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THE FARMER'S ADVOCATE
AND HOME MAGAZINE
 AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE.

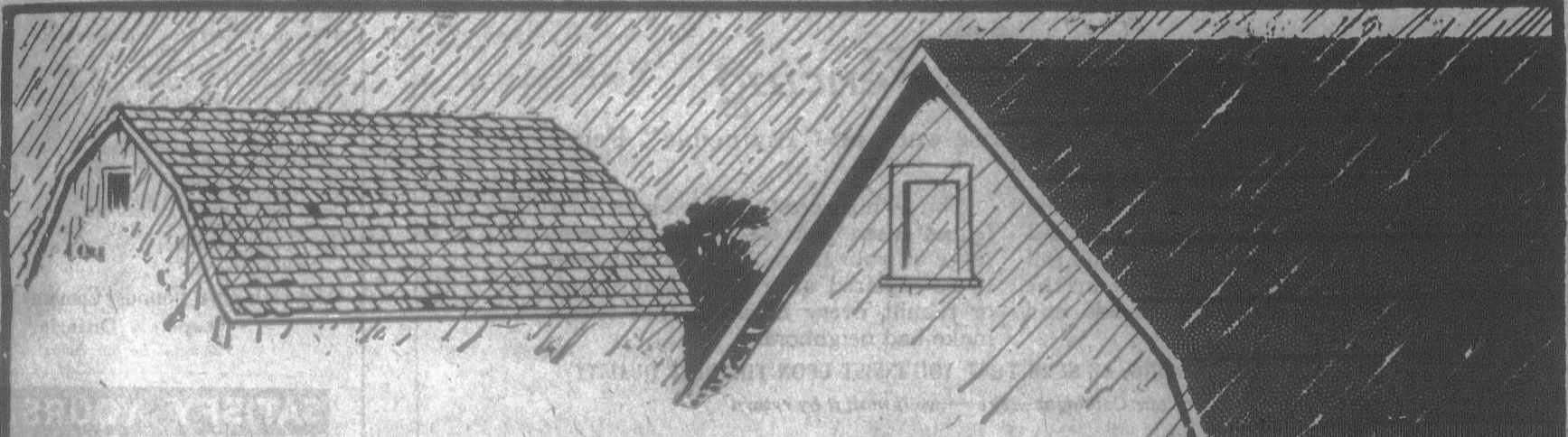
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DEPT. OF AGRICULTURE
 BRANTFORD, ONTARIO
 APRIL 15, 1920

LV.

LONDON, ONTARIO, APRIL 15, 1920.

No. 1438



Reroof the leaky barn with Brantford Asphalt

A leaky roof always gets worse and is apt some day to cause a lot of damage to the crops in the barn or the furnishings and wall paper in the house.

With Brantford Asphalt Roofing selling at such reasonable prices, it is true economy to roof with it. There is hardly another line of goods that has had the small advance in cost since the war that Brantford Roofing has had. By installing improved machinery and increasing the volume of our output, we have lowered our cost of production which has enabled us to keep down the price of Brantford Roofing below what might be expected in the face of the rising cost of raw material, labor and transportation.

Old wooden shingles are being replaced with Brantford Asphalt Roofing. It can be laid very rapidly, saving time, which means considerable when labor is scarce and high. It is a wonderfully fire-resistant roofing—a fire starting on a Brantford Asphalt Roof being unknown to this day. It is also very durable being completely waterproof and the asphalt blended and tempered to resist all the extremes of the Canadian climate.

Brantford Asphalt Roofing

Brantford Asphalt Roofing

is finished on both sides with a surface of silica sand and is made in three thicknesses and weights.

No. 1 is 60 lbs. per square. No. 2 is 70 lbs. No. 3 is 80 lbs.

Brantford Rubber Roofing

has the same high quality asphalt saturation and coating as Brantford Asphalt Roofing but it has a smooth, rubbery surface instead of being sanded. It is also in three weights. No. 1 is 40 lbs. No. 2 is 50 lbs. No. 3 is 60 lbs.

Leatheroid Roofing

Slightly lower quality than Brantford Rubber and used for same purposes. Has a leathery surface. Exceptionally good roofing at a low price. 35 lb., 45 lb. and 55 lb. weights.

Standard Mohawk Roofing

While this roofing is lighter in weight than Brantford Asphalt and Brantford Rubber it is the best quality of any low price roofing on the market. It is a standard that has been tested for years and given entire satisfaction. Sanded on one side. One weight only—40 lbs.

Climax Sheathing Paper

A tough kraft paper coated with high-grade asphalt. For use between footing and foundation of a building, between foundation and wall, between foundation exterior and the earth, below basement cement floors, underneath floors in houses, on walls before lath and plaster are put on—unequalled for damp-proofing and wind-proofing purposes.

Samples and prices mailed on request.

Brantford Roofing Co. Limited

Head Office and Factory, Brantford, Canada
 Branches at Toronto, Montreal, Halifax



As Permanent
as the Roadway

IN addition to the good appearance of a trim wire fence around your property, there is also the question of durability to be considered. The farmer who has once used

Invincible Fencing

will never use anything else, because once an "Invincible" Fence is erected, it's there for a lifetime.

Improve your property by erecting good serviceable Wire Fencing. It will pay you well to remove all the old rail fences on your farm and clean up the accumulation of shrubs, weeds and other pests.

You do not need to worry about your fences when you erect a woven wire fence on your farm. They do not need to be repaired after every windstorm, or rebuilt every Spring. Bad fences make bad neighbors.

WHEN YOU BUY WIRE FENCING, BE SURE THAT YOU INSIST UPON THE BEST QUALITY

Write for our Catalogs—Free—we'll mail it by return



THE STEEL COMPANY
OF
CANADA LIMITED
MONTREAL



HYLO SILO
Sweet Fresh Ensilage down to the last forkful!

THE HYLO SILO is perfectly air-tight. No frozen or spoiled ensilage around the walls. Convenient and perfect feeding device, adjustable without hammer or wrench. Made of Guaranteed Long Leaf Yellow Pine. Built to last a life-time. Stands rigid when empty.

Write for prices and catalogue. AGENTS WANTED.

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WILL MY NEXT YEAR'S CROP BE A SUCCESS?

GILSON NISCO WILL DO IT!

Why wonder? You can have a record crop if you wish! The soil cannot give you more than it has got! You have got to fertilize! Manure is the best fertilizer! Good manuring will ensure a record crop! For good manuring the GILSON Nisco is the accepted standard.

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Write for our free book—"Feeding the Farm." It is the recognized authority on manure. It tells the right way to handle and spread it. It gives you many helpful ideas. It tells you how to improve the texture and fertility of your land.

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Because it is made by Spreader specialists in the largest Spreader Factory in the world. Because it has a very wide spread—easy to adjust. Because it is low down. Because there are no complicated parts, no gears, no clutch.

Write for our Catalog, Price and Easy Payment Plan To-Day.

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118 West 51st Street, New York, U.S.A.

America's Pioneer Dog Remedies

Corn That Will Grow

Canadian-Grown Seed Corn
Your money back if not satisfied

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SOW SIMMERS' SEEDS

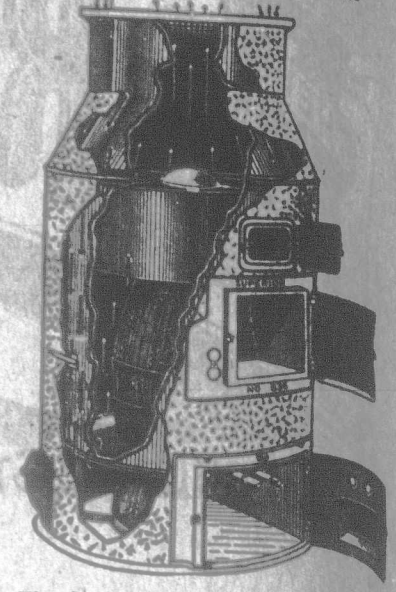
Successful Since 1856

It is easy to make claims for seeds—it is another thing to be able to substantiate them. We are emphatically able to make our claims good because our record for "seeds that grow" has gone unbroken for 64 years. For seeds, bulbs, plants of all kinds, trust Simmers' goods. **THEY GROW!**

Write for our handsome new 1920 Catalogue today.

J. A. Simmers Limited, Toronto

How the Heat Travels from Room to Room When You Have a **Pilot Superior Pipeless Furnace** Installed in Your Home



The circulation of the air in Pilot Superior heated buildings may in a measure be compared to the movement of water. Let us imagine that instead of warm air water is being circulated through the register. This water will flow from room to room in which the register is located, through the open doors and passage-ways into every part of the building, the level remaining the same in all rooms. As the volume of water increased, the depth becomes greater, until the entire contents of the building is filled.

In much the same manner the warm air is distributed from the room in which the register is placed, to every part of the building, the difference being that warm air, according to natural laws, rises to the highest level, and as the volume is increased it lowers in the building, while with water, the level rises as the volume is increased.

Manufactured by
The Hall Zryd Foundry Company, Limited
Hespeler, Ontario
Write us for particulars

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Let us send you on Free Trial a 'Johnny-on-the-Spot' Engine and pump jack—the Universal pumping engine—to try on your pump. It will give you fresh water whenever you want it at a cost of less than one cent for an average day's supply. In addition it will run the cream separator, churn, washing machine, pulper, etc. There are more

"JOHNNY-ON-THE-SPOT"

Engines pumping water and doing the other chores on Canadian farms than any other make. Life is too short to do this monotonous drudgery in the old expensive wasteful way.

Write us to-day for our free trial offer. Do not delay—you need this engine now.

GILSON MFG. CO. Ltd.
359 York St., GUELPH ONT.

GRAND TRUNK RAILWAY SYSTEM

The Double Track Route

BETWEEN MONTREAL, TORONTO, DETROIT AND CHICAGO

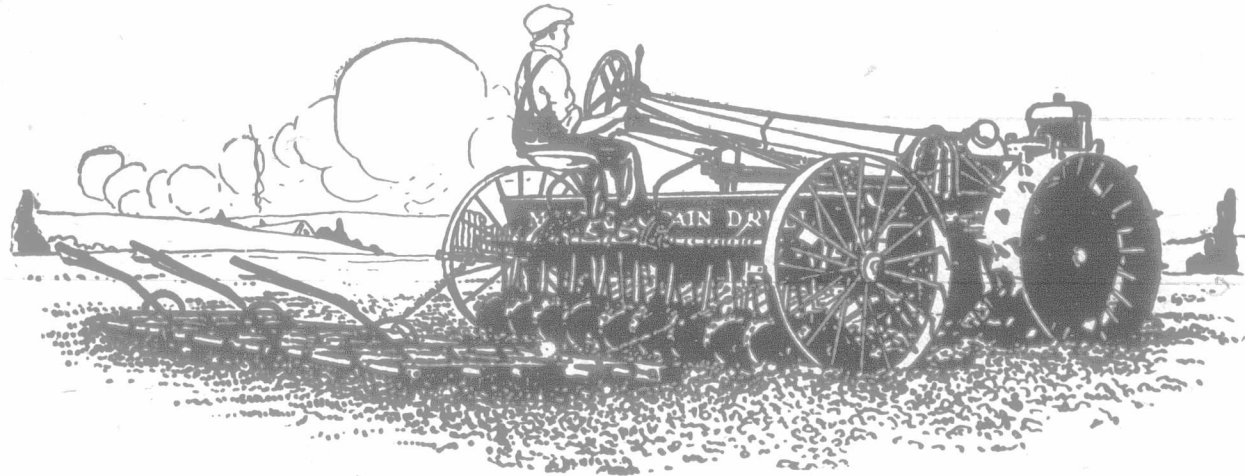
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Sleeping Cars on Night Trains and Parlor Cars on principal Day Trains.

Full information from any Grand Trunk Ticket Agents or C. E. Horning, District, Passenger Agent, Toronto.

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Give Moline its Leadership



THE outstanding leadership of the Moline Tractor is not accidental.

It is the result of definite ideals in the building of Moline Tractors.

Design—the Moline is the *only* tractor which gives you perfected one-man control—enables you to ride on the implement, where you should ride. *You can use your Moline as a four-wheel tractor if you wish.*

Moline design gives you a fine motor, strong, quiet, powerful. Electric starting and lighting. Many fine roller bearings.

Materials—fine metals make Moline design effective—give strength and precision to Moline parts—insure long-life and freedom from trouble. In no other tractor will you find, pound for pound, such metal as is in the Moline.

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For faster and more economical farm work—get a Moline Tractor now—in time to do your spring plowing, seeding, harrowing. It will be on the job all through the season for cultivating, harvesting and all belt work. Write us to-day for illustrated literature.

Tractor Division

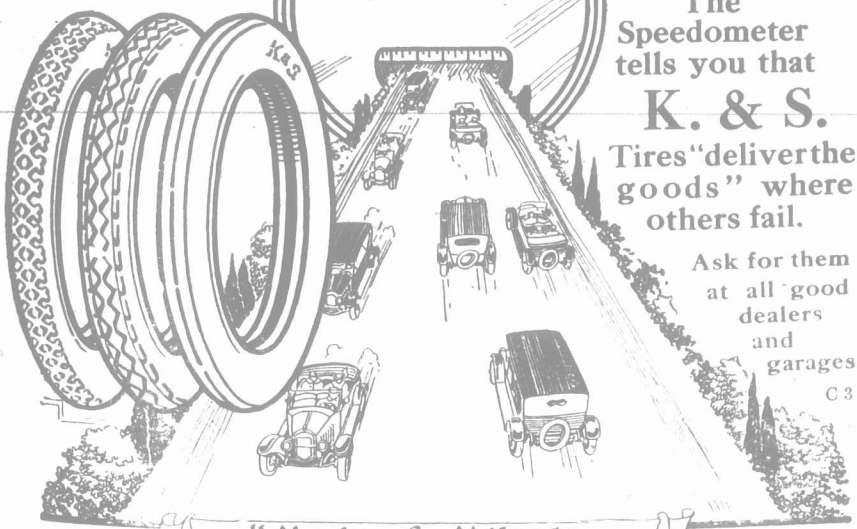
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 Toronto, Canada

MOLINE PLOW CO., MOLINE, ILL.

MOLINE

UNIVERSAL TRACTOR

K&S TIRES



The Speedometer tells you that **K. & S.** Tires "deliver the goods" where others fail.

Ask for them at all good dealers and garages

"Made of Mileage."

K. & S. Tire and Rubber Goods, Limited

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Increase Production with Planet Jrs.

Simply, yet scientifically designed for their intended work. They economize time and labor; enable you to cultivate easier, quicker and more thoroughly than with old-time, out of date tools and methods. Built to last a life time and fully guaranteed.

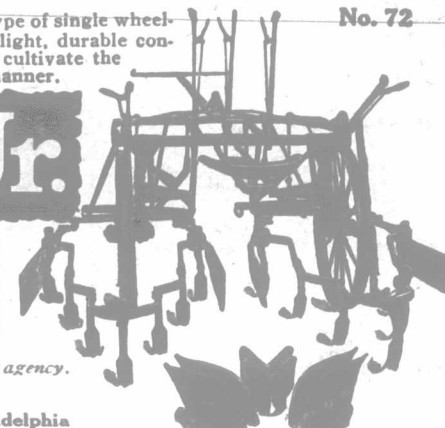
No. 72 Planet Jr. 2-row, 2 horse Pivot-Wheel Cultivator saves a man, a team and a cultivator every day it is used. Cultivates two rows of corn, potatoes, beans, etc., at one passage, even if rows are crooked or of irregular width. In check-rows and listed corn it also beats any other tool. Has spring lift and plant shields. Can be equipped with spring trip standards, discs, sweeps, hoe steels and furrowing shovels. Our especially hardened steels add 50% to wear.

No. 17 Planet Jr. is the highest type of single wheel hoe made. It is a hand machine whose light, durable construction enables a man, woman or boy to cultivate the garden in the easiest, quickest and best manner.

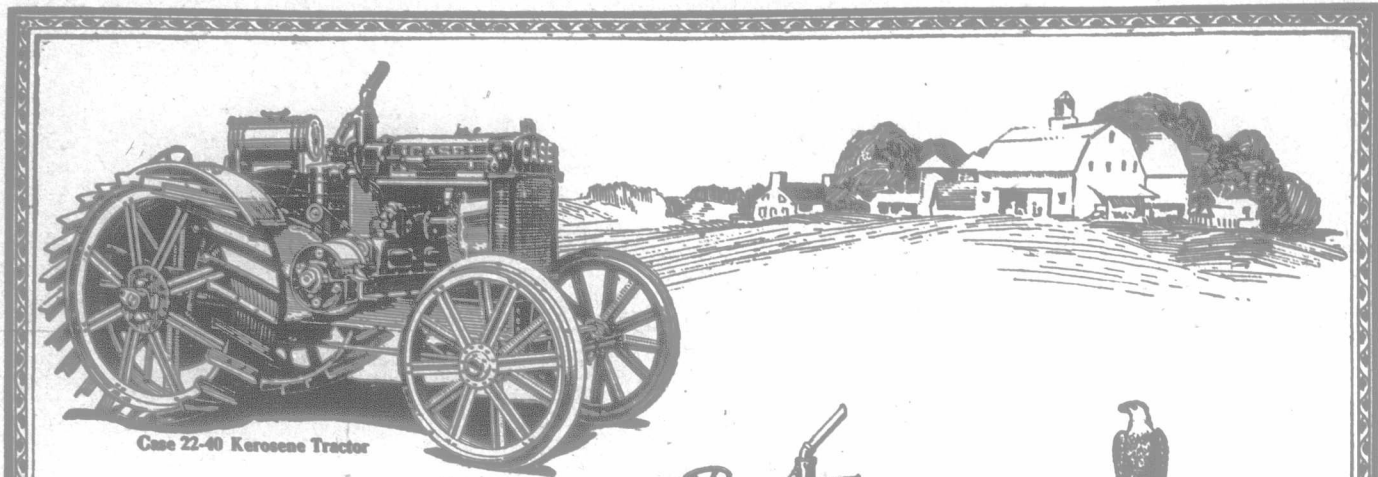
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Free 72-page Catalog illustrates tools doing actual farm and garden work and describes over 55 Planet Jrs. including Seeders, Wheel-Hoes, Horse-Hoes, Harrows, Orchard, Beet and Pivot-Wheel Riding Cultivators.

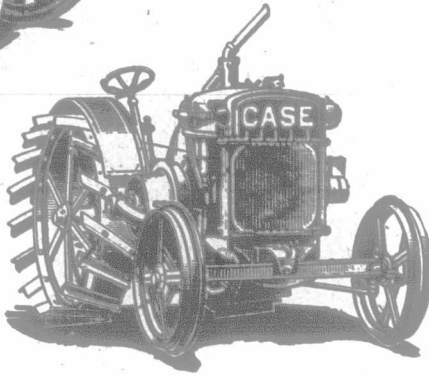
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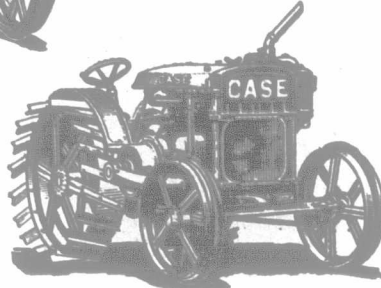
Case 22-40 Kerosene Tractor



Case 15-27 Kerosene Tractor



Look for the EAGLE Our Trade Mark



Case 10-18 Kerosene Tractor

To avoid confusion, the J. I. CASE THRESHING MACHINE COMPANY desires to have it known that it is not now and never has been interested in, or in any way connected or affiliated with the J. I. Case Plow Works, or the Wallis Tractor Company, or the J. I. Case Plow Works Co.

We Could Build Case Tractors Cheaper— But They Would Cost You More

Built into every Case Kerosene Tractor is a high degree of immunity from frequent repairs, replacements and undue wear. These items and the delays they cause are expenses you must add to the first cost of any tractor designed and built less excellently than the Case.

It would cost us less to use iron castings in many places instead of the drop-forged steel we do use; but it would cost you far more for replacement of broken and worn out parts.

We could save a lot by using cast-iron open gears instead of cut steel gears running in oil-tight housings; but later on, you'd pay many times the difference for extra parts, and lose still more by delay.

Thus, all through, in design, material, workmanship and equipment, we build Case Kerosene Tractors

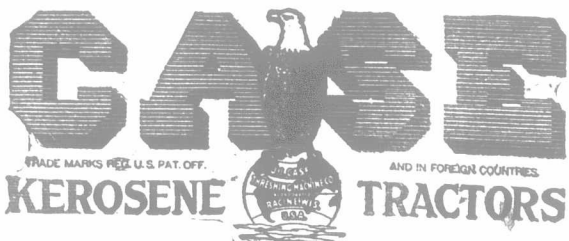
the best that they can be built instead of building cheaply and "passing the buck" to you.

Case Kerosene Tractors are built in a standardized design of three sizes: 10-18, 15-27 and 22-40 h.p. respectively. Your proper choice depends only on your power requirements. They are uniform in dependability, durability and simplicity of operation and adjustment.

Back of Case Kerosene Tractors is the great line of power farming machinery built by the J. I. Case Threshing Machine Co. Of this line, each unit is unexcelled in its class; within this line is equipment for keeping a Case Kerosene Tractor profitably employed throughout the year. Write for free catalog descriptive of Case Tractors, and listing our great line of tractor drawn or driven machinery.

J. I. CASE THRESHING MACHINE CO., Inc.

Dept. DP-4, 345-9 Dufferin St., Toronto, Ontario
Making Superior Farm Machinery Since 1842



RICHES-PIVER
CAL-ARSENATE
(Arsenate of Lime)
Paste and Powdered

An insecticide of greater and speedier poisoning power than Lead Arsenate and Paris Green, and much cheaper.

Only arsenical poison that can be safely incorporated with soluble sulphur compounds.

Very fine powder, being unusually bulky. Remains in perfect suspension in the tank. These facts ensure maximum covering capacity.

Guaranteed analysis on every package.

Write for Spray Booklet.

Other J. C. Co. Sprays:

- LEAD ARSENATE
- BORDO ARSENATE
- BORDEAUX MIXTURE
- BORDEAUX DUST

Made in Canada by
John Cowan Chemical Co.
LIMITED
7 Dalhousie Street Montreal

Tudhope-Anderson

WIDE TIRE Steel Wheels

Save your fields and horses

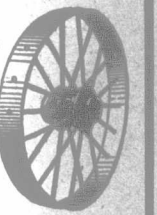
No farmer can afford to have his horses or fields used up by the extreme heavy draft of ordinary wheels in soft soil. Tudhope-Anderson Wide Tire Steel Wheels are a paying investment.

The heavy cast-iron two piece hub can be made to fit any skein or axle bearing—diameters, 20" to 60"; tire widths, 8" to 10".

Write us now for order-blanks and full particulars about Wide Tire Steel Wheels for work about the farm. Remember this is Made-in-Canada wheel.

We also manufacture Low Down Wide Tire Steel Wheel Trucks.

Tudhope-Anderson Co., Limited
Orillia, Ontario
Cut out this advertisement and mail to us



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Rods and Fishing Tackle of all kinds—Gill, Hoop, Trammel, Pound and Dip Nets and Lines. We carry in stock the largest assortment of Animal Traps in Canada; also

- Seines
- Floats
- Rubber Boots
- Rubber Coats
- Head Lights
- Guns
- Rifles
- Canoes
- Tents
- Camp Stoves
- Footballs
- Lawn Bowls
- and Sporting Goods

All at popular prices. Write for Hallam's latest Trappers' and Sportsmen's Supply Catalogue, mailed free for the asking.

John Hallam
LIMITED
127 Hallam Building, TORONTO
THE LARGEST IN OUR LINE IN CANADA



J.C. CHEMICALS
RICHES-PIVER
ARSENATE
 (arsenate of Lime)
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J. C. Co. Sprays:

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Steel Wheels

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Fishing Tackle of all kinds—
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Guns Camp Stoves
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John Hallam
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Massey-Harris



Two Rows at a Time

CULTIVATING two rows at a time, makes this implement a great time and labor saver, and a boon to raisers of corn on a large scale. The high Arch of the Massey-Harris Two-Row Corn Cultivator gives plenty of clearance in tall corn, and the Teeth can be easily set at the proper depth and angles for thorough cultivation, without injury to the roots, by means of convenient Levers.

It is easily guided in crooked rows by the feet of the operator, and either Gang may be readily adjusted for widening or narrowing rows by a convenient hand Lever. By moving this Lever the Gang can be adjusted for rows from 28 to 44 inches apart.

The width of tread is adjustable—the Wheels may be adjusted from 32 to 52 inches apart. It is built almost entirely of Steel, making a strong but light machine. The Steel Wheels have Malleable Hubs fitted with Removable Bushings or Sleeves.

MASSEY-HARRIS CO. Limited
 Head Office: Toronto, Ont.
AGENCIES EVERYWHERE

A Sprayer of Many Uses

A sure-death gun for bugs and vermin, O-K-Spra may also be used to wash your motor car or to apply cold water paints and whitewash to barns and hen-houses.

O-K-SPRA

will rid buildings and animals of vermin. It will apply cow wash in fly time, remove old wall paper or wash windows. It has been used as a fire extinguisher. Everything a good sprayer should be.

The O-K Canadian Two-Row Sprayer

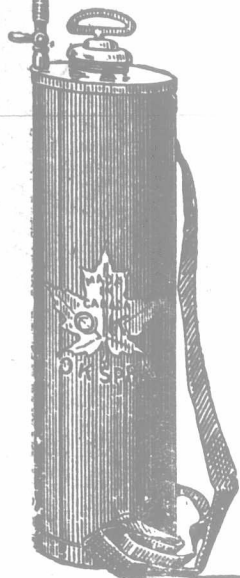
is a wheelbarrow type of sprayer that serves small acreages with big results. It is sturdily built, easy to operate.

We have recently bought the manufacturing rights of the Aylmer Barrel Sprayer which, added to our line, makes it more complete to choose from. If interested write for more particulars.

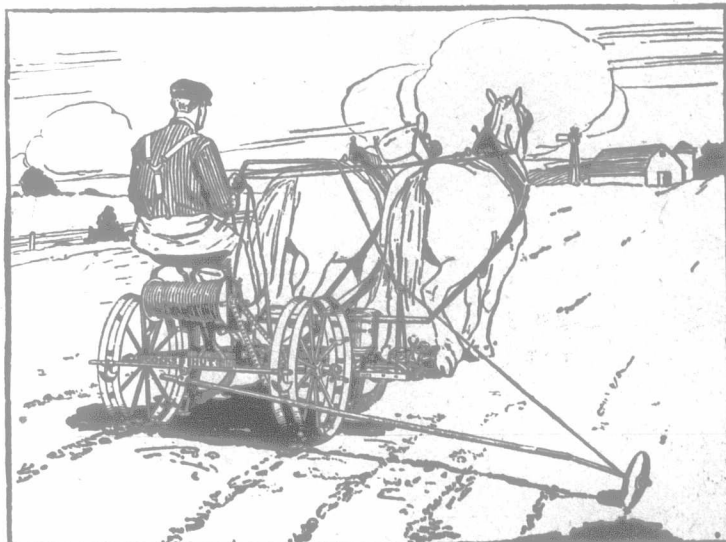
Valuable spraying calendar suitable for Canadian conditions supplied with each sprayer. Write for literature.

Canadian Potato Machinery Co., Ltd.
 54 Stone Road
 Galt, Ontario

Makers of O-K Canadian Four Row Sprayers and O-K Potato Planters and Diggers.



COCKSHUTT



You'll make money this year with a COCKSHUTT Corn Planter

Corn planting often has a short, rush season. You need a planter on which you can depend—one that will not fall down on you when it is most needed. It must be light in draft. It must be rigid. It must be a real, time-proven help and not an experiment. Cockshutt Corn Planters have all these qualifications because they are built by men who know what Canadian farmers need—with materials and workmanship that have only one standard: the very best.

Some Good Points

- Simple construction
Easy to understand.
- Checks seed into hills,
or drills it in rows.
- Feed changed by touch
of foot lever.
- Doesn't bruise seed.
Accurate feed.
- Fertilizer attachment
if wanted.
- Rigid, Strong,
Accurate.

Proper planting is half the battle for a good crop. Study the Cockshutt Corn Planter. Send for special Planter Folder. See our full line at nearest Agent's.

Cockshutt Plow Co., Limited

BRANTFORD, ONT.
 Sold in Eastern Ontario and Eastern Canada by
THE FROST & WOOD CO., LIMITED
 Montreal SMITHS FALLS, ONT. St. John, N.B.

A Smooth-running Beauty Winter and Summer!

THIS ENGINE began with a resolve to produce an engine second to none in the world. Once we accomplished that, we turned our efforts to cutting down the cost by standardizing all parts and simplifying every operation in the factory.

Now, we have a high-grade engine at a moderate price—vertical type, as used in high-priced autos, four cycle, water-cooled, with every modern feature. You'll like the **LONDON ENGINE** fine. Plenty of power—**FROSTPROOF** and unconditionally guaranteed.

London Gas Power Co., Limited
 43 York Street, London, Canada

Write to-day for Booklet
Your 'RIGHT' Arm of Power LONDON ENGINE

AGENTS WRITE FOR TERRITORY



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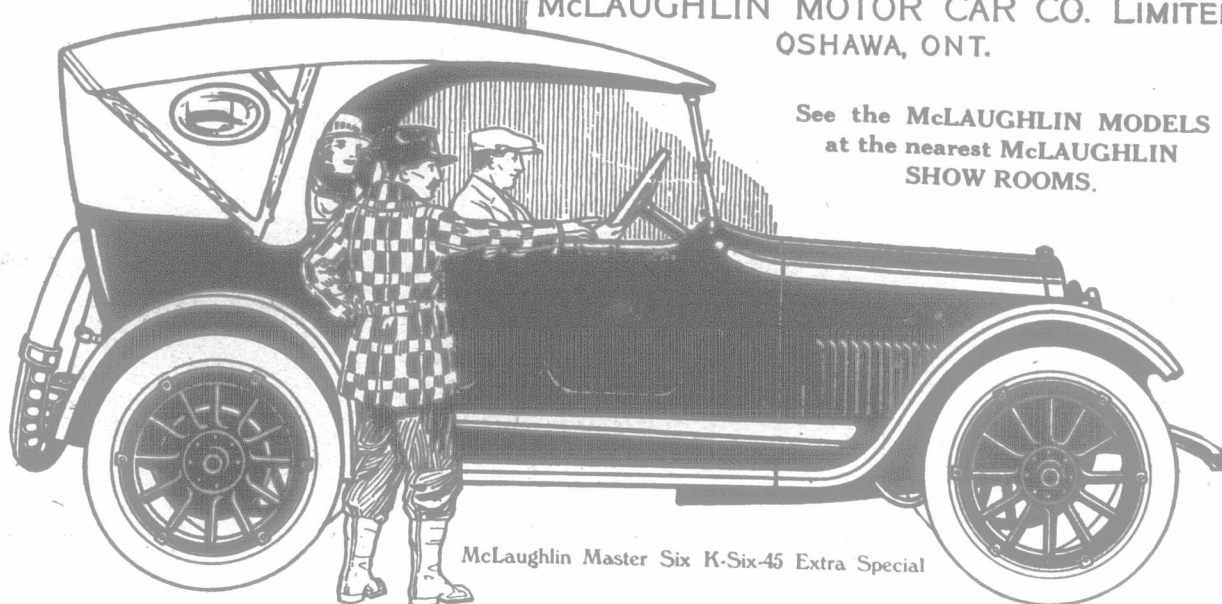
FOREMOST in popularity among Canadian-made Motor Cars the McLaughlin Master-Six has blazed the trail to greater motoring satisfaction.

