely no reserve.

The farm consisting of 175 acres will be offered at the same time, subject to a reserve bid.

For catalogues address

Mrs. Frank Boyle, Milliken or W. F. Elliott, Unionville

Prompt Returns From Shipments



When you ship Grain, Butter, Cheese or Fruit, put through The Merchants Bank a Draft on the buyer. This is the business way of securing prompt and satisfactory settlement.

It saves time and possible loss.

THE MERCHANTS BANK

Head Office: Montreal OF CANADA Established 1864.
With its 158 Branches in Ontario, 44 Branches in Quebec, 1 Branch in New Brunswick, 2 Branches in Nova Scotia, 36 Branches in Manitoba, 46 Branches in Saskatchewan, 86 Branches in Alberta, and 12 Branches in British Columbia, serves rural Canada most effectively.
WRITE OR CALL AT NEAREST BRANCH.

Smooth Running Household Machinery.

Doors that creak and stick; bureau drawers that refuse to open without nerve racking tug, that scatter the contents all over the floor; food choppers that squeak; egg beaters that perform their work in jerks; ice cream freezers that refuse to freeze, and scores of other things about the house, all make a deal of quite unnecessary work, besides wrecking the nerves and making the calmest tempered person irritable. It seems quite idiotic for so many women to suffer these annoyances when an occasional oiling up will make the wheels of any home revolve both rapidly and noiselessly.

Take a squeaking door, for instance; it can be stopped instantly by as simple a thing as a common lead pencil. The graphite in the pencil is an excellent lubricant for the rubbing surfaces, as the minute dust of this material fills the

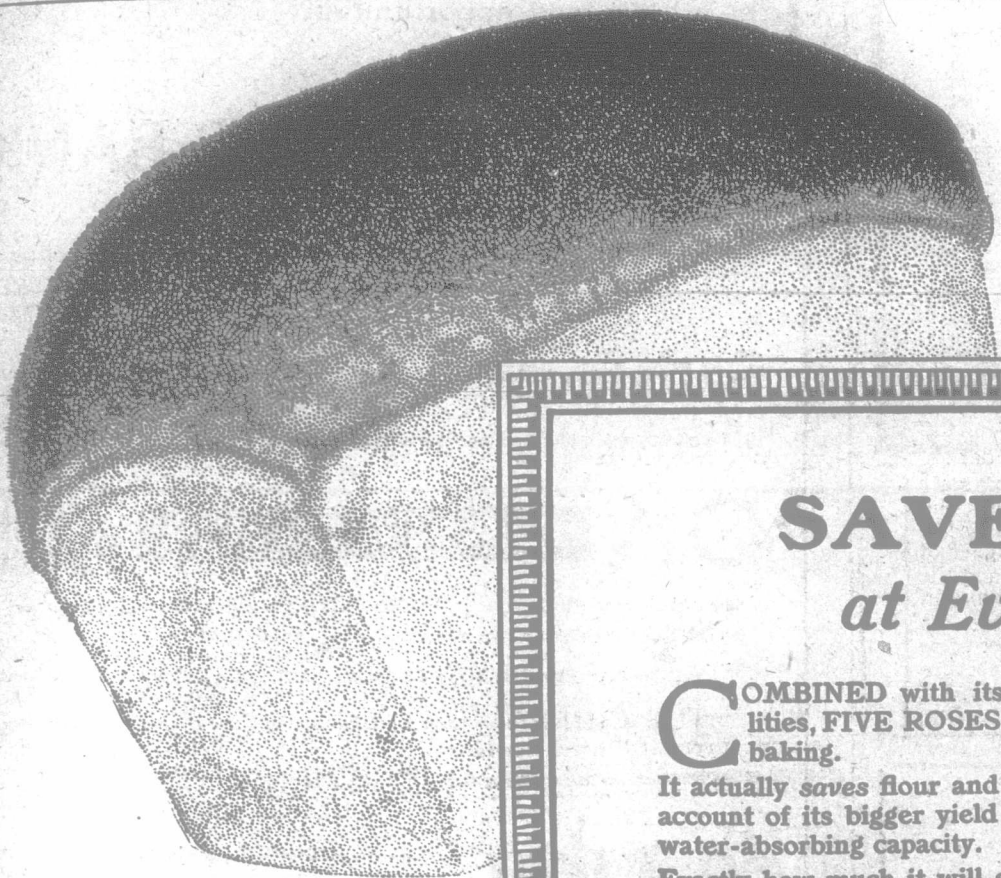
Dye Old, Faded Dress Material

"Diamond Dyes" Make Shabby Apparel Stylish and New—So Easy Too.

Don't worry about perfect results. Use "Diamond Dyes," guaranteed to give a new, rich, fadeless color to any fabric, whether wool, silk, linen, cotton or mixed goods,—dresses, blouses, stockings, skirts, children's coats, draperies,—everything!

A Direction Book is in package. To match any material, have dealer show you "Diamond Dye" Color Card.

"Advocate" advts. Pay.



SAVE A LOAF at Every Baking

COMBINED with its great nutrition and enticing eating qualities, FIVE ROSES is the acknowledged flour for economical baking.

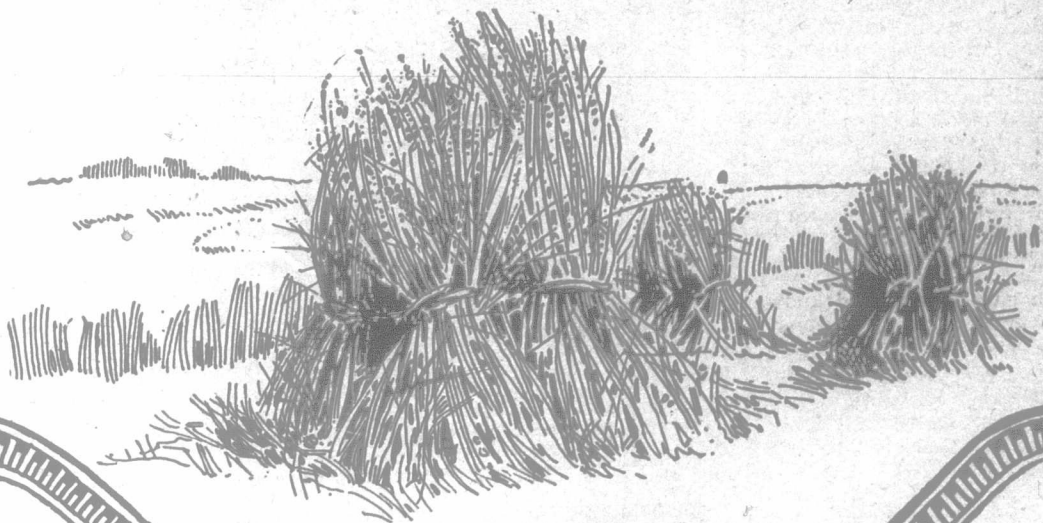
It actually saves flour and the money that that flour costs. This on account of its bigger yield due in turn to its glutinous strength and water-absorbing capacity.

Exactly how much it will save you depends upon how much baking you do, and upon how much bread you make at one baking. Read what thrifty housewives write us, in the margin. It points the way to patriotic economy.

You know how much FIVE ROSES flour you can bake in a year. By saving a loaf at every baking, figure out for yourself how you can reduce your own High Cost of Living.

LAKE OF THE WOODS MILLING CO., LIMITED
Montreal and Winnipeg

FIVE ROSES FLOUR FOR BREADS, CAKES, PUDDINGS, PASTRIES.



"We have been using FIVE ROSES flour and can gain a loaf of bread on every baking."
—Miss H. R., Brougham, Ont.

"Always go back to FIVE ROSES, as I have more bread with same amount of flour."
—Mrs. C. H. McN., Englehart, Ont.

"I use 7 quarts of FIVE ROSES flour in my recipe. Other flours I have used take 9 quarts."
—Miss A. P., Marshville, Ont.

"Am positive one can get more bread out of a bag of FIVE ROSES flour than from any other kind."
—Mrs. N. H., Copetown, Ont.

"Always an extra loaf from the same quantity of flour."
—Mrs. A. M., West Summerland, B.C.

"The most profitable flour a poor man can possibly obtain."
—Mrs. T. S. McC., Rodney, Ont.

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OUR TIRE PRICES HAVE NOT ADVANCED



Do you know you can still purchase absolutely new tires at a tremendous saving. Our tires are the biggest bargain on the market. Our prices are unequalled anywhere in the Dominion—they are far below quotations of other dealers, as we disregarded the recent 20% increase.

No matter in what province you live you can examine your purchase and convince yourself it is a genuine money-saver before paying a cent.

Order by mail or wire and we will ship tires express paid C.O.D. to any address east of Fort William. If you are not satisfied ship them back at our expense.

LOOK AT THESE PRICES

Size	Plain Tread	Non-Skid Tread
30x3½	\$13.50	\$16.50
32x3½	18.00	17.00
31x4	18.00	26.00
33x4½	28.00	30.00
34x4½	28.00	33.00
35x4½	28.00	33.00

Other sizes in proportionately low prices. When ordering state size and style—whether "Clincher" or "Straight Wall," plain or non-skid.

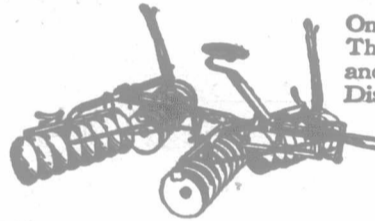
Special 30x3½ Tubes. Guaranteed \$2.25.

Don't lose this golden opportunity—Buy your season's tires and tubes NOW.

Security Tire Sales Co.

516 Yonge Street, Toronto

BISSELL Double Action Harrows will thoroughly cultivate



and pulverize any soil. One Harrow is Out, Throw; the other is In Throw. They are simply constructed, rigid and durable. The Gangs are flexible and the Disk Plates are so designed that they "hang" right into the soil. Bissell Harrows are built in sizes and weights suitable for horse or tractor use. Write Dept. W for free catalogue. 98

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

WANTED

CORD WOOD IN CARLOTS

Highest prices paid. We will buy any kind of 4 foot wood. Write at once, stating what you have.

BEACHVILLE WHITE LIME CO., :: Beachville, Ontario

rough depressions in the bearing surfaces of the hinges and make them work smoothly. The most cantankerous hinge can very quickly be given this soothing treatment by putting a stick under the door and using it as a sort of lever to raise it a trifle.

On household machinery, only a very little oil is necessary, and ordinary sewing machine oil is as good as anything, but if you have none in the house and the coffee grinder or the food chopper acts up, try greasing the bearing with a tiny bit of lard, or a drop or two of salad oil. Vaseline can also be used for anything where oil that does not run is desirable, and is just the thing for the ice cream freezer; it is too solid and sticky for the sewing machine, the kitchen clock, or the typewriter. I have occasionally used kerosene on these when no machine oil was in the house and I have even given the inexpensive nickel clock a bath in this fluid, and I once treated one of the cheap watches that used to be sold for a dollar in this way. In both cases it seemed to do a great deal of good and it certainly washed away the dirt, though I would not recommend it for an expensive timepiece.

Very few housewives seem to realize how greatly a little bit of kerosene will assist them in cleaning up. It makes a good substitute for soap and water, does not need the hard rubbing of the latter, and has the further advantage of leaving the surface nicely polished. The odor quickly disappears. The floor can be cleaned with a well-oiled mop or even a moistened cloth far more quickly and thoroughly than with a scrubbing brush. A light rubbing with a rag dipped in kerosene will restore a

Hogs—And More Hogs!

That is a money-making slogan for farmers. You can sell all the hogs you raise, sure of good returns.

If you need an advance to replenish your stock, consult the manager.

We are glad to assist responsible progressive farmers who are wide-awake to good opportunities.

THE DOMINION BANK

Satisfaction is the Verdict

Four letters picked at random from a number we have received from growers all over the country who are using our

OK CANADIAN Potato Planters

declare in positive words the absolute satisfaction they are giving each and every owner.

"This machine has given me perfect satisfaction for six years."

—Thomas Beauclair, Port Arthur, Ont.

"I have been using your planter for four years. It gives me all kinds of satisfaction."

—J. B. Bastien, Ville Marie, Que.

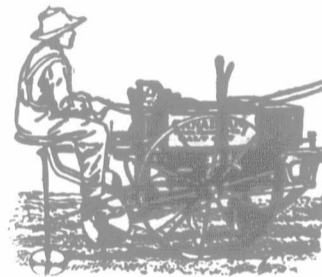
"The planter and four-row sprayer I got last spring have given me the very best of satisfaction."

—F. Bouvet, Chapeau, Que.

"I would like to say with regard to your planter that it is the ONLY Planter."

—H. Lowthin, Lochiel, Blainey P. O., Ont.

Write for our folder to-day.



CANADIAN POTATO MACHINERY CO., LIMITED
54 STONE ROAD, GALT, ONTARIO.

We make O-K-Spra and O-K Two-Row and Four-Row Sprayers, and O-K Canadian Potato Diggers.



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STANDARD TRANS-CONTINENTAL TRAIN EQUIPMENT THROUGH-OUT, INCLUDING NEW ALL-STEEL TOURIST SLEEPING CARS.

Sun. Mon. Wed. Fri.—Canadian National all the way.

Tues. Thurs. Sat.—Via G.T., T. & N.O., Cochrane thence C. N. Ry.

Tickets and full information from nearest Canadian National Railways' Agent.

or General Passenger Department, Toronto.

Industrial Department Toronto and Winnipeg will furnish full particulars regarding land in Western Canada available for farming or other purposes.

Canadian National Railways

bath tub to shining whiteness in a moment. And finger marks and smudges on white paint disappear as if by magic when they are touched with it.

For the drawer that enrages you every time you try to open it, do not use oil but soap. Rub this well along both the sides and edges of the drawer and you will not have any more trouble with it. A squeaky hinge, or a squeaky chair, can also be made noiseless by cutting soap in tiny bits and pressing well into the noisy parts.

If oil is rubbed occasionally on the nickel trimmings of the stove, it will prevent their getting dull and dingy looking from the steam and greases of cooking. The nickel fixtures in the bathroom will also stay bright for a very long time, if they are once in awhile given a rub with oil. Never put anything metal away for any length of time without treating it with oil. Knives should have a bath of kerosene and skates, after the season is over, should be covered with lard mixed with a little camphor and black lead. Treated in this way they keep in perfect condition even in the dampest weather.

A Welcome Visitor.

EDITOR "THE FARMER'S ADVOCATE": I have been a reader of your valuable paper for the past five years. It comes as a welcome visitor, every Friday, and is worthy of high recommendation both for its agricultural information and the excellent illustrations throughout the year, and especially your Christmas Number, regarding which too much cannot be said of its excellent preparation. Renfrew Co., Ont. IRWIN E. DEAN.

DON'T MISS THIS OPPORTUNITY IF YOU GROW FALL WHEAT

The entire production of

Sydney Basic Slag Fertilizer

from 1st May until 10 August will be reserved exclusively for sale to Ontario farmers for their Fall wheat seeding. This means a quantity of 11,000 tons and in order to get this thoroughly distributed

WE REQUIRE AGENTS IN ALL UNREPRESENTED DISTRICTS.

The kind of agent we want is a successful farmer in good standing with his neighbors, who is a believer in fertilizers and is using them himself. If he has never used Basic Slag we will give him an opportunity to inspect growing crops of wheat, where Basic Slag was applied; and let him talk with the growers of these crops, who have probably had a wide experience in all kinds of fertilizers. **WE WILL PAY ALL HIS TRAVELLING EXPENSES** inspecting these crops, and unless he feels thoroughly convinced that Basic Slag is a fertilizer he can introduce into his neighborhood with profit to the community, not the slightest obligation need rest on him. We are not philanthropists, but we know that Sydney Basic Slag is the best value in fertilizers obtainable by Ontario farmers, and it pays us to spend money in getting good farmers to start using our goods. Once this is accomplished a permanent trade is established.

AN OFFER TO FARMERS' SOCIETIES.

In any fall wheat district where we are not already selling Basic Slag we will be glad to pay the travelling expenses of your President and Secretary to inspect Fall wheat crops presently growing, and allow them to talk at first hand with prominent farmers who have had some years experience with our goods. Even if you are already using other fertilizers with good results, it won't cost you anything to take advantage of this offer. Sydney Basic Slag is giving results, putting it modestly, at least equal to those obtained from other fertilizers often costing 50 to 100% more money.

In 1918 the Department of Chemistry of The Ontario Agricultural College conducted experiments in fertilizing wheat with different forms of phosphoric acid. These experiments were carried out on two different farms in Welland County and the results showed that for each \$5 investment in Basic Slag there was returned a profit of \$59.20 in wheat alone, figuring wheat at \$2 per bushel. This was practically double the profit shown by the nearest competitor and more than five times the profit shown by another. The official figures for these are to be found in the Report of The Minister of Agriculture, 1918, page 72.