McLaughlin Leadership is due to a strict adherence to correct engineering principles and to a determination to build for Canadians a car complete and efficient in every detail.

"When Better Automobiles are Built, McLaughlin Will Build Them"

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McLAUGHLIN MOTOR CAR CO. LIMITED
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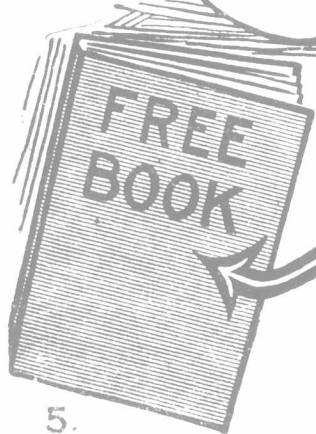
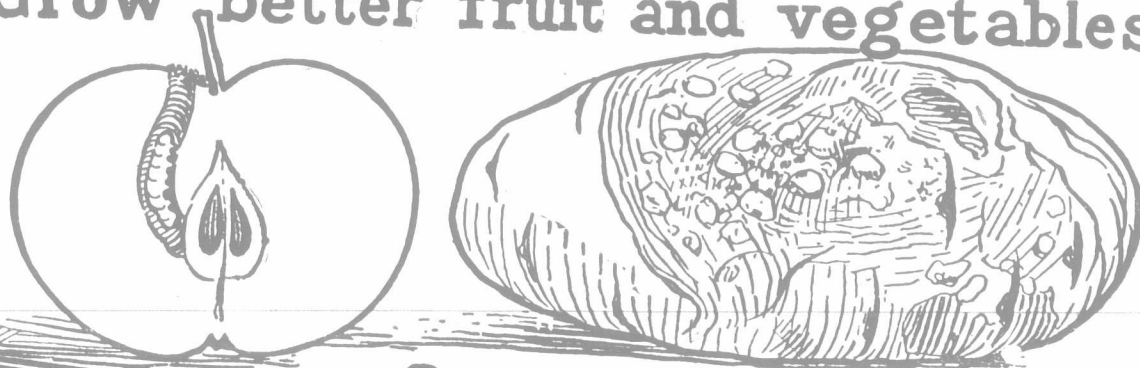
See the McLAUGHLIN MODELS
at the nearest McLAUGHLIN
SHOW ROOMS.

McLaughlin Master Six K-Six-45 Extra Special

The McLAUGHLIN MASTER SIX

STOP THIS WASTE!

Grow better fruit and vegetables



Spramotor

It isn't a SPRAMOTOR unless we made it

**Kills Rot and Scab
Kills Blight and Pests
Kills Bugs and Worms
Kills Weeds**

THIS All-Canadian spraying machine has been on the market over 25 years, and proven best for Canadian use. In that time it has repeatedly met the world's best in competition and captured over 100 Gold Medals and First Awards, including the coveted Canadian Government spraying contest award.

A Spramotor will double and treble your yield of apples, pears, peaches, plums, etc., and get you better fruit. It will do the same with potatoes and row crops, kill mustard in the growing grain, spray paint, whitewash and disinfectant on barns, stables, pens, etc., six times as quick as by hand. All styles and sizes, \$7. to \$400.

FREE! Crop Disease Booklet containing Government Reports and information. Write for your copy to-day.
SPRAMOTOR CO., 18 KING STREET, LONDON, CANADA

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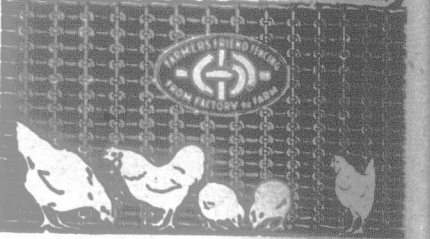
SARNIA POULTRY FENCE

The Canadian farmers and ourselves have been friends for more than eight years. Our business relations have been very intimate and profitable both ways—to the farmer and to us. We have given full measure of service—real fence value. That means repeat orders. Once a Sarnia fence customer, always a Sarnia fence customer. That is especially true of Sarnia poultry fence. You get real fence value, durable and strong, with all extra profits eliminated, when you deal direct with us on our Factory to Farm one profit plan.

We Save You Money

Buy no Poultry fence any part of which is made of light wire. The life of the fence will only be the life of the lightest wire. A chain is no stronger than its weakest link. The Sarnia knot—in fact all parts of our fences are made of the same size wire. We guarantee the Sarnia fence to be made from Government gauge, high grade wire that stands the acid test, and to be the most perfectly woven Poultry fence on the market. Western Canada supplied from Winnipeg. Get our low price list and descriptive literature before you buy Poultry Fence. Address nearest office.

THE SARNIA FENCE CO. Limited
Winnipeg, Manitoba Sarnia, Ontario



SEEDS

	Per bush
Alfalfa Genuine Ontario Variegated	445.00
" No. 2—No. 1 Purity (local grown)	415.00
Red Clover, No. 1 Govt. Standard	47.00
Red Clover, No. 2 Govt. Standard (local grown)	45.00
Alsike No. 2—No. 1 Purity	42.00
Sweet Clover—White Blossom, No. 2	38.00
" " Yellow " Can. Al.	37.00
Alboretta, No. 1 Purity	37.00
Timothy No. 2—No. 1 Purity	35.00

Situated in one of the best seed-producing districts in Ontario, and having the very best of cleaning machinery, we are in a position to offer high-grade seed, acclimatized and much superior to imported seed.

Write for catalogue—mailed free.

Douglas & Roy
SEEDMEN

Box 254, Brantford, Ont.

Ontario Grown Clovers

GOVERNMENT STANDARD

	Per bush
No. 1 Red Clover	445.00
No. 2 " "	415.00
No. 3 " "	40.00
No. 1 Alsike	43.00
No. 2 " "	42.00
No. 3 " "	42.00
No. 1 Alfalfa (Northern grown)	37.00
White Blossom Sweet Clover, 1st quality	37.00
" " 2nd " "	25.00
Unhulled White Blossom Sweet Clover	18.00
Yellow Blossom Sweet Clover, choice	34.00
No. 2 Timothy (No. 1 purity)	37.50
No. 2 " "	35.00
No. 3 " "	35.00

Timothy and Alsike Mixed..... 30.00
Timothy and Red Clover Mixed..... 30.00

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.

TODD & COOK

Seed Merchants

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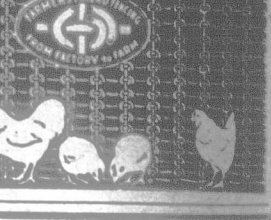
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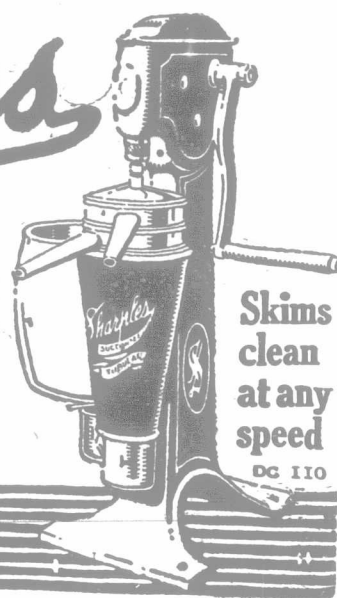
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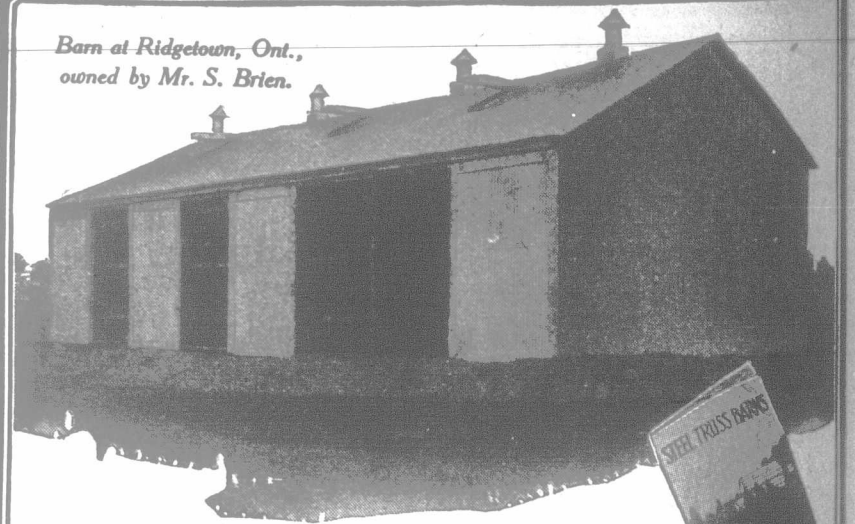
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The Farmer's Advocate and Home Magazine

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LV.

LONDON, ONTARIO, APRIL 15, 1920.

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EDITORIAL.

While waiting for the land to dry, clean up around the home and do some planting of shrubs and evergreens.

The problem of our Governments now is to raise revenue by taxation, but the biggest problem of all is to tax all people fairly.

Those who began seeding two weeks ago must have angered Dame Spring and brought upon us all the recent cold rebuke.

Get ready for the first spray. Much dirty fruit was produced last year because outfits were not ready in time and repairs were hard to get.

Once again we want to put in a word for the garden and urge that it be planted at the proper time, rather than left till after seeding and planting.

Consignment sales have been going well this spring and prices for good live stock have ruled high. Confidence and determination on the part of stockmen are valuable assets to the industry.

The market value of wool depends on the grade, the absence of chaff and other foreign matter. The grade is largely determined by the breed of sheep maintained, but any shepherd can do a great deal toward keeping the wool clean and rendering it more valuable.

The Hydro Commission of Ontario will not be obliged to pay an income tax on their canal farms for the Auditor's report shows a deficit of \$53,408 on the operation of them. It is common knowledge among wise men these days that there is "big money in farming," but auditors are seemingly unable to find it.

The League of Nations is short of funds and is suffering, no doubt, from the high cost of living. However, if it can accomplish that for which it was instituted, it is worth millions of dollars to every nation. It would appear like better business to spend a few millions in preventing wars than hundreds of millions in conducting them.

Farming in the old days was largely a matter of getting the land cleared and a place to sow the seed. Now it is one continuous fight with insects and fungus diseases, and every man must be somewhat of a veterinarian in order to combat diseases in his herds and flocks. With it all, the alert farmer finds his occupation interesting and moderately profitable, but the indolent or careless man is not suited for such a strenuous life.

The Supreme Court in its judgment could not uphold the Board of Commerce in its efforts to force Price Bros. to supply Montreal publishers with newsprint at a fixed price. This judgment practically does away with the Board of Commerce as "Paper Controller." The Court could not view newsprint as a necessity of life, but in spite of this a great many people would just as soon go without a meal as without their favorite paper.

If only a few towns and cities elect to observe daylight saving time this season, it will not cause the wide spread confusion and inconvenience that resulted last year when the railroads were led astray by the seeming necessity of acting unwisely in order to be on a par with United States. City and town councils will demonstrate their earnestness and genuine desire to co-operate with the surrounding country by refusing, this year, to adopt the so-called daylight-saving time.

Municipal Franchise and Property Qualifications.

Two Bills have been introduced and debated in the Ontario Legislature which ought not to become law until after the fullest consideration has been given them. One would extend the municipal franchise to all adults of a family living at home, provided the head of the house has the necessary qualifications and the other Bill provides that any householder, without further property qualifications, may offer himself as a candidate for municipal office. There are arguments in favor of these Bills, but the question arises, are we making the municipality any safer for democracy by removing all restrictions and allowing the people to make their choice from the names on the ballot paper? It is urged by some that we can trust the people and the ballot will decide the matter; but many a good man running for municipal office has suffered defeat because he found himself mixed up in a three-cornered fight, when, had the issue been a straight one he would have undoubtedly received the endorsement of the majority. Elections are so uncertain that precautions should still be taken to allow or encourage only the best men to offer themselves as candidates. The property qualifications are not severe in Ontario, and anyone without a stake in the municipality is not likely to have its interests quite as much at heart as one who has qualified by acquiring some property.

It is only reasonable to expect that the owner of a 50 or 100-acre farm would be a better servant for the rural municipality to entrust with the duties of office than one without a stake in the community, and consequently not an integral part of it. This Bill could be better discussed in the Legislature if it were allowed to rest intact for another year and after it is ascertained whether there is really any demand for it. In regard to the apparent extravagance in handing out ballots to all members of a household it should be remembered that it is possible to make the ballot too common—we should guard against that.

New Methods of Taxation.

The Minister of Finance has intimated that some new method of taxing will be devised to take the place of the "Excess Profits Tax" and bring a larger, as well as more regular, flow of revenue into the public treasury. Coincident with this came the suggestion that a small tax on turnover would be more effective and more desirable than the Excess Profits Tax, which is hard to collect and discouraging to production. Organs which openly, or clandestinely, speak for the capitalistic interests at once sprang to the support of this method, as one would expect, for it would undoubtedly relieve the big operators from the burden of taxation and place it on the shoulders of the consuming class.

The argument is advanced that a small tax on turnover would bear lightly on the public; that the Government's revenue from this source would be regular, frequently remitted, and inexpensively obtained; that big operators would not be discouraged by the constant demand of the state for a share of their profits, and some even go so far as to declare exultingly that under the proposed system "farmers would have to pay."

A tax on turnover is opposed in principle and in practice to the direct method of taxation which takes from the man who has, and does not rob the poor man of his last farthing. A tax on turnover is ultimately and surely paid by the consumer; from it, under the time-honored rules of trading, he has no escape. The statement that the tax will bear lightly on the public and will not be noticed, is wrong and mischievous. This indirect method of acquiring funds is a relic of the past, and the sooner it is scrapped the quicker will all classes realize their true duties to the state and acquire a frame of mind that will make for increased economic

stability, a better understanding between classes, social rest, and increased production in all lines. A tax on turnover would simply condone and abet excessive profits, would increase commodity prices and unload on to the consumer a burden that economists cannot establish that he alone should bear.

Profits in all industries are not the same. The farmer's milk cheque of say \$3,000 for the year represents very little profit, and, if it called for the same tax as \$3,000 of textile goods, there would unquestionably be a miscarriage of justice. Thought along this same line reveals other objectionable features of this indirect method of taxation. A farmer purchases raw material and implements of production; on these he would absorb the tax whatever it might be. He sells his finished article on a market set by world-wide conditions, and it is never flexible. Here again he absorbs the tax on turnover. As of old, he would be taxed going and coming (indirectly, of course) and he has had enough of that.

The excess profits tax may be faulty, but the bare suggestion of a tax on turnover does not commend itself at the present time. It may have some good features, but they are not apparent.

Packers' Insurance.

The order forbidding the further collection of the condemnation tax at public stock yards has been given a three months' hoist, "in order to consider a constructive policy for the reduction of disease." This is the outcome of a conference between the packers and the Live-Stock Branch, held on March 24, where it was agreed that representatives of the packing industry, producers, and the Live-Stock Branch would, working together, endeavor to perfect some scheme satisfactory to producers, the meat packers and the Live-Stock Branch.

The old system of buyer collecting one-half of one per cent. from the seller when the live stock passed over the scales served the purpose for which it was intended, but it permitted injustices to creep in. The packers claim to have received no more from this tax than their condemnation losses amounted to, and figures compiled by them showed an actual loss for two representative months last fall. One important objection was that the toll was exacted when stockers and feeders were going back to country points, or across the line, and where condemnation of the carcasses was not a matter of immediate concern. The tax, however, was declared illegal, and a readjustment became necessary.

Some of the packers have taken a keen interest in the matter and would like to see diseased animals traced back to the producer and a reasonable share of the loss incurred by him. This idea in principle is sound, but an animal passes through so many hands from the time it is born until it reaches the slaughter house that in practice it would be difficult to work out without hardship and injustices. All are agreed that some form of insurance is better than none, for without it the buyer would be in a position to levy any toll or discount the value of the animal according to his wishes and his disposition. All producers expect to receive what their live stock is worth, but no one expects the packers to be so philanthropic as to absorb the loss of animals condemned by officers of the Health of Animals Branch, acting in their official capacity as inspectors. Some insurance tax, we believe, is better than none; the problem now is to arrive at some method of collecting and distributing it in a manner satisfactory to all concerned.

Tuberculosis is on the increase in Eastern Canada, and it is from this cause that a large majority of the condemnations result. The insurance tax, we believe, should be collected by the Live-Stock Branch or the Health of Animals Branch on all live stock destined for the inspected slaughter house. As custodians of this

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fund, the Branch would compensate the packers for losses incurred and use the surplus, as recommended in our issue of February 26, as the nucleus of a fund to be expended in the eradication of disease from Canada's herds and flocks. Accredited herds and the "Tuberculosis Order providing assistance to dairies under municipal control" do not go far enough and are not sufficiently far-reaching to grapple effectively with tuberculosis, which is costing the country an inestimable sum in diseased live stock and human lives. Canada would be the better of a real campaign against this scourge. The collection of the insurance tax and the identification of diseased animals in the abattoirs would provide the Government with a starting point and information that could be used in an anti-tuberculosis movement in the interests of the state at large.

Nature's Diary.

BY A. BROOKER KLUGH, M. A.

One of the very earliest plants to appear above ground in the spring is the Skunk Cabbage. This plant belongs to the Araceae, the same family to which the Jack-in-the-Pulpit and the Water Arum belong. The rounded spathe, which forms a hood over the central spadix, is green, streaked and blotched with purple-red, while beside the spathe is a compactly-coiled, pointed peg, which later on will expand into the leaves. The stout spadix is set with pale lavender flowers which contain both stamens and pistil, the conspicuous anthers being straw-colored. The common name of this species is due to the appearance of the plant when the leaves are fully expanded and the foetid odor which is given off by it.

The fruit, which ripens in September, consists of the enlarged spadix with the round bullet-like seeds embedded in it.

The Skunk Cabbage is a plant of swamps, low wet woodlands, and the marshy ground beside brooks. Its range in Canada is from Nova Scotia to western Ontario, but is local in its distribution, usually being common where it occurs, but being absent from many localities.

Another of our earliest spring flowers is the Bloodroot, which pushes its way through the carpet of dead leaves on banks with a southern exposure in the woods while the remains of snowdrifts still remain on northern slopes. When the plant first appears above ground the leaf is wrapped tightly about the flower-bud, then the leaf unfolds to the form of a cylinder and the delicate white bud arises like a little pearl from its green cradle. When the flower-stalk has reached its full height the petals expand flat in the mornings of sunny days, become erect in the late afternoon and close by evening. On cool or rainy days the flower remains closed. This

it is open when insects are active, but closed for the protection of the pollen at other times. The insects which pollinate this species are bumblebees, the smaller short-tongued bees of the genus *Halictus*, and the bee-like flies of the genus *Bombylius*, which visit the flowers to obtain pollen, for the flowers secrete no nectar. The pistil of this species matures first, and the stigma (the sticky projecting portion of the pistil which receives the pollen) has withered by the time the stamens mature, so that cross-fertilization is assured. The petals of the Bloodroot are usually eight in number and four alternating ones being slightly narrower than the others they give the fully-expanded flower a somewhat squarish appearance. Occasionally there are twelve petals. The two little sepals fall when the bloom opens.

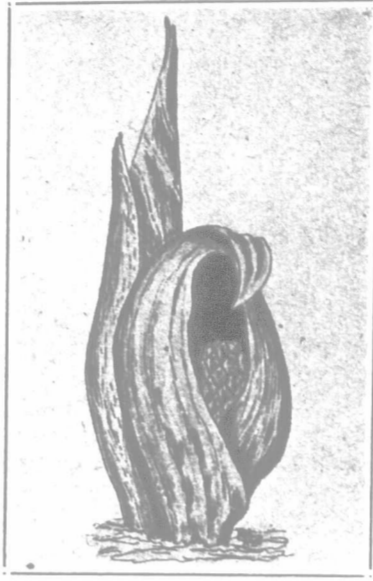


Fig. 1. The Skunk Cabbage.

The fruiting capsule of the Bloodroot is conical and contains many light yellow-brown seeds. The leaf continues to expand until early summer and by that time it often reaches six or ten inches in diameter.

The root-stock is thick and succulent and it is in this root-stock that the nourishment is stored which allows the plant to make such an early start in the spring.

That Bloodroot belongs to the Papaveraceae or Poppy Family, all the members of which have either milky or reddish juice. The red juice to which this species owes its common name, and also its scientific name of *Sanguinaria*, was at one time used as war-paint by the aboriginal tribes of North America.

This species is rare in the Maritime Provinces, but is recorded from a few localities in Nova Scotia and New Brunswick. It is common from western Quebec to western Ontario, and has been found in one locality in eastern Manitoba.

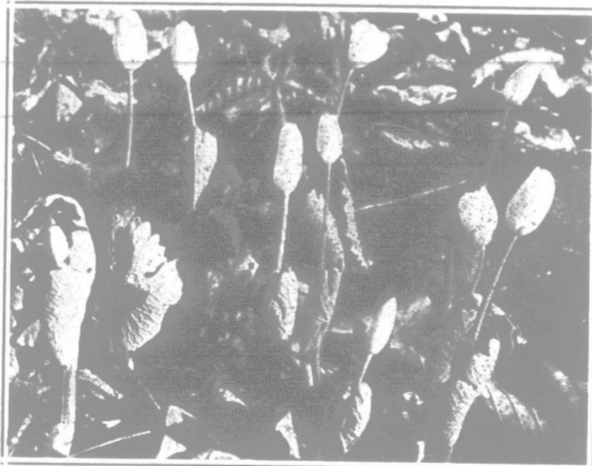


Fig. 2. The Bloodroot.

Jean Quits and Sandy Buys a Milker.

"Sandy", says the auld wumman to me this spring, "I'm gaein' oot on strike. It's the fashion noo-a-days, and onyway I think I've supported ye lang enough. There's mair coos tae milk oot in the stable there than ever ye had before and there'll never be a better time for me to throw doon my stool an' milk-pail than the present. Ye can just gae to toon an' buy a milkin'-machine that will dae the work for ye, or ye can dae it yersel'. I'm through," says she, lookin' me in the eye.

Having lived wi' Jean for, what I tell her, seems tae have been an awful lang time, I can tell just by the set o' her mouth whether she is in earnest or not. She was this time. An' it gradually cam' to me that I'd have to be puttin' oot a few hundred mair o' my hard-earned dollars in a machine that I'd never had muckle use for in the past, an' which I used to say made mair money for the mon that sold it than for the one that bought it.

On the ither hand it was a case o' milk the seventeen coos alone, an' by hand, for ye canna depend on the labor market for ony extra help to day, as ony farmer wi' a year or two o' experience can tell ye. And the prospect o' sittin' on a milkin'-stool for two hours an' a half each night an' mornin', dodgin' the coos' tails in fly-time, an' tryin' tae dae a wee bit o' milkin' on the side, didna

appear to me to be what ye might call a vera attractive program.

As luck would have it who should come around a couple o' days after this but an agent for one o' these vera milkin'-machines that we had been talkin' about. These agents can smell oot a likely customer the way a Scotch terrier can smell oot a rat, I'll be thinkin'. At any rate he caught me at the right time and he made his sale.

According tae the chap it was luckier for me than for him that he happened to come along when he did. If I'd bought ony o' the ither machines on the market I'd hae had a hard time o' it wi' them, it seems. The maist o' them are not worth the powder that it wad tak' to blow them oot o' the coo-stable, he tauld me. There was only one guid milkin'-machine made an' I got it.

Onyway, he left me thinkin' I had the world by the tail, and I went intae the hoose that night feelin' as independent as an auld bachelor payin' his dog-tax.

In a few days I got my machine home an' the men came along to set it up. When I saw all the pipes there was, an' the rubber tubes an' the taps an' faucets that had to be warked, an' all the ither things about it, it fairly made me dizzy. I began to get what the boys call "cold feet." "Sandy", says I tae mysel', "ye'll never learn tae handle that Chinese puzzle. Ye've bit off mair than ye can chew this time an' ye've put yer guid money in a hole." It must hae been weel on to ten o'clock before I could get tae sleep that night, what wi' thinkin' about it, an' tryin' to remember some o' the directions the men had been givin' me. I kened that there was those that were using milkin'-machines an' gettin' along all right wi' them, but I had na doot but that there was something o' the mechanical genius about them, which same I could never claim for mysel'. I always had a pretty guid sleight o' the axe or the scythe, but if it came to makin' a whipple-tree, for instance, there never was ony great trouble tellin' the one I turned oot from one that had been made on a turnin'-lathe. Sae ye can see why I got to be a wee bit dootful o' my ability to learn lang-distance coo-milkin'.

The next mornin' I was up guid an' early an' off tae the stable wi' my pails, but it wasn't wi' the intention o' tryin' oot that machine. I'll hae to tak' anither day to study it oot," says I to mysel'. "I'll juist go at it the auld way this mornin'." It was some job, too, an' that apparatus there juist waitin' to be hitched up.

But that night not bein' able to think up ony further excuse, that wad be likely to pass wi' Jean, I went at it. I think I'll just be drawin' a curtain over the scene that followed, as they have a way o' sayin' in the story-books. I'll juist say that that bunch o' teat-cups gave me mair trouble than onything else. I got them wrong end foremost an' upside doon, an' maybe inside oot, for all I can remember. Hoover, the coos were very patient wi' me an' finally I began to get the hang o' it. But all those faucets an' taps were an unco' worry to me for quite a spell.

Duncan McGregor was in the stable one day last summer an' says, he, "Sandy, ye ought to hae a milkin'-machine. Ye can afford to sit an' see it come." I thought o' that the day I was daein' my experimentin' an' couldna help wonderin' when the "sit an' see it come" part was gaein' to begin.

Hoover, I'm pleased to be able to state that I milked my coos that night wi' the machine, an' ilka time since it has been a wee bit better an' easier, until noo ye've juist about got to show the coo to that set o' teat-cups an' they'll jump on by themselves.

Gi' my wee gasoline engine stays on the job, an' none o' my bossies tak' a notion to tie themselves up in those rubber tubes they're hitched to, and I escape a few ither accidents that I ken are liable to come to onyone that monkeys wi' machinery, I'm thinkin' I ought to be able, along towards next fall, to put in a guid word for the machine milker. I'm not sayin' a word yet, mind ye. It's time enough to be braggin' when ye're dead sure ye are oot o' the woods. And ye can never be sure o' onything in this world, although they say that it's a pretty safe bet that the tax-collector willna forget to come around at least once ilka year.

I'll be thinkin', sometimes, that there is anither side to this business o' makin' machinery do our work for us. It seems tae me that it has a tendency to clear the cobwebs oot o' our brains, as ye might say, to have to learn all about a machine, an' then to have to run it every once in a while. It certainly mak's ye think, whether ye like the sensation or not. And they say that the only way to develop the mind is by giving it plenty o' exercise. Accordin' tae that, sittin' doon beside a coo an' gaein' half tae sleep over the job o' milkin' her by hand, an' daein' it over an' over again, gets to be a wee bit monotonous an' has an inclination towards discouragin' much in the way o' mental activity. Dae ye no think that yon's a pretty logical argument, noo? It wad pretty near sell a milkin'-machine to some chaps I ken.

And to go back to the subject I started on, I want to say, all jokin' aside, that I think a lot mair o' milkin' coos by machinery than I did a year ago. I'm one o' the latest converts an' I'm takin' this opportunity to mak' a confession o' my faith to the world. They're a wee bit awkward on the start, these machines, but they soon get on tae their job.

Haivin' a milkin'-machine is juist like onything else, being married, for instance. You've got tae get used to it.

A typographical error occurred in Nature's Diary, issue of March 25, in the table showing dimensions of entrances to bird boxes. The size of entrance for a Wren should have read $\frac{3}{8}$ inch, instead of $\frac{1}{8}$.

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THE HORSE.

Spring Horse Shows in Britain.

Reports which reach this country suggest that newspaper proprietors in Canada are having trying times. Here, also, the situation is anything but reassuring. Paper is scarce and is hardly to be bought at any price. When stuff that used to be bought for less than two pence per pound is quoted at tenpence, it becomes evident that the lot of the newspaper proprietor is not a happy one. I have not heard directly from Canada, but reports in our newspapers speak of advertisements being refused and papers being issued at one-half their size. In such circumstances it may be wise policy not to write too much or too often.

LONDON HACKNEY SHOW.

At the close of the first week in March the leading topic is of necessity the spring horse shows. The sequence in London has this year been altered. The Hackney Show was held on the Thursday and Friday of the third week in February. It was a wonderful show alike in respect of the number of entries, the large attendance of the public, and the keenness of the demand for really good horses. It would appear as if the automobile popularity had only whetted the appetite of horse lovers for the very best. Ponies were in great favor, and the show of ponies was a very fine sight. The most successful sire of Hackneys was Robert Scott's Mathias 6473, now deceased. Many first-class animals after him were exhibited alike in hand and in leather. The champion stallion, C. F. Kenyon's Kirkburn Leader 12875, was got by Mathias, and his dam was by the former London champion, Kirkburn Toreador—"Kirkburn" is the prefix of F. Buttle, one of the most successful breeders in Yorkshire. At the same time, it must be admitted that nearly all the winners were old favorites. The champion harness horse was the former champion, Mrs. Putnam's Park Carnation, and she was almost the only outstanding animal in that section not got by Mathias. Her sire was a comparatively unknown horse named Luath. The champion mare was Slashing Dorothy, of Danegelt lineage. In the pony section almost all the leaders were the Melbourne breeding. An exception was the first-prize three-year-old mare which was bred and owned by I. Ernest Kerr, of Harviestoun.

THE SHIRE HORSE SHOW.

The Shire Horse Show followed. It had the last week of February to itself, and a marvelous show it was. No breed has been more skilfully handled, as a breed, than the Shire. The champion stallion was the winning three-year-old, Field Marshal V. 35627, bred and owned by H. M. the King, at his Sandringham stud farm of Wolferton, Norfolk. The champion female was a great massive mare named Gleadthorpe Seclusion, and at the auction sale she made 4,600 guineas. On that day 108 Shire females made the great average of £422 apiece. A feature of the show was the appearance in the lists of the famous Clydesdale breeder, William Dunlop, Dunure Mains, Ayr. Last year at the Royal, Cardiff, Mr. Dunlop purchased the first-prize two-year-old colt, Fenny Conqueror. This year he was entered to be sold by auction at the Shire show, and there was no mention of him in the prize lists or sale lists. Mr. Dunlop, however, won the junior championship for females with his first-prize yearling filly, Pendley Vanity, which he bought at the Tring sale last autumn. The reserve to her was Maid Marian 2nd, the first-prize two-year-old from H. M. the King's stud at Sandringham. It is forty years since a Scot's exhibitor won champion honors at the London Shire Show. In 1880 the late Lawrence Drew, Merryton, Hamilton, won with Topsy. She was mated with Prince of Wales 673 (Clydesdale) and produced Nelly, and Nelly in her turn was mated with Darnley 222 and produced Castle-reagh, so long identified with the Seaham Harbour Clydesdale stud.

Both the Shire Horse Society and the Clydesdale Horse Society in 1919 had an unfortunate experience. The expenditures exceeded the income in the case of both Societies by fully £300. The cost of producing the annual volume of the respective stud books exceeded the revenue. This is not to be wondered at. In the case of the Clydesdale Society, an expenditure of nearly £500 has been incurred in connection with the inquiry into joint-ill in foals. It is anticipated that good results will flow from this expenditure.

THE GLASGOW STALLION SHOW.

The Glasgow Stallion Show has just been held. The event has fully maintained its prestige. The show is described as the Diamond Jubilee of the event. This may be correct, in so far as the existing organization is concerned. It may be sixty years since the show was promoted on its present basis, but it is much more than sixty years since an annual show of Clydesdale stallions was inaugurated in the Glasgow cattle market. A show of that kind was in existence at least eighty years ago. A special effort was put forth to make this a memorable event. A Diamond Jubilee Champion Cup was offered open to all comers, and the result was the bringing forward of at least three outstanding former champions, winners of the Cawdor Challenge Cup and the Brydon Challenge Shield. These were James Kilpatrick's famous five-year-old Craigie Litigant 19071, which won both trophies in 1918; his old-time competitor, George A. Ferguson's Ardentale 18993, which won the Cawdor Cup last year; and the same owner's six-year-old Dunure Kaleidoscope 18335, which won the

Cawdor Cup in 1916. These horses were all brought out in the pink of condition. They were respectively placed first, second and fourth in the aged class, and the Diamond Jubilee Cup went to Craigie Litigant, which thus for the second time became the supreme champion of the Glasgow stallion show. The third-prize horse was John Pollock's five-year-old horse, Dandaleith Quest 19082, a horse with beautiful quality of bones, up to a big size, and very showy and attractive. He was bred by John Philip, Dandaleith, Craigmachie, and was got by Dunure Footprint 15203, out of Queen Mary 38049 by Baron's Pride 9122. Maybe he is a little deficient in muscular development in the thighs, otherwise this is one of our best horses. The fifth and sixth horses were both owned by John M. McKean, Dalhousie, Bonnyrigg, Midlothian. The fifth was Odin 19513, by Dunure Stephen 17875, and the sixth, Dunure Luxury 19108, by Dunure Footprint. Mr. Ferguson had seventh with Pearl 19221, by the Hiawatha horse, Dunure Diamond 15806. Regarding these horses it may be said that Craigie Litigant is essentially a Scotsman's horse. He has first-class feet and legs, and very true action alike walking and trotting. He has a beautiful head and neck, and carries himself like a Thoroughbred. He lacks depth of back rib, and can be seen to disadvantage after a heavy season. Nothing can surpass his underpinning. Ardentale is much after the same type. Perhaps he is not quite so "classy" as Craigie Litigant, but he also rather lacks depth of rib and thickness. On the other hand, Dunure Kaleidoscope has such a splendid top that he was shown without roller or back saddle, with only a head collar. He is a very fine horse. With the exception of Pearl, all of the seven were Baron of Buchlyvie descent. Craigie Litigant and Dunure Kaleidoscope are his sons. Ardentale is by Bonnie Buchlyvie; Dandaleith Quest, and Dunure Luxury are by Dunure Footprint, and Odin is by Dunure Stephen 17875. The Brydon Challenge Shield and the Cawdor Challenge Cup were both won by the first-prize three-year-old, Thomas Clark's Rising Star 19836, the unbeaten two-year-old of last year. The reserve for the Cawdor Cup was Dandaleith Quest, and for the Shield, Ardentale. Rising Star was himself reserve

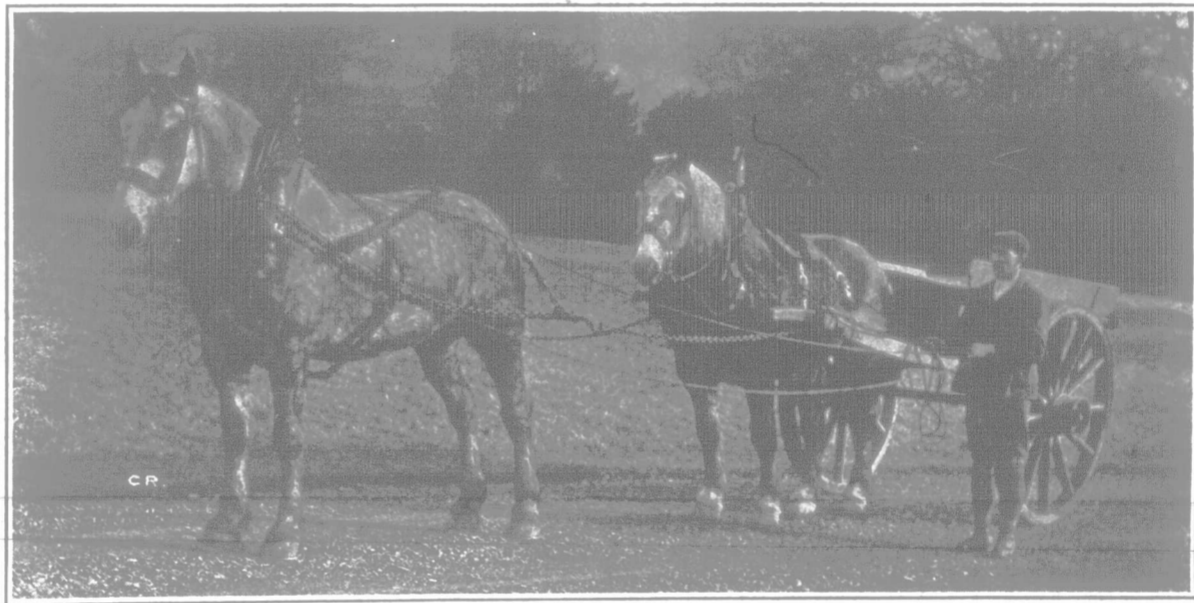
named Record 20157, and J. Hamilton's home-bred chestnut, Dunduff Chancellor 20002, second at the H. & A. S. last year. This is a great colt. In all likelihood Trans-Atlantic judges would have placed Record and Dunduff Chancellor first and second, unless indeed they would object to their colors. In Scotland, color counts for very little if the animal is right. The yearling cold class had twenty-one entries of somewhat varied merit.

ALBERTA BUYS A GOOD HORSE.

A notable purchase has been made on behalf of the Alberta Department of Agriculture by Mr. Weir, who has recently been visiting us. After a very careful survey of the whole field, he purchased Craigie Masterpiece 18297 from James Kilpatrick, Craigmains, Kilmarnock. Mr. Weir has bought a horse that will give satisfaction in the North West. He has the best of breeding, being got by the unbeaten champion, Everlasting 11331, out of Isabel 27186, by the Cawdor Cup Champion, Revelanta 11876. Isabel has been the dam of about half a dozen colts, all of which would have been kept as stallions. Mr. Kilpatrick owned three of them, but one died when rising two-years-old. Mr. Ferguson has one, a very promising colt, and Isabel herself is a Morayshire prize mare. Mr. Weir found that it was not possible to purchase the horse that in every particular would have filled the specification of the Honorable Duncan Marshall's Department, but he has secured a horse of great weight, with the best of feet and legs, and a beautifully set on head and neck and well-laid shoulders, as well as a grand top. It is to be hoped that Craigie Masterpiece may fulfil the expectations of those who have in such a spirited way invested in him.

SOME SPRING CATTLE SALES.

Something must be said before closing about the spring pure-bred cattle sales. At Aberdeen Shorthorn sale, James Durno's Rothiebrisan Knight made 5,000 guineas, or £5,250, the highest price recorded this season. His buyer was Joseph Shepherd for the Argentine. There is nothing ultra-fashionable about his breeding, but he is a phenomenally good bull, full of flesh and true to breed character and type. Mr. Durno,



Two Percheron Horses, Neronde and Oze, Taken to Scotland by Lord Minto from his Estate in Alberta.

for the Diamond Champion Cup. It would, therefore, appear that the order of merit in the best horses at the show was (1) Craigie Litigant; (2) Rising Star; (3) Ardentale; (4) Dandaleith Quest; (5) Dunure Kaleidoscope. Rising Star is a great, massive, weighty cart horse. He would command the attention of any breeder or owner of heavy horses. His dam was Wells Mayflower 44057, by the Everlasting horse, Star of Doon 16013. She was bred by Alexander Cross, of Knockdon, and the horse himself was bred by J. P. Sleight, St. John's Wells, Fyvie. Second to him in the class stood Craigie Excellence 19971, a particularly attractive bay colt with a beautiful hind leg and good hock action. This is a most valuable horse, being an outcross from the more fashionable strains. His sire, Rising Tide 17454, is by Airies Prince 10667. His breeder was John More, Gogar Mains, Blairlogie. E. A. Ferguson had third with Passchendale 19815, which as a yearling tried conclusions with Rising Star, and at least on one occasion beat him, and eighth with Bryandale 19641, a nice, sweet horse of which more is likely to be heard. The fourth was Purdie Somerville's high-class but rather gaudily-colored horse, Scotland's Victory 19759, by Kismet 18117, out of a famous breeding mare, Chrissy Sleight 35206, by Everlasting 11331. The fifth was Haining Castle 19739, owned by Walter A. Aitkenhead; the sixth, Fxvie Masterpiece 20040, owned and bred by the famous Shorthorn breeder James Durno, Rothiebrisan, and got by Kismet, and Wm. Robertson's horse, The Intent 19877 was seventh. He is from Park of Keir, Dunblane. Two-year-olds as a class were characterized by great size and weight. The first was Mr. Kilpatrick's Craigie Agility 19964, and the second Mr. Ferguson's Premierdale 20140. These are handsome "Classy" colts. Two great specimens of the heavy draft type were respectively third and fourth, namely, James McConnell's £3,400 purchase at Lanark,

Rothiebrisan, had an average of £807 for twelve young bulls; Sylvester Campbell, Kinnellar, the third bearer of the name whom we have known, had £646 for ten; David Anderson, North Loviston, had £627 for six; H. MacL. Duncan, Lethenty, had £459 for eight; Lady Cathcart of Cluny Castle, £453 for five (her second "draw" so to speak, her first being at Perth), and William Anderson, Saphock, Oldmeldrum, £426 for thirteen. In West Cumberland the Millgrove herd of Mrs. Burnyeat was dispersed on February 21. The sale was conducted by John Thornborrow, Penrith. Three cows made 1,000 guineas each, and one three-year-old heifer made 1,150 guineas. If cows and calves be reckoned as separate lots, sixty-five head made an average of £418 13s. 2d, and if cow and calf be reckoned as one lot, forty-nine lots made an average of £555. It was one of the most successful sales I have ever attended. At the Highland bull sale, at Oban, sixty-seven bulls averaged £60 3s. 10d., a record price of £420 being made for the champion bull from D. A. Stewart of Ensay. At the Galloway bull sale, at Castle Douglas, 116 yearling bulls made an average of £45 11s. 3d., the top price being £315, paid for Harry Lauder of Tarbreoch by Matthew Marshall, Stranraer. The champion, Thomas Biggar & Sons' Young Rascal, made £210. A notable sale of young Ayrshire bulls was held at Thomas Barr's farm of Hobsland, Monkton, Ayrshire, when twenty made an average of £239 14s. 3d., the highest price being the record of £1,869. This was paid by the Hon. Cameron Corbett, Rowallan, Kilmarnock, who is founding a milk-record Ayrshire herd.

SCOTLAND YET.

At 114 public sales of pure-bred Aberdeen-Angus last year, 5,412 head were sold for \$2,768,761.50, or an average of \$511.59, according to a review of the 1919 sale season just issued by the American Aberdeen-Angus Breeders' Association, Chicago.

LIVE STOCK.

Diarrhoea in Young Pigs.

A large number of young pigs are lost every spring from diarrhoea. The disease, in most cases, is caused by faulty feed. If the dam be in a feverish or unhealthy condition the first few days after the birth of the litter, her milk becomes unsuitable for such young animals, and they frequently develop diarrhoea as a result. Improper feeding of the dam is also a common cause of the trouble. The feeding of partially decomposed, rotten, or frozen feed to the mother in many cases results in poisonous materials being carried through the milk to the young, with serious results.

Where the pigs are kept in close, damp, ill-ventilated quarters, diarrhoea is especially liable to develop. The young pigs require light, airy, well-ventilated quarters, with plenty of sunshine and ample room for exercise. In too many cases the farrowing pen is an over-heated, damp, dark building, and, in such cases it is not surprising that the pigs begin to die at a few days of age. Diarrhoea is especially liable to develop if the weather be damp and chilly. Cold, rainy spring weather, especially if the pen be damp, or in any way the litter is exposed, is especially favorable to the development of the disease in a newly-born litter. The young pigs get damp and chilled, and as a consequence their strength and vitality is lowered, and they thus become predisposed to the actions of any poisonous substances that may be taken in the milk.

Where possible, the young pig in order to be healthy, should have the milk of its mother. In cases where the dam dies, has not sufficient milk, or possibly none, or refuses to nurse her litter, and an effort is made to raise them by hand on cow's milk, we frequently notice the development of diarrhoea in a few days. The milk of the cow is not suitable for young pigs, unless it be diluted with about one-half of its bulk of warm water, and a tablespoonful of sugar added to each pint of the mixture. The same appears to be true, to a certain extent, in the case of milk from other sows. Pigs often develop diarrhoea if forced to nurse another sow, especially if her litter be a week or two older than the adopted family. The milk changes and becomes stronger a few days after farrowing, hence the milk of a sow with a litter two or three weeks old is not likely to give good results if partaken of by a newly-born litter.

The age at which the disease may appear varies from the first day after birth up to several weeks. In some cases the symptoms appear so soon after birth that some claim the disease is congenital—that the young have it when born. In cases that appear several days or even weeks after birth, it is usually due to inflammation of the mucous membrane of the stomach and intestines, and chronic digestion. In some cases diarrhoea is preceded by a few days of constipation. In some seasons the disease is very common and appears almost as a contagious, or infectious diarrhoea, such as is often seen in calves.

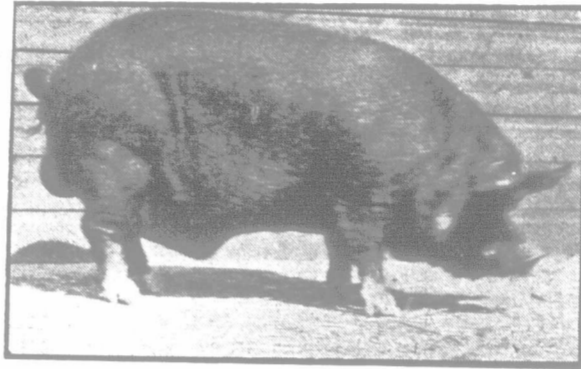
Symptoms.—The symptoms cannot be mistaken. There is frequent fluid or semi-fluid evacuation per rectum. The excrement is usually of a grayish or grayish-yellow color, and often has a foul, disagreeable odor. The longer the disease continues, the more liquid and foul-smelling the discharges become. They also become more irritating. At first the appetite is generally good, and may remain so for a day or two, but the patient soon loses appetite and rapidly loses flesh and strength. He becomes weak, stunted in appearance, stands with head down, tail drooping, and abdomen drawn up. The hair becomes rough and dry in appearance, and the patient expresses pain by squealing and grunting. Unless the disease be checked the animal usually dies in a few days, especially in cases where the disease starts during the first few days of life.

Treatment.—Preventive treatment consists in keeping the pregnant sow in clean, hygienic quarters, giving clean, laxative food of first-class quality, and seeing that she gets regular exercise. No sour swill, sour mash or mouldy grain should be given. Her quarters

for farrowing must be clean, dry, roomy, and so arranged as to allow the entrance of sunshine. If the dam appears feverish after farrowing she should be given a laxative of three to six ounces of raw linseed oil, and feed lightly on laxative feed for the next twenty-four hours.

Curative treatment consists in giving proper attention to the surroundings and the diet of the dam. This, in some cases, is all that is necessary. If diarrhoea be acute, measures to check it are necessary. If the patients be reasonably strong and are nursing well, it is good practice to give a laxative, as a dessertspoonful of castor oil, with the view of removing any irritant that may be in the intestines. If this is not followed by an improvement in the symptoms, or if the patient be weak when treatment is commenced, prompt means must be adopted to check the diarrhoea. For this purpose nothing gives as good results as small, repeated doses of laudanum, three to six drops in a little of the dam's milk or freshly-drawn cow's milk, placed well back on the tongue, out of a teaspoon every three or four hours until diarrhoea ceases. The administration of laudanum must not be continued after the diarrhoea is checked, else it is probable that constipation will result. If such symptoms should appear the patient should be given a little castor oil.

WHIP.



Berkshire Boar.

A champion at large exhibitions.

Beginning Right.

Probably never before in the history of British stock-breeding have so many new pure-bred herds of cattle been founded as during the past two years. The reason is not far to seek, inasmuch as the war, or the result of it, has created a "boom" in all kinds of pedigree stock, the like of which has never been seen, and many of those who have been favorites of fortune during the last five years are investing some of their surplus wealth in the pleasures of farming and stock-breeding, while many farmers have taken up pedigree cattle-breeding in real earnest. It is surely not too much to hope that pure-bred herds of cattle will, in course of time, be the rule rather than the exception on the majority of those farms and estates which are well adapted for the purpose of stock-raising. When we see so many fresh breeders taking up pedigree stock-breeding, and laying the foundation of new herds, sparing no expense on the undertaking, it makes us wonder whether they all set out with a very clear idea of the type of animal they desire to breed, and whether they all form a pretty clear mental picture of what they are out to produce. No doubt many do, but, on the other hand, it is almost certain to be now, as it always has been, that many new herds are started without any clear idea as to the type required, and consequently a somewhat heterogeneous collection is got together which will take a life-time to form and mould into what is deserving of the name of a "herd."

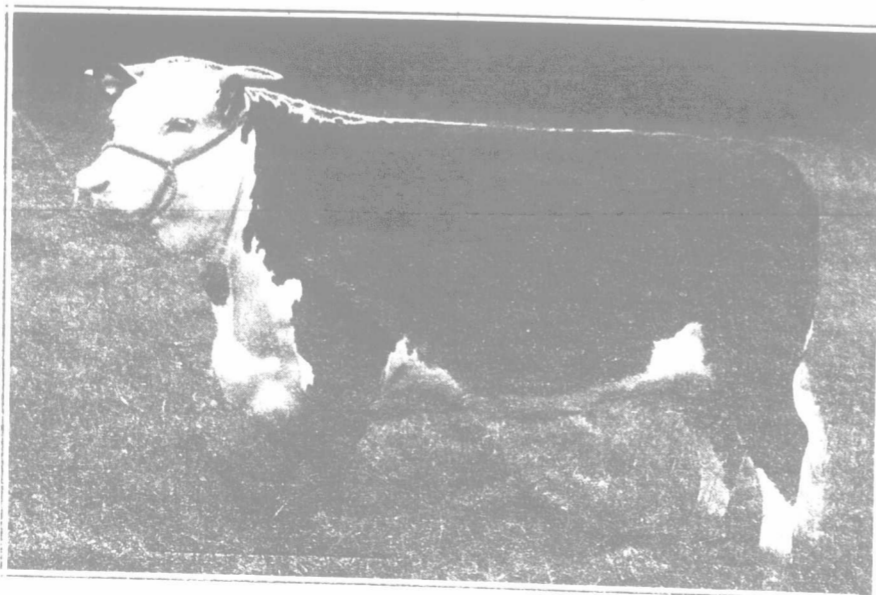
As to whether a new herd is destined to acquire fame all depends on the principles on which it is founded. Wealthy business men who are desirous of having a taste of country life, and with an innate fondness for good stock, usually secure the services of an expert manager and herdsman, both of whom have nothing to learn as regards the breeding and management of

pedigree cattle, and as expense never has to be considered, the very best specimens of the breed are selected for the formation of the herd, and only the best and most fashionable lines of blood are drawn upon for foundation stock. Under expert management, herds started on these lines soon begin to give a goodly account of themselves. Many of our landed proprietors now, alas! soon, as a class, to become extinct, so it seems, used to become impressed with the idea of maintaining a pedigree herd for the purpose of doing good to their tenants and neighbors. A most laudable object, in reality, but one that was only too often frustrated because the primary principles of breeding were never brought into force in the herd. So it is with many farmers who have a strong desire to be possessed of a pedigree herd and to attain both fame and fortune in the breeding of it, but unfortunately they, too, start with only a very limited knowledge of the scientific principles of breeding, and their swans in time turn out but very moderate geese.

On the other hand, there are the born breeders who embark on the project with a perfectly clear mental picture of the type of animal they intend to breed, and in laying the foundation of their herds they are very careful to select only that stock which comes up to their ideal, and prefer half a dozen of the exact type to begin with rather than a score of animals which only boast the ideal characteristics in a varying degree. The principles of breeding as an art is innate in these men, who seem to naturally possess an instinctive knowledge of the art of selection and mating, and with them nothing is left to chance, and their judgment seldom or never seems to go wrong. Few herds, however, made a name the foundations of which have been laid without the bestowal of much thought on the subject. No doubt more thought is given in these days of high prices, but only a very few years ago it was common enough to see herds got together in the most casual manner possible. Sales were attended, and any animal thought to be going cheap was purchased, regardless of type, pedigree or anything else. Probably a score of animals were got together, no two of which were alike in any respect, and, needless to say, a good long life-time was not enough to form a herd of one type out of a collection of this sort.

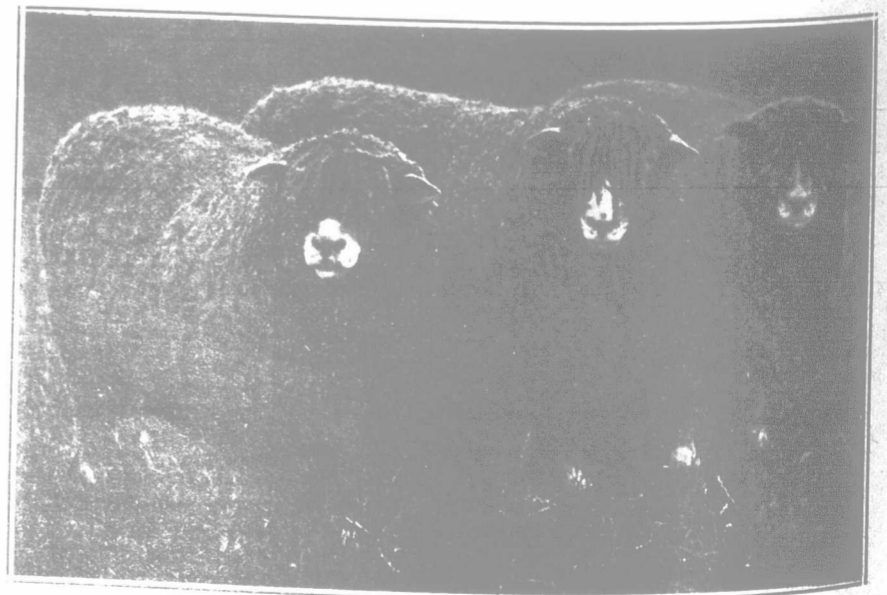
Unless a start is made with a clear idea success can never follow. The breeding of pedigree cattle, and especially Shorthorns, is a business which requires a great amount of thought, patience and perseverance, and without a natural genius in that line it takes a long apprenticeship as well. Whilst it is to the men of genius, the born breeders, that we owe all our best types of cattle, yet we also owe many of our most celebrated herds to men of untiring energy and perseverance, who have spared neither time, money nor themselves in getting together and perfecting that class of animal which as business men they considered the most likely to pay their way. Although a man is not bound to be a genius to be a successful breeder of pedigree stock, he must, at any rate, have very clear ideas as to what kind of animal he wants, and make his selections accordingly. The genius has no difficulty in seeing at once how to mate his cattle to improve or maintain the type, as the case may be, but the careful plodding breeder gives the subject all the thought he can, and brings his experience to bear in mating his stock, and if the results are sometimes disappointing he perseveres until he attains his ideal.

The most successful herds are those founded either by men of genius—that is to say, men born with a natural gift for breeding—or by men of energy and perseverance, who bring all their powers to bear as well as the pickings of other men's brains in building up a herd and getting the right sort of material together for the purpose. Then, on the other hand, herds which hardly ever make any reputation are those which are got together haphazardly, mated and bred with no clear idea in view, trusting to luck that something good may turn up by chance. It ends in certain disappointment if anything is left to chance in founding or building up a pedigree herd. To be successful very careful thought and clear ideas of the type sought after must be brought into force. Great breeders of old had their ideals and bred their cattle up to those ideals.



Clive Iris III.

A Winner at the Royal Show.



A Trio of Winning Lincolns at the Royal Show.

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clear idea success can pedigree cattle, and ness which requires a nce and perseverance, that line it takes a long is to the men of genius, all our best types of f our most celebrated and perseverance, who ey nor themselves in that class of animal idered the most likely an is not bound to be der of pedigree stock, clear ideas as to what ke his selections ac- difficulty in seeing at prove or maintain the the careful plodding thought he can, and mating his stock, and pointing he perseveres

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and when they had attained them they never departed from them. They knew what they wanted and got it because they thoroughly understood the scientific principles of breeding. So long as these great breeders lived the exact type of cattle for which they became famous was retained, but many of the characteristics for which the respective types were famous were soon lost through lack of knowledge on the part of those who came after them, and who trusted to chance and paper pedigrees instead of to the scientific principles of breeding.

The breeding of pedigree stock is, therefore, no haphazard work. Pedigree breeding means the guiding, controlling and developing of some of the hidden principles of nature, so as to produce in animals forms that are as perfect as possible, and in accordance with the ideas of the breeder. This is why it is essential to give so much study and thought to the subject. Pedigree must be studied, and so, too, must the laws which govern the principles of reproduction. What an easy task breeding would be if only one good point were desired, but the aim of every breeder must be to secure all-round excellence, and to get his herd true to type and possessed of those characteristics for which the herd is bred—be it beef, milk or both combined. Seeing as we do so many new names constantly joining the ranks of breeders, it makes one wonder how much thought is expended on the enterprise, and whether the right principles are brought to bear in the beginning.—Live-Stock Journal.

The Wool Trade.

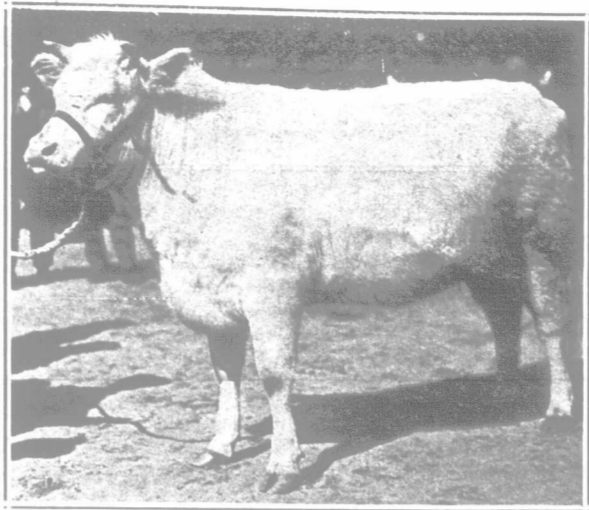
Again this spring, it appears that the fine and fine medium wools are in greater demand by the manufacturers than are the coarser grades. As the supply and demand, to a large extent, govern the price, it is quite natural to expect under such conditions that sheepmen having the lower grade wools to sell will be forced to take a lower price than will their neighbor who places the finer wools on the market. The manufacturers, however, are endeavoring to use more of the lower grade wools. Undoubtedly, the prices for the different grades will again come to a more equal footing. The following paragraph, taken from a letter sent out by the First National Bank of Boston, gives in concrete form the condition of the wool trade:

"Conditions in the wool trade during the past month have been unfavorable. Not only has the weather hampered trade, but dear money has tended to restrict operations. Just now, moreover, the wool trade must consider the purchase of the new domestic clip, estimated at some 270,000,000 pounds, exclusive of pulled wool, most of which is usually moved by the end of July. A small portion of the early shorn wools has been purchased. These purchases have consisted of fine and fine medium wools, which still are in demand. Medium to low grade wools, especially the latter, are in poor request and in heavy supply throughout the world, a combination of circumstances which makes the value of such wools more or less problematical. The English Government has steadily withdrawn such wools at the Colonial wool auctions when bids fell below the withdrawal limits, and it is suggested that such wools may be used in the way of barter with Germany for dyestuffs, etc., thus avoiding the difficulties of exchange. Some improvement is reported from England in the position of these long neglected wools, but the improvement has not been reflected here as yet, although there have been rumors that one manufacturer or another has been able to make coarse wool fabrics "go." One prominent manufacturer failed in a determined effort to market a piece of goods with a medium warp and a finer filling to give the face of the goods a fine feeling. Possibly rising exchange may help the position of lower grade wools in this country. Should a demand for medium wools arise, supplies will be ample for all demands, for outside of the tremendous holdings of Colonial wools of these grades by the English Government, it is reliably reported that fully two-thirds of the current Argentine clip and half of the Uruguayan are still unmarketed, to say nothing of very large quantities of old Argentine wools still on hand in South America and fairly good supplies here. Meantime the mills are working steadily on old orders where supplies are on hand, and the western growers are hoping that demand will continue to allow them to realize the highest prices in history."

The American Aberdeen-Angus Breeders' Association will give \$2,500 in cash prizes and gold watches to boys and girls winning with Aberdeen-Angus calves the coming year, according to an announcement just made. This is an increase of \$2,500 over the 1918 appropriation for boys and girls. Our Canadian breed associations might advisedly emulate them.

Latest advices from Argentina report the wool market slow, the leather market active, the meat market dull because of heavy stocks in Europe, and the general situation good. The wheat and grape harvests are exceptional.

The price which a breeder is justified in paying for a herd are depends a good deal upon the quality of cows he wishes to use him on.

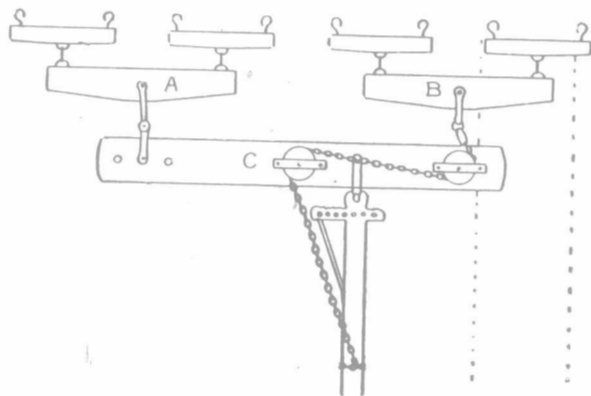


Orange Blossom 11th.
1st Prize Senior Heifer at Western Ontario Sale.
Shown by Kyle Bros., of Drumbo.

THE FARM.

Four-Horse Evener.

The accompanying illustration shows a method of arranging doubletrees for the plow so that three horses may walk on the land and one in the furrow. A and B are doubletrees such as are used on any implement, while C is a heavier one, 5 feet 4 inches long. From the end to the right to the centre of the first pulley is 7 inches, and from the centre of this pulley to where the plow-head clevis fastens is 15 1/4 inches, and it is 24 inches from centre to centre of the two pulleys. It will be

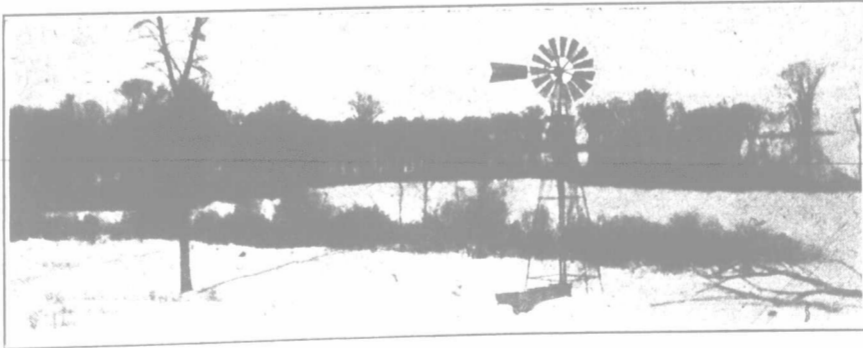


Four-Horse Evener for the Plow.

noticed that on the left hand of the doubletree there are three holes bored. This is to permit of adjusting the left-hand set of doubletrees to where the team pulls best. One end of the chain is attached to the set of doubletrees on the right, and passes through the two pulleys, back to the beam of the plow. The exact place will have to be decided on after starting to plow. The chain should be drawn fairly tight so that there will not be too much slack when turning around. This style of evener has been used on the two-furrowed plow by a number of our subscribers.