Now, you may think this rather early to interest yourself in your Fall wheat seeding, but it is really imperative that you should get into communication with our General Sales Agent at once. The inspection of growing crops will take place in June, but these matters must be arranged well in advance. If you delay until later possibly our Sales Agent's time will have already been booked up elsewhere.

We have some interesting literature which is yours for the asking. Let us have your name and address.

The Cross Fertilizer Company Ltd., - Sydney, Nova Scotia

Address all enquiries to our GENERAL SALES AGENT

A. L. SMITH,

220 Alfred Street,

- KINGSTON, ONT.

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**Potato
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each and every owner.

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GALT, ONTARIO.**

**O-K Two-Row and Four-
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Ont. IRWIN E. DEAN.

Use an International and Start Your Corn Right



If you have never operated a new INTERNATIONAL CORN PLANTER, you have a treat in store for you. These planters have, every convenience for efficient, labor-saving operation.

These machines plant corn accurately whether used with edge drop, flat drop, or full hill drop plates; whether the corn is checked or drilled. The drop clutch can be changed, while the planter is working, to drop 2, 3, or 4 kernels to a hill. The tongue is easily adjustable to the height of the horses. A handy foot drop lever makes head-row planting easy.

When you look over the INTERNATIONAL planter, don't miss the automatic marker, a handy feature that saves a lot of work and time. There are fertilizer attachments if you want them, combination pea and corn planting hoppers, open wheels or closed—your planter will be equipped just as you want it. You can plant rows 28 to 48 inches wide by 2-inch adjustments, with four distances between hills.

These planters are so good you will want to know all about them. Drop us a line and let us send you full information.

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A vast new land of promise and freedom now open for settlement to returned soldiers and sailors FREE; to others, 18 years and over, 59 cents per acre. Thousands of farmers have responded to the call of this fertile country, and are being made comfortable and rich. Here, right at the door of Old Ontario, a home awaits you. For full particulars as to terms, regulations, and settlers' rates, write

H. A. MACDONELL,
Director of Colonization.

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Minister of Agriculture,
PARLIAMENT BUILDINGS, TORONTO.

A Protection for Eastern Ontario Agriculturists.

Among the many replies to the speech in the Ontario Legislature that of W. H. Casselman, from Dundas County, stands out prominently, especially from the standpoint of ideas and suggestions expressed. Reference was made to this speech in the issue of April 1, but the following paragraphs deal with matters in detail. After brief introductory remarks referring to speeches of previous speakers, Mr. Casselman wastes no time in presenting concrete matters for the consideration of the Legislature:

"There was much in what the Hon., the member for West Northumberland, said with which I am in perfect accord. I am in perfect agreement with his attitude towards the Provincial Highway along the river front.

All along the north shore of the St. Lawrence from Kingston to the Quebec boundary, there are quaint, old homesteads and beautiful, modern residences, with lawns and orchards and stately

shade trees, which have required the care and efforts of four generations to be brought to their present state of beauty and perfection. Many of these must be mutilated, many buildings removed, valuable orchards and century-old trees must fall before the axe to provide an eighty-six foot roadway for a traffic that would never be congested on a properly constructed sixty-six foot road. Mr. Speaker, I protest against an eighty-six foot roadway along the river front. If an extra twenty feet is being expropriated in contemplation of a Hydro Radial, I want to say that we, in Eastern Ontario, want electric energy for light and heat and power first, and when a Government-owned railroad ceases to show an annual deficit and when traffic demands it, it will be time enough to provide a right-of-way for a competing Hydro Radial.

In that part of the St. Lawrence River, lying between lake level and the Quebec boundary, there is a fall of ninety-two feet, mostly confined to two or three rapids. Ontario's share of the potential electric energy of that part of the St.

Lawrence is estimated to be eight hundred and eighty-two thousand H.P., and yet in the five Ontario counties bordering on the mighty St. Lawrence, there are only five municipalities being served by Hydro! But I shall say more about Hydro later.

Speaking about election matters, the honorable the member for Sudbury appears to know more about some parts of the United Farmers' platform than we do ourselves. I understood from his remarks the other day that a United Farmer member might be recalled at will by a small committee, or a few dissatisfied supporters back in his constituency. I am subject to correction, but my understanding of the principle of the recall, as laid down in our platform, is that only on a 60 per cent. petition can a member who signs his recall papers be obliged to resign his seat. In my opinion, Sir, when a Member's course runs counter to the wishes of his supporters to the extent that 60 per cent. are dissatisfied, if he is a decent man, he will volunteer his resignation; and if he did not do so, there could be little harm in providing ma-

chinery whereby his removal could be secured. And let me say right here, that if this principle were recognized and in operation at Ottawa, there would very soon be a general Federal election.

Now just a word as to our leader and his Cabinet. The Hon. the Premier has, under most difficult conditions conducted himself in a manner which reflects undying credit upon himself, upon agriculture and upon the Province, and I for one am proud to be his follower. I have every confidence in the integrity and capability of every member of his Cabinet.

We have been twitted for going outside the elected members for a leader, and because that leader saw fit to go outside the elected members for members of his Cabinet, and because others than elected members had a voice in these selections and assisted in seat hunting. And it has also been insinuated that those elected members who so nobly stepped aside had been, or would be, rewarded.

Now, Mr. Speaker, will you pardon me while I point out a few incidents in political history, with which, no doubt,

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This Free Book Will Help Increase Your Profits

—it can be done on your farm. You can make more money by increasing your acreage, enlarging your crops and making your planting easier. CXL Stumping Powder will do it and this book—"Explosives for the Farm"—will tell you how. CXL Stumping Powder will drain swamp land, irrigate the arid section of your farm, remove stumps and boulders, break up your subsoil and help in your tree planting—and do it for less money. From the standpoint of cost and profit, you cannot afford to be without CXL Stumping Powder on your farm.

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Write Dept. P today for "Explosives for the Farm."



Use Power in the House as well as in the Barn

Runs by Motor or Engine

YOU know how much farm work is saved by electric motors and gasoline engines. Why not adopt the same idea in the house? Backaches from washing are out-of-date—successful housekeepers everywhere insist on washing machines, and the best idea of all is the power washer, because it does all the work itself and needs no attention whatever.

Maxwell

Power Bench Washer

—has proved itself a wonderful friend to others. Let it help you. It will even do the wringing! Handles the biggest or smallest wash, heaviest or daintiest clothes with no tearing or wearing. Pays for itself over and over! Made in three sizes. Write for particulars.

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APRIL 22, 1920

many in this House are already acquainted. In the General Federal Election of 1904, Sir Robert Borden was turned down in his home constituency, in Halifax, and Mr. Edward Didd, of Carleton, a safe Tory seat,—stepped aside to make room for the leader. In that case the Tory Party not only retained as its leader one who was not elected at the General Elections, but actually took one who had been refused by his own constituents.

After the General Federal Election of 1911, when the Tories were returned to power, Sir Robert Borden ignored his elected Tory supporters, and called in as his Finance Minister a certain Thomas White, a financier, a lawyer—and worse still, a God-forsaken Grit. He had not even been a candidate for election. A Mr. George Taylor, of Leeds, stepped aside to give Mr. White a seat. At the General Federal Election of 1917, after Leeds and Brockville had been merged, through re-distribution, Hon. John Webster secured the Unionist nomination for those merged ridings, and Sir Thomas White was left out in the cold. But, resigning in favor of Sir Thomas, Mr. Webster was condemned to languish in the Canadian Senate.

Then there is the story of Geo. P. Graham being left in his home constituency and finding asylum in South Renfrew. But last summer we had the greatest treat of all. On the death of Sir Wilfrid Laurier, it became necessary to select a permanent leader for the Liberal Party. A great convention was called, composed, not only of elected members, but of party workers all over the Dominion. Many prominent Federal and Provincial members of Parliament were there, and these were carefully scrutinized and weighed in the balance and found wanting. I think, quite possibly, the Hon. the member for S. W. Toronto was there, willing to sacrifice himself on the altar of service to his party, and, like Isaiah of old, saying: "Here am I, send me." But he was also examined and passed by. His star had not yet risen above the horizon. So they chose a man—he was a young man—he wasn't even in politics—he wasn't even a lawyer. They chose Wm. Lyon Mackenzie King, and they had a whale of a time finding him a seat.

But, Sir, the trouble with partisans in both the old parties is that they are sore because the farmers have presumed to enter politics, and because, in so doing, these interlopers have upset their little political apple-carts. The political upheaval of last October, which has been such a horrid nightmare to honorable gentlemen opposite and their friends, throughout the Province, is, to me, a most gratifying evidence of an awakening political consciousness in rural Ontario, and I congratulate the farmers of this Province upon that magnificent manifestation of steadfast determination against tremendous odds, to break the chains of party bondage in Ontario forever—chains which have held them captive so long in the gall of bitterness and the bonds of iniquity.

And why have the farmers presumed to enter politics? Because they have at length come to understand that by no other means is it possible for them to secure a share of the comforts of life commensurate with their contribution to the sum total of human endeavor in this Province.

And now, I want to point out briefly by what legislative means, while not interfering with urban interests, the farmer's lot may be improved.

First.—By inaugurating a system of vocational education, whereby public school pupils may be not only fitted for entrance to secondary educational institutions, but which will provide practical education that will be of use to country boys and girls in their chosen walk of life.

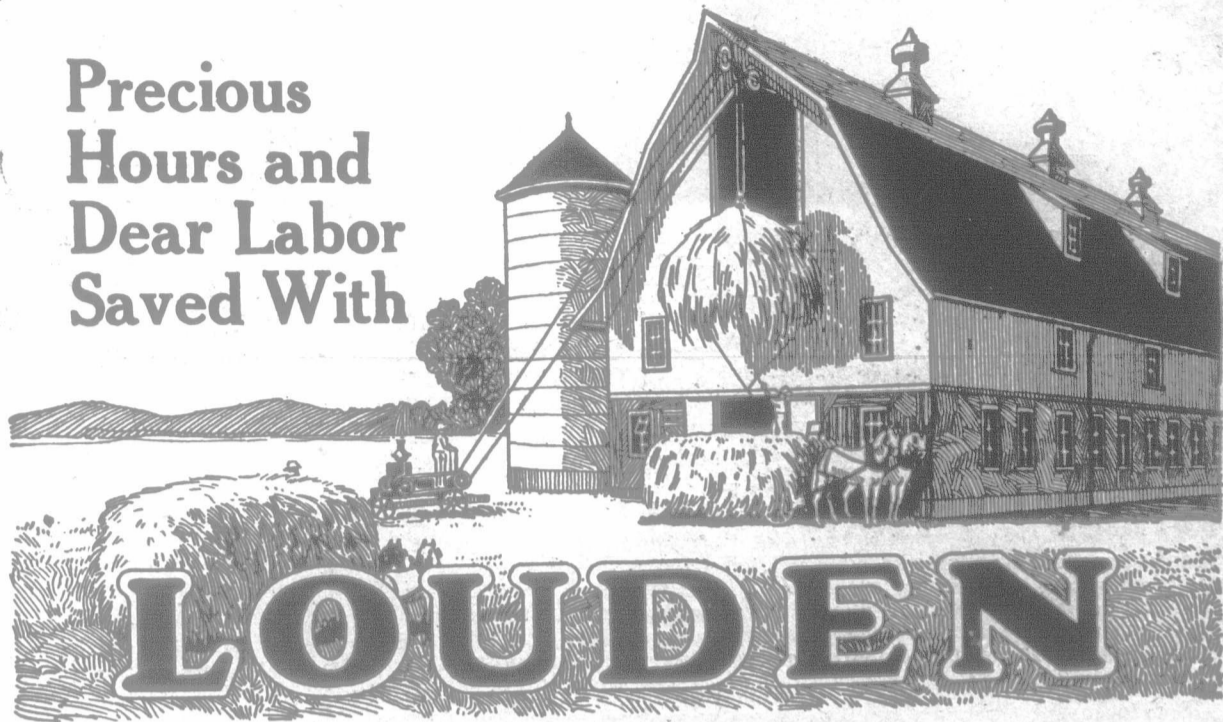
Second.—By assisting in the building of Community Halls in rural districts, so as to facilitate social intercourse among farmers.

Third.—By encouraging horticultural societies in rural communities, so as to assist in the beautifying of farm home surroundings, and for the purpose of keeping the roadsides neat and free from weeds.

Fourth.—By the building of good roads, not as high-class speedways, but to facilitate marketing.

Fifth.—By greatly extending the benefits of Hydro Electric service among the

Precious Hours and Dear Labor Saved With



LOUDEN HAY TOOLS

HAYING is one of the heaviest jobs on the farm. Are you going to have the necessary labor to harvest the crop? Added to the labor scarcity is the uncertainty of the weather.

Hay which is cured and ready to haul into the barn loses much of its feeding value if it becomes wet.

Works Like A Giant

With a Louden Haying Outfit to work like a giant for you, you are not only enabled to reduce the labor of harvesting your crop, but you are relieved of much of the anxiety of being caught by catchy haying weather. It will enable you to get through your haying in one-half the usual time—with one-half the help—and with fewer horses.

Five to Seven Minutes

A Louden Sling Carrier Outfit will handle your biggest loads in from five to seven minutes. Lifting the load straight up from the wagon it is deposited well-spread and cross-wise of the mow, which makes mowing back easy. It does not matter how high your barn is, it can be filled to the peak with a Louden Outfit.

A Louden Outfit not

only means less work for you, but may mean the saving of enough more good well-cured hay to pay for the whole outfit in one year.

Bound Grain Also Handled

Hay, Bound Grain, Straw or any other forage can be handled quickly and equally well. An all-year-round equipment is what you get when you use a Louden Sling Carrier Equipment.

If your barn is unsuited for a sling carrier equipment the next best thing is the Louden Senior Fork Carrier and Giant Grapple Fork. We are the Pioneers in the manufacture of Haying Tools and years of specialization well fits us to take care of your needs.

A man on the load—one in the mow or on the stack—and a boy at the hoist. That's all the help you need to run a Louden Sling or Hay Fork, a Louden Hay Carrier and a Louden Hoist.

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The Louden Illustrated Catalogue tells all about Louden Hay Tools. Write for it. If you are building or remodeling your barn send coupon for Louden Barn Plan Book prepared by leading specialists.

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Send in your neighbor's subscription. For each new subscription with \$1.50, we will advance the date on your own label SIX MONTHS FREE OF CHARGE.
THE FARMER'S ADVOCATE AND HOME MAGAZINE, London, Ontario

BIG CROPS OF BERRIES


are produced only from strong, healthy plants of the best varieties. The Senator Dunlap, the most popular variety grown for home use and near markets, a heavy producer of medium large, richly-colored fruit of excellent quality; the Williams, a popular commercial variety, which ripens one week later than the Dunlap. Price, \$1.25 per 100, \$2.00 per 200, \$7.00 per 1,000. When wanted by mail add sufficient for postage, and balance will be returned. Our strong, healthy, northern-grown plants will please and profit. Send for price list.

N. E. MALLORY, Gravenhurst, Ont.

Eggs Wanted—Live Hens Wanted

Top prices paid for eggs. We require large quantities of heavy live hens at very top prices. Our specialty is poultry. Get the best market in Western Ontario for your poultry by selling to—

C. A. MANN & CO.
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Is There Money In Hens?

The Poultry Farmer thinks so—Poultry when properly cared for—properly fenced—pays best. Poultry dollars will pay war taxes—better watch the dollars—a well fenced poultry farm is a splendid property for any Canadian, and Canadian farmers buying the best—building for business.

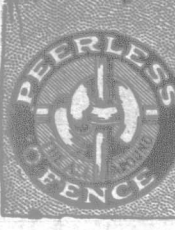
Peerless Perfection Poultry Fence

is true to its name, a perfect fence strong enough to keep strong animals out and close enough to keep even small poultry in. Every Peerless fence is guaranteed against sag, rust or break and we stand back of your dealer unconditionally. It is made of Open Hearth steel wire with all impurities burned out and all the strength left in. Well galvanized. Top and bottom wires are extra heavy. No top or bottom boards needed. Requires less posts than ordinary poultry fencing.

Send for catalog giving details. It also describes our farm fencing, gates and ornamental fence. All of our well known quality brands.

Agencies almost everywhere.
Dealers wanted in unassigned territory.

The Banwell-Hoxie Wire Fence Co., Ltd.
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For Any Farm Service

FARMING is a many-sided occupation. It calls for uncommon knowledge, technical skill and practical workmanship. It demands the best of methods and equipment. It is one of the great "overall" occupations.