Field Water Supply.

EDITOR "THE FARMER'S ADVOCATE":
What with the continued disappearance of land under bush and the extension of drainage system, the supplies of water from small, natural streams for dairy cows or grazing stock in summer become more precarious. In case of milking cows it is of course, imperative that the daily supply be not only ample but fresh and pure. The little creeks that used to run



Farm Waterworks in Winter.

steadily the summer through now usually dry up in July and August and "pond holes" are objectionable on sanitary grounds even though they were not reduced to a coating of dry slime. On hundreds of farms, therefore, wells have become the more reliable recourse. Windmills and gasoline engines for pumping are in general use, hand labor being "out of sight." Generally the outfit is located near the stabling with cement tanks, but very often for the greater convenience of the live stock, in the fields. In various sections of Ontario there still exist deep lakes of good water several

acres in extent, but often with soft bottoms and marshy edges, unsafe for live stock. Not a few valuable animals have been lost through getting mired or beyond their depth in crowding for a drink in hot weather. The most practicable plan of overcoming this difficulty is shown in the illustration from a photo taken during the past winter on the farm of David Beattie, North Dorchester Township, Middlesex Co., Ont., devoted mainly to grazing sheep and cattle. For the latter he has had two mills in use for several years one on each side of the pond to supply different herds. The one shown in the photogravure is located about 100 feet from the waters edge so as to secure firm earth bottom for the cattle and anchorage for the windmill tower which stands thirty feet high. The intake pipe running out to the pond is one inch in diameter. It extends out past the water lily pads into clear water. The end is plugged and a number of small holes drilled to let in the supply. It is further protected at the end by a small, slatted, wooden box which prevents it sinking into the mire. The intake pipe is covered with about a foot of earth to prevent trouble from spring or fall frosts. A wooden tank 14 ft. by 2 1/2 ft. by 2 1/2 ft. is used to hold the supply of water. When full a float automatically shuts off the mill and when the cattle have drunk it down eight or ten inches the fans start revolving again if the wind is blowing. Although located not far from a range of hills and trees the wind has proved a dependable source of pumping power. Three year's steady use has demonstrated its reliability to supply a dozen head of cattle on one side and over forty on the other. Middlesex Co., Ont. ALPHA.

How to Calibrate a Seed Drill.

EDITOR "THE FARMER'S ADVOCATE":

Seed drills are classified according to the type of the device employed for opening the seed furrow. Hence we have shoe-drills, hoe drills, single disc and double disc drills. The shoe drill seems to have outlived its usefulness. While this type of furrow opener does good work when a deep mellow seed-bed has been worked up, it is next to useless where the seed-bed is not so deep or where a good seed-bed has been hardened by rain. The strongest point in favor of the shoe drill is the lightness of draft. The hoe drill has been largely used, but is now being replaced by the disc-drills. Of these there is, no doubt, but that the single disc furrow opener is the more popular of the two. In fact, the only places where the double disc furrow opener seems to have any advantages over the single disc is in well prepared seed beds and on side hills. While it is possible to put pressure on a disc drill and force the discs into fairly firm soil we must not forget that a drill is not a tillage implement and should not be used as such; the seed bed should not be neglected even if a disc drill is used.

When using a new disc drill in a deep seed-bed many men who are new to the use of the disc-drill are inclined to put on too much pressure; this can only result in the seed being planted too deeply. The depth at which the different discs will run is regulated by the pressure spring with which each disc is equipped. These springs must be kept at equal tension else there will be some rows of grain planted deeper than the rest. This means irregular appearance of the field and may affect the ultimate yield of the crop.

All drills are equipped with a device by which to set the amount of grain sown per acre. Very few of these devices sow the exact amount showed by the scale on the seed box. It is necessary to know the amount of error before work is started and the best way to get this information is to calibrate or mark the drill to one's own seed. To do this it is best to proceed as follows:

First, find how many revolutions the drill wheels make to sow an acre. To do this multiply the circumference of the wheel in feet by the width the drill sows in feet and divide the number of square feet in an acre by this number.

Second, put say two bushels of grain in the seed box, jack up the wheels of the drill, set the scale at whatever you may wish to sow per acre, say two bushels per acre. Now turn the wheels and count the number of revolutions needed to empty the drill. If the two bushels are gone before the number of revolutions necessary to sow an acre has been reached then it is sowing more than two bushels per acre and if the number of revolutions turned is reached before the seed box is empty the drill does not sow two bushels per acre. It is well to repeat this test with several kinds of grain to ascertain the correct setting for a given amount per acre.

As an example of this we will take a drill with 4-foot wheels.

The circumference of a wheel is 3.1416 times the diameter which is 4 x 3.1416 = 12.57 feet.

Say the drill has twelve tubes six inches apart, or sows 6 feet wide.

Therefore if each revolution the drill would sow 12.57 x 6 = 75.42 sq. ft.

There are 43,560 sq. feet in an acre.

Therefore the drill wheels would have to make (43,560 ÷ 75.42) = 577.5 revolutions to sow an acre.

It is possible by this method to make one's correction marks on the scale with a file and thus preserve the information gained by the experiment.

Wellington Co. L. G. H.

Fertilizer Facts and Fallacies.

BY B. LESLIE EMSLIE.

PRIOR to their conquest of Britain, the Romans had already discovered the advantages of a rotation of crops, and they introduced the system to England. This early rotation consisted of (1) bare fallow, (2) wheat, (3) beans.

Our modern knowledge of the nitrogen-gathering faculty of the legumes (alfalfa, clover, vetch, peas, beans, etc.) would lead us to change the order somewhat, so that wheat might follow the beans and thus derive a greater benefit from the nitrogen stored in the residues of the bean crop. Besides a certain loss of nitrogen would occur in the fallow year.

The chief purpose of a crop rotation is, through the alternate growth of shallow-rooting, surface-feeding plants with those having a deeper root system, and plants which make a heavy draft on one particular plant food substance with those whose special predilection favors another, to avert soil exhaustion which might follow the continuous growth of the same kind of crop on the same land.

In general farm practice, therefore, the rotation of crops has come to be regarded as a necessary economic system. There are naturally exceptions where, for instance, the value of a certain crop affords a sufficient pretext for its repeated growth on the same land. Such an exhaustive system would, of course, ultimately necessitate a liberal use of manures and fertilizers.

CONTINUOUS WHEAT-GROWING AT ROTHAMSTED.

At the Experiment Station of Rothamsted, England, there is a field, divided into half-acre plots variously treated, which has borne a crop of wheat every year since 1843. On all plots, except the checks, fertilizers—and, on one, manure alone—have been used to maintain fertility.

The original purpose of the experiment was to test the influence of increasing quantities of nitrogen on the yield of wheat, the mineral constituents, phosphoric acid and potash, being supplied uniformly to all the fertilizer plots.

Averages of the annual yields, for a period of fifty-one years, show that the mineral fertilizers alone produced only a slight increase of crop, but that the addition of nitrogen was followed by remarkable increases. The fertilizer containing the largest amount of nitrogen was responsible for the highest yield, an average of 37.1 bushels per acre. During the same period, the unmanured, unfertilized check plot produced an average yield of 13.1 bushels. It is of interest to note that this untreated plot has, for many years, yielded fairly consistently about 12 or 13 bushels per acre.

The behavior of the check plot would indicate that the soil thereof has reached, what might be termed, its minimum productiveness or a degree of productiveness which—through the gradual liberation of mineral plant food from its natural store, supplemented by nitrogen from the crop residues, rain, snow, etc.—may be maintained for years to come.

Sir A. D. Hall, a former director of the Rothamsted Experiment Station, expressed the opinion that, since wheat is a deep-rooting plant having a comparatively long season of growth and, therefore, able to forage for its mineral food substances, it requires usually only a nitrogenous fertilizer. This accords entirely with the writer's experience of the results following the spring application of nitrate of soda on fall wheat.

A SCOTTISH CROP ROTATION.

As a basis for our procedure, it would be well to study an established system which, though unsuited, in detail, to Ontario conditions, may serve to illustrate certain principles.

In the north-eastern county of Aberdeen, famed for its Aberdeen-Angus and Shorthorn breeds of cattle and primarily a beef-producing country, the rotation includes a turnip crop which supplies the succulent fodder for the winter ration. Those experienced in the feeding of turnips to cattle can appreciate the sentiment of the old Scottish farmer who, when reminded by an "expert" that turnips contain about 90 per cent. of water, retorted: "Ay, but it's awfu' guid water."

So important then is the turnip crop in the rotation that it may be termed the starting point thereof. It is the crop that receives most of the direct fertilizing besides the bulk of the barnyard manure, the succeeding crops being expected to utilize the residues.

This Aberdeenshire rotation is a six-year one, and consists of:

- 1st year—turnips.
- 2nd year—barley or oats, seeded down with clover and grass seeds.
- 3rd year—Hay.
- 4th year—pasture.
- 5th year—pasture.
- 6th year—oats.

A farm of 150 acres would, as a rule, have 25 acres in turnips, each year, although a small part of this area may be devoted to potatoes.

The preparation of the land for the turnip crop is important and usually very thorough, the season being recognized as opportune to the eradication of weeds. The deeply-plowed land is generally stirred and pulverized by deep-toothed cultivators, and, if necessary, rolled, until a sufficiently fine tilth is obtained. These operations are followed by the use of chain harrows which collect, roll up and leave the weeds in heaps on the field, the heaps being, afterwards, burned. As surface pulverizers and weed rollers, chain harrows undoubtedly possess a value that is more generally recognized. As the name implies, they consist of a series of connected or interlinked

This is the fourth of a series of articles on fertilizers written by B. Leslie Emslie, formerly Supervisor of Investigational work with fertilizers at Ottawa. Mr. Emslie is second to none as an authority on this subject, and he is putting the information that farmers need, into these articles. First of the series appeared in the issue of March 4, the second in the issue of March 11, and the third appeared last week. Preserve these numbers and have a comprehensive treatise on a very important subject.

each link being four or five inches square.

Part of the area may have been manured in the previous fall, but the greater part will receive the manure between the ridges set up by the double-moldboard plow, in spring. The customary application of manure for turnips would approximate 10 tons per acre.

Prior to the application of the fertilizers, the rows are usually smoothed down by rolling or by dragging a log over them. The fertilizers are then applied, the rows closed by the double-moldboard plow and the preparations for seeding are completed.

In the choice of fertilizer materials, the turnip's partiality for phosphoric acid is considered, and a phosphatic fertilizer, usually superphosphate, predominates in the mixture. Indeed, when a heavy dressing of manure is given, superphosphate or basic slag may be the only fertilizer used. As a rule, however, the fertilizing will consist of about 600 pounds of superphosphate, 400 pounds of kainite (equal to 100 pounds of muriate of potash) and 150 pounds of nitrate of soda per acre. Sometimes only half the quantity of nitrate of soda is applied in the mixture with the other materials, before seeding, the remainder being reserved for application as a top-dressing at thinning-out time. Perhaps the nitrogen may be furnished partly in the form



The Results of Fertilization.

The lot on the right was fertilized with Nitrate of Soda, 120 lbs.; Superphosphate, 300 lbs.; Muriate of Potash, 100 lbs. That on the left, unfertilized.

of sulphate of ammonia and partly as nitrate of soda, 50 pounds of the former being sown with the mineral fertilizers and 75 pounds of the latter as a subsequent top-dressing. On soils of the heavier types potash may be omitted entirely from the turnip fertilizer mixture.

The fertilizers for potatoes are, of course, somewhat differently compounded, potatoes experiencing less difficulty in obtaining their phosphoric acid, but more in obtaining their potash. The potato land will have been heavily manured, preferably in the preceding fall.

The method of preparing the land for potatoes is similar to that described for turnips. After the "start" are planted, they are lightly covered with soil by the process of dragging the log over the rows, which prevents the fertilizers from coming in contact with the sets.

On an average, however, the potato fertilizer might consist of 150 pounds of nitrate of soda, 50 pounds of sulphate of ammonia, 250 pounds of superphosphate and either 200 pounds of kainite or 150 pounds of muriate of potash. The larger part of the potash should be given as a top-dressing, some two or three times during the season.

Barley owes its place in the rotation to the fact that it is a shallow-rooted crop, and will profitably receive the influence of good tilth and the heavy manure and the conditions which the growth of a heavy crop would create.

The hay crop of the third year is usually given a top-dressing of fertilizers. This should consist of 500 pounds of superphosphate, 500 pounds of nitrate of soda, 100 pounds of muriate of potash and

treatment for hay. Sometimes, particularly on the lighter soils, the basic slag was mixed with an equal weight of kainite.

Excepting when conditions require the application of nitrate of soda to the oat crop of the sixth year, no further fertilizer treatment is given in the rotation.

ONTARIO FARM CROPS AND THEIR FERTILIZER NEEDS.

While the crop-rotation system described may have no exact counterpart in Ontario from practice, there are certain points of resemblance or features common to both. In Ontario the corn and mangrel crops generally replace the turnip crop, they being more adapted to the warmer, drier summer season which characterizes our climate.

If, in the preparation of the land for corn, manure has been applied liberally, there may be no great need for fertilizers, although their judicious employment will usually prove profitable. As in the case of turnips, phosphoric acid will be the chief constituent in a fertilizer for corn. Superphosphate, at the rate of 300 to 400 pounds, and nitrate of soda, at the rate of 100 to 150 pounds per acre will, as a rule, suffice.

Mangels do not resemble turnips, but are akin to sugar-beets in their fertilizer requirements; they respond rather to nitrogen and potash than to phosphoric acid in the fertilizer. Nitrogen is particularly needed. A suitable fertilizer, under average conditions, for mangels would be 200 pounds of nitrate of soda and 300 pounds of superphosphate per acre. If potash were obtainable at a reasonable price, we should supplement the above with 100 to 150 pounds of muriate of potash.

Grain crops on soils of reasonably good fertility will seldom require heavy fertilizing. Occasionally, nitrate of soda may be found helpful and profitable, particularly on fall wheat, in stimulating early growth. When it is desirable to encourage the clover and timothy, seeded with the cereal crop, a small quantity of basic slag or superphosphate may be applied also.

Alfalfa, though belonging to the nitrogen-gathering legume family and, when well established, independent of artificial supplies of nitrogen, will usually respond decidedly to a moderate dressing of nitrate of soda used, at seeding time, as a "starter," in addition to

K Prompted to the subject this opportunity way, believing and to splice may prove of This article, used knots.

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Courtesy "P

1. Bowlin

Courtesy "P

1. Rope S 4. C

AUTOMOBILES, FARM MACHINERY AND FARM MOTORS.

Knots, Hitches and Splices.

Prompted by many manifestations of interest attached to the subject of knotting and rope-splicing, we welcome this opportunity of treating with the subject in a general way, believing that the ability to tie a few useful knots and to splice a rope, as occasion sometimes requires, may prove of practical knowledge to many of our readers. This article, illustrates and describes a few commonly used knots.

Figures 1 and 2 in Series I are both bowline knots; No. 1 being a bowline in a bight or double bowline, while 2 is a simple bowline. The bowline is one of the most useful knots to know, and is used wherever a loop is wanted that will not slip or pull tight. To make the simple bowline, Fig. 2, lay end of rope over standing part, which forms a loop; termed "throwing a bight." Bring end of rope up through bight, leading end around the standing part and down through bight again.

The Double Bowline, Fig. 1, is used when a loop is desired in the middle of a rope. To tie the Double Bowline, take the bight of the rope and proceed the same as with the Simple Bowline, only instead of tucking end down through the bight of the knot, carry the bight over the whole and draw up, thus leaving it double in the knot and double in the standing part, but the loop under the standing part is single.

The Carrick Bend, Fig. 3, is used for joining two stiff or heavy hawsers. A bight is first formed by laying the end of one rope over the standing part. The end of the other rope is passed down through the bight, then straight up over the cross and down through the bight again, so that it comes out on the opposite side from the other end, thus bringing one end on top and the other below. With heavy lines it is well to secure the knot by seizing the ends to the standing parts.

The Square Knot, Fig. 4, is widely used for tying small ropes and twines. It is easily tied by taking the ends of the rope, passing the left end over and under the right end, then the right end over and under the left. The Square Knot is strong, and the harder the pull the more firmly it holds. If our simple directions are followed the frequent mistake of forming the useless Granny Knot will not be made.

The Fisherman's Knot is illustrated by Fig. 5. This is a useful and valuable knot for anglers, as the name

implies. It is made by tying an overhawl knot in each line over the standing part of the other line. When this is drawn taut it will not slip.

The Weaver's Knot, Fig. 6, obtains its name from universal use in textile mills for tying threads and yarns. It is a secure fastening for small lines and is easily made: first, by forming a loop in one end of the line. The other line is passed up through the loop and underneath the end and standing part, then down through the loop just formed.

The Jar Sling, Fig. 7, is used for setting up the jury masts in boats or small vessels. It is also used for slinging barrels, casks, etc., when it is desired to hoist them perpendicularly. To make the Jar Sling, take the bight of a rope and turn bight up over the two standing parts, making two loops or bights in the rope. Put hand down through the right hand loop and grasp the left loop, bringing it up through the right loop and over the first rope that lies across the standing parts. Take up the slack of the first loop with hand down through and under the second loop, grasping the first rope and pulling the slack through.

Inasmuch as the bowline is used in a variety of forms and for many purposes, an early understanding of its make-up and utility is likely to prove a practical basis from which to work.

The Running Bowline, Fig. 1, Series II, serves as an excellent slip-knot, as it slips freely and cannot jam or unfasten. It is nothing more than a simple bowline with the long end or standing part of the rope passed through the large loop.

Fig. 2 illustrates a peculiar slip-knot known as the Tomfool Knot. Its name is derived from the deceptive manner in which it is tied, and is a good illustration of how the quickness of the hand deceives the eye. The rope is first placed across the palm of both hands, fingers of the right hand pointing out and fingers of the left hand pointing in. With the right hand throw a bight around the left hand, and with the first two fingers of the right hand grasp the loop in the left hand, while with the first two fingers of the left hand grasp the loop in the right hand, drawing through, thus making the knot. The Tomfool Knot has become quite famous in use for emergency handcuffs, for if the wrists are placed within these loops, the latter drawn taut and the loose ends tied firmly around the central part, a pair of wonderfully secure handcuffs results.

Fig. 3, the Midshipman's Hitch, is used principally to make fast the sheets of small boat sails. Its construction is obvious—a half hitch around the standing part and a round turn twice around above it—the hitch

being fastened by bringing the end of the rope through the loop which remains.

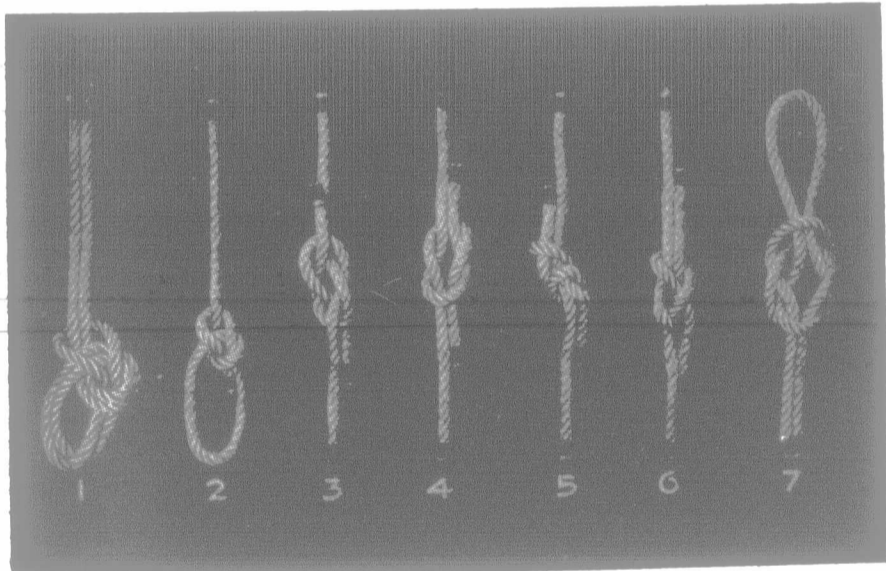
Formation of the Half-Hitch and Seizing, Fig. 4, is also evident at a glance. It is in popular use for permanently joining heavy hawsers, as it allows the rope to be handled and coiled more readily than is the case with certain other knots.

For a quick shortening in the centre of a rope when both ends are made fast, the Sheepshank is widely used. A simple loop is first made and a hitch or bend placed through it as shown in Fig. 5. The Sheepshank is easily made, but in order to make it entirely dependable the loops at the ends should be seized to the standing parts of the rope.

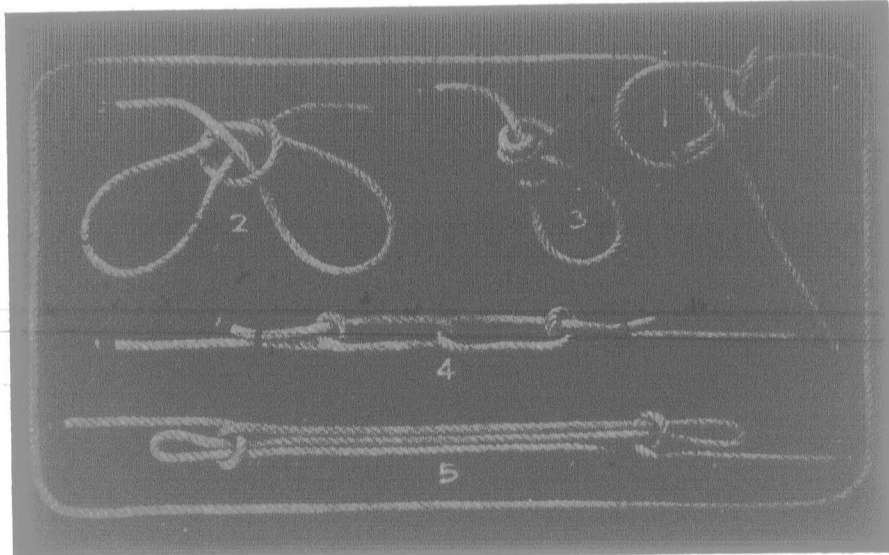
Fig. 1, in Series III, which we have utilized as a border design for our illustration, is a Rope Strap or Sling made with a short splice. It is largely used in all engineering work for heavy hoisting purposes, the strap being wrapped around the casing or machinery to secure a purchase or fastening for the lug tackle. The short splice used in making this strap is easily made. The ends of the rope should first be unlaid for a few inches and seized to prevent unraveling. Likewise the ends of each strand. Place the two ends of the rope together, laying the strands one within the other, and drawing them together as closely as possible. Now take the opposite strands and tie with overhand knot, pulling up tightly. The ends should then be tucked between the strands, tucking over the first strand which is next to it, and through under the second and out between the second and third. Two tucks on each end after the overhand knot above referred to will be sufficient to insure satisfactory strength in the splice.

The Figure Eight Knot, Fig. 2, is made from a loop by passing the end around the standing part in a second loop, and then back through the first loop. The Double Figure Eight Knot, Fig. 3, is used where there is too much rope. Both the Single and Double Figure Eight Knots are used on shipboard when it is desired to keep the rope from running through an eye, ring or block.

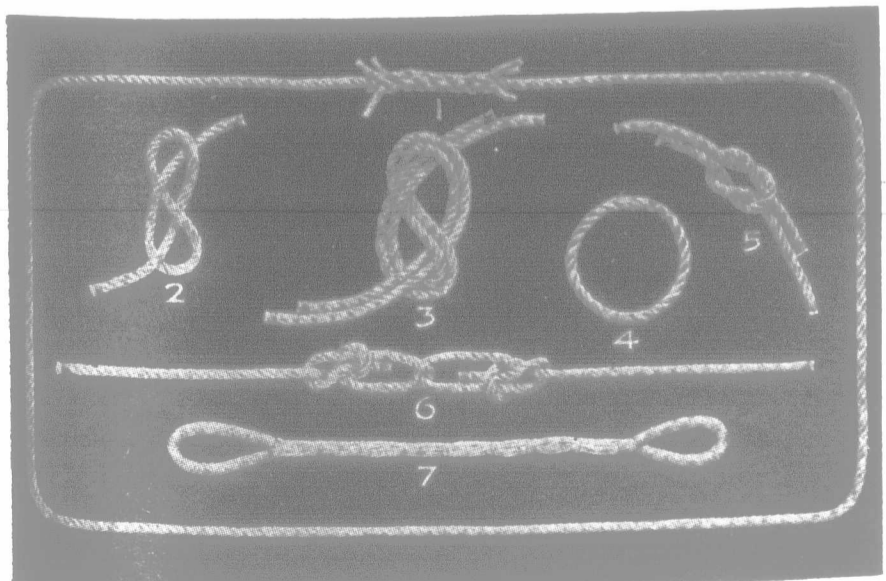
The Grommet, Fig. 4, is an endless ring of rope which is very useful aboard ship as well as ashore. It is principally used as handles for chests and for rings with which to play quoits. The Grommet is best formed by using a single strand of rope five times as long as the circumference of the Grommet when complete. The proper size loop is first made, and the long end of the rope is led around following the grooves or "lay" of the strand until back to where the start was made, thus forming a two-stranded ring. Then continue twisting the free end between the turns already made until the three-strand ring is complete. The two



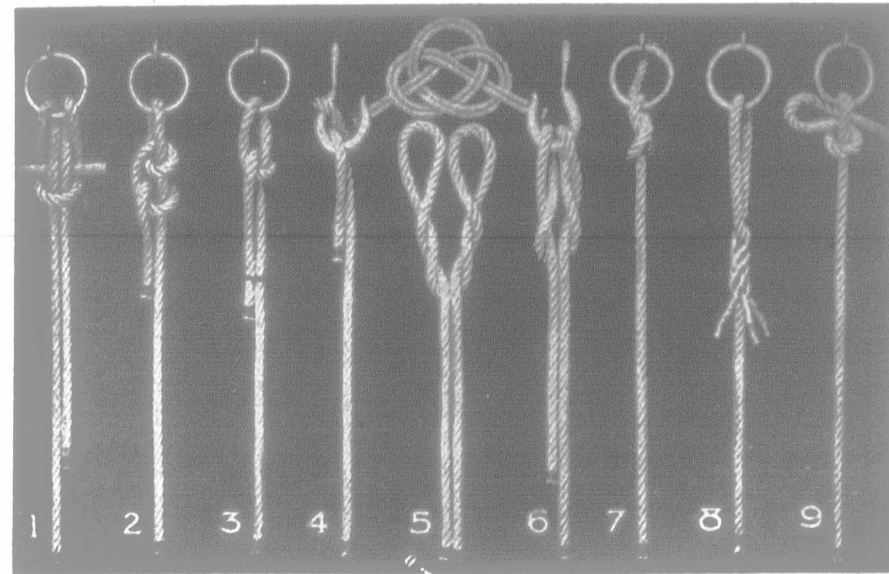
Courtesy "Plymouth Products"
Series No. I.—A Few Commonly Used Knots.
 1. Bowline in a Bight. 2. Bowline. 3. Carrick Bend. 4. Square Knot.
 5. Fisherman's Knot. 6. Weaver's Knot. 7. Jar Sling.



Courtesy "Plymouth Products"
Series II.—Practical Knots.
 1. Running Bowline. 2. Tomfool Knot. 3. Midshipman's Hitch.
 4. Half-hitch and Seizing. 5. Sheepshank.



Courtesy "Plymouth Products"
Series III.—Knots, Hitches and Splices.
 1. Rope Sling with Short Splice. 2. Figure Eight Knot. 3. Double Figure Eight Knot.
 4. Grommet. 5. Bread Knot. 6. Bowline Hitch. 7. Seivagee Strap.



Courtesy "Plymouth Products"
Series IV.—Hitches and Ties.
 1. Lark's Head with Toggle. 2. Two Half Hitches. 3. Half Hitch. 4. Blackwall Hitch.
 5. Catspaw (Tying). 6. Catspaw (Finished). 7. Capstan Knot.
 8. Eye Splice. 9. Slippery Hitch.

ends are now tied with an overhand knot and the remaining ends passed underneath the nearest strands and trimmed closely. If a strong twist is kept on the strand while laying up the Grommet, the finished ring will be as firm and smooth as a finished rope.

The Bread Knot, Fig. 5, is in reality nothing more than a square knot, except that the two ends come out on opposite sides. This knot is shown that we may have opportunity for spinning a sailor's yarn. It was the practice of the captain of a Cape Cod vessel to keep a canvas cover on his bread kit, secured by a small rope tied with a square knot. He became suspicious that the bread was disappearing more rapidly than the daily ration of the crew warranted, so he secured the canvas cover with the knot tied as per our illustration. At his next visit to the kit he found, it securely fastened but with a properly made square knot. Suspicion pointed to two of the younger members of the crew, and the term "Bread Knot" was born to furnish the subject of this oft-repeated story.

The Bowline Hitch or Bend, Fig. 6, is perhaps the strongest of all the knotted hawser bends. It is formed of two bowline knots, one crossing the loop of the other.

The Selvage Strap, Fig. 7, is stronger than a spliced rope strap of the same number of yarns, as every yarn lays straight and with the same tension, and is free from the shearing strain present in the rope. It is made by passing the yarns around wooden pins or nails set in a board and spaced according to length of strap desired. The whole is then bound together with a seizing of yarn or marline. This makes a very strong and durable strap for use in hoisting heavy weights. When rope of sufficient strength is far distant, the Selvage Strap made from waste yarns or binder twine offers the farmer a serviceable sling.

Most of the knots already described are principally used for fastening the two ends of a rope and for joining two ropes together. It is our purpose now to treat with a somewhat different class of knots which are commonly used for making a rope fast to a stationary or fixed object. These are best termed as "hitches" or "ties." The security of such a fastening is dependent upon pressure of the standing part upon the end, and under certain limitations the greater the pull or load the stronger the hitch will hold. Once the strain is eased up, a hitch from its very simplicity is readily cast off.

Lark's Head with Toggle, Fig. 1, in Series IV., is one of the very easiest of this class to tie. It is frequently used as a boat fastening and may be released instantly by pulling out the toggle or pin. The bight of the rope is passed up through the ring and a marline spike or wooden pin is wedged through the sides of the bight and under or behind the standing part as shown. This makes the fastening secure. The end of the rope may be left free or finished with a half hitch.

Fig. 2 represents an ideal and quickly tied fastening. Two Half Hitches can be tied with but little practice from a glance at our illustration. This will hold forever without loosening, and even when thrown around a smooth, round spar it will stand tremendous strain without slipping. If the single Half Hitch is used, Fig. 3, the end should be seized to the standing part as illustrated.

The Blackwall Hitch, Fig. 4, is one of the simplest hitches to make and is of very great practical value. It consists of a loop with the end of the rope passed under the standing part and across the hook. Under strain, the hauling part jams the end against the hook. This hitch will carry a heavy load providing the tension is constant.

The Catspaw is illustrated by Figures 5 and 6. This is a readily made and useful hitch to employ for hoisting work. By passing the bight of your rope over the end and standing part, and twisting each of the two bights thus formed a result is obtained like Fig. 5. The two loops thus formed in the bights are now brought together and thrown over the hook, making a fastening that will not pull out and which at the same time admits of instant release.

An excellent mooring knot for the painter of a small boat is illustrated in Fig. 7, the Capstan Knot. In construction it is nothing more than a simple Figure Eight Knot.

For a permanent ring fastening and for splicing round a block or thimble, the Eye Splice, Fig. 8, is in very general use. The method of making is identical to the Short Splice, described in a previous article, except, of course, the end after being unlaid and bent around, forming the eye, is spliced into its own strands of the standing part.

Fig. 9 illustrates what is called "The Slippery Hitch." This is used for a temporary fastening and very frequently for hitching a horse. It is made by running the end of the rope through the ring or eye to which it is being fastened, then back over the standing part, pulling a loop through the bight thus formed. To untie, the free end is pulled.

At the very top of our illustration there is shown a fancy or decorative knot concerning which little comment is necessary. It is the so-called Gordian Knot and appears to be intricate at first sight. This can be easily made, however, from a single rope or with the rope double. A bight is first thrown and a second bight partly overlapping. The end of the rope is then brought under the standing part and is woven through the loops. This knot, of course, has no practical value and is simply included in our series as a matter of general interest.—From "Plymouth Products."

THE DAIRY.

A Dairy and Ice-House Combined.

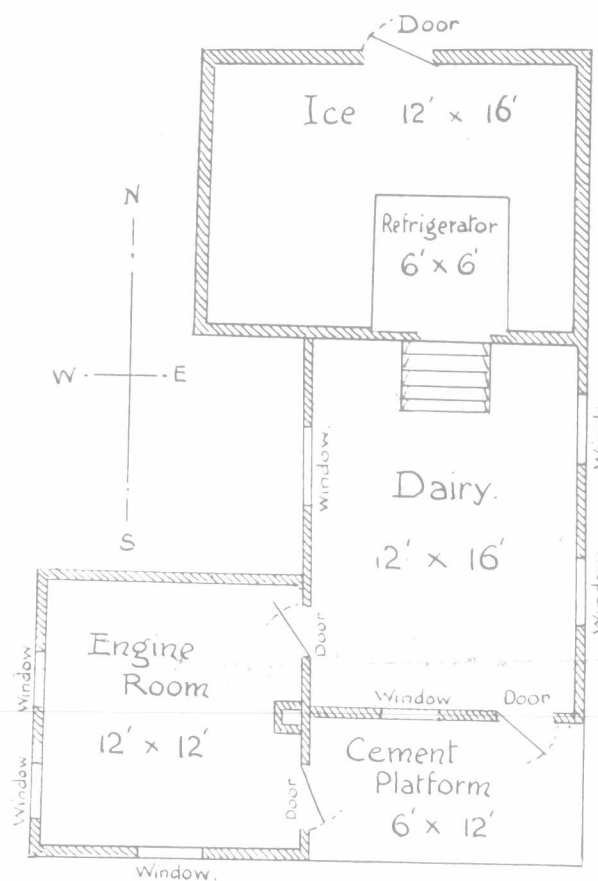
EDITOR "THE FARMER'S ADVOCATE":

One of our neighbors had a building sixteen feet by twelve, which was used as a dairy building. Realizing the value of ice and wishing to build a convenient and, as far as possible, inexpensive structure, he paid us a visit one rainy day and had a look at our building which combines an ice-house, dairy and engine-room all under one roof.

During the summer he set about the building and remodeling, and it was not till last fall that I had a chance to look at the results he obtained in converting his one-room dairy into an ice-house and dairy, with a refrigerator and engine-room attached.

The accompanying diagram will explain the building as it now stands. On the north is the ice-house, twelve feet by sixteen, with a ten-foot post. There is only one door and no windows. Next to it is the dairy room, also twelve by sixteen feet and built on the south side, where it will shield the ice-house from the direct rays of the sun. Between the dairy and ice-house is a refrigerator six feet square and seven feet high. It is set three feet into the ground and extends upward into the ice four feet. The ice is packed in on three sides and on top. It is entered from the dairy by a door and by steps leading downward.

The dairy has a concrete floor with a slope towards the door where drainage is provided for. It contains the pump, sink, etc. A line shaft runs from the engine room and is twelve inches from the ceiling. Plenty of light is provided for by the four windows. In front is a concrete platform six feet wide and twelve long which extends out as far as the end of the engine room.



A Combined Ice House, Engine Room and Dairy.

The door to the engine room leads off this platform. The room itself is twelve feet square and the floor is of concrete. A door, not shown on the plan, has been cut in the wall between the dairy and engine room, making it much more convenient and saving steps at time of starting and stopping the engine. The room is large enough to accommodate a lighting plant.

The original building had a wooden floor laid on beams. The walls were of five-inch studding with boards, building paper and shingles on the outside, and sheathed on the inside with three-quarter-inch lumber. The floor was torn out and concrete posts built under the sills and extending three feet into the ground. The space inside was filled to a depth of two feet with loose stone from the fields. On top of the stones, round poles about three inches in diameter were laid for a floor.

The walls were further insulated by standing two-by-four-inch studding against the outside walls and covering with tarred paper and rough inch boards, thus making two dead-air spaces with a wall of about twelve inches. The spaces where the windows had been were carefully covered. The original door was left to form part of the entrance to the refrigerator by boarding up the upper half. Another door for storing the ice was cut in the centre of the north wall.

The foundation of the dairy is eight inches thick and goes three feet into the ground, and is built about a foot above ground. There was a foundation of broken stone laid six inches deep with the smaller pieces filling in the spaces on top. An eight to one mixture of cement was laid four inches thick on top of the stone and finished off with a one-inch layer of concrete, mixed, one part cement to three parts of sand. The surface being well trowelled until smooth.

The floor slopes four inches from the rear to a drain at the front which runs across just inside the door. This has a slope of three inches to a pipe built in the wall at the corner. This leads to the outside drain.

The cement platform was built at the same time and it is finished in the same manner, but it slopes three inches toward the front. The floor of the engine room is built in the same proportion, but is laid level. The sills of both engine room and dairy are four inches by four inches. They are fastened to the cement wall by bolts which were built into it. The corner posts are four inches square, the remainder of the studding is of two-by-four. The plates are four by four and the rafters are two by four, spaced two feet on centres, excepting the end ones which are four inches square.

The outside walls are of one-inch rough boards covered with prepared roofing. The roof of the dairy and engine room is covered with asphalt roofing. The ice house when built was roofed with pine shingles. The roofs of the ice house and engine room are at right angles with that of the dairy. This required four gutters.

The remodeling of the original building was done first. The building was made ready for the ice before the construction of the remainder was begun. When the ice house was completed, the concrete walls and floor of the other two rooms were done, the ground being first levelled off in order that the proper slopes and levels could be obtained in the dairy room. As the concrete mixture was being run into the forms, three-quarter-inch iron bolts were imbedded in the mixture. These were used later to fasten the sills securely to the foundation.

The total cost of the building as it now stands is rather hard to estimate, as the original building was erected at a time when labor and materials were cheaper than at present. The value of the materials will differ considerably according to local prices, also the distance they are to be carried. The amount of material and the value was something as follows:

Scantling 2 x 4's and 4 x 4's—1,100 board feet at \$30 per M.....	\$ 33.00
Rough boards and ceiling—3,500 board feet at \$30 per M.....	105.00
6 rolls 3-ply roofing at \$3 per roll.....	18.00
11 rolls 2-ply roofing at \$2.50 per roll.....	27.50
7 windows at \$7.50 each.....	52.50
8 barrels cement at \$4 per barrel.....	32.00
Nails, etc.....	5.00
Total cost of material.....	\$240.00

It will be noticed that no charge is made for the stone, sand and gravel, as these were obtained on the farm and hauled to the site at odd times, whenever there was a good chance to bring in a load or two between other jobs. The labor was performed by the owner and his two sons, between seeding and haying, the job being completed after harvest.

Such a building would cost more in one locality than in another, and where labor must be hired it will add greatly to the total cost. Ice was stored in this building for the first time this winter. It was cut in blocks two feet square. Owing to the severe frost, it was possible to get from twelve to fifteen inches of clear ice. A time of putting up the ice a foot of clear sawdust was laid on the floor. No ice was allowed any closer to the walls than twelve inches. As the ice was going in this space was filled with sawdust, but no sawdust or trash was allowed between the cakes. They were placed as closely together as possible and the spaces closely packed with snow, which allows the ice to freeze solidly in one compact mass. A good large ventilator was provided and a four-inch pipe, which acts as a ventilator, connects the refrigerator with the ventilator in the roof. Calculating 35 cubic feet of ice to the ton, this house, when filled to the eaves, will hold about thirty-two tons. If carefully handled, this, in an ordinary summer, would be enough for the milk of from ten to fifteen cows.

We have stored ice in a similar building for the last twelve years and we would not be without it for a good many times what it costs us each year to put it up. It is almost impossible to keep dairy products in first-class condition during hot weather without ice. We select cold, frosty weather for storing the ice, as the condition it is in when put into the building has a lot to do with its keeping qualities. However, a few years ago we cut our ice in April and managed to keep it until fall.

Cape Breton, N. S.

J. H. McDONALD.

Some Recent Holstein Tests.

During the first half of March, the official tests of sixty-five cows and heifers were recorded in the Holstein-Friesian Record of Merit. Sunnybrook Annie Belle leads a class of nineteen mature cows with 29.12 lbs. of butter from 684 lbs. of milk. A splendid record of 30.83 lbs. of butter from 512.8 lbs. of milk marks the performances of Sylvia Burke Pontiac in the senior four-year-old class, in which there were only three records. Five junior four-year-olds are headed by Queen Mary De Kol 2nd, with 23.85 lbs. of butter from 535.4 lbs. of milk. There are ten senior three-year-olds, led by Riverside Jemima Korndyke, with 24.31 lbs. of butter from 536.3 lbs. of milk, while Raymondale Lady Echo has 27.56 lbs. of butter from 502.3 lbs. of milk. Eight at the head of seven junior three-year-olds. Eight senior two-year-olds show a top record of 21.22 lbs. of butter from 482 lbs. of milk, made by Lakeview Queen 6th, and the twelve junior two-year-olds are led by Riverside Paladin Ormsby, with 17.82 lbs. of butter from 340.3 lbs. of milk. The most outstanding record for

the first half of 1,060.95 lbs. made by Co. the world's c both milk and

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Pontiac Avon

Rowan.....

Gano King Te

Elmcrest Alca

Johanna Bon

ville.....

The Glen Otter Farm Holstein Sale.

On Wednesday, April 7, J. B. Hanmer, of Norwich, disposed of fifty-nine head of royally-bred Holsteins in the big arena at Woodstock. This proved to be an ideal place for a sale, as there was ample accommodation for the many breeders present, and the seating was so arranged that everyone had a good view of the animals in the sale-ring. The majority of the animals were from noted sires and dams and had made very creditable records, or were out of record stock. An idea of the breeding may be ascertained from the fact that such individuals as Butter Baron, Butter Baron Posch A., Prince Colanthus Abbekerk, Prince Mercena Echo, and Champion Echo Sylvia Pontiac were some of the sires appearing in the pedigrees. Many of the females were in calf to May Echo Vale, a 32-lb. sire, May Echo Champion, tracing to May Echo. Prince Colanthus Canary A was also used on a number of the females. The bidding was brisk and Mr. Hanmer should be congratulated on having such high-class stock to offer to the public. The highest priced cow on the sale was Topsy Mercena Posch, a daughter of Rolo Mercena DeKol, the heifer which Mr. Hanmer sold in the Philadelphia sale for \$26,000. This heifer was bred to Prince Mercena Echo, whose dam has a 34-lb. record. The purchaser was H. H. Bailey, of Oak Park Farm, Paris, who secured her for \$3,700. E. Snyder, of Burgessville, paid \$2,300 for Belle Abbekerk 2nd, a three-year-old heifer that made a 23-lb. record at two years. Her two nearest dams averaged over 29 lbs. of butter in seven days, and the heifer herself is a pleasing individual. She has been a successful winner at both the Canadian National and the Western Fairs. Her sire is Butter Baron, a son of Queen Butter Baroness. A. Frain, of Burgessville, secured Ladoga Idaline Mercena, a seven-year-old cow with a 29-lb. record. This cow is in calf to Prince Mercena Echo, and is a particularly good individual. Mr. Hanmer paid \$3,000 for her last spring, but she went under the hammer at Woodstock for \$2,550. The next highest price was \$1,325, paid by E. Chambers, of Hatchley, for Mercena Canary De Kol, a six-year-old cow with a 27.52-lb. record. She is a cow of good capacity and it is quite possible that Mr. Chambers will be able to get a high record from her.

The catalogues for this sale were quite elaborate. They contained the extended pedigree of each of the individuals offered, and the paper used was of the finest book print. These catalogues might well be preserved for future reference, as breeders can, through it, trace up the breeding of many of the noted sires and dams that have made a name for the Holstein breed. H. H. Bailey, of Paris, managed the sale, and Moore, Dean and Pullen did the selling. The fifty-nine head made a total of \$27,415, which is an average of \$464.66. Following is a list of the animals sold, together with the names and addresses of the purchasers:

Mary Mercedes 2nd, W. J. Shaw, Curries.....	\$ 210
Carlina Posch 2nd, J. Tuttle, Curries.....	220
Carlina Abbekerk Posch, B. McCartney, Thamesford.....	225
Carlina Pontiac Walker, A. McIntyre, St. George.....	240
Aeme Cornelia 2nd, R. A. Ballantyne, Atwood.....	165
Greta Pontiac Korndyke, J. E. Turner, Carlingford.....	195
Paul Hengerveld Abbekerk, A. Willoughby, Atwood.....	130
Esther Belle Korndyke, J. P. Morgan, Hensall.....	210
Rosa Echo Vale, J. C. Karn, Woodstock.....	300
Maple Grove Ella, R. Thompson, St. Paul.....	280
Daisy Togo Mercedes, R. Siddal, Denfield.....	395
Favorit Mercena Posch 2nd, J. P. Morgan.....	395
Baroness Mercena Posch, Wm. Chambers, Mt. Elgin.....	400
Heifer Calf, E. Hanmer, Norwich.....	140
Lady Roberts Favorit 2nd, F. Shelton, Woodstock.....	360
Lady Roberts Colantha, H. H. Bailey, Paris.....	415
Ingar Maid, G. A. Hogg, Thamesford.....	600
Schuiling Korndyke De Kol, D. McArthur, Embro.....	130
Echo Sylvia Pontiac, Wm. H. Chambers, Salford.....	710
Inka Sylvia Beets, J. C. Karn.....	310
Lady Keyes Mercena, R. Thompson.....	350
Ladoga Idaline Mercena, A. Frain, Burgessville.....	2,550
Premier Helbon Korndyke, D. Murphy, Lindsay.....	600
Maple Hill Faith, J. Harvey, Frelightsburg, Que.....	585
Ruby Schuiling Posch, Geo. McIntosh, Science Hill.....	255
Favorit Posch Pearl, R. G. McDonald, Ancaster.....	300
Netherland Francy, H. Thistle, St. Paul.....	500
Queenie Abbekerk Colantha, Wm. H. Chambers.....	625
Belle Abbekerk 2nd, E. Snyder, Burgessville.....	2,300
Pontiac Belle Abbekerk, J. Hanmer.....	530
King Belle Posch, F. Row, Curries.....	350
Glen Otter Aaggie Colantha, J. Harvey.....	340
Ormsby De Kol Posch, Wm. H. Chambers.....	195
Josephine Abbekerk Lass, Wm. H. Chambers.....	345
V. O. Butter Girl, H. H. Bailey.....	530
Topsy Mercena Posch, H. H. Bailey.....	3,700
Pontiac Francy Lass, J. E. Turner.....	115
Canary Flora De Kol, D. Murphy.....	725
Bull Calf, Wm. H. Chambers.....	400
Canary Flora Johanna, Wm. H. Chambers.....	510
Mercena Canary De Kol, E. Chambers, Hatchley.....	1,325
Mercena Canary Posch, J. Tuttle.....	250
Prince Mercena Posch, J. W. Bolton, St. Mary's.....	100
Violet Rose De Kol 2nd, Chas. Holborn, Shedden.....	250
Leone Rose De Kol 2nd, Wm. H. Elliott, Kirkton.....	160
Olive Rose De Kol 2nd, Wm. H. Chambers.....	200
Fedrina Pietertje Banks, J. W. Cochrane, London.....	210
Bella Pontiac Schuiling, S. G. Burgess, Woodstock.....	105
Fanny B. B. Pietertje, H. H. Bailey.....	625
Heifer Calf, H. H. Bailey.....	215
Princess Pietertje Abbekerk, G. Gill, Russeldale.....	185
Perfection Pauline Duchess, R. Veal, Paris.....	260

Liola Duchess Korndyke, A. D. Robertson, Ingersoll.....	265
Liola's Korndyke Duchess, R. Veal.....	185
Daisy Jewel Trenton, J. C. Karn.....	245
Korndyke Pontiac Belle, R. G. McDonald, Ancaster.....	355
Bessie Walker Abbekerk, A. D. Robertson, Ingersoll.....	250
Heifer, J. P. Morgan.....	200
Canary Sadie, G. Gill.....	195

The Dairy School Largely Attended.

The dairy courses in connection with the Ontario Agricultural College were largely attended, making the present small building and equipment quite inadequate to properly handle the classes. By courses the registration was: Three months' Factory Course, 67; One month farm Dairy Course, 23; Cow-testing, 28; Ice-cream and Soft Cheese, 23; making a total of 141.

Fifty-six students wrote on the final examinations for the Factory Course. The proficiency list and prize winners are as follows: 1, A. D. King; 2, W. B. Silcox; 3, W. H. J. Currie; 4, M. O. Bingeman; 5, J. R. Laidlaw; 6, M. Jamieson; 6, H. Taylor; 7, J. M. Lock; 9, F. Bell; 10, G. E. Moriarty; 11, A. Stanley; 12, W. Edge; 13, F. Drake; 14, J. Taylor; 15, W. Rogers; 16, H. Edwards; 17, H. Knowles; 18, C. J. Leger; 19, A. Nelson; 20, L. Smith; 21, T. Corkery; 22, A. Mitchell; 23, D. McDougald; 24, R. Holland; 25, A. Campbell; 26, W. B. Allison; 27, R. Robbins; 28, A. R. Murray; 29, J. Morrison; 30, C. C. Palmeter; 31, W. H. Norris; 32, M. Healey; 33, W. Buchanan; 33, E. Fleischer; 35, M. Brown; 36, C. Bradt; 37, E. McManus; 38, A. A. O'Connor; 39, G. Noack; 40, C. E. Gowdy; 41, H. Huether; 41, L. Vaughan; 43, F. J. Goldsmith; 44, (1), A. B. Anderson; 45, T. Barclay; 46, M. H. Lynch; 47, H. Pattison; 48, J. E. McDonald; 49, R. Cartwright; 50, W. T. Gristey; 51, A. Dixon; 52, T. Lydiate; 53, (2), M. R. McPhee; 54, C. H. Miller; 54, (3), A. Matheson; 56, (4), J. Gardiner.

NOTE.—1 will be required to pass supplemental examination in practical cheesemaking; 2, in practical buttermaking; 3, chemistry and bacteriology; 4, chemistry, practical buttermaking and bacterial testing.

WINNERS OF COMPETITIONS.

Through the kindness of friends of the dairy school cash prizes to the value of \$150 were offered to competitors. The winners were:

Judging Ayrshire Cattle.—1, Wm. Davern, Coneseon, Ontario; 2, A. R. Murray, Woodstock, Ontario; 3, W. B. Allison, Marshall, Sask. Judging Holstein Cattle.—1, W. B. Silcox, Shedden, Ontario; 2, Robt. Cartwright, Caledonia, Ontario; 3, W. Edge, St. Catharines, Ontario. Making Cheddar Cheese.—1, G. Noack, Pembroke, Ontario; 2, C. C. Palmeter, Norham, Ontario; 3, J. Taylor, Peterboro, Ontario.

Making Butter.—1, M. Brown, Tara; 2, W. H. J. Currie, Strathroy, Ontario. Pasteurizing and Bottling Milk.—1, A. R. Murray, Woodstock, Ontario.

Proficiency: 1, A. D. King, Cayuga; 2, W. B. Silcox, Shedden; 3, W. H. J. Currie, Strathroy, Ontario.

THE COW TESTING CLASS.

The cow-testing class was large and enthusiastic. Some in the class had previously taken the Factory or Farm Courses, but a number were farmers' sons, interested in dairying, cow-testing and cattle breeding who had never taken a dairy course. The proficiency list of those who passed both the practical and written examinations is:

1, R. Cunningham; 2, W. Edge; 3, C. Plant; 4, S. Scott; 5, M. O. Bingeman; 6, H. Osborne; 7, W. H. Norris; 8, R. Dennis; 8, A. Campbell; 10, R. Langford; 11, C. Hopkins; 12, D. J. Howell; 12, O. J. MacLachlan; 12, G. Pearce; 13, J. Wardell; 16, J. K. Crang; 17, L. Thomas; 17, Wm. Constable; 17, H. Armitage; 20, W. D. Ferguson; 21, R. H. Shore; 22, Thos. Lydiate; 23, R. Cartwright; 24, W. B. Allison; 25, J. T. Weed.

Creamery Conference at the O. A. C.

The Conference of buttermakers and creamerymen held at the O. A. C., Guelph, March 30 and 31, and April 1, was a notable gathering, chiefly for the reason that a few distinct and important advances were made towards improving the creamery butter of Ontario. Briefly, these were: strong recommendations to have cream graded and paid for on a quality basis; the pasteurization of cream at a temperature of 170°F., held for at least ten minutes; the grading of butter; and more co-operation among cream-producers, butter manufacturers and buyers, and the Ontario Department of Agriculture as regards instruction work.

There were about one hundred interested men in attendance and there was something doing all the time. The college creamery never before had so many practical buttermakers around the pasteurizers and churns as during these three days. All agreed that it was a meeting "worth while" and a resolution was passed asking for a similar conference next year. There were also resolutions asking for more help from the Ontario Department of Agriculture and one against any more indulgence to "oleo" manufacturers in Canada.

Those taking chief part in the practical creamery work were Messrs. McMillan, Smith and Sproule. The addresses and discussions were mainly by Professors Lund and Dean of the College Staff, and Mr. Bird, O. A. C.; Professor Zucht of Kingston, Mr. Barrand, D'Arcy Scott, of Ottawa; Alex. McKay of Winnipeg; Messrs. Pannum, and Scott of the Ontario Department

of Agriculture; and Messrs. Plover, Waddell and Robertson, creamerymen. Messrs. John Scott and L. H. Newman were presiding officers at the two afternoon sessions. Most of the dairy instructors for Western Ontario were present. All regretted the absence through illness of Frank Hens, Chief Dairy Instructor for Western Ontario.

Practical lessons on grading cream and butter were an important feature of the Conference.

As a result, we may expect a "long pull" and a "strong pull" to put Ontario butter at the top of the list during 1920. The Western Provinces will need to look to their laurels.

HORTICULTURE.

The First Spray.

By G. E. SANDERS.

Last year the majority of Nova Scotia apple growers missed the preblossom sprays, on account of their spray pumps being out of order. Practically all intended to apply the first spray, but when they got the sprayers out they found them disabled in one way or another; the result that it took in some cases weeks to get repairs made and many were not able to apply any spray until the after blossoms. Consequently we had a very dirty crop, and everyone, even the men who grew clean fruit suffered, for word went to the market that the Nova Scotia crop was dirty and clean lots of fruit were sold at a discount on account of the general reputation of the crop.

Growers should get their sprayers out at once and overhaul them so that if any parts are worn or broken they will be able to replace them before it is time to apply the first spray.

In Nova Scotia the first spray should be three pounds of bluestone, ten pounds of lime, one pound of arsenate of lime, to forty gallons of water. For aphids add three fourths of one pint of black leaf 40 to each one hundred gallons of this mixture. This spray should be applied when the leaves are about the size of a ten-cent piece.

Where bud moths are present in injurious numbers the amount of arsenate of lime may be increased to one and one-half pounds to forty gallons, and the spray applied at the highest pressure possible, and in such a manner as to drive it into every chink and crevice of the opening buds. If only a few bud moths are present a fog spray is much more desirable.

Results of Geneva, N. Y. With Dusting.

In our issue of March 11, a correspondent reported an interview with Professor P. J. Parrott, Entomologist, New York Agricultural Experiment Station, Geneva, New York, on the question of dusting for orchards. Since that time we have received some additional information from Professor Parrott regarding his experience with this substitute for liquid sprays, and quote the following paragraphs for the benefit of those who may be interested:

"The chief deficiency is that we have not discovered so far dusting preparations with contact insecticidal properties that are efficient against such pests as red bugs, pear psylla, scales and aphids. In speaking of red bugs particularly I stated that the dust particles floating in the air had not proved nearly as effective as the usual contact liquids delivered as a rather coarse, driving spray under high pressure. Until these limitations are overcome, dusting must be considered supplementary to spraying.

"As regards codling moth, dusting has proven very effective against this pest. The averages of tests for four years are—spraying 3.45% wormy apples; dusting 4.33% wormy apples.

"As to the relative values of the different treatments in the official spraying schedule, all are important, but under the conditions of last year the delayed dormant spraying gave efficient results in preventing primary infections of apple scab. The importance of the different treatments varies with the season, and under our conditions it certainly pays to make the regular delayed dormant, the pink and calyx sprays as outlined in circular 57, a copy of which is enclosed."

Hot-Bed Plants.

EDITOR "THE FARMER'S ADVOCATE":

From a lengthy experience, I can heartily endorse the commendation of a Dufferin County correspondent of the value of the hot-bed as an adjunct of the farm garden, for giving an early start to many varieties of vegetables and flowers. In a climate where frosts are liable to cut down tender plants like tomatoes through the glass, as late as June, it is necessary to remember the extra covering at night of burlap of the coarse canvas that comes about packages of goods to the wholesale houses. A good plan is to tack the stuff on to a little wooden frame that will fit down snugly on the sash. It is more convenient than loose pieces. Because of the heat and extra rich soil, growth is rapid so that one need not get in too great a hurry sowing the hot-bed seed unless for things that will bear early transplanting. With regard to sowing cabbage seed, mentioned by the correspondent, that is all right for the varieties for summer and early fall use, but when it comes to the main crop to be kept through the winter, the seed need not be sown until, say, from May 1 to 10, in a row, in the open ground, with a soil preferably friable through the

presence of scattered the plant above rootlets belonging in excess if sown thin grow tall cabbage seed they can same suggest. Though not far surpasses and ought to In case of to ferred from the second se apart. By they can be time of tra In case of vey best rest sods, six in side by side danger of fr can well be t Middlesex

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Last we evidences of since March Peter Smith be delivered No night spite of th over and qu one or mo returned so on Thursd The Govern before the l additional in ment of the the adjour Honorable F ment was b order that intimated th full respons necessary to perfectly wi every sugges ever, was Government that it wo brought up it was necess and this was The matter is not yet c the Honora Major Ken mission a ve school teach in 1917 and three went would exte who elect accounts of small as pos intend of H. S. C would be n been treat The experie for placin in charge of was largely South Bran least said t one and the Victoria No about \$1,000 who are th in Old Onta every man, land should the North c settlers to s said that K war as a de interned en take them Algoma, a v speech, in v Lands, For soldiers wa very minut comes from Minister. Honora secured the Highway This Bill o scheme. I to take ov by the Ov secured as t country.

presence of a little sand or mould. The seed is better scattered thinly. In that way there will be a stocky plant above and a good root system or clump of fine rootlets below, to which fine particles of earth will cling in excellent condition for transplanting. Especially if sown thickly, hot-bed cabbage plants are liable to grow tall and spindly. For convenience, sometimes cabbage seed is sown in a small open bed, but in the row they can be kept cleaned and tilled more easily. The same suggestions apply to growing cauliflower plants. Though not so robust as the cabbage, the cauliflower far surpasses the former, as a toothsome vegetable and ought to be more liberally grown in every garden. In case of tomatoes, for best results they should be transferred from the hot-bed to a cold frame when showing the second set of leaves, and set about six or seven inches apart. By frequent stirring of the soil and watering they can be pushed along and be ready to flower at the time of transplanting to the open ground, in June. In case of cucumbers and melons, I have secured the very best results by inserting four or five seeds in inverted sods, six inches square, placing them in the hot-bed side by side. In removing to the open ground when danger of frost is past, a couple of the weaker plants can well be thrown aside.

Middlesex Co., Ontario. W.T.

FARM BULLETIN.

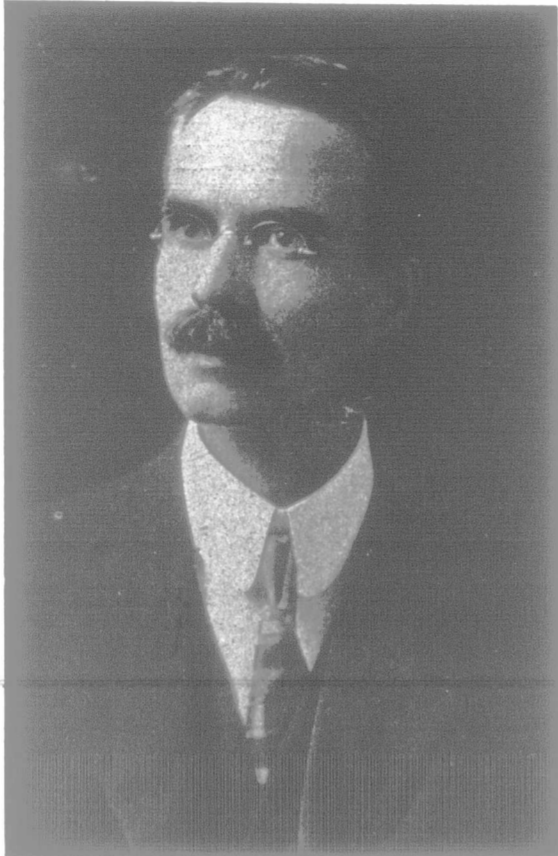
The Ontario Legislature Starts Working.

Last week in the Provincial Legislature saw more evidences of real work than during any previous week since March 9. Owing to the fact that the Honorable Peter Smith was taken ill, the budget speech could not be delivered on Tuesday, April 6, as was anticipated. No night sessions were held during the week, but in spite of this a considerable amount of work was put over and quite a large number of bills were advanced one or more stages. The Kapuskasing Colony for returned soldiers was made the subject for discussion on Thursday, on motion of Major Tolmie, Windsor. The Government had promised to bring this matter before the House so that members could put forward additional information or further ideas as to the treatment of the settlers. The Honorable Mr. Drury moved the adjournment of the House on Wednesday, but Honorable Howard Ferguson objected that the Government was bringing in no motion declaring its policy in order that the House might debate it. Mr. Drury intimated that the Government was prepared to take full responsibility for its policy, and did not think it necessary to have it discussed in the House. He was perfectly willing, however, to take into consideration every suggestion made. His motion to adjourn, however, was lost and he thereupon declared that the Government would not bring the matter up again, but that it would not oppose a discussion of it if it were brought up by the Opposition. On Thursday, therefore, it was necessary for the Liberals to introduce the matter, and this was done by Major Tolmie, as intimated above. The matter was discussed all Thursday afternoon, but is not yet completed, since both Hartley Dewart and the Honorable Howard Ferguson have still to speak. Major Kennedy, Peel, thought the report of the Commission a very fair one, but suggested free seed and free school teachers for five years to the men who went up in 1917 and are satisfied to remain. Altogether, forty-three went up that year, of whom six are left. He would extend the same privileges to settlers of any year who elect to remain. He also suggested that store accounts of those who do not want to stay be made as small as possible. Major Kennedy was the first superintendent of the Colony.