KITCHEN'S "Railroad Signal" OVERALLS

are known to farmers because they bear a name famous for the finest of material, design and handiwork. Sewn to make the seams like wire, they stand the heavy wear and tear like the stoutest corduroy. MADE ONLY BY

The Kitchen Overall and Shirt Co. Ltd.

Exclusive Makers in Canada of Open Front Work Shirts.

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farmers, so that the township roads and the farm homes and buildings may be lighted and the farm machinery driven by electric energy.

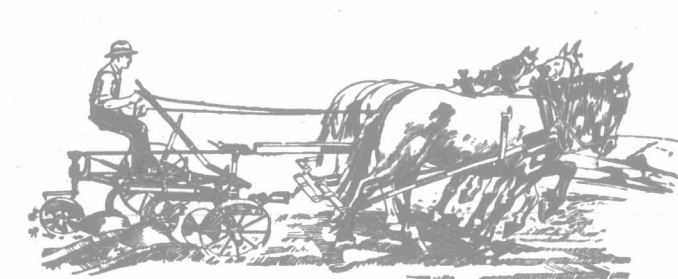
Mr. Speaker—I do not believe that there is any one agency which has done more to accentuate the difference between conditions in the rural districts and in the urban centres, socially and materially, than the manner in which the water powers of this Province have been exploited to the advantage of the large urban interests. I am one who believes that the water powers of a country belong to all the people in that country, and that those water powers should be developed as a public utility by the Government and the service administered in the interests of all, and, Sir, that on a flat rate basis. Electric energy should never be a commercial commodity. If you allow the power privileges to pass into the hands of private corporations, those corporations may do as they please with the electric energy derived therefrom; selling it to large consumers and denying it to smaller ones, at pleasure.

To-day the city of Toronto gets its Hydro Electric Service at \$14.50 per H.P., while in Chesterville, my home village, we have the proud distinction of paying the highest price of any municipality in this Province for a like service. According to information furnished me by the clerk of our municipality, the price required of us, beginning with the 1st of May, 1919, is \$76 per H.P.

More than that—Toronto is a profligate user of electric energy. The Conservation Commission of Canada in its 10th Annual Report, (quoting J. M. Robertson, writing in the May issue, 1918, of the Journal of the Engineering Institute of Canada) says—That the city of New York uses 255 K.W.H. per head of population, yearly; Boston, 350 K.W.H.; Cleveland, 400; Pittsburg, 500; Buffalo, 586; while Toronto uses 700 K.W.H. per head of population, yearly.

Now, sir, I maintain that cheap power to large centres, expensive power to smaller centres and none at all to the farmers tends to the concentration of industry and population and wealth, and a consequent and inevitable depopulation of rural districts. And where you have concentration of industry and population, you have your housing problems,

Massey-Harris



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Now, sir, when we have succeeded in bringing into realization the improvements I have suggested, when we have provided an educational system which will educate our boys and girls for, and not from the farms, when we have facilitated social intercourse and developed a community spirit in rural districts, when we have lighted farm homes and township roads by electricity; when we have done what we can to encourage horticulture in the townships. When we have completed the Biggs' Program of Road-Building, then will the honorable, the member for Grenville, be able to travel over those good roads across an Ontario rendered beautiful through the activities of rural horticulturists, either to Montreal or to Kenora at will. And, incidentally, we will have taken a long step towards stemming the tide of internal migration toward the industrial centres and turning it back to the land. Economic conditions in this Province have been of such a character that the best boys and girls have been lured from the uninviting prospect of farm life to the white lights

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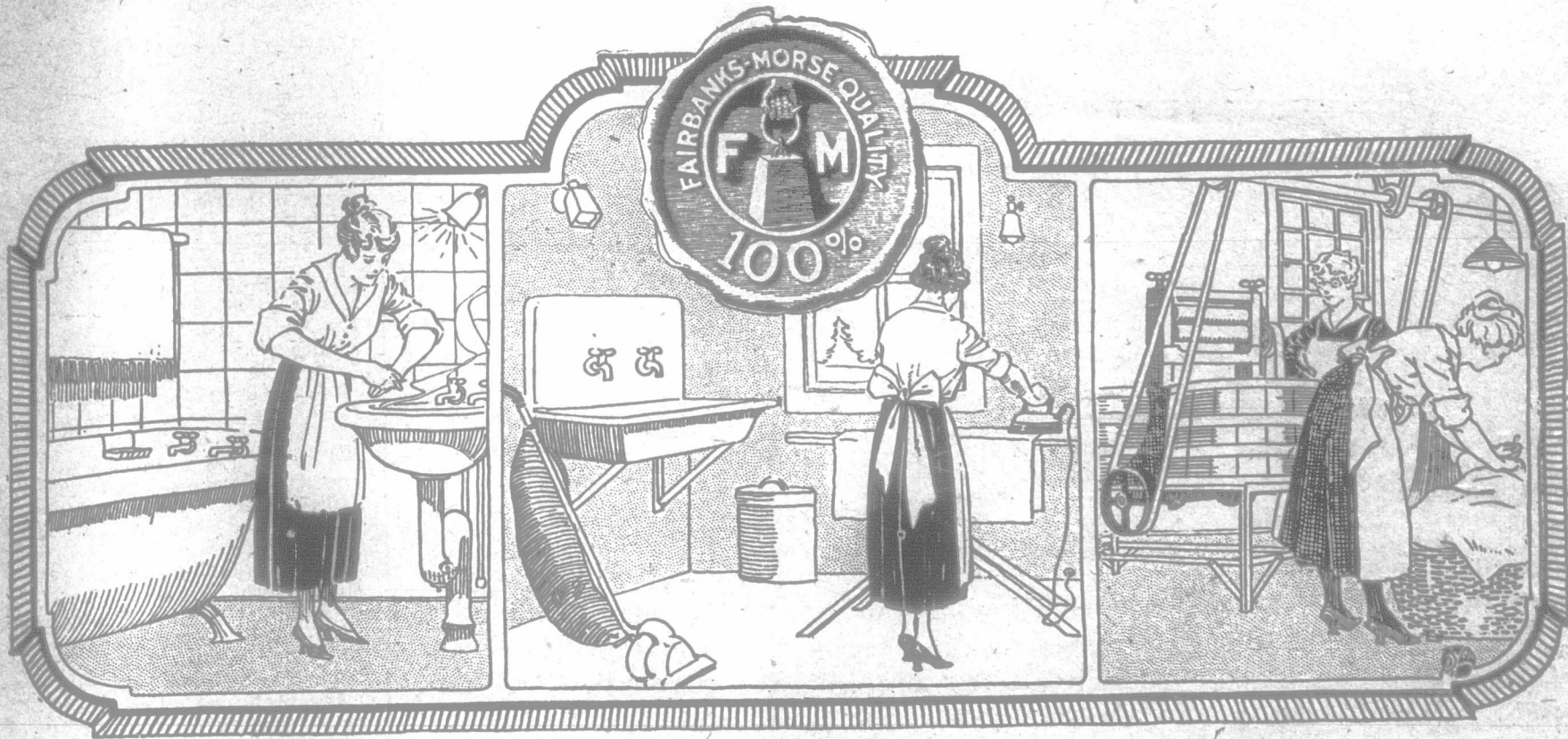
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The Farmer's Advocate.

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THOUSANDS of farmers' families live in homes where lamps and lanterns are unknown—where brilliant, clean, electric light floods every room in the house, cellar, stables, or other buildings, at the touch of a button.

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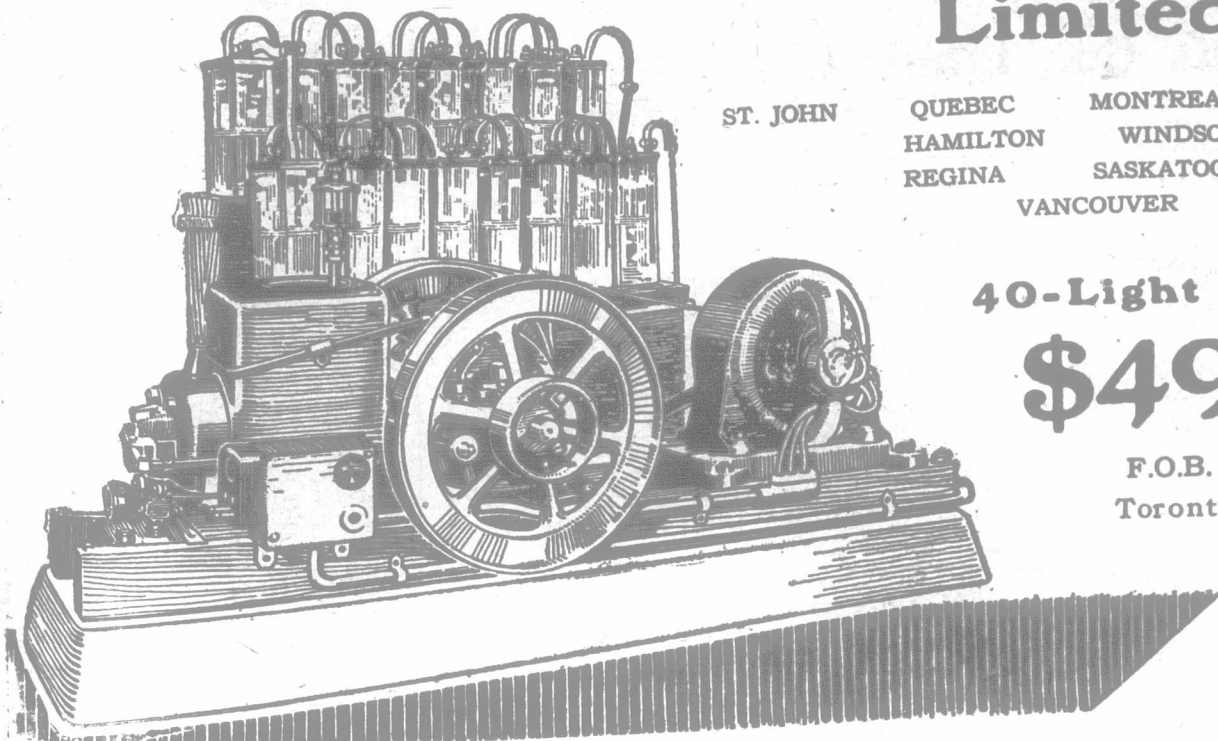
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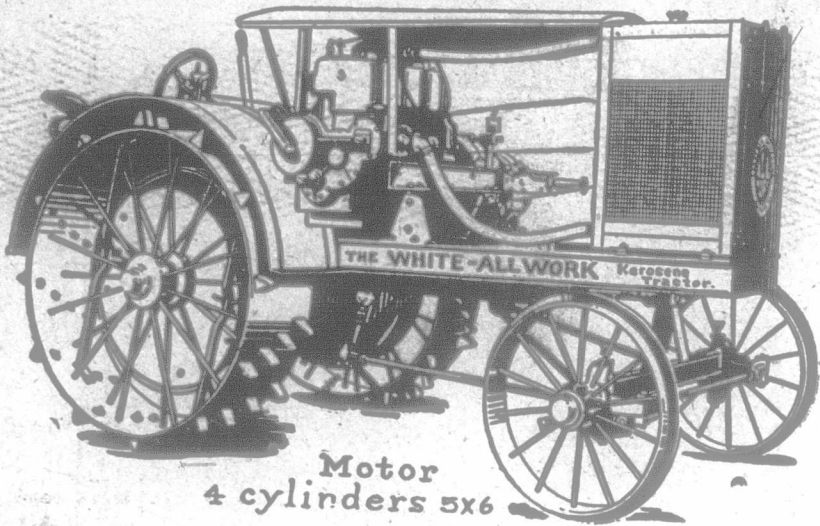
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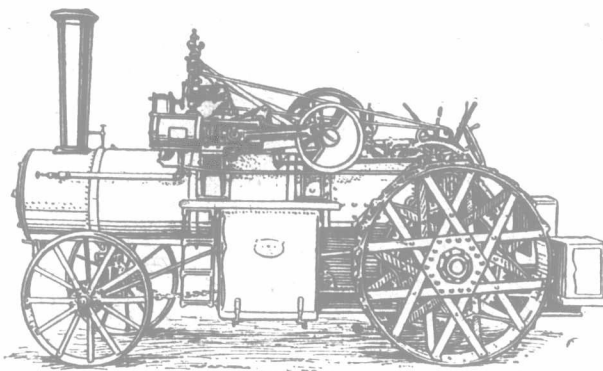
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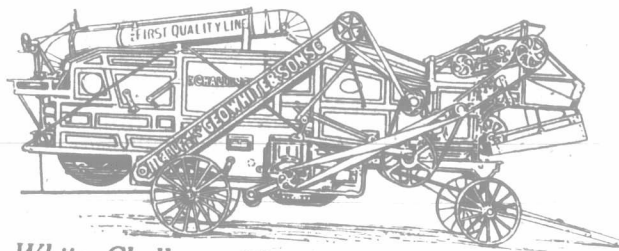
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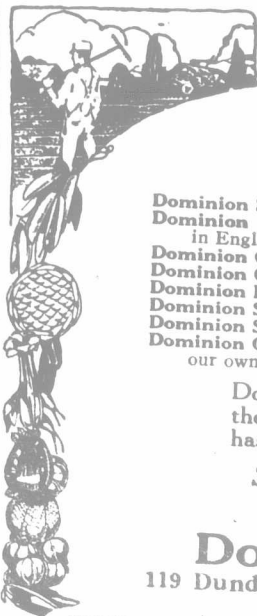
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of large industrial centres, and a lop-sided social and industrial condition has ensued. Fifty years ago about seventy-five per cent. of the population of this Province lived upon the farms, to-day about sixty per cent. live in the villages, towns and cities, and this in a Province whose basic industry is agriculture, and a Province where the measure of the prosperity of all classes is gauged by the measure of prosperity enjoyed by the farmers. To-day the farms of Ontario are sadly undermanned, and agriculture is thereby so handicapped that it is no longer possible to maintain the volume of agricultural production necessary to keep down the cost of living. This is not a "back-to-the-land" cry. We do not want town and city folk on the land, for they would only clutter things up, and be in the way. God knows, many of them are a sufficient burden where they are. But we do want to hold our own boys and girls on the land, and if we can do this in due course, the natural increase will re-populate the land with useful folk.

I do not wish to be misunderstood. I am not antagonistic to urban dwellers. I realize that prosperous villages, towns and cities are just as necessary to agriculture as agriculture is to them. We are inter-dependent and our interests are harmonious.

But, Mr. Speaker, I desire to emphasize the idea that prosperity for farmers means prosperity for all. If we can increase the buying powers of farmers, we automatically benefit all classes. The farmers, emulating their urban cousins are fast becoming good spenders. They are buying manufactured articles of all kinds to the limit of their ability, and so an increased buying power among the farmers will reflect beneficially upon all classes in the Province, upon labor and industry, upon banking and commercial institutions. Upon railway and steamship companies, upon all lines of human endeavor, from the lowest up to the very highest, even to those members of the learned professions, whose God-given prerogative it has been to grace our Legislative Halls with their presence and to shed upon our deliberations the light of their superior wisdom—the lawyers—for, when a lawyer is called upon to close up the estate of a deceased poor man, in collecting his fees he may take but little if he takes it all; but, when he has the opportunity to close up the estate of a deceased rich man, he may take much and still leave a little.

We have in this Province millions of acres of fertile farm lands, which only await the application of scientific methods of intensive farming to produce food products sufficient, not only to feed the coming millions of Ontario, but sufficient also to help to feed the millions in other lands. We have great lakes and inland seas and rapid water courses, many of which are still busy with fur-bearing life, and swarming with shoals of valuable fishes. In these great inland seas and rapid water courses, there is potential electric energy unequalled on earth; which only requires to be harnessed for the needs of man to light and heat millions of Ontario homes, to drive our farm machinery and to furnish motive power for the many industrial establishments which will some day dot the length and breadth of this favored Province. We have ranges of hills which are literally bursting with mineral wealth and great plains which, despite wasteful methods and the ravages of fire, are still covered with forests, which under wise forestation methods could be maintained in perpetuity; representing a wealth of mineral and wood resources which when converted into manufactured articles will be sufficient, not only to minister to the needs and comforts of the coming millions of Ontario, but will be sufficient also to vastly augment the volume of the trade and commerce of the world.

This, Mr. Speaker, is truly a glorious heritage, and I ask this Assembly—are we willing to prove ourselves worthy of such an heritage by sinking our petty differences and laboring harmoniously for the attainment of some adequate measure of our industrial and social possibilities? We may not see eye to eye as to method, but, if we are worthy of citizenship in this Province, if we are going to prove worthy of the best traditions of Ontario's Legislative Assemblies then we will be united at least as to purpose, and that purpose—the protection and promotion of the best and lasting interests of all classes in this land.

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The biggest value in roll roofing on the Canadian market. It is made of the best grade of waterproofing materials, is low in cost, easy to lay, staunch and durable.

You can't go wrong if you buy Everlastic—it has proved its worth on thousands of farm and factory buildings all over the Dominion.

Made in three weights (1-ply, 2-ply and 3-ply). Rolls contain 108 sq. ft. Nails and cement with each roll.



For Repairing Your Old Roofs

Here are two of the greatest roof-repair materials ever produced:

Everlastic Liquid Roofing Cement

Unequaled for re-surfacing worn-out felt and "Rubber" roofs. Has the consistency of thick molasses; is easy to apply and dries quickly into a hard, elastic, wonderfully durable coat that adds years to the life of your roofs.

Comes ready for use in packages ranging from 1-pint tins to 40-gallon barrels.

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For patching holes and leaks in all kinds of roofs, repairing flashings, re-lining gutters, etc. Known as "waterproof cement of a thousand uses." Elastigum is tough, elastic, plastic, waterproof, acid-proof, and inexpensive. Comes all ready to use.

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Your farm implements and metal roofs don't wear out—they rust out. Everjet prevents rust. You'll be surprised how it lengthens the life of all kinds of metal work. Gives a lustrous, black finish which wears stubbornly under the most severe conditions and is proof against moisture, acids and alkalis.

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The French Canadian Horse.

That automobiles, trucks and tractors are replacing horses for certain kinds of work in many places is admitted by all. But when one thinks about the very congested city districts where trucks will never be profitable on short hauls, the long winter months, in most northern sections, during which tractors will necessarily be idle, the hilly or even very rolling farms where too much power is lost in propelling the machine itself, it is clear that the horseless age is still very far distant. That the automotive industry is rendering service to the country at the same time as it is piling up dividends is certain; that it will in time crowd the horse away from farms is not believed by anybody who has given the question serious consideration.

Drafters have always and will always be profitable to the breeders who produce them. But there are a large number of farmers who like a good general purpose animal, one that can be hitched to a carriage without looking out of place, and that can take his turn at farm work with a willing disposition, a fast walk, lots of courage and endurance. To pretend that drafters are the only class of profitable horses to raise is to go too far, just as it is not right to say that tractors or trucks are always the most economical for the farm or the city.

The old time French Canadian pony, as he was called, was admitted to be a little horse of iron. The first animals

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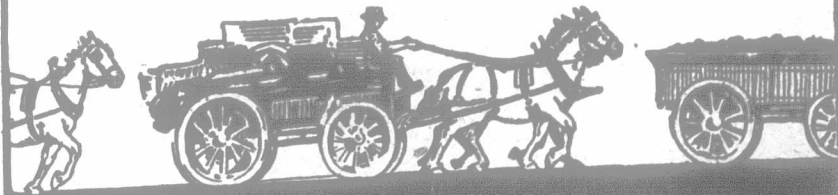
Imperial Mica Axle Grease

—not only lubricates, but smooths the surface of the axle and hub with a coating of powdered mica, thus reducing friction and lessening the strain on horses and harness.

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keeps harness straps and tugs pliable and strong, prevents cracking and breaking of stitches. It preserves harness against the action of sweat, moisture and dust, also wards off insects. Imperial Eureka Harness Oil imparts a rich, black, lasting finish.

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of this breed came to Canada from France where they were chosen amongst the best to be had. Through natural selection, by the survival of the fittest, only those remained which had the most vitality, enough to withstand the cold climate and the deep winter roads of their new country. This made of them a breed

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When you must delve in the depths of the dark hall closet, or rummage around the dim store-room, a Daylo will help you to find what you're after.

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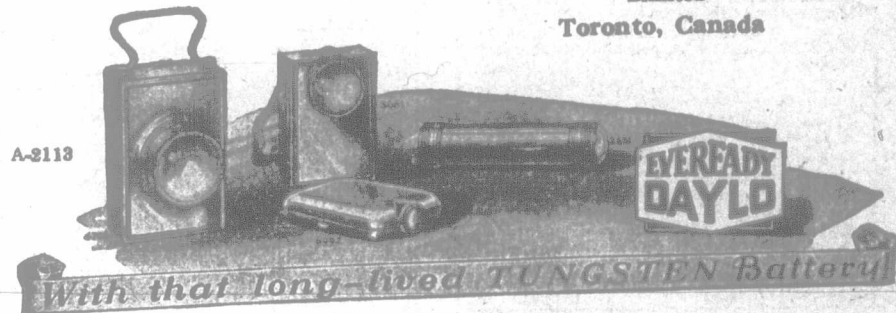
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which can probably develop and keep on developing more power per hundred pounds of live weight than any other one. Their qualities were so well known that they were used to form certain families of the Morgan and of the Standard Bred, so that their blood is flowing in the veins of some of the gamest and fleetest horses in America. The Honorable Sydney Fisher has well said of the French Canadian: "He never gives out, it does not matter what he is at."

There are now four stallions with fifty mares and fillies, all pure-bred and registered, at the Cap Rouge Station and at the St. Joachim Horse Farm. These are used to study problems of breeding, feeding, housing and management. They form, it is freely admitted by all, the largest and best stud of the breed in existence to-day. One of the points towards which efforts are concentrated is the production in a fairly consistent manner, of a breed of horses weighing between 1,200 and 1,300 pounds, which may be used either on the road or on the plough, a low-set, thick animal, with a short back, a strong loin, giving him a general conformation which will make him a cheap producer of power.

Whoever is interested in this class of horses will be quite welcome either at Cap Rouge or at St. Joachim. Both farms are under the superintendence of the writer who will be pleased to give by mail any information required by those who cannot visit the two named farms —Gus Langelier, Superintendent, Experimental Station, Cap Rouge, Quebec.

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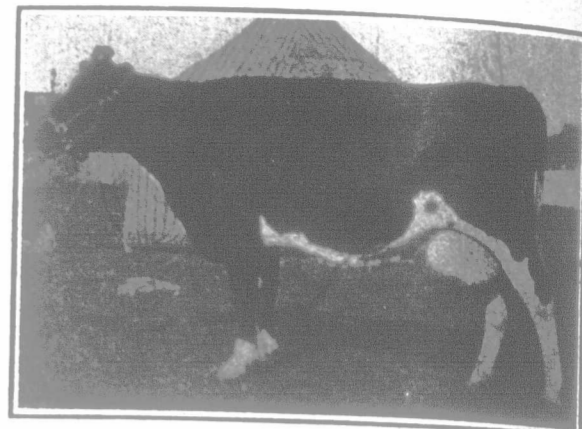
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 Our records show that a trial package of Capital Heaves Remedy was sent Mr. Norton, on July 28, 1917, and it was this trial package that made him a good friend of Capital Heaves Remedy and caused him to write the above letter.
FREE We send a full week's trial free for 5c to cover postage and wrapping. If you have a horse that coughs or heaves write Veterinary Supply House, 750 Cooper Street Ottawa, 10

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 Two Clydesdales 4 years old, two Clydesdales 3 years old, two Hackney stallions (one 5 years old), all from imported sires and dams. Two of the Clydesdales have seven registered numbers, the other four have five registered numbers, with size and quality—inspected and passed. All are broken to harness. Will sell cheap, or exchange for other stock. For particulars, write J. A. MYLES, R.R. No. 4, Epping, Ontario Station—Thornbury.

Spraying.

(Experimental Farms Note).

If the fruit grower, vegetable grower, or flower grower does not spray nowadays, he is almost certain to have inferior products in his orchard, small fruit plantation and garden. There are so many injurious insects and diseases which affect a large proportion of the plants he grows that if they are uncontrolled there will either be no crop left or else the value of the crop will be very much reduced.

There are few of these insects and diseases which cannot be well controlled by using some of the remedies which have been discovered during the past twenty-five or thirty years and which have been well tested by many experiments.

Spraying must, however, be thoroughly done if good results are to be obtained. Materials are expensive, and the cost of labor is high, and money will be wasted if the work is improperly done or not done at the right time.

The early sprayings are, as a rule, the most important, and those who have orchards or gardens, should get everything in readiness to begin at the right time as delay may mean much loss. Spray calendars are issued by the Dominion and Provincial Departments of Agriculture, in which several sprayings are recommended to be applied at certain stages in the development of the leaves, flowers, and fruit. In the case of fruit trees the spray should be applied so that every leaf, bud, and fruit will, if possible, receive some of the material, not only on one part of it but as nearly all over as possible. Every leaf, flower and bud or young fruit missed means a possible starting point for disease or insect pests.

In the case of vegetables promptness in the application of a good spray is just as important as with fruits. One does not need to be convinced of the value of promptness in using poison in controlling the Colorado potato beetle as the results of the spray are immediately apparent in the death of the "bugs", but more faith is required when dealing with diseases and insects which are not so readily seen but which do much harm, and usually the grower is well rewarded for such faith.

The formulae for the mixtures and solutions recommended should be followed as closely as possible. If a man knows the chemical composition of the materials he uses, and has made a study of spraying, he may alter them slightly to meet certain circumstances, but if he knows little about them he should follow closely the instructions given on the Spray Calendar. He should, also, spray as nearly as possible at the time suggested. A delay of a few days may mean practically the loss of the mixture or solution used as there might be no return for the labor and expense. Write to either the Dominion or Provincial Departments of Agriculture for a Spray Calendar.

The Old Reliable.

I have taken "The Farmer's Advocate" a number of years. The older it gets, the better it gets. I take four others, but the old reliable for me.
 Meigs, Ont. M. T. LEE, Sr.



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No. 640, Team Harness, is especially designed for farm work such as ploughing, seeding and general hauling. Exceptionally good value at a very low price. Blind Bridles with side check; lines one inch; high top hames; traces, steel chain, leather covered; pads with hook and terrets; backstrap with trace carriers riveted on top. White metal or japanned mounts, less collars. Price \$57.00

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Light Draft and Thorough Spreading

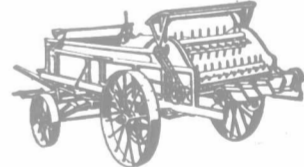
FROM a quarter to half a ton less dead weight for your horses to pull—a straight line of drive through direct connection of front and rear axles, and freedom from choking—these three light-draft features alone often sell T.A. Spreaders. And its direct chain drive is the lightest running drive yet contrived.

Thorough Spreading—even spreading—is assured by double cylinders running in opposite directions. And then to make assurance doubly sure our exclusive, special design distributor that takes care of odd lumps of manure that might happen to get through. Get the rest of the description by writing now for interesting catalogue.

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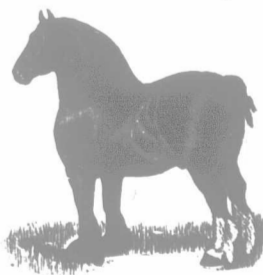
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Royal Raven 21558, born May 30, 1917. Sire, Montrave Imperialist (Imp.) 12646—16310. Dam, Royal Kate (Imp.) 28263—20719. A good horse at a right price. Come and see him.
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JAMES WILSON, care of Queen's Hotel, LISTOWEL, ONTARIO

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Brooding and Feeding of Chicks.

(Experimental Farms Note.)

Brooding methods have undergone considerable changes of late. For small flocks the portable hover is undoubtedly the most satisfactory, but even with comparatively small flocks some are now using stove brooders. The advantage of these stoves is that they can brood large flocks at a comparatively small cost. The pipe brooder was the system that was formerly used on large plants and is still quite largely employed. It gives excellent satisfaction but is so expensive to install that the stove brooders are largely supplanting it.

These stove brooders can be used in any ordinary colony house, thus avoiding the necessity of a special brooder house. They are made in different sizes and will accommodate either large or small flocks. Five hundred chicks can be attended in a colony house with almost as little labor as 50 in a small brooder and the additional cost is comparatively low.

When the chicks are removed from the incubator, care should be taken to avoid chilling them. The brooder should be so heated that they will be able to get a temperature of 100 degrees.

If the hovers are heated to 90 or 95 degrees before the chicks are put in them, the heat generated by the chicks will bring it up to the desired temperature. The idea is to give the chicks as low a temperature as is consistent with their comfort. The temperature should be gradually reduced but never so quickly as to cause any discomfort to the chicks.

With the brooder stoves the chicks can select their own temperatures. If they want a little more heat they can get a little closer to the stove, if they get too warm they can spread out a little more. It is advisable when the chicks are first put into the house to make a ring around the stove in which the chicks are confined until they become used to their new quarters and get accustomed to the source of heat, then the fence may be removed. For this purpose a strip of ready-roofing—half width—answers to perfection, as it is easily handled and it breaks the draughts, which are liable to be along the floor and which are one of the dangers that should be guarded against in this method of brooding.

Feeding — When the chick is hatched it comes into the world with a sufficient supply of nourishment in the form of egg yolk to last it for several days. What a chick requires at the start is not feed but warmth and rest. When the chicks show positive signs of hunger, which will be in about two or three days, give them a feed scattered on a little coarse sand or chick grit. For this first feed, hard boiled egg and bread crumbs in the proportion of about four of bread crumbs to one of egg is used. Feed little and often alternating this feed with scratch grains and dry mash. Supply tender green feed such as lettuce or something similar. After the first week hoppers of dry mash should be kept before them and by the time they are about ten days old, the egg feed may be discontinued. Place grit, water and a dish of sour milk where they will have free access to them. Nothing provides animal food in better form than does sour milk.

Mud Turtles.

In a recent issue of "The Farmer's Advocate", a subscriber was inquiring about destroying mud turtles. One way is to put out a lot of hooks and lines baited with fresh meat. A float should be attached so the hooks will be from six to eight inches from the bottom of the pond. Another method is to put boards on the water, on to which the turtles will climb. In the early morning, or just before dark, a good many of the turtles may be killed by the use of a rifle.

EDITOR "THE FARMER'S ADVOCATE":
"The Farmer's Advocate" is, in my estimation, the only real farm journal for a real or intending farmer. Its advice is worth more to me than I can say in writing, and I should be lonesome without it.
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Just one bull left, 9 months old; sire, Lochiel (imp.); dam on the R.O.P. Pure Scotch. Stallion colt, sired by Baron's Stamp. Fillies rising 2, 3, 4 and 5-year old. Come, see, and be satisfied.
Brooklin G.T.R. and C.N.R. Myrtle C.P.R. **WM. D. DYER, COLUMBUS, ONTARIO**
20 Bulls—**SPRUCE LAWN**—100 Females
Clyde, Laber, Shorthorns, York-shires. Herd headed by Imported Golden Challenger 122384. a Ruby-hill, bred by Earl of Northbrook, by Assort Challenge, bred by L. De Rothschild. Special fatness in female's milk. Cows and heifers in calf, yearling and heifer calves. Yorkshires either sex.
J. L. and T. W. McCAMUS, Cavan, C.P.R.; Millbrook, G.T.R. and P.O., Ont.

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Choice bred heifers. Bulls 8 to 15 months. Southdown ewes in lamb.
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Nine extra good young bulls for sale. Also females all ages. Show-ring quality.
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How to Avoid Bee-Stings.
 BY H. W. SANDERS.

There are many people who would like to keep bees, but who cannot stand the thought of being stung, and there are even people who do keep bees who fail to get the best out of them, owing to their fear of the little weapons carried by the bees. Yet it is easy to avoid getting stung if one will only take the needful care.

In a recent number of a bee magazine there appeared a photo of a man with a large swarm of bees hanging from his chin so that it looked like a beard—here again the needful precautions were taken. It is not too much to say that an expert can handle bees clad in a bathing suit and nothing else.

Of the first importance is the breed, or strain of the bees. Pure Italians are much the gentlest race, and their other desirable qualities—such as disease-resistance, have made them the choice of practically every important beekeeper in the world. The old-fashioned black bees are also gentle, but not quite so much so as the Italians. When, however, we get a cross between the two races, (known as hybrids), for some reason they are nearly always extremely cross and difficult to handle. We had a very unpleasant experience of this some years ago. Some bees had been purchased out in the country and then brought into our yard here, and assuming that they would behave the same as the others we had, they were merely added to the outfit, which occupied a piece of land close to the highway. The bees built up well and all was serene till the season was well advanced, and then suddenly the bees began to sting all and sundry who came down the road. They chased us into the house when we were tending the garden, they plagued our neighbors, and in the end they nearly landed us in the police court for "a common nuisance."