H. S. Cooper, North-West Toronto, thought there would be no cause for complaint if settlers had always been treated as they were treated by Major Kennedy. The experience at Kapuskasing was a strong argument for placing soldiers who had actual experience overseas in charge of any body of returned men. The problem was largely one of psychology. M. M. MacBride, South Brant, thought the proposition one on which the least said the better. The Commission was a good one and there were some satisfied settlers. E. Watson, Victoria North, said the experiment had cost Ontario about \$1,000,000, and, on the basis of the eighty soldiers who are there now, a farm fully stocked and equipped in Old Ontario could have been purchased outright for every man. Z. Mageau, Sturgeon Falls, thought the land should be sold to others who are more fitted for the North country, and opportunity given for the soldier settlers to settle elsewhere. R. R. Hall, Parry Sound, said that Kapuskasing had been selected early in the war as a detention camp because it was a place where interned enemies could not raise enough vegetables to take them through to civilization. K. S. Stover, Algoma, a very young member, made a crude but fiery speech, in which he denounced the Deputy Minister of Lands, Forests and Mines, and said that the returned soldiers wanted him fired. Mr. Stover got his seat by a very minute majority in a three-cornered fight, and comes from the same constituency as the Deputy Minister.

Honorable F. C. Biggs, Minister of Highways, secured the second reading of Bill 102, amending the Highway Improvement Act, on Tuesday, April 6. This Bill carries provisions for the Provincial Highways scheme. He said that the Government had seen fit to take over so much road because the money granted by the Dominion for road improvement was largely secured as the result of the tariff on cars coming into the country. The people all over Ontario, therefore, had

contributed to this money supplied by the Dominion Government. Last year, for instance, the people of Ontario, from the farmers on the back concession to the car-owners in big cities, paid over \$14,000,000 on cars coming into the Province. It was proposed, therefore, as the only fair way to serve every country, to give back some of the money that had been secured in automobile fees. Practically every county town will be touched by a Provincial Highway, and, rather than build one trunk through the Province, it was decided to designate several roads and endeavor to put all in reasonable condition. The Act also gives rural districts the privilege of using five per cent. instead of three per cent. of the assessed value of property for road work. Mr. Biggs also secured the second reading of Bill 101, providing for the elimination of glaring headlights on automobiles. Hereafter, only such lights or devices can be used as are approved by the Department of Public Highways. The Bill would come into force within sixty days of the close of the session.



Prof. J. B. Reynolds.
New President of the O. A. C.



Dr. G. C. Creelman.
Who goes to England as Agent-General for Ontario.

Honorable H. C. Nixon's Housing Bill was advanced another stage during the week. This Bill empowers municipalities to raise their own loans for housing purposes, subject to the approval of the Government through the Housing Commissioner. Any loans raised by the municipalities for this purpose will be guaranteed by the Government. Over one hundred municipalities are working under the old Act, which is practically embodied in the new Act. So far, \$10,700,000 has been spent by the Provincial Government, of which \$2,000,000 was Provincial money.

R. L. Brackin, West Kent, secured the second reading of Bill No. 89, which amends the Tile Drainage Act so that municipalities are empowered to loan for drainage purposes the sum of \$2,000 for each one hundred acres to be drained. Formerly no one person could borrow more than \$1,000 from the municipality. H. S. Cooper moved the second reading of Bill No. 119, to

amend the Noxious Weeds Act in such a way that persons who have waste land growing up to weeds need only to be notified in writing, instead of personally notified as at present. Under the amendment, the weeds can be cut ten days after notification and the cost charged to the owner, if he fails to take heed of the notice. W. P. Hill, Ottawa West, introduced a Bill which we understand to be a perennial in the House, which would provide that where any municipality establishes a municipal abattoir it shall be compulsory for all meat intended for consumption in the municipality to pass through the abattoir for inspection. This would virtually mean that all killings for local purposes would have to be done in the municipal abattoir, so that if a farmer wanted to sell some hogs on the local market it would be practically impossible for him to do his own killing. This Bill, we understand, has been up frequently before, and is advanced in the interests of some impractical women's organization.

The Agricultural Committee held two meetings during the week, at which good work was done. The Bill respecting the practice of veterinary science introduced by J. G. Lethbridge, West Middlesex, was thoroughly discussed and amended so as to put a strong curb on the operations of quacks and those who encourage them to practice. The farm labor situation was gone over and strong recommendations made to the Minister of Agriculture that the immigration policy of the Government be very much strengthened. It is anticipated that several offices will be opened up in England, and perhaps in Scotland, as well as on the continent. Farm labor is apparently available from the Old Country, but it must be sought after in competition with the Dominion Government, and probably the United States also. Dr. Riddell, Deputy Minister of Labor, said there was nothing in the statement that farmers could not pay sufficient wages, because farmers are offering at the present time wages that are equally as high as those paid by any other industry calling for similar work. The agricultural representatives were also discussed, and the Minister stated that he thought the agricultural representatives could do excellent work, but that the system should be tightened up somewhat, and it might mean that some men would have to be released. This subject will be more fully aired on Tuesday, April 13.

New President for the O. A. C.

Honorable Manning W. Doherty, Minister of Agriculture for Ontario, has at last announced definitely that Dr. G. C. Creelman, President of the Ontario Agricultural College, will accept the position of Agent-General for Ontario in London, England, and will be succeeded at Guelph by Professor J. B. Reynolds, who is now President of the Manitoba Agricultural College.

Professor Reynolds is a native of Ontario County and an honor graduate of Toronto University. He formerly taught Physics and English at the O. A. C., relinquishing the latter Department in the fall of 1915 to become President of the Manitoba Agricultural College. As a Professor at Guelph, Mr. Reynolds was highly respected by everyone, while as a teacher and disciplinarian he was an outstanding figure at the Institution. During the latter years of his stay at Guelph Professor Reynolds operated a farm in the neighborhood of the College and became deeply interested in farm life and work. It is generally conceded that Professor Reynolds will fill the responsible position he has accepted with satisfaction to all.

Dr. G. C. Creelman, who is to succeed Brigadier-General Manley Sims as Agent-General for Ontario, in London, England, was born in May, 1869, on his father's farm at Collingwood, Ont. In 1888 he graduated from the Ontario Agricultural College, and for a number of years taught in agricultural colleges in the United States. In 1899 he assumed the position of Superintendent of Farmers' Institutes for Ontario, and later added to this duty that of the Secretaryship of the Ontario Fruit Growers' Association, and was at the same time Director of the two Provincial Dairy Schools. On February 1, 1904, he followed Dr. Mills as President of the Ontario Agricultural College. The Institution has made rapid strides during the sixteen years Dr. Creelman has been its President. It has expanded wonderfully in buildings and equipment, and it is not now in a position to accommodate the large number of students asking for admission.

It is stated that the President of the O. A. C. will now draw a salary of \$6,000 a year, with nothing provided. Dr. Creelman's salary in England will be \$6,500. A reminiscence in this connection reveals the extent to which salaries have risen during the last sixteen years. Dr. Creelman received \$2,000 and residence when first appointed President of the College.

The Agent-General in England will be responsible to the Department of Agriculture, and, while he will be expected to represent Ontario in all regards, immigration will be one of his most important duties.

R.W.E. Burnaby Federal Candidate.

At a convention of the United Farmers of North York, on Saturday, April 10, R. W. E. Burnaby, Jefferson, President of the United Farmers of Ontario and President of the Canadian Council of Agriculture, was given the nomination for the Federal election. Mr. Burnaby will contest the riding of North York against the Hon. W. L. Mackenzie King, Liberal leader in the House of Commons, Ottawa.

Toronto, Montreal, Buffalo, and Other Leading Markets

Week Ending April 8.

Dominion Department of Agriculture, Live Stock Branch, Markets Intelligence Division

	CATTLE						CALVES					
	Receipts			Top Price Good Steers (1,000-1,200)			Receipts			Top Price Good Calves		
	Week Ending	Same Week	Week Ending	Week Ending	Same Week	Week Ending	Week Ending	Same Week	Week Ending	Same Week	Week Ending	
Toronto (U. S. Y.)	5,230	7,676	3,766	Apr. 8	1919	Apr. 1	Apr. 8	1919	Apr. 1	Apr. 8	1919	Apr. 1
Montreal (Pt. St. Chas.)	191	488	358									
Montreal (East End)	260	614	433									
Winnipeg	1,439	2,700	1,731	13.00	15.00	12.25	105	83	82	16.00	14.50	15.00
Calgary	2,390	1,287	1,462	14.00		13.80	120	11	130	11.00		11.00
Edmonton	930	562	1,100	12.50	13.00	12.50	65	65	35	14.00	10.25	15.00

	HOGS						SHEEP					
	Receipts			Top Price Selects			Receipts			Top Price Good Lambs		
	Week Ending	Same Week	Week Ending	Week Ending	Same Week	Week Ending	Week Ending	Same Week	Week Ending	Same Week	Week Ending	
Toronto (U. S. Y.)	5,128	7,870	3,141	Apr. 8	1919	Apr. 1	Apr. 8	1919	Apr. 1	Apr. 8	1919	Apr. 1
Montreal (Pt. St. Chas.)	826	1,223	918									
Montreal (East End)	309	896	651									
Winnipeg	2,641	5,283	1,678	20.50	20.25	21.00	10	356	136		15.50	15.75
Calgary	599	2,165	1,042	20.50		20.75	1,134	919	1,007			
Edmonton	806	726	1,105	19.80	20.50	20.50	11	104	244		13.00	

Market Comments.

Toronto (Union Stock Yards.)

Cattle receipts were comparatively light in comparison with the demand, and values showed a strong upward tendency on handyweight butcher grades. On Monday, with seventeen hundred cattle on sale, trading was active and prices a shade stronger. On Tuesday and Wednesday, butcher cattle met with a brisk inquiry and prices were generally 50 cents to 75 cents above those of a week ago. Thursday's receipts brought the total for the week up to fifty-one hundred head, and although trading became a trifle slower the previous day's accessions in values were fully maintained. Local packers bought freely during the week, handling most of the offering; a few shipments were made to outside abattoirs, but Buffalo speculators did not feature in the trading. Shipments of feeders to country points were limited to a narrow volume, the demand from local abattoirs for the cheaper grades of cattle putting values of feeding stock on a basis where it was unprofitable for farmer and grazier to operate. Owing to the possibilities of a strike by the butcher workers, there was a tendency on the part of some of the packers to buy sparingly on the closing markets. Although heavy cattle were limited in number, that class of stock showed little appreciation in value during the week, and \$14.50 per hundred bought top quality; one load weighing thirteen hundred and eighty pounds sold at \$14, and the balance of the offering from \$13.50 to \$14. Heavy cattle are not in demand for the local meat trade and any large volume of offerings has a tendency to create congestion. The "spread" between heavy steers and handy-weight butchers was reduced to a narrow volume during the week, providing further proof that feeders catering to the local meat trade would be well advised to market their cattle at an earlier age and at weights ranging from nine to eleven hundred pounds. Of steers of ten hundred to twelve hundred pounds in weight, one pair which averaged ten hundred and fifty pounds, of baby-beef quality, sold at \$15.50 per hundred, thereby topping the week's market, while eleven head of butcher quality which averaged ten hundred and twenty pounds sold at \$14.50 per hundred; numerous good loads averaging ten hundred to eleven hundred pounds per head sold from \$13.25 to \$14, while medium quality moved from \$11.50 to \$12. Butcher steers and heifers which weighed under ten hundred pounds had a strong inquiry and values were fully 75 cents higher; baby-beef quality sold from \$14 to \$14.50 per hundred, choice butcher grades of nine hundred to ten hundred pounds sold on the late markets of the week from \$13 to \$13.50, and a few up to \$14, most of the sales of that class and grade were, however, made from \$11.75 to \$12 per hundred, with medium quality ranging from \$10 to \$11.50. Cows and bulls were slightly higher in sympathy with the rise in butcher cattle. Good cows sold generally from \$10 to \$11.50 per hundred, extra fat cows sold as high as \$12 per hundred, the best bulls moved from \$10 to \$11.25, medium and bologna bulls, from \$7 to \$9.50, and medium cows, from \$8 to \$10. The stocker

TORONTO					MONTREAL (Pt. St. Charles)				
CLASSIFICATION	No.	Avg. Price	Price Range Bulk Sales	Top Price	No.	Avg. Price	Price Range Bulk Sales	Top Price	
STEERS									
heavy finished	85	\$13.85	\$13.00-\$14.25	\$14.50					
STEERS									
good	312	13.08	12.20-13.75	14.00					
1,000-1,200 common	56	10.58	8.50-11.75	12.25					
STEERS									
good	1,726	12.45	12.00-13.50	13.75	34	12.50	11.50-13.00	13.00	
700-1,000 common	308	10.44	8.50-11.00	11.50	12	10.00	8.00-10.50	11.25	
HEIFERS									
good	1,064	12.25	11.75-13.50	13.75	1				
fair	113	10.52	9.50-11.75	12.50	4	10.00	9.00-10.50	10.50	
common	59	8.91	7.50-10.50	11.50	12	8.00	7.00-9.00	9.00	
COWS									
good	361	10.28	9.75-11.25	11.50	48	11.50	11.50	12.50	
common	497	8.13	7.25-10.00	10.00	40	8.00	7.00-9.00	9.00	
BULLS									
good	85	10.16	9.50-11.00	11.25	4	11.00	10.00-11.50	12.50	
common	65	8.60	7.50-9.50	10.00	8	8.50	8.00-9.00	10.00	
CANNERS & CUTTERS	123	5.87	5.50-6.50	6.50	19	5.75	5.00-6.50	6.50	
OXEN									
CALVES									
veal	2,387	16.75	15.00-19.00	21.00					
grass	23	10.00	9.00-11.00	11.00	1,972	15.75	14.50-16.50	17.00	
STOCKERS									
good	214	10.12	9.50-10.50	10.50					
450-800 fair	69	9.10	8.00-10.50	10.50					
FEEDERS									
good	78	11.24	10.25-11.50	11.50					
800-1,100 fair	15	10.75	9.50-11.00	11.00					
HOGS									
selects	4,280	19.68	18.75-19.50	19.50	558	19.70	19.75	19.75	
heavies	2			18.50					
(fed and lights	666	16.96	16.75-17.50	17.50	236	19.70	19.75	19.75	
watered) sows	169	14.22	13.75-16.00	16.50	31	15.70	15.75	15.75	
stags	11	13.00	11.75-13.75	14.25	1				
LAMBS									
good	83	18.09	17.00-20.00	21.00	1				
common	5	16.00	14.00-17.00	17.00	4				
SHEEP									
heavy	48	14.09	12.00-15.00	15.00	6	12.75	12.75	13.50	
light	14	6.53	3.00-8.00	8.50	9	12.00	12.00	12.50	

and feeder trade was quiet, only a few loads going to country points. Feeders were quoted from \$10.50 to \$11.50, and stockers from \$9 to \$10.50. Milch cows had a quiet trade with choice milkers selling up to \$170, medium quality from \$100 to \$140, and carload lots from \$120 to \$140. Calf receipts were heavy and a seasonal decline resulted. Calves weakened \$2 to \$3 per hundred early in the week, and on Thursday the market became demoralized. Owing to the strike of switchmen at Black Rock, Canadian calves were shut out of the Buffalo market and speculators who had loaded for Buffalo were forced to sell on the local market. With local abattoirs listless buyers, calves moved at a further decline of \$2 per hundred. An odd calf or two sold at \$20 and \$21 during the week, but the majority of the good calves ranged from \$16 to \$19, until Thursday, on which day prices declined to a range of \$15 and \$17. Only a few sheep and lambs were on sale and trading was featureless. Spring lambs were easier within a range of \$8 to \$14 each, but yearlings were a shade stronger, selling up to \$21. Ewes were steady from \$10 to \$15. The hog market developed an upward tendency. Packers only favored to buy hogs at steady prices, but in this they were

unsuccessful. On Monday a few hogs sold at \$19.75 and some at \$19, but for the balance of the week prices ranged from \$18.25 to \$18.60 f. o. b., and \$19.25 to \$19.60, fed and watered; most of the sales were made on a fed and watered basis at \$19.50, with lights from \$17.25 to \$18.50, and sows from \$14.25 to \$16.50. The total receipts from January 1 to April 1, inclusive, were: 71,983 cattle, 3,387 calves, 86,205 hogs and 15,042 sheep; compared with 85,679 cattle, 10,564 calves, 94,272 hogs and 25,508 sheep, received during the corresponding period of 1919. Montreal. There were only four hundred and thirty-nine cattle for sale on the two markets during the week. There was a scarcity of medium weight butcher steers and prices for that grade particularly were reported about 50 cents up. Other grades of cattle were disposed of at prices only as strong as those paid during the previous week. Steers weighing around ten hundred pounds, if of good quality, brought \$13, steers of about ten hundred pounds, rather uneven in quality, brought \$12.75. There were no heavy steers, a yearling head of young fat cow, which weighed up at \$12.50 per hundred, and a few of the good cows were sold at \$11.50, or under. There

were no good heifers on hand; young thin heifers poorly fed, were sold down to \$7, while light heifers in fair flesh brought up to \$10.50. A price of \$12.50 per hundred was paid for one bull which weighed fourteen hundred and seventy five pounds; good heavy bulls brought up to \$11.50, and common light bulls sold around \$8. There were about thirty-four hundred veal calves on sale, of which about twelve hundred were bought for shipment to New York, U. S. A. A large percentage of the balance of the calves was bought to be killed in Montreal, and shipped to American points as dressed meat. On Wednesday a notice was received (marked labor trouble) of an embargo on all shipments of live stock and other freight to American points. Calves already en route for New York were diverted to Toronto, and commission firms advised their clients to withhold all shipments of calves to Montreal until further notice. Until the above notice was received, trading in calves was brisk and prices ranged from \$15 to \$16.50 for carload lots. During the week the City of Montreal took action against a dealer for having immature calves, in his possession and a fine was imposed of \$20 for each calf condemned. There is not much action to the market for sheep and lambs at present. There are very few yearlings offered, and so far,

Markets

Department of Agriculture, Live Stock Markets Intelligence Division

Top Price Good Calves

Table with columns: Same Week, Week Ending, Apr. 1, Apr. 8, Apr. 15. Rows show price fluctuations for calves.

Top Price Good Lambs

Table with columns: Same Week, Week Ending, Apr. 1, Apr. 8, Apr. 15. Rows show price fluctuations for lambs.

TREASURY (Charles) Price Range Bulk Sales Top Price

Table showing Treasury price ranges for various commodities like wheat, corn, and other grains.

Calves on hand; young calves fed, were sold down to... A price of \$12.50 per head for one bull which... hundred and seventy heavy bulls brought up... common light bulls sold... were about thirty... calves on sale, of which... hundred were bought for... York, U. S. A. A large... balance of the calves... be killed in Montreal... American points as... on Wednesday a notice... (marked labor trouble) of... shipments of live stock... to American points... a route for New York... Toronto, and commission... clients to withhold... calves to Montreal until... until the above notice... ing in calves was brisk... from \$15 to \$16.50... During the week the... took action against a... of immature calves, in... a fine was imposed of... condemned... ch action to the market... at present. There... ings offered, and so far,

No spring lambs. Sheep were sold at prices ranging from \$11 to \$13.50 per hundred.

Hogs were sold up to Wednesday at \$20 for mixed lots of selects and lights, weighed off cars. On Wednesday, a few lots were disposed of at \$19.75. There was a very large percentage of hogs weighing less than one hundred and fifty pounds each, in the shipments. The market closed weak in tone.

Pr. Sr. CHARLES.—The total receipts from January 1st to March 31, inclusive, were: 7,310 cattle, 6,390 calves, 14,336 hogs and 56 sheep; compared with 9,393 cattle, 11,308 calves, 16,071 hogs, 5,108 sheep, received during the corresponding period of 1919.

EAST EXP.—The total receipts from January 1 to March 31, inclusive, were: 9,516 cattle, 7,233 calves, 9,507 hogs, and 3,930 sheep; compared with 11,408 cattle, 6,324 calves, 8,826 hogs and 5,570 sheep, received during the corresponding period of 1919.

Buffalo.

Cattle.—Cattle market for the first part of last week at Buffalo was very satisfactory throughout but with the switchmen's strike the latter part, receipts were cut off and no trading to speak of was done, the receipts coming mainly from state points by truck and were very light. For the week fifty to sixty cars of shipping steers were offered and these sold fully a quarter to a half higher than for the preceding week, while on butchering grades strong prices prevailed on the choice kinds, medium and less desirable grades selling at about steady prices. Trade was weak on milk cows and springers, as the result of the price of milk declining, and a good strong market was had on anything in the stocker and feeder line. Bull trade was generally a quarter higher. There were several loads of Canadians offered this week, best steers running from around \$12 to \$12.50. 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, \$12.25 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; oxen \$9 to \$11.50.

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

Hogs.—Market the first two days of last week was practically unchanged from the previous week's close. Medium and heavy hogs ranged from \$16 to \$17, bulk of the good handy hogs moved at \$17.50, few \$17.60, with a couple of decks \$17.65, and pigs sold largely at \$16.50. Wednesday packers paid up to \$17.25 for some weighing around 240 pounds and the light hogs moved at \$17.50 and \$17.75, with two decks \$17.85, and pigs brought \$16.75. As a result of the switchmen's strike receipts after Wednesday were very light, and most of the trading had to be done with local packers. Thursday the range was from \$17 to \$17.75, and Friday a few light hogs reached \$17.75 and \$18, with heavies selling down to \$17. Pigs landed at \$16.75 and \$17, roughs around \$13.50 and stags \$8 to \$10. Receipts for the past week were 20,000 head, as compared with 25,448 head for the week before and 23,200 head for the same week a year ago.

Sheep and Lambs.—Last week opened with best wool lambs selling at \$21.50, culls ranged from \$19.50 down, top clips ranged from \$18 to \$18.50, with the culls out of the same selling from \$15.50 down. The next two days showed a steady market on clips, with best wools bringing up to \$22. This day there was no market, on account of eastern buyers not being able to ship out, and Friday wool lambs reached \$22.50 and clips on the tippy order sold from \$18.75 to \$19.75. Sheep were scarce and firm all week. Wool

wethers reached \$17, unshorn yearlings made \$19, and top for ewes that carried fleece was \$14.50. Clipped shipped sold \$2.50 to \$3 per cwt., under the wools. Receipts for the week were 17,200 head, the week before there were 21,123 head and for the same week a year ago 18,600 head.

Calves.—Prices last week struck the lowest level for a long time back. Monday tops sold at \$19.50, and the next three days none brought above \$19. Friday the market was better, best lots being placed at \$20 and \$20.50. The fore part of the week showed culls selling from \$16 down, and Friday a few reached up to \$17. The past week's receipts totaled 5,350 head, as compared with 8,047 head for the week before and 7,400 head for the same week a year ago.

Toronto Produce.

Receipts of live stock at the Union Stock Yards, West Toronto, on Monday, April 12, numbered 170 cars, 2,079 cattle, 1,320 calves, 3,337 hogs, 38 sheep and lambs. It was a strong cattle market with prices 25 cents to 50 cents higher; top, \$14.15 for 15 head averaging 1,090 pounds each. Best cows were \$10.50 to \$11.50, and a couple sold at \$12. Best bulls were \$11 to \$12. The calf market was demoralized and prices were around \$3 lower; best sold at \$15 to \$16. Sheep and lambs were steady. Hogs were strong at \$19.75 to \$20 fed and watered.

Breadstuffs.

Manitoba Wheat.—No. 1 northern \$2.80; No. 2 northern, \$2.77; No. 3, northern, \$2.73. Manitoba Oats.—No. 2 C. W., \$1.04 3/4; No. 3 C. W., 99 1/2%; extra No. 1, 99 1/2%; No. 1 feed, 97 1/2%. Manitoba Barley.—No. 3 C. W., \$1.70 1/2; No. 4 C. W., \$1.50 1/2; rejected, \$1.41 1/2; feed, \$1.41 1/2. Ontario Wheat.—F. o. b., shipping points, according to freight; No. 1 winter, \$2 to \$2.01; No. 2 winter, \$1.98 to \$2.01; No. 3 winter, \$1.92 to \$1.93; No. 1 spring, \$2.02 to \$2.03; No. 2 spring, \$1.98 to \$2.01; No. 3 spring, \$1.95 to \$2.01.

American Corn.—Prompt shipment, No. 3 yellow nominal, \$2.01, nominal. Ontario Oats.—No. 3 white, \$1.02 to \$1.04, according to freight. Peas.—No. 2, \$3. Rye.—No. 2, nominal; No. 3, \$1.83 to \$1.85.

Barley.—Malting, \$1.78 to \$1.80. Buckwheat.—No. 2, \$1.65 to \$1.70. Ontario Flour.—In the jute bags, prompt shipment, Government standard, \$10.40 to \$10.50.—Montreal and Toronto. Manitoba Flour.—Government standard \$13.25, Toronto.

Hay.—Track, Toronto, No. 1, \$27 to \$28; mixed, \$25. Straw.—Car lots, \$16 to \$17.

Millfeed.—Car lots, delivered Montreal freights, bags included: Bran—, per ton, \$45; shorts, \$52; good feed flour, per bag, \$3.75 to \$4.

Farm Produce.

Butter.—Butter remained about stationary at last week's slightly firmer prices, fresh-made creamery pound prints, being quoted at 68c.; fresh solids at 66c.; cut solids, 63c. to 65c. per lb.; and best dairy at 55c. to 60c. per lb.

Eggs.—Supplies continue to be heavy, and prices were still declining; latest quotations for new-laid being, 50c. to 51c. per dozen.

Cheese.—The market was quoted as steady, new large selling at 28c. per lb.; and old large, 32c. per lb.

Poultry.—Prices kept about stationary, with the previous week, receipts being rather light with a good demand, especially for live weight hens. Turkeys declining as only old gobblers are being shipped in. Poultry prices being paid to producer: Chickens, per lb., alive, 30c.; dressed, 35c.; chickens, milk-fed, per lb., alive, 35c.; dressed, 40c. Ducks, per lb., alive, 40c.; dressed, 40c. Hens, under 4 lbs., per lb., alive, 30c. per lb.; dressed, 30c.; hens, from 4 and 5 lbs., per lb., alive, 35c.; dressed, 32c.; hens, over 5 lbs., per lb., alive, 38c.; dressed, 35c. Turkeys, per lb., alive 40c.; dressed, 45c. Guinea hens, per pair, alive, \$1.25; dressed, \$1.50.

Wholesale Fruits and Vegetables.

There was very little change in fruit prices during the past week, but potatoes advanced and are very firm. Apples.—Western, \$3.50 to \$5 per

box; Ontario's \$6 to \$12 per bbl., and \$2.75 to \$3.50 per box; Nova Scotias, \$3 to \$7 per bbl.

Beans.—Dried white hand-picked \$5 to \$5.25 per bushel.

Cabbage.—New, Texas, \$6.50 to \$7 per bbl.; Florida, \$7 per case; Cal. \$6 per case.

Carrots.—\$1.50 to \$2 per bag. Cauliflower.—Cal. \$6.50 per crate.

Celery.—Florida, \$6.50 to \$7 per case. Cal. \$10 to \$12 per case.

Lettyce.—Leaf, 30c. to 50c. per dozen; extra large, 85c. per dozen.

Onions.—\$8 to \$10 per cwt. Cal., \$11 per 112 lbs.; green, 40c. to 50c. per dozen bunches; \$5 to \$5.25 per bag.

Parsnips.—\$2.50 to \$2.75 per bag. Potatoes.—\$5 to \$5.25 per bag.

Turnips.—90c. to \$1.25 per bag.

Hides and Skins.

Hides, f. o. b. country points—Beef hides, flat cure, 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; horse hides, country take-off, \$8 to \$10; No. 2, \$8 to \$9; No. 1 sheep skins, \$2.75 to \$3.75; yearling lambs, \$1.75 to \$2.50; horse hair, farmer's stock, 40c. to 42c.

City Hides.—City butcher hides, green, flats, 25c.; calf skins, green flats, 50c.; veal kip, 30c.; horse hides, 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.

Seed Quotations.

Wholesale merchants quote the following prices for seeds at country points; Alsike, No. 1, fancy, per bushel, \$36 to \$37; No. 1, per bushel, \$35 to \$36; No. 2, per bushel, \$32 to \$33; No. 3, per bushel, \$29 to \$30. Red clover, No. 1, fancy, per bushel, \$36 to \$37; No. 1, ordinary, per bushel, \$34 to \$35; No. 2, per bushel, \$31 to \$32; No. 3, per bushel, \$29 to \$30; sweet clover, No. 1, fancy, per bushel, \$22 to \$24; choice, per bushel, \$18 to 20.

Seeds Retail.

Dealers quote clover and other seeds as follows: Red clover, No. 1, per bushel, \$48; No. 2, per bushel, \$45.60; alsike, No. 1, per bushel, \$49.20; No. 2, per bushel, \$46.20; Alfalfa, No. 1, per bushel, \$39; No. 2, per bushel, \$37.20; Canadian, per bushel, \$48. Sweet clover, best, per buhsel, \$29.40. Timothy, No. 1, per bushel, \$11.28; No. 2, per bushel, \$10.32.

Montreal.

Horses.—There was a falling off in the sale of horses during last week, the activity of the previous few weeks giving way to renewed dullness. Very few horses are offered for sale, so that the situation relative to prices remains about the same. Heavy draft horses, weighing 1,500 to 1,600 lbs., were quoted at \$250 to \$300 each; light draft, 1,400 to 1,500 lbs., \$200 to \$250; light horses, \$125 to \$175 each; culls, \$75 to \$100, and good saddle and carriage horses, \$175 to \$250 each.

Dressed Hogs.—Demand for dressed hogs continued good, and everything offered was taken at steady prices, being 28 1/2c. per lb. for city abattoir, fresh-killed stock, country dressed being 26 1/2c.

Poultry.—Dealers reported nothing new in the market for poultry. Cold storage turkeys were quoted steady, at 53c. to 54c. per lb., while chickens were quoted at 38c. to 40c. per lb.

Potatoes.—The price of potatoes continues to advance from time to time, and quotations were higher than at any time in this crop. Quebec white stock sold at \$4.25 to \$4.35 per bag of 90 lbs., carloads, track with smaller lots bringing 50c. more, ex-store. Quite a few shipments were being made to the United States.

Maple Products.—The tone of the market for maple products was firm and prices advanced to \$3.20 and \$3.25 per gallon tin for maple syrup, while maple sugar was steady at 32c. to 35c. per lb. Opinion is divided on the volume of the crop.

Eggs.—Prices continued on the decline. Receipts from the country are moderately large through recent cold weather and storms interfered with the supply somewhat. Quotations were 52c. to 55c. per dozen in half-dozen case lots.

Butter.—Buyers have been taking considerable quantities of finest September

creamery at 60c. per lb., this representing a decline from recent top prices. The prospects seem to favor lower prices rather than higher.

Cheese.—Prices showed little change, quotations for small cheese being 27 1/2c. to 28c. per lb., with large cheese being about 1/2c. more.

Grain.—The market for oats is quiet for local account, and apparently prices were away above an export basis. Car lots of No. 2 Can. Western oats, on spot, were \$1.17 1/2, and No. 3 at \$1.13 per bus., ex-store.