We tried everything we could think of to pacify those bees, but nothing seemed to work at all. Moving them was practically out of the question as the older bees had marked the location and would return to that spot if the hives were moved less than a couple of miles away. We sent away for Italian queens, in the end, and when they arrived we moved the hives a few rods away leaving in their place about half the number of hives with an Italian queen in each. The older bees all came back to these hives and they soon became rousing colonies, but the new queens laid only Italian eggs of course, and as the older bees died off the temper of the colonies underwent a marked change. Since then we have had no further trouble. The hives that were moved were re-queened the next season.

You can easily tell Italian bees. In the first place their color is uniform, with three yellow bands across the abdomen, whilst hybrids show all sorts of colors, from the Italian markings, to pure black or black with greyish bands. Secondly the Italian bees keep still when you handle the combs, whilst hybrids run nervously all over the combs and hang in bunches or drop off. We have had Italians so gentle that the queen would go right on laying eggs whilst we held the comb in our hands.

Novices generally err on the side of opening their hives too often. Once one has learnt the trick there is something fascinating about handling bees, and one is tempted to "monkey around" with them too much. This is all right when conditions are ideal, but in spring or when there is not a good warm day and honey yielding in the fields, the bees are apt to resent it and "signify in the usual manner."

Choose a bright day when the sun is shining and the bees are flying freely and proceed to the back of the hive. A bee-veil is useful, if only to give confidence, and provision should be made to prevent the bees getting up the sleeves or trouser-legs. Gloves we do not recommend except in cases of very bad tempered bees. Their use makes the action of the fingers clumsy, and nothing is worse than bungling motions.

We have a smoker, an engine of tin that will puff smoke out at will, and as we open the hive we blow a little smoke in. This has the effect of demoralizing the bees and instead of rushing to attack the

Good Breeding Son of Right Sort (Imp.)
Herd Bull for Sale

Escana Star =103953=
 Dark red; bred by Mitchell Brothers; an Orange Blossom. Dam, Orange Flower 2nd. The three top bulls in his pedigree are Right Sort (Imp.), Village Duke (Imp.), by the great Villager, and Greengill Victor (Imp.). Short-horn breeders will appreciate the value of this breeding. My cows all being in calf to him and heifers coming on from him, would be willing to sell this valuable sire. Sure, active, low down, thick fleshed quality bull.

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Three Scotch Shorthorn Bulls for Sale
 Two roans and one white, all "Crimson Flowers," and all sired by Augusta Knappin - 115764 -; ages 14, 12 and 11 months. All three are big, strong, supple calves, and in good condition, and ready for work. Dams, Crimson Jennie 8th - 80630 -; Crimson Jennie 9th - 94989 -; Crimson Jennie 11th - 97428 -.

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Lord Lorne (21269)—Clyde
 Rising 3 years. A grand young stallion, with good size, excellent head and legs. Black body, with white marks on legs. For further particulars apply to

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 One nearly 2 years in proved calf getty; sired by Sultan's Choice - 107452 - and from 1332, Duke G. 1 - 118440 - Another near 18 months from same dam, sired by Berlim-Bradford son Duke - 109800 - One from Levat M. produce - 200 (Imp.) - 1-2777 - sired by imported bull - ARCH. HISLOP, Brussels P. O. From 31 - from Brussels, G.T.R.; 3 miles from Walton, Ont.

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I am in a position to furnish you with the best in either sex that can be found. High-class young bulls for the breeder and the farmer. Cows and heifers of the finest breeding to start you right, and you cannot afford to start wrong. Every animal that I have sold in two years has been satisfactory, the most of them sold by letter. I can satisfy you with the best in what you want at a price that will give you a chance, and I will pay the freight or express to your station. Augusta Sultan =93092 = one of the greatest living sires at the head of my herd. Write and if possible come and see, it is worth while.

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Pear Lawn Shorthorns, Hackneys and Yorkshires—One imported in dam Miss Secret bull, 12 months, imp. sire and dam; one Golden Rose bull, 6 months, imp. sire and dam; one bull, a Flattery, 12 months, imp. sire. A few young cows with calves at foot. One imported Hackney stallion, A 1; two Hackney stallions rising one year; one registered Clyde mare; also Yorkshires at weaning time. HERBERT J. MILLER, Keene P.O., Ont. Stations—Keene G.T.R., Indian River C.P.R. Peterborough County.

Spring Valley Shorthorns—Herd headed by Sea Gem's Pride 96365. We have a number of good bulls for sale, including the Champion Ivanhoe 122700, and his full brother also, an extra well bred Rosewood, and others. Write for particulars.

Telephone and telegraph by Ayr. KYLE BROS., Drumbo, Ont.

Imported Scotch Shorthorns For Sale—three imported bulls, one yearling sire, also a choice two-year-old Orange Blossom of our own breeding and three well bred bull calves about year old. Would consider exchanging an imported bull for Scotch females.

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 Three young bulls (re-fellows); also 6 thick heifers a Scotch Clementina bull right. Come and see, o HENRY J. Ball 'Phone

Buy Glenfloy
 9 bulls, all ages; 25 Herd bull 2,400-pound sire's dam and three records average of also high-class stallion. Com Stewart M. Grah

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Two Registered Sc
 One white, 13 months, other red, imported in da 2-year-old; both priced Elmer Ford, - R. F.

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... who would who cannot stand ... and there are ... bees who fail ... them, owing to ... weapons carried ... is easy to avoid ... will only take the ... of a bee magazine ... of a man with a ... hanging from his ... like a beard—here ... tions were taken. ... ay that an expert ... n a bathing suit

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intruder they fear a fire, and rush to their stores of honey. They fill their bodies with honey so that if forced to abandon their home at short notice they will have something to start with elsewhere, and when full of honey a bee rarely stings. This fact is at the bottom of all methods of bee-control.

We are careful not to drop anything, not to breathe on the bees or to jar their home. Bees are extremely sensitive to shocks of all sorts and many a sting have we got from inadvertent bumps against the hive. Once we had some bees and could not imagine what made them so cross, they had loose flat covers, and these were held down by stones. Without thinking these had been lifted off and thrown on the ground, and the shock had irritated the bees before we started to open the hive at all.

Quick nervous movements, fighting an attacking bee, or anything in the way of excitement will instantly provoke an attack.

If one gets a sting, the right course to follow is to quietly scrape the sting out and then remain motionless for a few seconds. By that time the pain will have subsided and the bees will be quieted. The odor of sting-poison has the effect of arousing the bees and if one is not careful other bees will add their stings to the one he already possesses. Therefore, the pause. The smoker is used to blow a little smoke over the bees, not at them, and this will usually prevent further stings.

Bees have a curious dislike for the smell of horses, and will readily sting any one bearing this odor. Farmers who keep bees usually find it best to keep special clothing for their bee work.

Bees dislike dark colors and white clothing seems to render the wearer invisible. White overalls such as are used by painters and a white shirt that buttons tightly at the wrist make a good combination for apary work.

Bees are much more inclined to be cross when there is a sudden stop in the honey flow than at other times. In fall an early frost will sometimes cut away the flowers, or else weather conditions in early summer may have the same effect and the bees are thereby rendered very angry for a few days. Robbing is another cause of much trouble in the way of stinging.

Beekeepers always find that when they have been at the game for a time that they become gradually inoculated with the poison of the bee-sting and that it ceases to have any further effect on them, except for the few seconds after the sting. Even the veteran suffers acutely for those moments, but once they are past the sting is forgotten. Those who have not become inoculated in this way often have severe swelling and inflammation for several days.

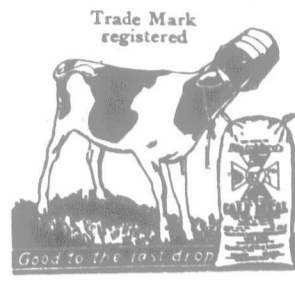
We have tried many remedies for bee-stings, but have found very little effect from their use. Warm water seems to ease the swelling, and in the case of horses that have got badly stung we have read of a cure being effected by cloths wrung out of boiling water being applied. Outside of this we have not discovered anything to recommend.

We always make a point of giving a present of honey to any one who has been victimized by our bees, and we heartily advise all beekeepers to do the same. If keep the neighbors sweet.

Blatchford's Calf Meal

(The Original Calf Meal)

Established
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120 Years
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Every 100 lbs.
Equals
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THOROUGHLY STEAM COOKED
Blatchford's Calf Meal is the most widely used Milk-Substitute.
More Calves are RAISED on it each year than all other Calf Meals combined.

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Three young bulls (red), for sale; thick, sappy fellows; also 6 thick heifers, 2 years old, bred to a Scotch Clementina bull. These will be priced right. Come and see, or address:
HENRY FISCHER,
Bell Phone R. No. 2, Mitchell, Ont.

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9 bulls, all ages; 25 heifers and cows. Herd bull 2,400-pound quality kind, which sire's dam and three nearest dam's milk records average over 9,000 pounds; also high-class yearling Clyde stallion. Come and see them.

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Herd headed by Master Marquis = 123326 =, by Gainford Marquis. Stock of either sex for sale. Also Oxford Down ewes.
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Two choice young bulls, 6 and 11 months old, also one and two-year-old heifers, all got by Roan Chief Imp. = 60865 =.
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Two Registered Scotch Shorthorn Bulls

One white, 13 months, by Pride of Escana; the other red, imported in dam, by Grand Champion 2-year-old; both priced for immediate sale.
Elmer Ford, - R. R. 1, - Hornby, Ont.

40 SCOTCH SHORTHORNS

arrived home Dec. 17th. From our herd of 125 head we can offer a large selection in choicely-bred bulls and females. Anyone in need of foundation stock may find it to their advantage to look over our offering before making any purchases.
J. A. & H. M. PETTIT :: **FREEMAN, ONTARIO**
Burlington Jct., G.T.R., only half mile from farm.

The Salem Herd of Scotch Shorthorns

HERD HEADED BY GAINFORD MARQUIS, CANADA'S PREMIER SIRE
Write us about the get of Gainford Marquis. They have won more at Toronto and other large exhibitions than those of any other sire. We still have a few sons to offer, as well as females bred to Canada's greatest sire.
J. A. WATT, : : **Elora, Ontario**

Braeburn Scotch Shorthorns

150 Head 100 Breeding Females
Herd Headed by Nero of Cluny (Imp.)
I have at present twelve young bulls that are now nearing serviceable age. The majority are sired by my present imported herd sire, and we guarantee them as good individually as the get of any other one sire in Canada. They are nearly all roans, and are priced to sell. Can also spare some breeding cows in calf to Nero of Cluny (Imp.).
CHARLES MCINTYRE, Scotland, Ontario
Brantford 7 miles. Oakland 1 mile. L.E.N. Electric R.R. Cars every hour.

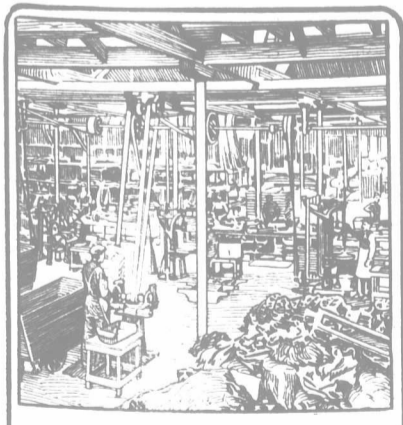
Shorthorn Bulls at Maple Hall—These five young bulls, from 5 to 18 months, are some of the best animals we ever raised—a roan Crimson Flower show bull calf (5 mos.); an extra good Duchess of Gloster (15 mos.); a red Crimson Flower (16 mos.), from a great milking family and a right good bull; a red Butterfly (10 mos.), a show bull; also a red Shepherd Rosemary (8 mos.). It will pay anyone looking for Shorthorn bulls to see these animals.
Claremont C.P.R. Greenburn C.N.R. Pickering G.T.R.
D. BIRRELL & SON, Claremont, Ont.

Shorthorns—Males and females for sale—We are offering our herd sire, King Dora (imp.) 107291 = (137372), and a number of young cows with calves, at foot by the above sire; also some young bulls and heifers.
Clyde mare, Lady Kinloch (imp.) 12248 in foal.
SOCKETT BROS., Rockwood, Ont.
Phone 22 ring 3.

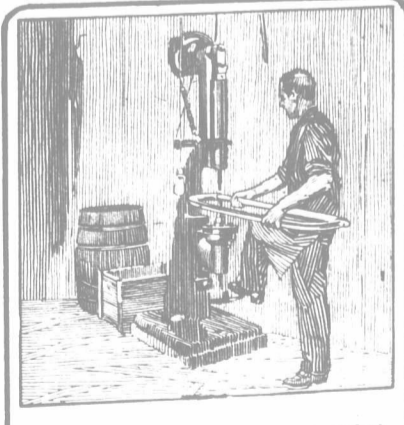
Scotch Shorthorn Bulls and Females—I have a nice offering of Scotch young bulls still on hand. The pedigrees are choice, the individuality is good—and the prices are right. If you want one Shorthorn female of a carload, come to Markdale.
THOS. MERCER, Markdale, Ont.

Cedar Dale Scotch Shorthorns—Pleasing Cattle and Pleasing Pedigrees—Senior Sire, Excel-sior by Gainford Marquis (imp.). Junior sire, Matchless Duke by Gainford Matchless, the \$12,000 son of Gainford Marquis (imp.). I have a number of choice bred heifers, and must sell a few to make room. Also have a couple of Scotch-bred bulls. Prices right at all times.
FRED. J. CURRY, Markdale, Ont.

Shorthorn Bulls and Females—Herd headed by Ruby Marquis, a son of the great Gainford Marquis (imp.). Our calves now coming are all by this sire. We are also offering a few females in calf to him. Get our prices before buying elsewhere.
PRITCHARD BROS., - R. R. No. 1, - ELORA, ONT.



1. When you buy BT Equipment you get the best value on the market. Our very large output enables us to make savings in production. We give you the benefit of these savings by using heavier material, by galvanizing our Stalls and by giving better service.



2. The machine for rivetting Stanchions, shown above, takes the place of five men. Our machine for bending triple curve partitions will do more and better work than fifty men. What we save from machines like these we put back into the goods in heavier and better material.



3. We were the pioneers in Canada in the manufacture of Stable Equipment. You get the benefit of our long experience, up-to-date machinery and many patents. Our Barn Planning Department will give you free assistance. The BT Barn Book gives full particulars the coupon brings it—Free.

Send this coupon for the 352-page Barn Book. Tells how to plan and build the barn, how to ventilate, how to frame, how to save steps, labor, time and feed. This book saves you hundreds of dollars in building. It is free.

BEATTY BROS. LIMITED
K488 Hill St., Fergus, Ont.

I intend to build about
I intend to remodel about
I keep Cows
My name is
My Post Office is
R. R. No. Prov.
Nearest Railway Station
If you live in Maritime Provinces, please give Lot and Concession. If you live in Western Provinces, please give Section, Township and Range

Make Your Crops Pay Better



Be sure to work
the fertilizer
thoroughly into
the damp soil.

Increase The Yield Per Acre

Experience shows that the following analyses of commercial fertilizers produce larger and better yields.

RECOMMENDATIONS:

- For Corn.** Four hundred to six hundred pounds per acre of Swift's Red Steer Fertilizer 2-12-1.
- For Sugar Beets.** Five hundred to one thousand pounds per acre of Swift's Red Steer Fertilizer 1-9-2.
- For Tobacco.** Seven hundred to one thousand pounds per acre of Swift's Red Steer Fertilizer 3-8-3.
- For Potatoes.** Five hundred to one thousand pounds per acre of Swift's Red Steer Fertilizer 3-8-3 or 2-10-2.
- For Spring Grain.** Two hundred to four hundred pounds Swift's Red Steer Fertilizer 2-8-2 or 2-12-0.

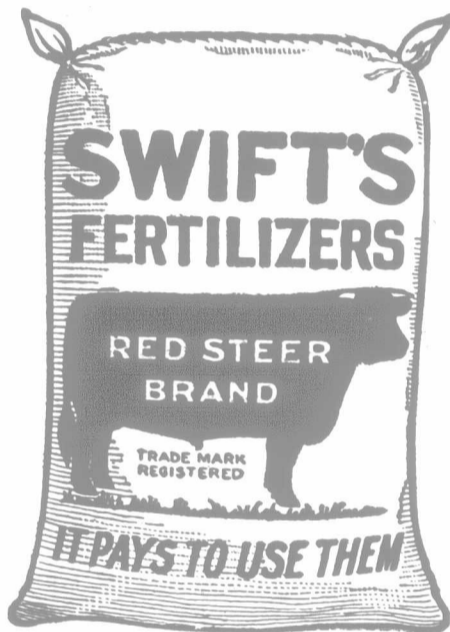
We ship in 125-lb. Bags or Carlots

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SWIFT CANADIAN CO.,
Limited

Fertilizer Dept. TORONTO, ONTARIO 1958 St. Clair Ave. W.

Agents wanted in unrepresented territory.



DUAL-PURPOSE SHORTHORNS

Present offering: Six young bulls, Reds and Roans, also a number of females. They have size, quality and breeding from good milking dams. Prices moderate. Satisfaction guaranteed.

CHAS. GRAHAM - Port Perry, Ontario

Mardella Dual-Purpose Shorthorns

8 choice young bulls; 30 females, cows and heifers. All of good size, type and breeding. Herd headed by The Duke; dam gave 13,599 lbs. milk, 474 lbs. butter-fat. He is one of the greatest living combinations of beef, milk and Shorthorn character. All priced to sell. Write, call or phone.

THOMAS GRAHAM, Port Perry, R.R.3, Ont.

Dual-Purpose Shorthorns—Herd sire, Darlington Major Maude = 101212 =, by Darlington Major = 91279 = (imp.); dam Lady Maude = 104885 = (imp.). For sale, 6 bulls, ages 6 to 13 months. R. H. & W. S. SCOTT, Box 231, Tillsonburg, Ont.

Maple Shade SHORTHORNS

A dozen young bulls imported and my own breeding at moderate prices.

W. A. DRYDEN

Brooklin - - - Ontario

R.O.P. Shorthorns

At Evergreen Hill Farm. One yearling bull by St. Clair = 84578 = also a few yearling heifers.

S. W. JACKSON, - Woodstock, Ont.

"Advocate" Advts. Pay.

GRAND RIVER DUAL-PURPOSE SHORTHORNS

Herd headed by Prince Lavender 104449—dam gave 16,596 lbs. milk as 4-year-old Present offering: 5 good young bulls. Some good bull calves coming on—dams now running in R.O.P. A few females to spare.

HUGH A. SCOTT, - - - CALEDONIA, ONT.

DUAL-PURPOSE SHORTHORNS

Herd headed by Dominator 106224, whose two nearest dams average 12,112 pounds of milk in a year. Inspection of herd solicited.

WELWOOD FARM, - Farmer's Advocate, - London, Ont.

MILKING SHORTHORNS Young stock from R.O.P. cows by imported sires.

BERKSHIRE PIGS Choice bred sows and boars, all ages. Can supply pairs not akin.

J. B. PEARSON, Manager - Credit Grange Farm - Meadowvale, Ont.

Newcastle Herd of Shorthorns and Tamworths for sale—Several young bulls ready for service; several heifers bred to Primrose Duke = 10754 =, and a good milking strain. A choice lot of Tamworths of both sex, and various ages, from noted prize-winning stock. Pair of registered Clydesdale fillies rising 3.

Long distance Phone. A. A. COLWILL, R.R. No. 2, Newcastle, Ont.

Shorthorn Herd Sires Selling Quick—I have several young bulls left that must go out quick. All are of serviceable age—three are by Gainford King, a same sire that sired the \$3,100 junior champion heifer, sold in the Dryden-Miller sale. Write quick if you want them.

GEO. E. MORDEN, Oakville, Ontario

Fairview Clydesdale Champions—We have at present several mares that have been champion winners at Toronto, Guelph, London and Shorthorn bulls and females of show individuality.

ROBERT DUFF & SON, Myrtle, Ontario

Irvin Scotch Shorthorns—Herd Sire, Marquis Supreme, by Gainford Marquis viceable age and one younger, all sired by our herd sire and from Scotch-bred dams. Good individuals and the best of pedigrees. Also pricing a few females.

J. WATT & SON, Flora, Ontario

Glengow Shorthorns and Clydesdales—Recently advertised bulls have all been sold. Sultan = 106239 =, and all bred to a Golden Drop bull; also several others somewhat younger. A real good yearling stallion, and mares all ages, in foal, will be priced right.

WM. SMITH, Columbus, Ont. Stations: Oshawa, C.N.R.; Myrtle, C.P.R.; Brooklin, G.T.R.

BLAIRGOWRIE SHORTHORNS

3 Imported bulls. 10 Imported females in calf or calf by side. 2 Scotch bred bulls.

JNO. MILLER - (Myrtle C.P.R. and G.T.R.) - ASHBURN, ONT.

Questions and Answers. Miscellaneous.

Income Tax.
Are any in Canada exempt from the income tax who have the required income?

Ans.—Not that we are aware of. M. J.

Diseased Animals.

Is there any Government remittance for a cow that is destroyed because of lump jaw? What proceedings would I have to take to get it?

Ans.—Unless the herd is under the control of the Health of Animals Branch and the animal is ordered slaughtered by them there is no remuneration. W. F.

Samples of Potatoes.

Through what experimental farm in the Province of Quebec could I obtain a sample of potatoes?

Ans.—We do not know whether the colleges or experimental farms in Quebec send out samples or not. A small quantity of seed of different varieties can very often be obtained from the Experimental Farm, Ottawa, and it is possible that it may be obtained from the Macdonald College, at St. Anne de Bellevue. H. T.

The "Home" for Children.

Is Dr. Barnardo's Girls' Home the only institution in Ontario where a person can obtain a girl? If not please mention the names of the other institutions or homes and also the name of the person in charge.

Ans.—There is a "Children's Shelter" in nearly every town and city in Ontario. A letter addressed to "The Secretary, Children's Shelter," etc., will probably reach the right destination. The "Shelters" usually take Canadian-born children only. Addresses of the shelters in London are: "Thomas Alway Home for Children," Wharncliffe Road, London, Ont., and "Ronald Gray Home for Children (Salvation Army), 35 Evergreen Ave., London, Ont. A. S.

Butter.

I have heard that there is an article made and put on the market called dairy butter that is made out of 1 lb. good butter and 1 quart whole milk. I have been told that it was made in Guelph, Hamilton and other places by a machine called a merger. Can the above be made and put on the market either as dairy or farmer's butter? Has not butter to grade a certain thing as regards moisture, etc.? Is it lawful to put such an article on the market? If not, whose duty is it to look after the same?

Ans.—Several parties claim to have been able to make two pounds of butter out of one pound of butter and a quart of whole milk. We have not seen such, but butter made in this way would be illegal. The law on this point is: "No person shall mix with or incorporate with butter by any process of heating, soaking, re-churning, re-working, or otherwise, any cream, milk, skim-milk, buttermilk or water, to cause such butter when so treated to contain over 16 per centum of water." So far as I know, there will be no objection to persons mixing milk with butter for their own private use, but they might as well drink the milk and eat the butter, separately, as there would be no advantage in mixing the two together. If this class of butter is being put on the market then it should be reported to the Dairy Commissioner at Ottawa, under whose Department prosecutions will be made for infractions of the Dairy Industry Act. J. A. H.

Ans.—I have a wall to go this way, faulty construction used or the mixture could get cement out; if not, then fairly thick cement saved for seed, a crop of hay is a second growth cutting for hay to cut too low.

EDITOR "THE FARMER'S ADVOCATE":

Please send me "The Farmer's Advocate" for another year. I think it is the best paper for a farmer and his family. I wish your paper every success. Perth Co., Ont. FRANCIS L. HENRY.

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There are letters in the files, similar to Pilgrim of Ontario statements made the long service Separators.

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Questions
Miscellaneous

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DE LAVAL

THE EVERLASTING CREAM SEPARATOR

There are thousands of voluntary letters in the De Laval Company's files, similar to this letter from Mrs. Pilgrim of Ontario, bearing out the statements made in connection with the long service of De Laval Cream Separators.

In fact by averaging up the years of use, it has been found that the average life of a De Laval is more than 15 years; and that during that time they have required little attention or repairs, and have produced the highest possible quantity and quality of cream with the least time and effort.

"We have used our De Laval for the last seventeen years and have had every satisfaction with it. Outside of rubber rings, it has never cost five cents for repairs.

"It is easy running, easily washed and kept clean, and when we need a larger separator it will be a De Laval."

MRS. G. H. PILGRIM,
Ontario

That is why there are more De Laval's in use than all other makes combined. Sooner or later you will buy a De Laval.



The nearest De Laval agent will be glad to demonstrate a De Laval. If you do not know his name, write to nearest De Laval office.

THE DE LAVAL COMPANY, Ltd.
MONTREAL PETERBORO
WINNIPEG EDMONTON
VANCOUVER

50,000 Branches and Local Agencies
the World Over.

Hamilton House Holstein Herd Sires

Our highest record bull for sale at present is a 4 months' calf from Lulu Darkness, 30.33 lbs., and sired by a son of Lulu Keyes, 36.56 lbs. His two nearest dams, therefore, average 33.44 lbs., and both have over 100 lbs. of milk per day. We have several other bulls by the same sire, and from two and three-year-old heifers with records up to 27.24 lbs. All are priced to sell.

D. B. TRACY, Hamilton House, Cobourg, Ontario

MONTROSE HOLSTEIN - FRIESIAN FARMS

(The Home of 20,000-lb. Cows)

Present offering (at right prices), four young bulls out of R.O.P. cows with records of 20,000 lbs. milk and over. See this herd and our young bulls in particular before buying elsewhere. Visitors always welcome.

R. J. GRAHAM, - Montrose House Farms - BELLEVILLE, ONTARIO

Hospital for the Insane, Hamilton, Ont.

HOLSTEIN BULLS, ONLY, FOR SALE

Senior sire is from one of the best sons of King Segis Alcartra Spofford. Junior is grandson of the noted May Echo Sylvia, by Champion Echo Sylvia Pontiac.

Write to the Superintendent for prices, etc.

HOLSTEIN HERD AVERAGES 18,812 LBS. MILK

A herd of 13 pure-bred Holsteins last year averaged 18,812 lbs. milk and 638.57 lbs. fat. Do you realize the money there is in such cows? It is estimated that the average annual yield of all cows in this country is under 4,000 lbs. These 13 cows produce as much milk as 62 cows of the 4,000-lb. class.

Why feed, milk and shelter any more cows than you need to produce the milk you require? If interested in **HOLSTEIN CATTLE** send for booklets—valuable information they contain much **HOLSTEIN-FRIESIAN ASSOCIATION OF CANADA**

W. A. CLEMONS, Secretary, ST. GEORGE, ONT.

Raymondale Holstein-Friesians

A herd sire of our breeding will improve your herd. We have sons of our present sire, Pontiac Korndyke of Het Loo (sire of \$12,750 Het Loo Pieterje), and also sons of our former sire, Avondale Pontiac Echo. Several of these are of serviceable age, and all are from good record dams. Quality considered, our prices are lower than anywhere else on the continent. Their youngsters should not remain long. Write to-day.

RAYMONDALE FARM, Vaudreuil, Que. - D. RAYMOND, Owner, Queen's Hotel, Montreal

Cloverlea Dairy Farms Herd headed by King Pontiac Rauwerd who combines the blood of Canada's greatest sires and dams. His offspring are a choice lot. We have stock for sale, both male and female, 75 head to choose from. Consult us before buying elsewhere. Could book a few more cows for service to "King."
GRIESBACH BROS., - L.-D. 'phone - Collingwood, Ont.

High-Testing Holsteins—Present offering: Three young bulls, 10 months old; all splendid individuals, out of high-producing dams, backed by noted blood and big records. Our herd sire, Ormsby Jane Hengerveld King (by Ormsby Jane King), has been used on this herd for several seasons, and his get, both heifers and bulls, are exceptionally promising individuals. It will pay you to inspect these youngsters before buying.
L. C. SNOWDEN, R.R. 3, Bowmanville, Ont.

Evergreen Stock Farm Registered Holsteins

Our motto: Choice individuals—the profitable producing kind. Nothing for sale now, but get in line early for your next herd sire.

A. E. HULET, - Oxford Co., G.T.R. - **NORWICH, ONTARIO**

Questions and Answers.

Miscellaneous.

Difficult Churning.

I am having trouble with churning. We have to churn for two or three hours and the butter will scarcely gather then. We are feeding mixed hay, roots and chopped oats. We are only churning the cream from one cow.

Ans.—Where there is only one cow in milk this trouble is not uncommon. The easiest remedy is to pasteurize the cream at each skimming and after it cools mix it with the main supply. Then heat to churning temperature before churning.

Porous Walls—Seeds.

1. I have a five-year-old cement silo with an 8-inch wall, but it is so porous that the rain leaks through and the silage spoils around the outside. We have whitewashed it with cement inside and outside, but yet it is not what it should be. How can this be remedied?

2. Should sweet clover seed be saved from the first or second cutting?
3. What is the difference in alfalfa seed, and which is best, home-grown, Northern-grown or variegated?

A. C. B.

Ans.—1. It is unusual for a concrete wall to go this way, and it would indicate faulty construction either in the material used or the mixture of the same. If you could get cement plaster to stick, it would be advisable to plaster both inside and out; if not, then give several coatings of fairly thick cement wash.

2. In some districts the first cutting is saved for seed, while in other sections a crop of hay is taken off early, and the second growth allowed to mature. In cutting for hay care must be taken not to cut too low.

Two Young Holstein Herd Sires—I have only two young bulls of serviceable age left—both are sired by Lyons Hengerveld Champion, whose dam is the 25.83-lb. junior 3-year-old daughter of Baroness Madoline, 34.48 lbs. Both calves are 12-month youngsters, one from a full sister of a 29.95-lb. cow and the other is from an untested daughter of Baron Colantha Fayne. They are priced to sell.
T. W. McQUEEN (Oxford Co.) Tillsonburg, Ont.

PIONEER FARM HOLSTEINS

My present sales list includes only bull calves born after Jan. 1st, 1919. These are priced right.
WALBURN RIVERS & SONS - R.R. No. 2, Ingersoll, Ontario

Summer Hill Holsteins—We have the best bunch of Holstein bulls ever offered at our farm. Their dams have records up to over 34 lbs. of butter in 7 days. All are sired by a bull with a 34-lb. dam. One is a full brother to the Grand Champion bull at Toronto this year. Prices reasonable.
D. C. FLATT & SON, R.R. No. 2, Hamilton, Ont.

HOLSTEIN BULLS FROM 30-LB. DAMS

If you want 30-lb. bulls—good individuals—and priced right—you should see my present offering. I also have lower priced bulls and am offering females bred to Ormsby Jane Burke. Correspondence solicited.
R. M. HOLTBY, Manchester G.T.R.; Myrtle C.P.R.; PORT PERRY, ONT.

"Premier" Holstein Bulls Ready for Service—I have several young bulls from dams with 110 lbs. of milk in one day—over 3,000 lbs. in 30 days. All are sired by present herd sire, which is a brother to May Echo Sylvia. Step lively if you want these calves.
H. H. BAILEY, Oak Park Farm, Paris, Ont.

SUNNYBROOK FARM HOLSTEINS

We are offering for quick sale one 24-lb. bull and one 26-lb. bull ready for service. Both are sired by a 33-lb. son of the great King Segis.
JOSEPH KILGOUR, NORTH TORONTO, ONT.

Minster Farms—Holstein bulls fit for service for sale. Son of a 14,763-lb. 2-year-old dam, with 650 lbs. butter (in test again at 3 years old), 18,864-lb. milk and 777.5-lb. butter (ter-fat). Also a pair of bulls from untested sisters of our dam, 19,500 lbs. They are choice bulls 4 year-old heifer (Marie Calamity Fayne). Dam of their sire has 19,500 lbs. They are choice bulls and priced right. For full particulars, write
R. HONEY & SONS, Dartford, Ont. (Hastings Station).

Cedar Dale Farm—The Home of Lakeview Johanna Lestrage, the \$15,000 sire—He is the son of the 38.06-lb. cow, Lakeview Lestrage, and is our chief sire in service. We are offering a few females bred to him, and also have a few bull calves sired by him at right prices. Other older bulls, sired by our former herd sire, Prince Segis Walker, son of King Segis Walker.
A. J. TAMBLYN, Cedar Dale Holsteins, (C.N.R. station one mile), Orono, Ont.

For Sale—Paul Rauwerd—Dam, Lulu Pauline, 23 lbs. butter in 7 days. Sire, Hill-Crest Rauwerd Vale, out of a 22,000-lb. four-year old. Price \$300.00 if taken before his dam makes another record.
W. FRED FALLIS, R. R. 3, Millbrook, Ont.

Subscribers! Your neighbor would profit by reading **The Farmer's Advocate and Home Magazine.** Send his name and his \$1.50, and we will advance your own subscription **SIX MONTHS FREE OF CHARGE.**

3. As a rule, a plant always does best after it has become acclimatized. As alfalfa is not a native of this country, it does not stand the winter any too well until it has become acclimatized. As a rule, home-grown seed is preferable, if it can be secured. However, it will not have as bright a color as imported seed. Northern-grown seed usually refers to seed grown in the Northern States, and variegated is the name of a selected variety of alfalfa which is claimed to be very hardy. In fact, it has been selected for its hardiness.