Flour.—No change of importance has taken place in the market flour. Manitoba spring wheat flour was \$13.25 per bbl., in jute, ex-track, Montreal, to city bakers, with 10c. additional for smaller lots than car lots, and 10c. off in all cases for cash. Ontario winter wheat flour was quoted at \$10.75 per bbl., in jute bags, ex-track, broken lots being \$11.30 to \$11.40 in new cotton bags, ex-store.

Millfeed.—The market for millfeed was firm under a good enquiry. Bran was sold, with flour, in mixed car lots, at \$50 per ton, while shorts were \$58; white, without flour, prices were \$4 more. Pure barley meal was \$78, cornmeal being \$80, dairy feed \$68.

Baled Hay.—Trade was slow, with No. 2 timothy at \$30 to \$31 per ton, No. 3 being \$28 to \$29, and clover mixed \$26 to \$27, ex-track.

Hay Seed.—No change of importance developed. Timothy seed was steady at 17 1/2c. per lb., to 20c.; clover and alsike were each 65c. to 67c.; sweet clover was 40c. to 45c.; and alfalfa 58c. to 60c., track, Montreal.

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

Chicago.

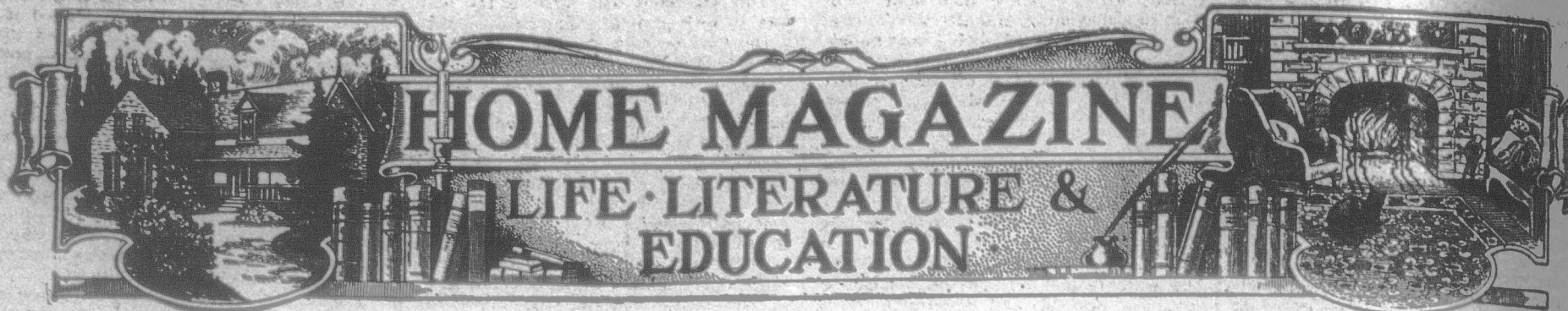
Cattle.—Receipts, 1,000; firm, beef steers, medium and heavyweight, choice and prime, \$13.75 to \$15; medium and good, \$11.50 to \$13.75; common, \$10 to \$11.50; light weight, good and choice, \$12.40 to \$14.25; common and medium, \$9.75 to \$12.40; butcher cattle; heifers, \$7.65 to \$13.75; cows, \$7.50 to \$12.15; canners and cutters, \$4.25 to \$7.50; veal calves, \$13 to \$14.50; feeder steers, \$9 to \$11.85; stocker steers, \$7.65 to \$11.25. Sheep—Receipts, 5,000; nominal; lambs, 84 pounds, down, \$18 to \$20.75; culls and common, \$14.75 to \$17.75; ewes, medium, good and choice, \$11 to \$15; culls and common, \$6 to \$10.75. Hogs.—Receipts, 5,000; 10c. to 50c. lower than yesterday's average; bulk, \$14 to \$15; top, \$15.25; heavy, \$13.65 to \$14.60; medium, \$14.25 to \$15.25; light, \$14.50 to \$15; light light, \$13.75 to \$14.75; heavy packing sows, smooth, \$12.25 to \$13 packing sows rough, \$12 to \$12.50; pigs, \$12 to \$14. Estimated receipts Monday: Hogs, 10,000; cattle, 5,000; sheep, 5,000.

Victory Bonds.

Following were the values of Victory Bonds on the Toronto market, Saturday, April 10: Victory Bonds maturing 1922, 99 to 100; Victory Bonds maturing 1923, 98 3/4 to 99 3/4; Victory Bonds maturing 1927, 99 1/2 to 100 1/2; Victory Bonds maturing 1933, 100 1/2 to 101 1/2; Victory Bonds maturing 1937, 102 to 103.

Sale Dates.

April 16, 1920.—Geo. W. Bethune, Ryckman's Corners, Ont.—Holsteins. April 20, 1920.—Aberdeen-Angus cattle, Albany, New York. April 20, 1920.—Renten Dunlop, Mohawk, Ont.—Shorthorns, etc. 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, Thorndale, Ont. June 10, 1920.—Second National Ayrshire Sale, Springfield, Mass. June 15, 16, 17 and 18.—Live-Stock Breeders' Association of the District of Beauharnois, Limited, Ormstown, Que.



"Who loves his garden still his garden keeps."

"My prayers with this I used to charge:
A piece of land not very large,
Wherein there should a garden be,
A clear spring flowing ceaselessly.
And where, to crown the whole, there should
A patch be found of growing wood.
All this, and more, the gods have sent,
And I am heartily content."
—Horace.

The Vegetable Garden.

It is really astonishing how many farms there are without a good vegetable garden. The writer knows a "line" where for miles the vegetable selection is very select indeed, being chiefly confined to a couple of onion beds at each farm. The onions from those, with potatoes, turnips and mangels (used for beets) from the fields, make up the sum total of vegetable food for the year.—Where there is plenty of land to spare at that!

"We've no time for gardening," would probably be the explanation of the farm folk on every one of those farms.

It is "dollars to doughnuts," however, that a trial of a good vegetable garden for just one year on any of those farms would work a revolution.

Program something like this: Men put on fertilizer in fall and plow it in, work up the ground thoroughly in the spring and roll it. . . . Women mark out the rows and put in the seed while men are busy in fields; also thin out the plants and clear away first weeds. . . . Men run cultivator through when necessary, women doing a little cultivation with hoe or claw-weeder when they have time (that will be pretty often if they become infected with the love of a garden). . . . Men take out roots in fall and store them.

That looks like a fair division of labor, does it not? And men, women and children reap the benefit. Not only do the vegetables give variety for appetizing meals,—they afford, besides a considerable amount of nutriment, valuable medicinal properties that will help to make healthy bodies and capable minds as well as capable hands. A vegetable garden is certainly hard on the family doctor.

Besides, production is just as necessary and just as patriotic as it was during the war. While children anywhere are starving for food, every spoonful of food raised in the garden will help to tide over the period of scarcity. When you are eating food grown in your own garden you are *not* eating food that might go overseas. In almost every part of Europe children are in need of more food. Thousands in Armenia are still on the verge of actual starvation. Thousands more in Serbia and Bulgaria are underfed. In Germany and Austria thousands more will never walk because of rickets brought on by malnutrition. God help the little children! They were not our enemies. But they can only be helped by us and folk like us. If we are instruments of the All-Good we will forget hate and do mercifully. In the matter of gardening we can actually help others by helping ourselves. That seems a paradox, but it is true, as explained above.

The Soil.

Don't work up the soil while it is wet and cloggy, especially if it is a clay soil; that will only make it dry in hard lumps. Leave it until it is somewhat crumbly; then work it up well.

The site selected should be in a sunny place where the ground is either level or with a slight slope towards the south; if it has a bank of evergreens or a tall, close fence along the north, to keep off

cold north winds, all the better. The spot should be well drained, and if ideal the soil will be a rich clay loam. If too sandy, adding loads of clay and humus will pay in the end; if too heavy, i. e., a heavy, resistant clay, it will be wise to add some sand, if it can be got conveniently, also hardwood ashes in rather liberal quantity, or if hardwood ashes cannot be got, some sifted coal ashes. A layer of ashes 2 or 3 inches deep will not be too much if thoroughly worked into the soil. If manure was not put on in the fall, and the ground is poor, it will need to have fertilizer put on now. Manure is the best of all fertilizers, as it supplies humus as well as plant food, but if put on in the spring it must be old, mellow and well-rotted. Fresh manure burns the young, tender rootlets of plants, and destroys the garden. In fact, it should never be placed where the very young rootlets can touch it; if used at all a good layer of soil should be between it and the seedlings, so that by the time they reach it the roots will be stronger and the manure less hot and sharp. The safest way, however, is never to put fresh manure on the garden in spring.

If there is any suspicion that the soil may be sour (as often happens when the drainage is poor) test it in this way: Get some blue litmus paper at the drug store and thrust it into the soil. Examine it in half an hour, and if it has turned red you may know that the soil is too acid and requires lime to correct the acidity. It is always best to apply lime in fall or several weeks before planting, as it too has a tendency to burn the rootlets. If it has to be applied shortly before planting use lime-stone dust or raw ground limestone instead of the hydrated lime. A layer an inch deep will not be too much if thoroughly worked in. Hydrated lime ("unslaked") is usually put on at the rate of half a ton to the acre. . . . Just here it may be remarked that lime is good to loosen up heavy soil as well as

to correct acidity. . . . Some expert gardeners put on nitrate of soda to hasten early growth, also to make the plants more resistant to attacks of insects and diseases. About 200 lbs. to the acre is enough, put on by degrees, a little at time of planting, the rest worked in as a top-dressing around the plants from time to time during the growing season. Never sprinkle it so that any will fall on the leaves, as it will burn them.

In conclusion: remember that the garden soil should be deep, friable and rich, but mellow, with nothing in contact with roots or stems that can burn them. After working up the garden let it stand for a few days at least, then work the surface with a rake until the soil is fine, making a soft seed-bed through which the tiny rootlets can easily make way. The deeper the bed the better the vegetables. It should be compact and settled throughout to leave no holes.

Selection of Seeds.

Every farm garden should have the following vegetables: Peas, beets, carrots, parsnips, onions, radishes, early turnips, cabbages, lettuce, celery, beans, cucumbers, early corn, Hubbard squash and tomatoes. The enthusiastic gardener will, of course, add a number of others among which may be mentioned cauliflower, salsify or vegetable oyster, Swiss chard, parsley, melons, artichokes, vegetable marrow and the seasoning herbs—sage, thyme and summer savory.

Swiss chard, by the way, affords "greens" over a long period lasting right up to snowfall. The green portions of the leaves are used for "greens," and the ribs are cooked separately like asparagus.

Some people are very enthusiastic over eggplant (which may be cooked in a variety of ways) and the large-podded sweet peppers, which are good when stuffed and baked, also when made into a sweet pickle for sandwiches; but as

both of these must be started very early, in February or March, it will be necessary at this late date (if one has not already started them) to buy the plants from a green-house. The same is true of tomatoes. Do not set out until the weather is warm.

Artichokes are very easily grown, and as they may be cooked in a variety of ways, should be seen in gardens more frequently than they are. They are a good food, and the new, large kinds are quite easy to prepare.

Kale is also very easily grown, but, to be any good, must be left out in the garden until the frosts of early winter have made it tender. Indeed, the plants may be used, direct from the garden until about Christmas.

Sowing the Seed.

As climate conditions vary so, it is impossible to give any set time for sowing the seed. Experience and the experiments of one's neighbors must be the guide. As a rule nothing is gained by putting in the garden too early. First of all put in a few beets, carrots, lettuce, onions, peas, parsley, radishes and early turnips, sowing them in the open. Cabbage, cauliflower, tomatoes, lettuce and a few beets may be started much earlier in the house or hot-bed, or plants may be bought at transplanting time (late in May or early in June). As a rule, from the first to the tenth of May is a good time for the earliest out-of-door seed-sowing, but, as remarked above, climate must determine the date. The following should not be sown or transplanted into the open, as the case may be, until the weather is settled and warm: Beans, corn, cucumbers, eggplant, squash, tomatoes, peppers and melons. Celery may be started in April in a box and transplanted to trenches when ready.

Do not sow all of any kind of seed at first. Keep some for later sowings, as this is the secret of having young and



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tender vegetables always ready for the table. This concerns such plants as beets, carrots, lettuce, cress, peas, onions, Swiss chard and radishes. Old radishes, by the way, are very nice when cooked and served with cream sauce, while lettuce that is too old to be served as a green salad may be boiled for greens.

Another point to remember is to keep a good balance of vegetables. For instance, do not have too much of anything at the expense of too little of something else. Consider, also, the part of the garden where the various things are to be sown. Put lettuce, cress and radishes, which depend for their excellence on quick growth, in the warmest, richest part, and give plenty of water. Almost everything requires rich soil, but put tomatoes in the least rich part, as, in too rich ground they tend to run to tops rather than to fruit.

Do not make raised garden beds, which let the water run off, but sow the seeds in rows (running north and south to prevent undue shading) on the level. When the surface of the soil is worked until fine and even, over a firm yet rich and friable bed, mark the rows, having them as straight as possible, and put in the seed. Sow it thinly, as too thick sowing means needless waste. Small seeds need only to be pressed into the soil with a piece of smooth board, larger ones need a light sprinkling of fine soil on top, while large ones such as beans may be covered to about four times their depth.

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a little water is worse than none. Put it on in the evening, and afterwards cover the moist surface over with a dust mulch. Occasionally, if it seems necessary to hasten growth, weak liquid manure may be put on the ground about the plants, but to prevent "indigestion" it should be put on after thorough watering. Tomatoes, cabbage, cauliflower, celery, etc., after being set out, may need especial watering every evening until thoroughly established. When setting them out place them in a sort of cup of soil, leaving a depression that will hold the water when it is put on, instead of letting it run off, and be sure to put a dust mulch over the surface after watering. Afford some shade (by putting shingles, newspaper, etc., about the plants) to keep off the hot sun until the roots are established and the plants have stiffened up and become ready to grow. If there is too much top-growth at time of transplanting it will pay to remove some of the leaves, so that the roots will not have to feed a great area before established enough to do so.

Your Health.

"MEDICUS."

Proteins Necessary for the Growing Child.

FOR the growing child proteins (meat, eggs, fish, curds, etc.) are one of the essential constituents of the diet, because they contain nitrogen. It seems

You will likely ask, what is the best way to give protein? The curd of milk is the very best for the child, and especially for the infant under one year. He should have (the curd of) a pint to a pint and a-half of milk daily. You no doubt have heard of "protein milk," and this will often save the baby's life in an attack of severe diarrhoea. Curds never disagree with the baby. But, you say, the baby vomits the milk and it is all curdled. The baby vomits usually because it is fed too often (I hope to talk about that later) or because it is fed a food too rich in fat. The mother's milk or the mixture in the bottle contains too much fat. And you know how rich gravies, onions fried in fat, etc., "repeat" on you. They tend to regurgitate, or to make you vomit. Pork is hard to digest because of the fat, but bacon—why anybody can eat bacon; because the crisp piece of bacon contains little fat and is mostly protein. The milk curdles in a very few minutes it reaches the stomach if the stomach is working properly. So you can see that if the baby vomits, and if he has taken milk, he should vomit curds if his stomach is perfectly healthy. Then again the mother will tell you there are curds in the napkin. Those curds have fooled the doctors as well as the mothers. They are not curds at all—at least in the great majority of cases. When the chemists examined them they found the so-called curds were soaps, and these soaps are formed when the baby gets too much fat. Real curds do

Don't buy a settee, unless there is some corner that seems especially to need it. And don't buy a sofa, with turned up ends, that is too short to lie down upon comfortably. A big couch that fairly invites you to rest is better.

Don't have a "parlor" at all. Have a living-room. If there must be a place for receiving strangers who cannot be admitted into the living-room, let it be a very small reception room furnished formally.

Don't have things forever on a slant, on "crazy" lines. Balance and symmetry are two of the rules for restfulness.

Don't have an easel in your house if you are not an artist, and don't have an old-fashioned spinning-wheel in your drawing-room. An easel is made for work, and one does not spin in a drawing-room.

Don't have too many small tables in a room. They simply "kill" it, by giving an effect of triviality and clutter. And don't load any table with small articles. They look silly. A lamp on a runner or center-piece, a bowl of flowers and a few books are enough for any table.

Don't have a "cozy corner." It is ridiculous. Furnish each room as a whole.

Don't have a tacked-down carpet. A moderate-priced rug (even a rag rug lined with heavy canvas to make it lie flat) on a hardwood floor is more sanitary, will look more artistic, will be more easily cleaned, and in the long run will give more satisfaction than the most expensive tacked-down carpet. Carpets are dust-catchers, and dust is not good to breathe.

Don't run to fads. A house with an "English" room, a "French" room, a "Dutch" room, and a "Japanese" room, is faddy and expressionless. One's home should express oneself, not some foreign nation.

Don't have many small pictures on a wall. They clutter it much more than a few larger ones, and are less restful. No ordinary house needs very many pictures, but such as there are should be good. If one's liking for pictures demands many of them, a picture-gallery should be provided.

There are two kinds of ugly houses—the cheap ugly one and the dear ugly one. Don't have either.

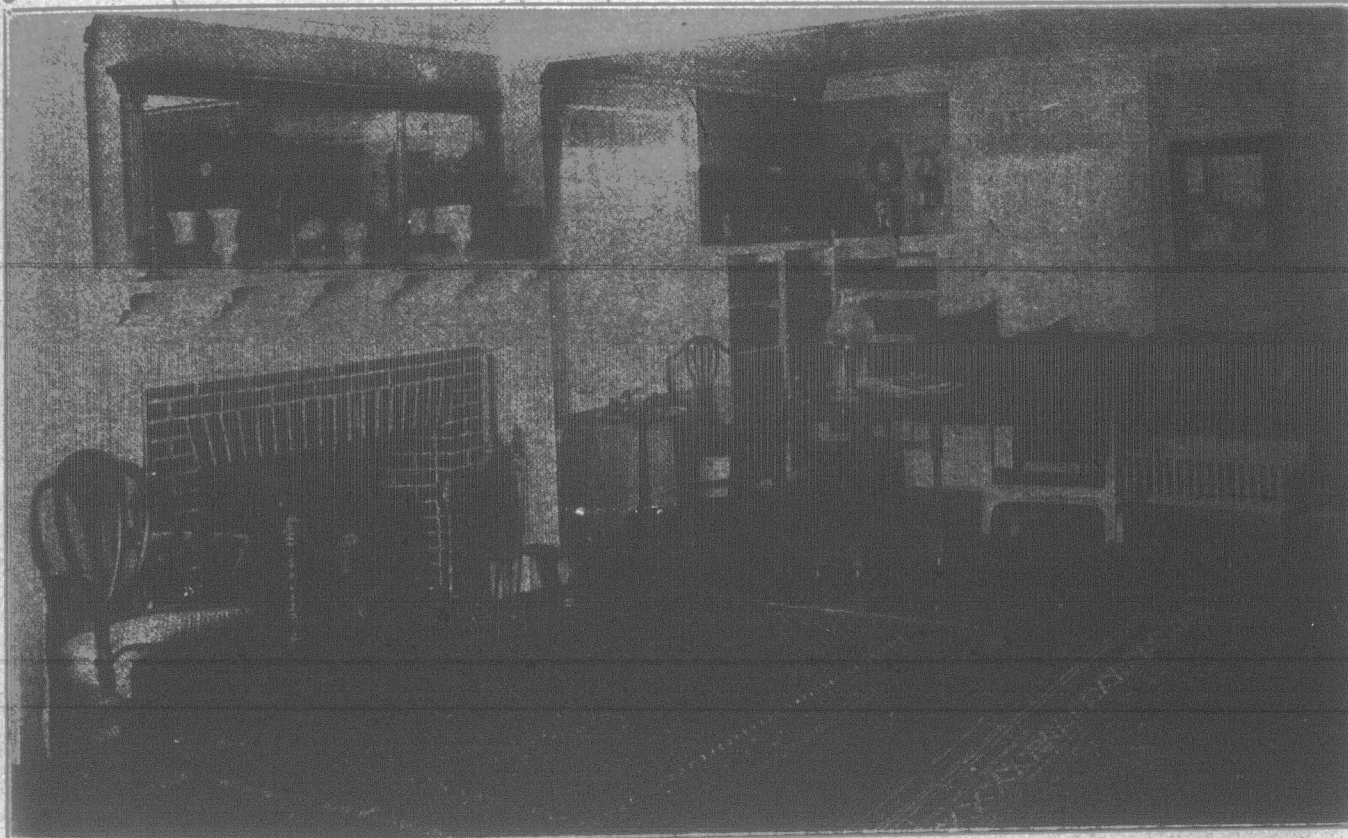
Don't let "design" run rampant. There are some houses that fairly writhe with it.

Do away with red lamp-shades, smash cheap, ugly vases; and don't put white doilies and center-pieces anywhere but on the dining-table or tea-table, where their place is.

Don't have too many straight chairs in a living-room, and never arrange chairs here in straight lines. Put arm-chairs where they seem needed, before a window, by a table with books, by the fireplace, etc.

Don't have too much of any one color in a room. A room that is "too green," "too yellow," "too blue," or "too" anything else, is never pleasing.

Don't have plush or velvet upholstery. It collects dust and is not sanitary. Plain wooden chairs are better, or upholstery in some hard-finished, close material.



A Living-Room.

The bookcase in corner and white-painted couch are homemade.

Thinning and Cultivation.

When the plants have attained a few leaves thin them out where necessary, leaving them one inch apart. At a later date thin out again, transplanting those taken out, to prevent waste. It pays to thin well; plants need plenty of room to grow.

Frequent cultivation ensures a good garden as well as a good corn field. It is done not only to keep weeds down but to keep up a dust mulch that will keep the moisture of the earth about the roots of the plants and not permit it to escape into the air. There is much truth in the old saying "A good stir-up is as good as a rain." If cultivated frequently enough (twice a week is not too often) very little watering will be necessary except for freshly transplanted plants. Use a shallow, sharp hoe or a claw cultivator if weeding and cultivating must be done "by hand," or a wheel hoe if you are so fortunate as to own one. Be careful not to cut stems, and, especially while the plants are small, cultivate very shallow so as not to injure the roots. A little work between the plants, such as pulling up weeds and loosening soil close to the stems will have to be done by hand with the aid of a knife.

Should a long period of dry, hot weather come, so that watering is absolutely necessary, put on plenty, enough to reach right down to the lowest root;

strange that the growing cell, whether animal or vegetable, requires its nitrogen prepared for it,—the so-called "fixed nitrogen." We are surrounded by air containing a large percentage of nitrogen, but it is not in a form that the plant or animal cell can use. One noted scientist has calculated that the earth contains so much "fixed nitrogen," and that we are using up so much each year, and when all has been used up life on this earth will no longer be possible. According to his calculations you and I could only live a few thousand more years, provided, of course, we were modern Methuselahs. The point I want to drive home is the one important function of proteins: to supply the growing cells of the child with nitrogen in a form in which he can use it. Just as the child requires nitrogen, so with the growing plant. The artificial fertilizers contain nitre, or saltpetre, or ammonia salts, both rich in nitrogen. You have used ammonia on your plants and it makes them grow, because you are supplying nitrogen to them. So you should feed the growing child all the protein he wants. Instinct will be one of your best guides as to the amount. There is only one caution, and that is don't give him too much at any one time. Fats (cream, butter, etc.) and carbohydrates, sugar, starch, rice, etc.) will make your baby fat but will not make him grow.

occasionally occur in the stools. This can be prevented by boiling the milk for three minutes. Again let me repeat: curds never disagree with the baby. Proteins are absolutely necessary every day for the growing child; protein milk is often life-saving in a case of diarrhoea. Detailed directions for making protein milk will be given later when the treatment of diarrhoea is discussed.

Some "Don'ts" of Good Furnishings.

Don't admit anything that is freakish or grotesque.

Don't have much highly polished furniture. It catches the light and makes too many conflicting points of it.

Don't have polished brass bedsteads. They bother the eyes and are not restful.

Don't put things that have no purpose in the living-room. It is not a show-room but a place to live in. Besides, many useless things mean much unnecessary dusting.

Don't have artificially grained or fancy "stippled" effects in woodwork or floors. The plainest paint, if of good color, is better. But oil finish or simple stain with oil finish, is best of all for new wood.

Don't furnish a living-room throughout with a "set." Sets always rob such a room of individuality.

Some "Do's" of Good Furnishings.

Sit in chairs before you buy them, and choose only those that are absolutely comfortable. Arm-chairs should make you want to curl up in their luxurious arms.

Buy things that are really "good," that have lasting qualities, even if you have to wait a long time for them. You will be better satisfied in the end.

Remember to have plain walls with figured-floor coverings. Figured inside curtains may be used with plain walls, but they should be the same as the upholstery, or cushions. Have plainness somewhere in every room.

Remember that taste is not a question of money, but rather of a sense for color and proportion. Everyone is not born with this sense, but it may be cultivated. Quite as pleasing results may be attained with simple as with expensive things.

Consider, as Ruskin advised, whether a thing be useful and whether it be beautiful. Combine use and beauty. It can be done. Keep a useless ornament only when it is supremely beautiful. That is its only excuse for existence.

Get rid of dust-catchers, wherever you can. Keep only those things that can be easily cleaned with the dustless duster

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and the vacuum cleaner. Never forget that it is important to breathe clean air and to conserve your health and strength.

Always take off every shred of old wall-paper before putting on new. Successive layers of paste and paper are likely to catch and hold dampness, and are not sanitary. Besides the wall will look better if the old paper is removed. Mop it frequently with hot water and when soft enough scrape off.

Demand good, well-made furniture; keep up the demand by inspiring others;—and after while there will be no other kind offered for sale.

Keep in mind that no house is successful unless it expresses the personality of the people in it. A mere copy of someone else's house is a failure. Get ideas and principles, then adapt them to your own likings and personality.

Never forget the importance of proportion, even in color. Use the most restful colorings for the largest spaces.

Create a demand for plain stoves, etc., by asking for them. They are much easier to keep clean.

Collect good china piece by piece. It is a delightful hobby and not "overly" expensive. Similarly collect silver spoons, forks, etc., if you cannot afford to get flat silver all at once.

Remember the difference between harmonizing and contrasting colors. If there is too much "cold" color in any room, introduce a harmonizing "warm" one for contrast.—And vice versa.

Set forth as your chief aim, to have every room livable.

Keep in mind that there is a wide call between clutter and charm.

When buying willow chairs insist on willow and do not take rattan. Also insist on plainness in any of these chairs. Willow is only willow, wicker is only wicker, rattan is only rattan. Design makes these vulgar; plainness gives them honesty and refinement. Whorls and scrolls are usually to be avoided.

A lamp should suggest sunlight. The best colors for the shade are yellow, buff, amber, cream and orange.

Consider every detail, no matter how seemingly insignificant, with regard to its relation to the whole.

Keep this in mind: We should make our abiding places the visible expression of our finer rather than our crude selves.

The Children's Poem.

A Funny Story.

The story told by the neighbor's dog Was the funniest ever heard.
"The bird was after the worm,
And the cat was after the bird,
And I was after the cat you know,
And Teddie was after me.
The worm crawled into his hole,
The bird flew over the hill,
The cat turned round with a sudden bound
And hissed at me with a will.
And just was I in the midst of a bark
When Teddie, my master came,
And took me home, and that was the way
That all of us missed our game."

Hope's Quiet Hour.

Altogether Lovely.

What is thy beloved more than another beloved? My Beloved is the chiefest among ten thousand. . . His lips are as lilies. . . His speech is most sweet: yea, He is altogether lovely. This is my Beloved, and this is my Friend.—Can't 5:9-16. (R. V.).

O perfect life in perfect labor writ,
O all man's Comrade, Servant, King or priest,—

What "if" or "yet", what mole, what flaw, what lapse,
What least defect or shadow of defect,
What rumor, rattled by an enemy,
Of inference loose, what lack of grace
Even in torture's grasp, or sleep's, or death's,—

Oh, what amiss may I forgive in Thee,
Jesus, good Paragon, thou Crystal Christ?
—SIDNEY LANIER.

The Bride, in "Solomon's Song," was searching Jerusalem for her beloved. When asked how he was to be recognized among the multitudes of men in the city, she answered that he was "chiefest among the thousand," and "altogether lovely."

When we, who claim Christ as our Beloved Friend, are asked by the bewildered or mocking unbelievers how we can be sure that Christianity is true,—when it is only one among many religions—we can give the same answer. Our Leader, Saviour, King, Beloved and Friend is altogether lovely. He is the only flawless man the world has ever known.

Through many disappointments the human heart constantly reaches out longingly for perfection. We are like the merchant seeking goodly pearls. If we devote our lives to the search for perfection in human life we are certain to be disappointed—unless we seek it in the life and words of Christ. It is only there that we find no "defect or shadow of defect."

I remember saying once to a friend who had done something I disapproved: "I thought you were perfect! But, now,—"

The answer came like a flash of fierce lightning: "It is vicious to think that anyone is perfect!" I felt rather crushed. But, of course, I had not really expected perfection. My remark was shallow and untrue, and I deserved to be called "vicious."

How can a doubter be persuaded that JESUS stands supreme among men, that He is flawless, perfect, Divine? Well, the only way I know of is to keep one's eyes on Him, with the steady determination of climbing nearer to God and holiness, with sincere repentance for past sins and the full intention of fighting against them in the future. "If any man willeth to do His Will, he shall know if the teaching whether it be of God, or whether I speak from myself," said our Master Himself.—S. John 7:17 (R. V.).

It is not enough to acknowledge the beauty of Christ's spirit. Pilate found no fault in Him, and openly declared his opinion; yet he gave the wicked order that this blameless Prisoner should be tortured and killed. The fact that he knew the order for crucifixion was a terrible injustice, only made his guilt the greater. Herod found no fault in Jesus, yet mocked His claim to be King; and our Lord's unbroken silence in his presence speaks more loudly against him than many words.

Judas knew the holiness of his Master, yet that knowledge only made his treachery more awful.