Weight of Milk—Cows on Pasture.

1. How much does a quart of milk weigh?
2. If A rented a pasture from B, could he collect damages if one of his animals got killed?

Ans.—1. There are approximately 2½ pounds of milk in a quart.

2. It depends somewhat on the agreement. If the cow was killed due to negligence on the part of B, A should be able to collect damages.

Vicious Sow.

A sow that farrowed recently was very cross and killed all the pigs. What was the cause of the trouble?

Ans.—Occasionally a sow will be vicious at farrowing time. It is important that she be wintered on a fairly laxative ration composed, to a considerable extent, of roots. As farrowing time draws near the sow should be handled more or less and made acquainted with her new quarters. Sometimes the sows are feverish and this tends to make them cross. The young pigs should be removed from the pen and kept in a box until the sow quiets down. They may then be allowed to feed, but if the sow shows any signs of viciousness should again be removed. If she is a good sow it might be advisable to breed her again as she may be all right the next time.



Are You Giving All Your Profits To Your Help?

In the past many farmers have been less well-off than their hired help. Such a condition is unbearable and can only be overcome by modern methods—reduction of labor and increased production. The dairy end of your farm can be made to pay much bigger profits if you install

The Macartney Machine Milker

THE COW'S ADOPTED CHILD

It milks thoroughly and naturally and is far more pleasing to the cow than the old hand method. Moreover by the Macartney way, one man can milk from 20 to 24 cows in an hour. Think of the saving in labor. Still further—the Macartney increases the flow of milk and prolongs the lactation period.



Get Particulars Now

Don't buy a milker till you have seen the Macartney—the simplest and most modern of all—and even if you are not ready to buy, get particulars now and learn what other farmers say about the Macartney. Fill in the coupon and mail it to-day.

The Macartney Milking Machine Company Limited

216 CATHERINE ST. - OTTAWA

The Macartney Milking Machine Co. Limited
316 St. Catherine St. - Ottawa

Please send me full information about the Macartney Milker.

Name _____

Address _____

I have _____ Cows

Dept. B (B-3)

100 Sophie Tormentor Jerseys 100

At Auction, June 3, 1920

Register of Merit Cows, Bred Heifers, Heifer Calves, Bulls Ready for Service and Bull Calves.

Descendants of the World's Champion Long-distance cow, Sophie 19th of Hood Farm; Hood Farm Pogis 9th, the champion sire, sire of 79 R.O.M. cows and 31 producing sons; Hood Farm Toronto, sire of 73 and 24 sons; Pogis 99th of Hood Farm, sire of 70 and 10 sons. The champion producing blood of the breed. Herd tested by U. S. Dept. of Agriculture Veterinarians. Shipment to Canada without quarantine. The catalogue tells the story—free on request to

HOOD FARM, INC. :: :: LOWELL, MASS.

BRAMPTON JERSEYS

THE LARGEST JERSEY HERD IN THE BRITISH EMPIRE

At Toronto Exhibition, 1919, we won twenty-five of twenty-seven first prizes. We now have for sale first-prize young bulls from R. O. P. dams, as well as females of all ages.

B. H. BULL & SONS :: Brampton, Ontario

Laurentian Producing Jerseys—The oldest bull we have at present is a year old youngster, sired by our herd sire, Broadview Bright Villa, No. 5630, and from Brampton Astoria, one of the best imported cows in the herd. We also have others younger of similar breeding, as well as a few bred heifers for sale. **FREDERICK C. TODD, Owner, 801 New Birks Bldg., Montreal, P.Q.** **F. J. WATSON, Manager** Farm at Morin Heights

For Sale—Edgeley Golden Jolly, son of Queen 2nd—1st prize in 2-year-old in Bright Prince, a son of Sunbeam of Edgeley. We have him priced right for quick sale. **JAS. BAGG & SONS, EDGELEY, ONT.** (Woodbridge C.P.R., Concord G.T.R.)

CANADA'S MOST BEAUTIFUL JERSEY HERD

The Woodview Farm JERSEYS Herd headed by imported Champion Rower, winner of first prize with five of his daughters on the Island of Jersey, 1914, second in 1916, and again first in 1917. We are now offering for sale some very choice bull calves, ready for service, sired by imported bulls and from Record of Performance imported prize-winning cows. Also some cows and heifers. Prices right. We work our show cows and show our work cows.

INO. PRINGLE, Prop. London, Ontario

DAISY MEADOW STOCK FARM

Quality animals—Highest production with show type females of all ages for sale. Also bulls fifteen months and under from R.O.P. dams.

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Questions and Answers. Veterinary.

Shoeing Horses.

1. Describe the proper way to shoe a horse.
2. Should a horse now barefooted have anything cut out of the bottom of his feet before shoeing?
3. What size of a shoe and how wide at the heel should be used on a Cyldesdale horse of 1,600 lbs?
4. Is it good practice to allow a horse to go barefooted when idle or at light work? J. K. A.

Ans. 1 and 2. The foot should be trimmed to the proper shape. If the treds are deep they should be rasped down to the proper height. Any partially detached portions of the sole should be removed, care being taken to not cut the bars down. Then the shoe should be made to fit the foot. Little burning should be done, but the shoe must be made sufficiently hot to discolor the parts with which it comes in contact and then the necessary amount of those sections removed by knife or rasp to make the bearing surface level, the shoe then nailed on and nails clinched.

3. The size of the shoe must correspond with the size of the foot and the width of the shoe at the heel with the width of the heel, in other words, "The foot must first be trimmed and then the shoe made to fit it." The weight of a horse does not determine the size of shoe or width of heel.

4. Yes, unless the hoofs are breaking or the horse going tender on account of the hoof wearing down too much.

Miscellaneous.

1. Bull is fed on timothy and clover hay. He had vermin and I applied coal oil and stock dip. His appetite was poor but is all right now. I noticed little boils on back and sides. They are sore at first, but they burst and discharge a thin blood and water and then seem to get itchy.

2. Milch cows fed on beaver hay, timothy and clover, one after the other seem to lose power of their hind part, and I often have to help them up and they do not seem to be getting any better.

3. Is there any cure for founder? Can I relieve the pain in any way?

4. What is the meaning of a "Barrel of Cement?" D. L. W.

Ans.—1. The skin trouble was caused by a too free and strong mixture of coal oil and dip. As the little vesicles form, lance them and then dress 3 times daily with 1 part carbolic acid and 35 parts sweet oil.

2. This trouble seems to be simply inability. Feed some chopped oats and bran daily, and feed good timothy and clover hay and they will gradually improve. The parts are not paralyzed, else they could not stand or move when helped up.

3. A case of founder if properly treated in the early stages usually yields to treatment, but if not properly treated it is liable to cause permanent tenderness. Blister the cornets once monthly with 2 drams each of biniodide of mercury and cantharides mixed with 2 oz. vaseline. If you have to work the animal all that you can do is shoe with bar shoes, giving good frog pressure and keep them moist by packing with white rock or other material that retains moisture when in the stable. Are you sure the trouble is "Founder?"

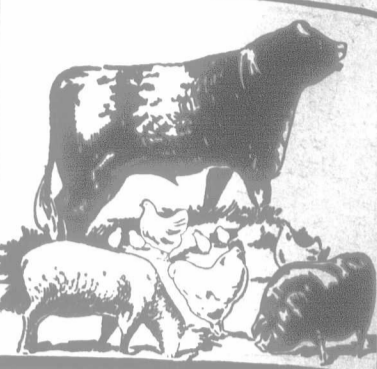
4. It is a term used in the cement trade and is the same weight or amount as four bags of cement. V.

Miscellaneous.

Plums Drop.

I have a plum tree which used to produce large plums, but lately the plums get to about the size of marbles, then wither and fall off. What will prevent this? R. J. R.

Ans. The trouble may be due to a blight or to the plums being stung by an insect. Spray with lime-sulphur of a strength of one to ten, just before the buds burst, and then the second spray, just after the fruit is set, of lime-sulphur one to forty, to which has been added 2½ pounds of arsenate of lead to the forty gallons. A third application is put on six weeks later, using the same proportions as for the second spray.



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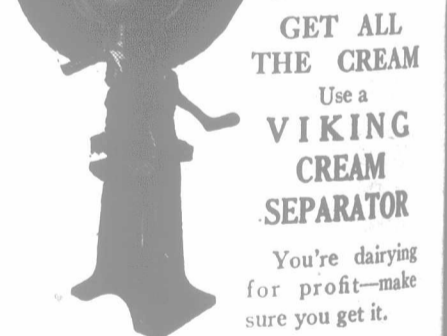
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APRIL 22, 1920

Question

MI

What is the n litmus paper? Ans.—Blue moist soil and will be turned r

Treatm

1. The dry oats, which w Farmer's Advoc very successful forgotten the an 2. What wou grain to sow for What time sho pasture after ha

Ans.—1. The fully described publication. T of formalin to pint of this solu 25 bushels of oat 2. A mixture has been recoc pasture, but the from the cattle be smutted. W in sowing anythi good crop they regular seeding off just as they course, this wo earlier than you would give the to get a fresh s will take on a se picking during e

Can

I have some n good condition but about three developed a diseas in the mouth, an in curing if I g but in the adv stubborn to dea three birds rece that they were feeding wheat, co for a little while grain. Do you cause the trouble and I disinfect i

Ans.—It is a scientists as to chicken pox are a disease, and the recently an anti trouble, but our c far has not been the present time use unless we get Now then as t the bird's mout disease that is m January to June of the year and when anything that is to say if t at each other th cut their mouths develop canker, burnt grain mig but it is doubtf where one bird i it spreads very e pondent says, is until the birds a ment is usually t a good practice to salts at the ra hundred birds, e any suspicion of sick birds a teas treatment of the sometimes succes not so. About a swab out the wh mouth with som others touch the and others with None are absolut so far as we are dry and free fro the birds will rig a chance.

A Source of Kn

EDITOR "THE F

Allow me to and knowledge your valuable Advocate". I farmer's paper.

Argenteuil Co

Questions and Answers.
Miscellaneous.

Testing Soil.

What is the method of testing soil with litmus paper?
B. M. T.
Ans.—Blue litmus paper is applied to moist soil and if it is sour the blue paper will be turned red.

Treatment for Smut.

1. The dry treatment for smut in oats, which was described in "The Farmer's Advocate" last year, proved very successful with us, but we have forgotten the amount of formalin to use.

2. What would be a good mixture of grain to sow for pasture for milch cows? What time should it be sown to give pasture after haying?
W. H. R.

Ans.—1. The dry treatment was again fully described in a recent issue of our publication. The proportion is one part of formalin to one part of water. One pint of this solution is sufficient to treat 25 bushels of oats.

2. A mixture of oats, barley and wheat has been recommended for summer pasture, but there is just a little danger from the cattle eating barley if it should be smutted. We really see no advantage in sowing anything but clear oats. For a good crop they should be sown at the regular seeding time and then pastured off just as they are coming in head. Of course, this would give pasture a little earlier than you are wanting it, but it would give the regular pasture a chance to get a fresh start, and then the oats will take on a second growth and give fair picking during early fall.

Canker Mouth.

I have some nice birds and they are in good condition as to weight and vigor, but about three months ago they developed a disease which resembles canker in the mouth, and which I have no trouble in curing if I get it in its early stage, but in the advanced stage it is very stubborn to deal with; in fact, I lost three birds recently before I was aware that they were diseased. I have been feeding wheat, corn, roots and mash, and for a little while was feeding some burnt grain. Do you suppose this would cause the trouble? The pen is kept clean and I disinfect it regularly.
H. G. H.

Ans.—It is a debatable point among scientists as to whether roup, canker and chicken pox are not all one and the same disease, and there has been developed recently an antitoxin treatment for this trouble, but our experience here with it so far has not been satisfactory, and up to the present time we could not advise its use unless we get better results.

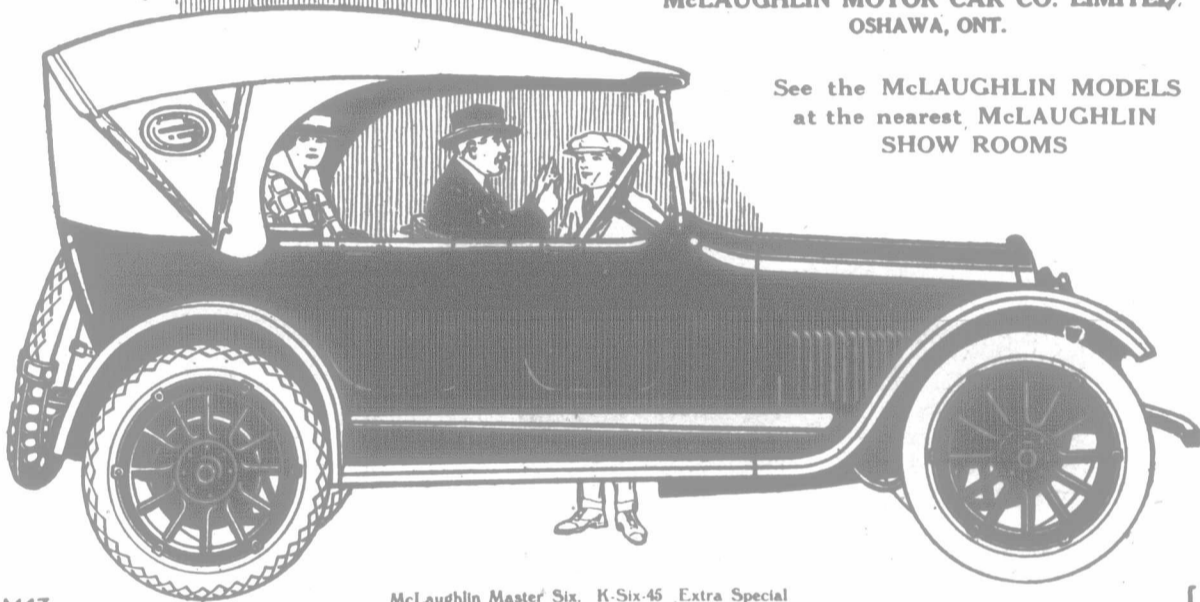
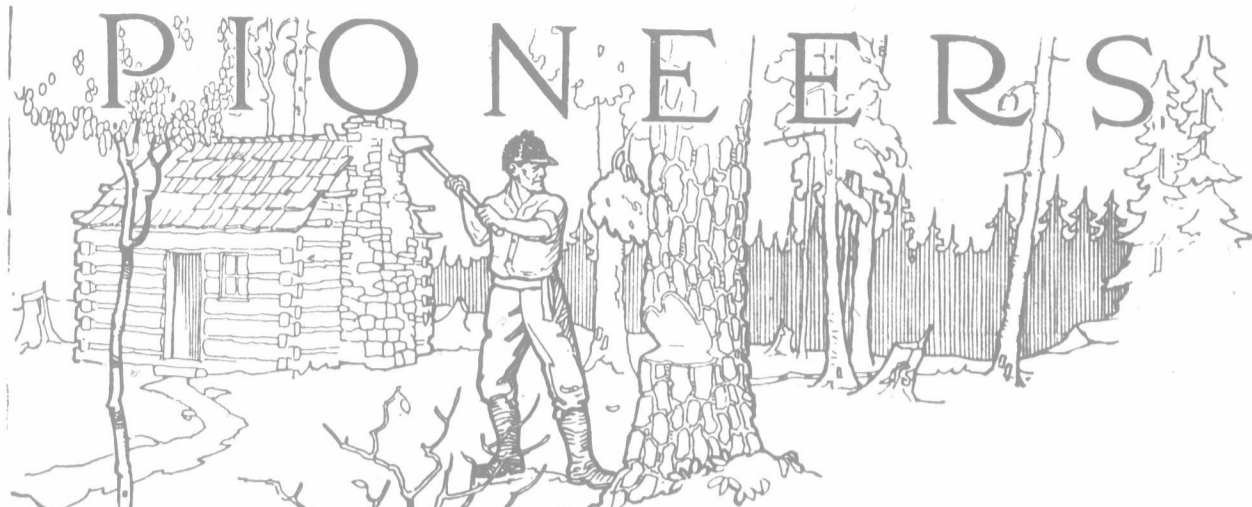
Now then as to the cause of canker in the bird's mouth, apparently it is a disease that is much more common from January to June than at any other season of the year and develops most readily when anything cuts the bird's mouth, that is to say if two male birds get picking at each other through a wire fence and cut their mouths they are almost sure to develop canker. In this respect the burnt grain might possibly be a cause but it is doubtful. On the other hand, where one bird in a pen develops canker it spreads very easily and, as your correspondent says, is most difficult to diagnose until the birds are real bad, when treatment is usually too late. We consider it a good practice to give the birds a dose of salts at the rate of one pound to one hundred birds, every week when we have any suspicion of the trouble. Give the sick birds a teaspoonful or more. As to treatment of the individual birds it is sometimes successful but in many cases not so. About all that can be done is to swab out the white patches in the bird's mouth with some powdered blue stone; others touch the parts with carbolic acid; and others with potassium permanganate. None are absolutely sure in their action so far as we are aware. Keep the house dry and free from draft, and ordinarily the birds will right themselves if they get a chance.
W. R. G.

A Source of Knowledge and Pleasure.

EDITOR "THE FARMER'S ADVOCATE":

Allow me to thank you for the pleasure and knowledge I have acquired through your valuable paper, "The Farmer's Advocate". I think it is the only real farmer's paper.

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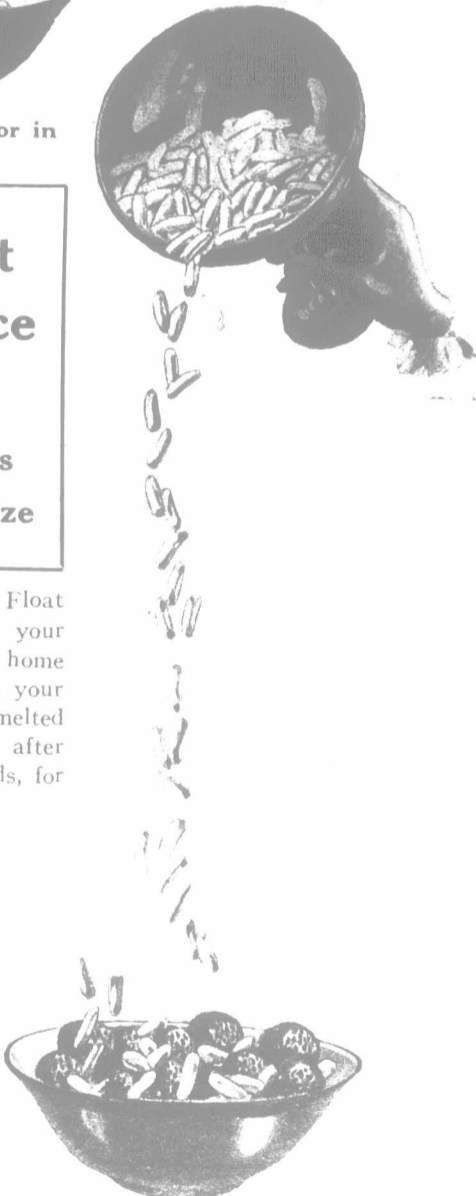
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Serve with cream and sugar. Float in bowls of milk. Mix with your fruits. Use like nut-meats in home candy making and as wafers in your soups. Crisp and douse with melted butter for hungry children after school. These are all-hour foods, for they easily digest.



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The Story of Apple Scab.

PROF. J. E. HOWITT.

Nearly every year black spots are seen on apples, especially on such varieties as Snows and Greenings. When we enquire what causes them we are told that they are due to a fungous disease known as Apple Scab. Naturally the next question that comes to our mind is "What is a fungous disease?" Most of us are inclined to think that a fungous disease is something mysterious, something which cannot be explained. However, a high-power microscope shows us that there is nothing more strange about a fungous disease than there is about a dog having fleas. A flea is a small and low form of animal life which lives upon and obtains its nourishment from the dog, which is a larger and more highly-developed form of animal life, while a fungous disease is caused by a fungus which is an exceedingly small and low form of plant life, which lives upon and obtains its nourishment from a larger and more highly-developed form of plant life such as an apple tree or a potato plant.

These little plants, which are called fungi, are just as much plants as are sunflowers, turnips and maple trees. They differ from such well-known plants as these chiefly in their very small size, in the fact that they have no roots, stems, leaves, flowers or green color, and also in the way they get their food.

Most fungi are very, very small, though there are some quite large ones. Some idea of how small many of them are can be had when we are told that we can only see them when there are several hundreds of them growing close together, and then usually only as mere specks.

Instead of being composed of roots, stems and leaves, fungi are made up of very fine and delicate threads, some of which bear little bodies called spores, which take the place of the seeds of our familiar plants. These seed bodies or spores are generally very numerous and always very small, so small indeed that they can only be seen without a magnifying glass when there are several hundreds of them massed together. Being so small they are very light, and, therefore, very easily blown about by the wind, washed around by rain, or carried on implements and clothing from place to place.

The familiar plants, such as trees, flowers, grains and vegetables, take certain substances from the soil and air, and out of these they manufacture their food. Fungi have not the power to manufacture their own food, so they steal it from other plants or get it from the bodies of dead and decaying plants or animals. Those fungi which steal their food from other plants injure them in various ways, and thus cause what are known as fungous diseases. So we see that after all there is nothing very wonderful about fungous diseases, except the small size of the little plants called fungi which cause them.

Now that we know something about the nature of fungous diseases we are better able to understand "The Story of Apple Scab." If we go into an orchard and look over an apple tree we shall see that there are black and brown spots on the leaves as well as on the fruits. If the spring and early summer have been very wet and the trees have not been sprayed, in all probability nearly all the fruits will be disfigured and many of the leaves destroyed by the apple scab. If we could examine under the microscope the black or brownish spots on the fruits and leaves we should find that they were made up chiefly of fungous threads and very small somewhat oval spores. These spores are produced just under the outer layer of the apple skin which is soon pushed off so that they are right on the surface of the spot, from which they are easily washed away by rain, blown about by the wind or carried off on the bodies of insects. By such means the spores produced on a scab spot are spread all through the orchard. Those that reach an apple or an apple leaf, if there is plenty of moisture, begin to grow. They send out very small threads called germ tubes which bore under the skin and grow into numerous ragged threads and spores which soon show on the surface of the fruit as spots. Plenty of moisture is necessary because the spores of the

scab fungus to grow and produce new spots. This explains why apple scab is always worse in a wet season than it is in a dry one.

The spores found on the surface of the spots are often called summer spores because they spread the scab during the summer months. They are not, however, the only spores produced by the scab fungus. If in the early spring we examine the fallen leaves under an apple tree on which the scab has been bad the previous year, we shall notice on both surfaces of the leaves little black, pimple-like bodies, some mere specks, some as large as a pin's head. If we could examine these under a microscope we should find that they were round black cases, each with a very small hole or mouth. In each case we should find a large number of little sacks, and in each sack eight little spores. In the spring, when the weather begins to get warmer, if there is plenty of rain these spores are set free into the air, and some of them are blown on to the lower leaves of the apple tree, where, if there is plenty of moisture, they grow and produce scab spots with numerous summer spores, which, if the weather is wet, soon spread the scab through the orchard.

As these spores which are found on the fallen leaves in the spring of the year serve to carry the fungus over the winter, they are often called winter spores. Just when they are liberated in the spring of the year depends upon the time we get our rains. Moisture is required to set free these winter spores as well as to cause them to grow. In most seasons we get enough rain to set free the spores and cause them to grow just about the time the leaves of the apple tree are unfolding. The scab fungus only grows and spreads rapidly when there is plenty of moisture, so that the times of the year that the scab usually does the most damage are during the spring and early summer months, which are very likely to be wet, and during the early fall rains which we often have about the middle of August or first of September.

If we enquire how to prevent apple scab we are told to spray with lime-sulphur or Bordeaux mixture. These substances are what are called fungicides, that is, they kill fungi; and the object of spraying is to cover the surfaces of the leaves and fruits with them so that when a spore reaches a leaf or fruit it is poisoned and cannot grow and cause scab. We see, therefore, that if spraying is to accomplish its object it must be very thoroughly done; every fruit and leaf must be all covered with the poison so there is not the least space on which a spore can grow.

Spraying must also be done at the proper time. The poison should be on the leaves and fruit before the spores reach them. We have already learned that the spores only spread and grow during wet weather. The times of the year, therefore, that we get our wet weather are the times when we have to spray if we are going to prevent scab. One spraying with either lime-sulphur or Bordeaux mixture is not sufficient as the rain in time washes the spray off and, as the leaves and fruit grow larger, there is more surface to cover. In order to be sure of preventing apple scab we must spray with lime-sulphur or Bordeaux mixture from three to five times during the summer, the number of sprayings depending upon whether the season is wet or dry. The first spraying should be done early in the spring just as the leaf buds burst, the second just when the blossom buds are showing pink, the third immediately after the blossoms have fallen. If the weather is wet after this time another spraying should be given in about two weeks. After this last spraying we seldom get very much rain until late summer when the weather very often becomes cold and wet and favorable for the spread of scab. In such seasons it is necessary to spray again in August.

Children are often given calves to rear for their own, and if any readers of this page should have the pleasant task this spring of feeding and caring for a dairy calf, they should read the article, "Starting the Dairy Calf Right." This article appeared in our issue of April 1, page 613.

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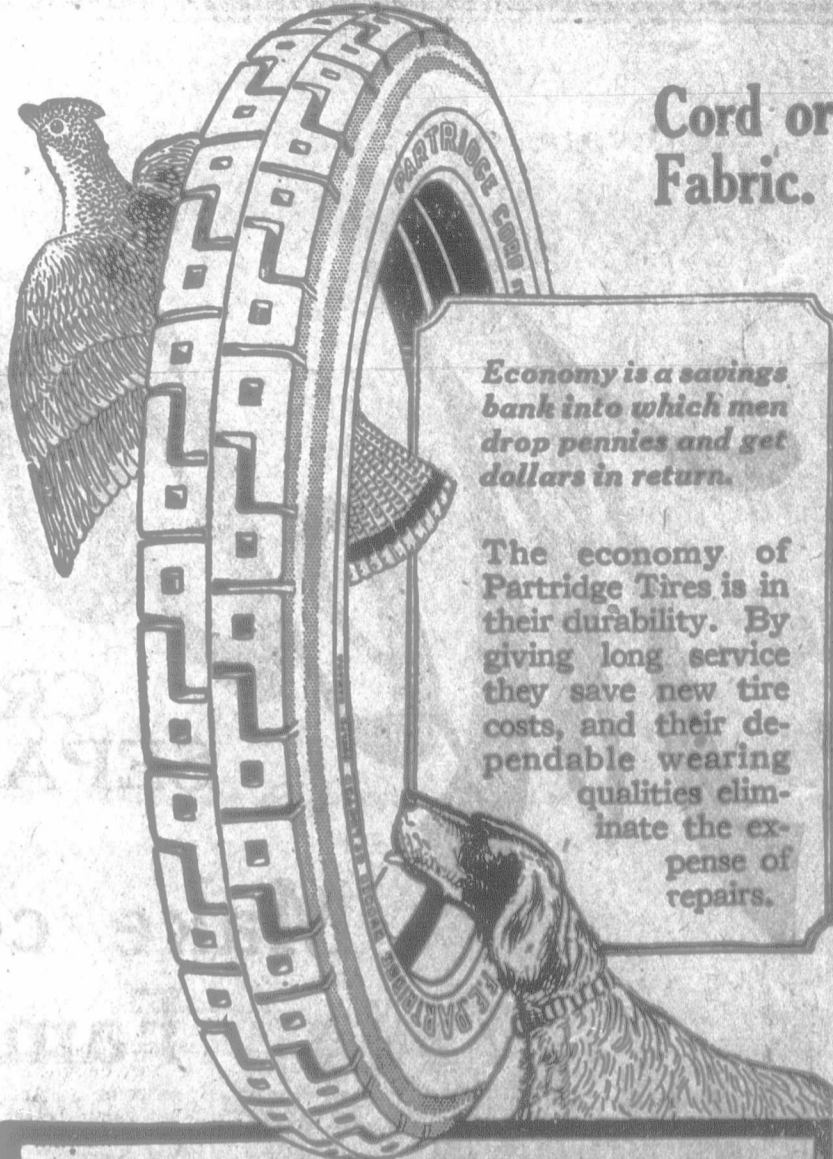
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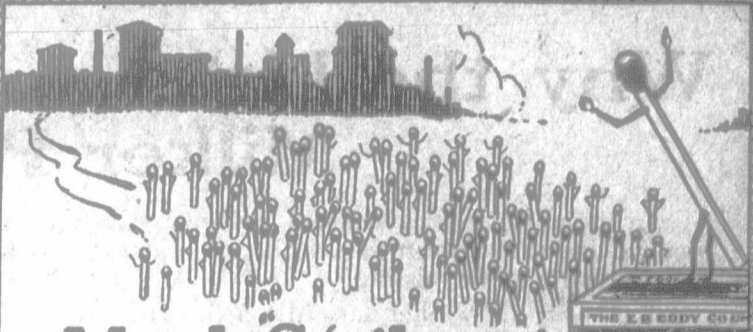
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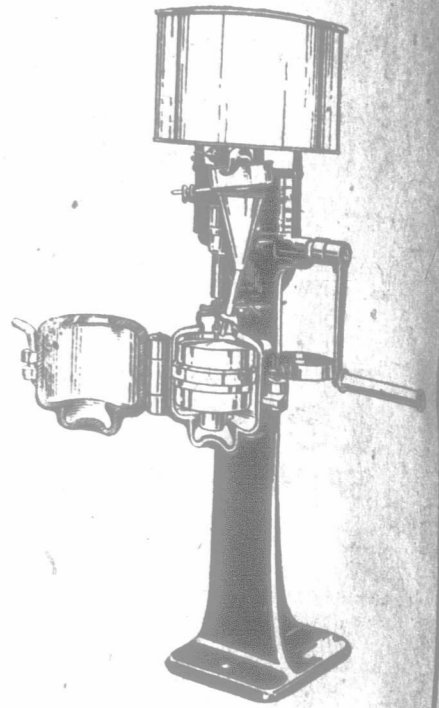
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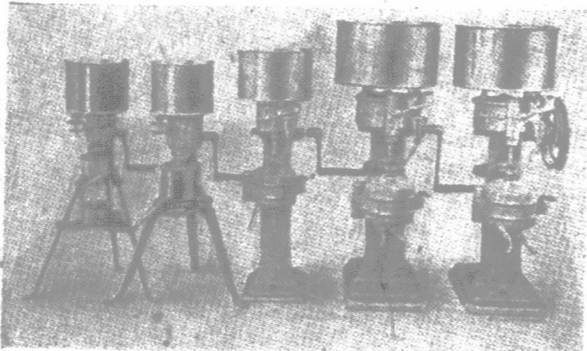
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Make certain you get the Famous Original Melotte



ONE of the striking proofs of the efficiency and world-wide reputation of the Melotte is the frequent attempts to reproduce it by imitation machines.

Never yet have imitations of the Melotte proven a success, either for the imitator or the user. No imitator can hope to suddenly appear with a machine that carries the nicety

and precision of workmanship which the Melotte has attained after half a century of experience. No imitator can afford the immense facilities of capital and machinery, or put into an imitation the traditions of fifty years that are yours if you get the original Melotte.

WARNING.—Your first consideration when buying a Melotte should be the certainty that you are getting the genuine, original Melotte, sold in Canada only by R. A. Lister & Co., Limited. All others are imitations.

REPAIRS.—While many Melotte users have written us they have

not required repairs for many years, accidents may make repairs necessary. R. A. Lister & Co. carry repair parts for each and all of the 6 models and 15 sizes of Melotte. If you get the genuine, original Melotte you can obtain repair parts with ease from the dealer or direct from us.

The Melotte is the machine with the wonderful patented self-balancing bowl—the part that does the work. The Melotte bowl can't get out of balance, can't cause currents in cream, can't remix cream with milk. In other words, it is the bowl that *gets the cream*. It is the closest of close skimmers.

The Melotte is also famous for easy running and easy cleaning. Be certain you get the original, genuine Melotte. Write us for free literature.

Why the Lister Milker Pays

In these times of wonderful markets that take all you can produce and shout for more at big prices, what splendid opportunities you may be missing!

Listen to Mr. Sherman Mitchell. He says: "I like the Lister Milker. Two fellows can milk my 30 cows in an hour! If I could not procure another I would not take \$1,000 for it."

"Many times," he says, "I have come from the fields after a hard day's work and would gladly have given five dollars to be relieved of the milking. With a 'Lister' milking is a SNAP!"

We stand behind every Lister Milker we sell. Get a "Lister" Milker now and cut down milking time, increase your herd and have more dairy products to sell at good prices. Write for free literature.



Other Lister Lines: "Lister" Gasoline Engines, Lister Grinders, Lister Silos, Avery Tractors, Electric Lighting Plants.

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