It is not enough to acknowledge that Jesus is chiefest among ten thousand, or even to agree with the company of the apostle, the noble army of martyrs and the holy Church throughout all the world, in praising His perfections. If we don't choose this supreme Leader as our Master, if we don't try to follow and obey Him, we are pronouncing our own condemnation. We find ourselves

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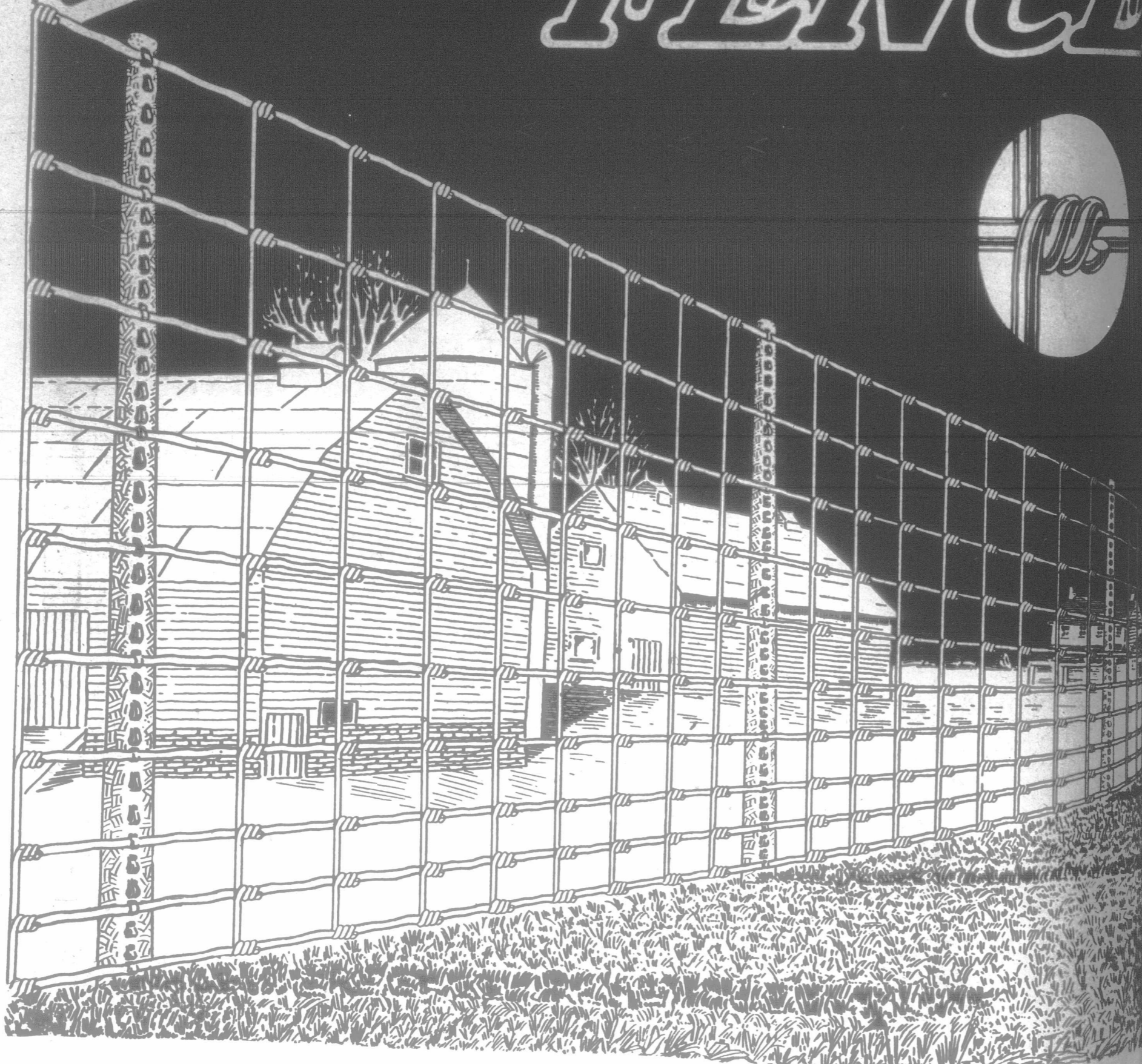
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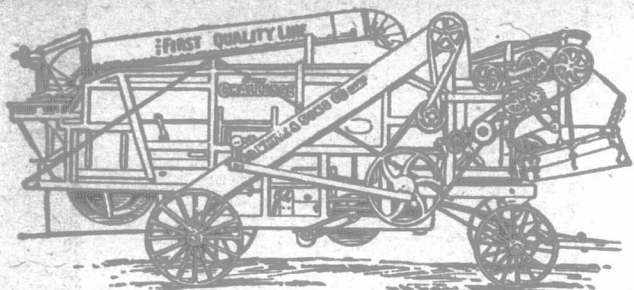
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in this world with the responsibility of life laid upon us. If we see the good and choose the evil, we find our condemnation within ourselves. Conscience is easily killed in any person. It may be drugged and lulled into an uneasy sleep. But it is a sad thing for a man when he tries to drug and gag his own conscience, so that he can turn his back on righteousness. Judas managed to escape the reproaches of conscience—or, at least, he refused to listen—until the deed was done which branded him as the chief of traitors. Then conscience woke up, and he tried to escape the agony by suicide—as many another despairing person has done. You can kill your body, but conscience is not part of the body. It is not so easily got rid of.

The greatest Name in history is the Name of One whose cradle was a manger and whose dying bed was a cross. He had no worldly wealth, influence or learning. He wrote no book for posterity to read, refused to meddle with political matters, was not an inventor—like Edison—nor a scientist like Sir Oliver Lodge; but His Name outshines other names as the noonday sun eclipses the stars. His words are not only authoritative, they are satisfying. His ideals are still the highest we can conceive of. His selfless life still towers immeasurably above the lives of those who have tried for many years to be like Him. His untroubled peace and kingliness, on that day of horror which we call "Good Friday," draw us to His feet in adoring amazement. His "seven last words" are a mine of spiritual wealth for innumerable preachers and teachers—a mine which seems inexhaustible.

I am writing this on the 25th of March, the day of the "Annunciation"—just nine months before Christmas. How strange it must have seemed to the lowly village maiden, when the angel told her that her Son would be King of the Jews forever, and that of His kingdom there should be no end. It does not seem so impossible now, when His kingdom grows greater every year. When Mary stood beside the Cross she must have been utterly bewildered. Where was the endless kingdom promised to her Son? He had been poor from babyhood, and His earthly life was over. The title, "KING," was written above His head; but God would not mock her submissive faith by an empty title! Was this all?

We know it was not all! We can see that His Kingdom is a glorious and ever-growing reality. Let us learn to trust God's future when our dark days come. Death is not the end. It is only an incident in life.

It is wonderful to remember how the King, uplifted on a cross of shame, has drawn and is drawing hearts after Him. He reigns supreme in the heart of man here and a woman there, in a little child and an enthusiastic boy, in a king and a char-woman. Millions of people, of different tastes and temperaments, are one in their certainty that He is altogether lovely. Read over any collection of hymns, and you will find that men and women of many religious opinions agree in their personal loyalty to Christ as supreme.

When you, who read this page, lift up your eyes in glad confidence to Him of whom I write, remember that you do not stand alone. The Lord knoweth them that are His, and they are a great multitude which no one but the Captain Himself can number. There is one great bond of fellowship linking closely together those who seem to have very little in common; and that is unswerving devotion to one Master. He—and He only—is "altogether lovely." Each generation proclaims that fact in its turn, and He still stands unrivalled, with no one daring to stand at His side as an equal, with no one able to even imagine a beauty of spirit greater than His. Jesus Christ is the great Miracle of all the ages. How is it that He shines like the sun in the sky unless He is Divine? How can He be as near as my own soul, in understanding sympathy, unless He is also Man? We need a perfect Friend, who is one with us in our humanity and yet infinite in love and power and holiness. There is One Who can supply our need. I need Him, and so do you. Browning voiced this instinctive heart-hunger when he wrote those oft-quoted words:

"'Tis the weakness in strength that I cry for!
My flesh, that I seek
In the Godhead! I seek and I find it."

A Hand like this hand
Shall throw open the gates of new life
to thee!
See the Christ stand!"

But the King seeks followers, not sentimental admirers. It is not easy to follow the Crucified, who said: "If any man will come after me, let him deny himself, and take up his cross and follow me." We can't live that kind of life except by the indwelling power of the Holy Spirit. We are not very Christ-like yet, but we struggle on hopefully, for as S. John assures us—"when He shall appear, we shall be like Him; for we shall see Him as He is."

DORA FARNCOMB.

For the Sick and Needy.

"Ruth" sent six dollars for the needy, and two dollars came from "Doris"—which I will send to her friend, as requested. Two little boys dropped a quarter apiece into the Quiet Hour Purse—to please Jesus. My thanks go out to all the friends who keep the Q. H. P. filled and to those who have sent S. S. papers, cards, etc., for the "shut-in." The stream of your kindness is like the river of Ezekiel.—47 : 3, 4.

DORA FARNCOMB,
6 West Ave., Toronto.

Current Events

The Ontario Educational Association held its 59th annual convention in Toronto last week. Mr. James Davison of Guelph was elected President.

The House of Commons at Ottawa is still working on the new Franchise Bill, which, it is hoped, will be a model one.

A horse entered in an exhibition at Santa Barbara, Cal. arrived by airplane from Los Angeles.

The Republicans of the House at Washington, with only 2 defections and the aid of 22 Democrats, 1 independent and 1 prohibitionist, on April 9 passed the Porter resolution declaring the war with Germany at an end. The vote was 242 to 150. The resolution then went to the Senate.

The military in Ireland say the crisis is past, and attribute the fact that the expected rebellion did not come off at Easter partly to a split among the Sinn Feiners. Armored cars manned by British troops are still in Dublin and Cork, and the Sinn Fein extremists are in jail.

A despatch from London says that an appeal is being issued the by League of Nations Union for a national fund of £1,000,000 to support the League and thus maintain the world peace it is designed to ensure. The appeal has been signed by Lord Grey, Premier Lloyd George, Earl Beatty, former Premier Asquith, Lord Robert Cecil and J. R. Clynes.

The Japanese have seized Vladivostok but have announced that they will withdraw from Siberia if the Russian revolutionists will "settle the unrest in Vladivostok." Premier Lloyd George and Mr. Asquith both favor re-establishing trade with Russia, looking upon commerce as "a sobering influence," hence upon one side of Russia part of the Allies are negotiating with the Russians while, on the other side, their ally, Japan is fighting her.

Six millions of people in Austria are in peril of utter starvation, due to the situation precipitated by the Kapp revolt in Germany, which diverted supplies.

The Cabinet of Sali Pasha at Constantinople resigned on March 28 because of pressure brought upon the Government for surrender of Col. Rawlinton, British Control Officer at Erzeroum, and Capt. Forbes, British Passport Officer at Amasia, both of whom were seized by the Nationalists. Mustapha Kemal recently called a congress to meet at Angora, and has ordered general mobilization, stating that he will not recognize the Sultan's orders. A delegation of 4 members of the Turkish Chamber, permitted to pass by the British Passport Control, has gone

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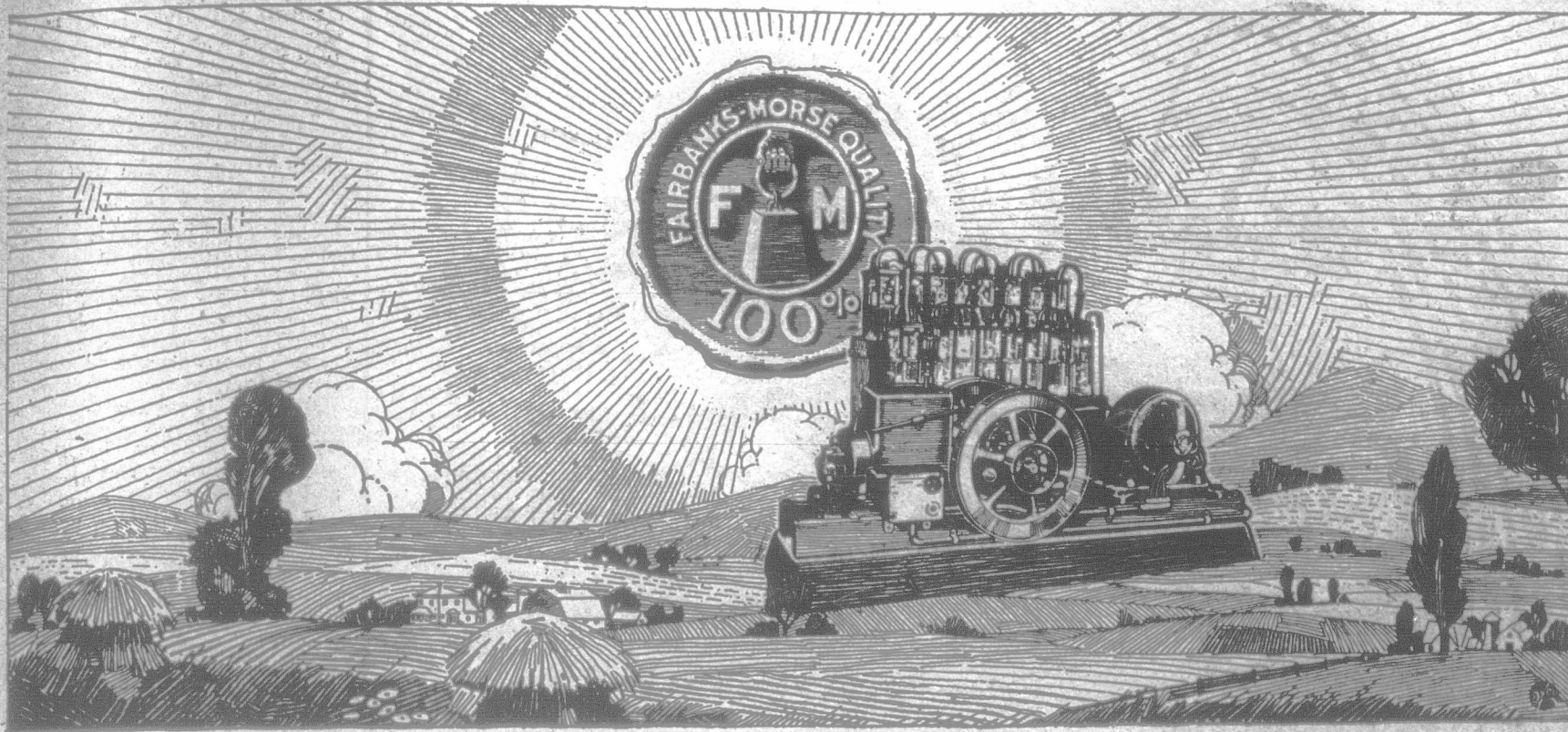
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Canada's Greatest Farm Help

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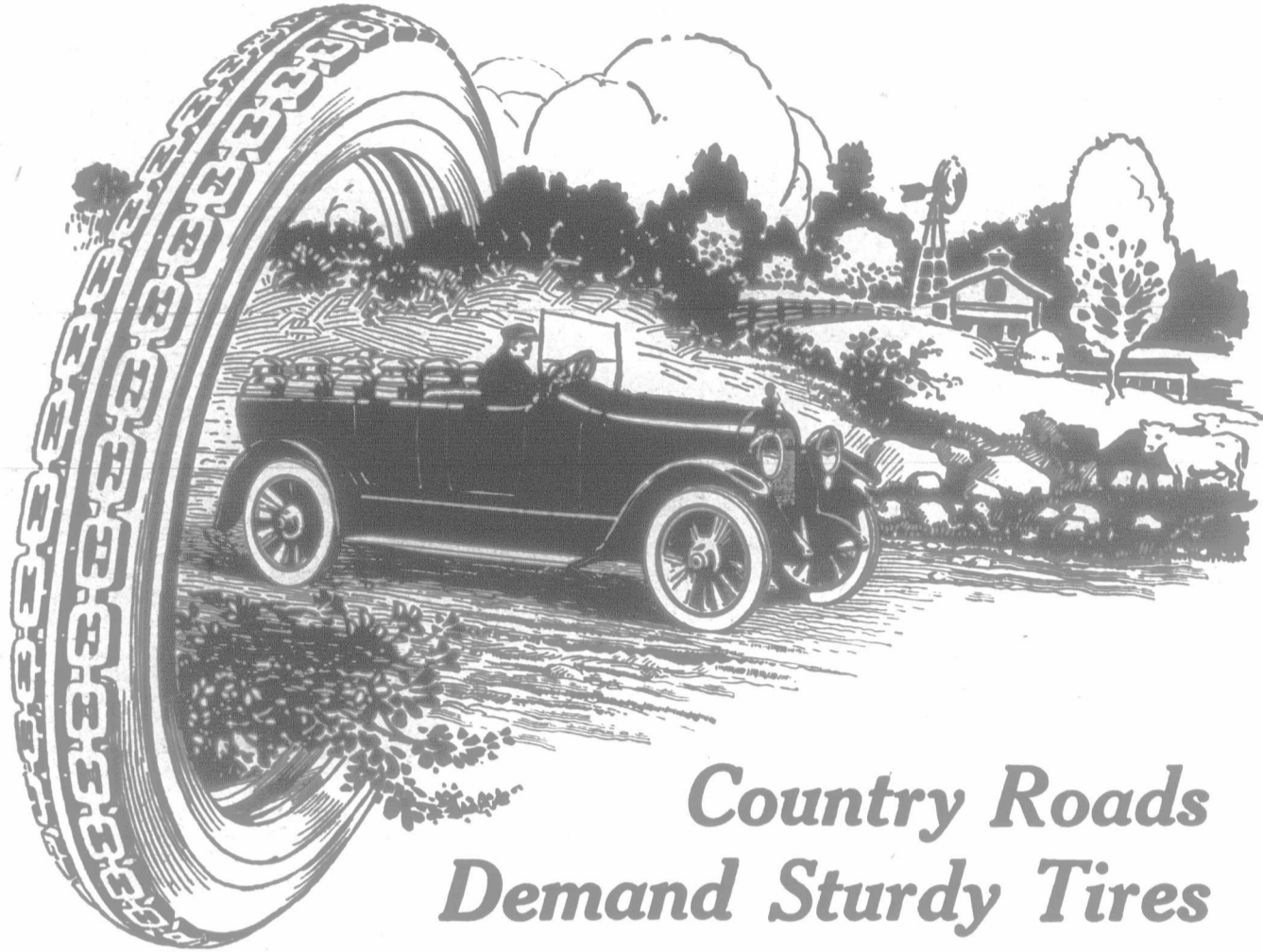
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BUT—if you have to bump over ruts and ditches—and if you use the car for country driving—then get the Dominion Tire best suited to the roads and the loads.

There are six treads to choose from—"Royal Cord", "Nobby", "Chain", "Dominion", "Grooved" and "Plain", for every car and every purpose.

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Dealers who handle DOMINION TIRES also carry DOMINION INNER TUBES and the full line of Patches, Sleeves, Reliners, Cement and other DOMINION TIRE ACCESSORIES.



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to Angora to confer with Mustapha Kemal.

The Italo-Jugo-Slav Commission has decided that Italy is to have Fiume, Scutari and other towns going to the Jugo-Slavs. D'Annunzio is not satisfied with the decision.

Trouble has again arisen in Palestine, and British troops are being recalled to their stations on the west bank of the Suez canal.

During the past week a critical situation arose in Europe. Claiming that the German Government had broken the Peace Treaty by sending far too many troops into the Ruhr region to quell the "Red" disturbances there, Foch ordered French troops under Gen. de Goutte into the district, and on April 5 Frankfurt, Darmstadt, Homburg, Hanau and Duisburg were occupied by them. In general they met with no opposition. Later, some colored troops met with some jeering and resentment and turned a machine gun on a mob, causing some casualties. This caused much resentment in Germany, Great Britain claiming that the French had acted contrary to warnings from the Allies, and that the condition in the Ruhr Valley was a social disorder with which Germany alone should deal, expressed strong disapproval of the course taken, and for a time relations were distinctly strained. At time of going to press, however, it is stated that the French Government has made explanation which will ease the situation. In the meantime German State troops have been fighting from time to time in the Ruhr and have occupied Essen. The Government asks that the time of withdrawal of troops be extended from April 10 to July 10, as, if they are taken away now trouble will break out again. The workmen on the other hand, claim that the State troops massacred several hundred workmen near Dortmund. The Ruhr is a strongly industrial region of Germany.

Serial Story

"His Family."

BY ERNEST POOLE.

(Serial rights reserved by the Farmer's Advocate and Home Magazine.)

CHAPTER XXXIII.

But as he watched Laura in the house, Roger's first emotions were complicated more and more by a feeling of bewilderment. At dinner the next evening he noticed with astonishment that she appeared like her natural self. "She's acting," he decided. But this explanation he soon dismissed. No, it was something deeper. She was actually unashamed, unafraid. That first display of feelings, the night of her arrival, had been only the scare of an hour. Within a few days she was back on her feet; and her cure for her trouble, if trouble she felt, was not less but more pleasure, as always. She went out nearly every evening now, and when she had spent what money she had, she sold a part of her jewelry to the little old Galician Jew in the shop around the corner. Yes, she was her natural self. And she was as before to her father. Her attitude said plainly,

"It isn't fair to you, poor dear, to expect you to fully understand how right I am in this affair. And considering your point of view, you're acting very nicely."

Often as she talked to him a note of good-humored forgiveness crept into his daughter's voice. And looking at her grimly out of the corner of his eye, he saw that she looked down on him, far, far down from heights above.

"Yes," he thought, "this is modern." Then he grew angry all at once. "No," he added, "this is wrong! You can't fool me, young woman, you know it as well as I do myself! You're not going to carry this off with an air—not with your father! No, by George!"

And he would grow abrupt and stern. But days would pass and in spite of himself into their talks would creep a natural friendly tone. Again he found himself friendly with her—friends as though nothing whatever had happened! Could it be that a woman who had so sinned could go right on? Here was Laura, serenely unconscious of guilt, and smiling

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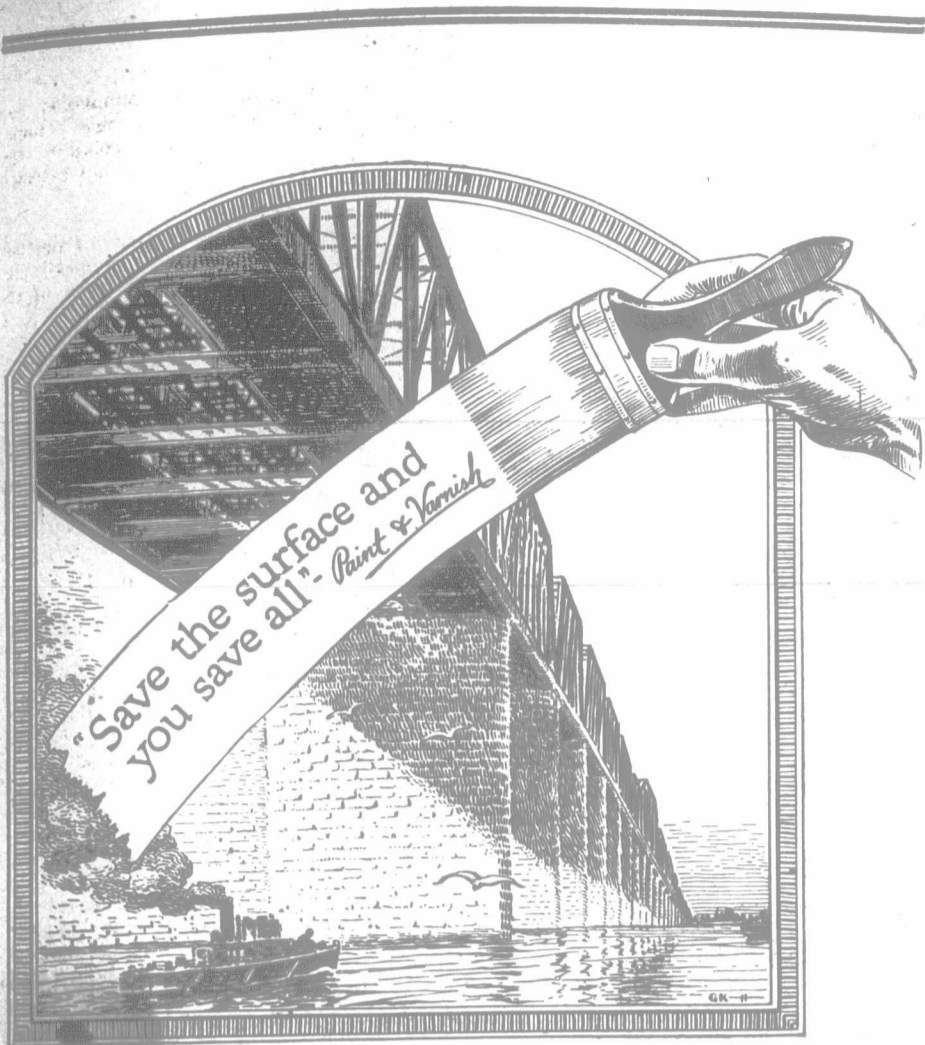
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SAVE THE

APRIL 15, 1920



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The Great Victoria Bridge, Montreal

A Powerful Example of Preservation that should be applied to every Farm

ALL the great bridge builders of the world leave works that are wonderful monuments to their genius.

What a tragic failure their great works would become were it not for surface protection!

Rust would weaken bridges to the breaking point under their colossal loads. Every engineer recognizes this and every bridge is painstakingly protected, although a coat of paint is not more than one four-hundredth part of an inch in thickness.

Apply this same vital principle to your own property. The same kind of rust that can eat away bridges can and will eat away the metal trim on your buildings—your metal roof—your metal barn—your windmill—your metal garage—your farm machinery.

The same moisture that means rust just as surely means rot to your wooden house and other buildings—to wagons—silos—to everything of wood your eyes rest on as you look around your property.

And what rust and rot will do in some directions, wear will do in others—to floors and furniture for example.

Surface protection—paint and varnish—is the answer. Keep the elements and wear working on a renewable protective coating instead of on the unrenewable surface itself. Save the surface and you save all.

THIS ANNOUNCEMENT is issued by the Canadian Save the Surface Campaign Committee, for the purpose of educating the public in the Preservative and Protective value of Paint, Varnish and Allied Products for the Conservation of Property, and has received the approval of the Canadian Trade Commission in the following words:

"The realization of the above objects will lead to employment during the Reconstruction Period and bears our entire approval.

THE CANADIAN TRADE COMMISSION

Harry M. ...
Commissioner



into her future, dreaming still of happiness, quite plainly sure of it, in fact! With a curious dismayed relief Roger would scowl at this daughter of his—a radiant enigma in his quiet sober house.

But Edith was not at all perplexed. When she learned from Deborah that there was soon to be a divorce, she came at once to her father. Her face was like a thundercloud.

"A nice example for my children!" she indignantly exclaimed.

"I'm sorry, my dear. But what can I do?"

"You can make her go back to her husband, can't you?"

"No, I can't," he flatly replied.

"Then I'd better try it myself!"

"You'll do no such thing!" he retorted. "I've gone clear to the bottom of this—and I say you're to leave her alone!"

"Very well," she answered. And she did leave her sister alone, so severely that Laura soon avoided being home for lunch or dinner. She had taken the room which George had occupied ever since John had been turned out, and there she breakfasted late in bed, until Edith put a stop to it. They barely spoke to each other now. Laura still smiled defiance.

Days passed. Christmas came at last, and despite Edith's glum resolution to make it a happy time for the children, the happiness soon petered out. After the tree in the morning, the day hung heavy on the house. Roger buried himself in his study. Laura had motored off into the country with a gay party of her friends. Or was this just a ruse, he wondered, and was she spending the day with her lover? Well, what if she was? Could he lock her in?

About twilight he thought he heard her return, and later from his bedroom he heard her voice and Edith's. Both voices sounded angry, but he would not interfere.

At the Christmas dinner that evening Laura did not put in an appearance, but Edith sat stiff and silent there; and despite the obvious efforts which Deborah and Allan made to be genial with the children, the very air in the room was charged with the feeling of trouble close ahead. Again Roger retreated into his den, and presently Laura came to him.

"Good-night—I'm going out," she said, and she pressed her cheek lightly to his own. "What a dear you've been to me, dad?" she murmured. And then she was gone.

A few minutes later Edith came in. She held a small note in her hand, which Roger saw was addressed to himself.

"Well, father, I learned this afternoon what you've been keeping from me," she said. Roger gave her a steady look.

"You did, eh—Laura told you?"

"Yes, she did!" his daughter exclaimed.

"And I can't help wondering, father—"

"Why did she tell you? Have you been at her again to-day?"

"Again? Not at all," she answered.

"I've done as you asked me to, let her alone. But to-day—mother's day—I got thinking of her."

"Leave your mother out of it, please. What did you say to Laura?"

"I tried to make her go back, of course—"

"And she told you—"

"He wouldn't have her! And then in a perfect tantrum she went on to tell me why!" Edith's eyes were cold with disgust. "And I'm wondering why you let her stay here—in the same house with my children!"

Roger reached out his hand.

"Give me that note," he commanded. He read it quickly and handed it back. The note was from Laura, a hasty good-bye.

"Edith will explain," she wrote, "and you will see I cannot stay any longer. It is simply too impossible. I am going to the man I love—and in a few days we shall sail for Naples. I know you will not interfere. It will make the divorce even simpler and everything easier all round. Please don't worry about me. We shall soon be married over there. You have been so dear and sensible and I do so love you for it." Then came her name scrawled hastily. And at the bottom of the page: "I have paid every bill I can think of."

Edith read it in silence, her color slowly mounting.

"All right," said her father, "your children are safe."

She gave him a quick angry look, burst into tears and ran out of the room.

Roger sat without moving, his heavy face impassive. And so he remained for

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Doesn't hurt at all and costs only a few cents



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Try Freezone! Your druggist sells a tiny bottle for a few cents, sufficient to rid your feet of every hard corn, soft corn, or corn between the toes, and caluses, without one particle of pain, soreness or irritation. Freezone is the discovery of a noted Cincinnati genius.

Irritated Itching Skins Soothed With Cuticura



These super-creamy emollients usually stop itching, clear away pimples, redness and roughness, remove dandruff and scalp irritation and heal red, rough and sore hands. If used for every-day toilet purposes they do much to prevent such distressing troubles. Nothing better, surer or more economical at any price.

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A Serious Fence Shortage Confronts The Canadian Farmer

THE unfortunate combination of the Steel Strike last Fall and the prevailing acute material shortage, is the basis for a serious Wire Fence shortage.

Although Wire Fence may still be had, the available supply is limited. Notwithstanding contrary reports we know this fact to be general throughout the Wire Fence industry. We are publishing it because we think it fair to do so.

But in the face of these difficulties we have secured a fair stock of Fencing and Barb Wire. But it's FIRST COME FIRST SERVED. Orders placed NOW will be shipped in the order of their receipt. We sincerely suggest that you get your order in EARLY.

The integrity of this Company—makers of good and NON-MISREPRESENTED fence—is a guarantee of the assertion that fencing conditions, due to an increased demand and a curtailed supply, are abnormal. When we ask you to order now we do so in your behalf.

Write for freight paid prices and illustrated folder.

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A
Dainty Solid
Chocolate

Refuse Imitations
of this Delicious
Confection

C.A.

a long time. Well, *Laure* was gone—no mistake about that—and this time she was gone for good. She was going to live in Rome. Try to stop her? No. What good would it do? Wings of the Eagles, Rome reborn. That was it, she had hit it, struck the keynote of this new age. Rome reborn, all clean, old-fashioned Christian living swept away by millions of men at each others' throats like so many wolves. And at last quite openly to himself Roger admitted that he felt old. Old and beaten, out of date. Moments passed, and hours—he took little note of time. Nor did he see on the mantle the dark visage of "The Thinker" there, resting on the huge clinched fist and brooding down upon him. Lower, imperceptibly, he sank into his leather chair.

Quiet had returned to his house.
(To be continued.)

The Ingle Nook

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

Worth Thinking Over.

"The food-profiteers are amateurs beside those responsible for the price of clothing."—*Financial American*.

"Smokers are much more liable than non-smokers to cancer of the lips and tongue."—*Medical Correspondent of the London Observer*.

"The experience of a stressful past has drawn John Bull and Uncle Sam together. They face the future with arms linked."—*The Globe*.

Wedding Queries.

For "Cordelia," Bruce Co., Ont.
It is quite correct to wear flowers with a suit when quietly married at a parsonage, but the bouquet should not be too large.
Since there is to be no bridesmaid the bride will have to remove her glove herself, but that will not be much trouble if she gets a pair rather on the loose side and powders the inside well with talcum.
A menu for the wedding breakfast at the early hour you mention might be:
(1) Half a grapefruit or large orange cut about neatly to loosen the "meat," sprinkled with sugar and decorated with a maraschino cherry in the middle.
(2) Broiled chicken, or chicken pâté, or cold sliced fowl of any kind, with potato chips and any other vegetable liked.
(3) A green salad with salted wafers or small biscuits and cream cheese.
(4) A water-ice, or ice-cream with bride's cake. Olives, small pickles and salted nuts may be on the table. Serve coffee, tea, or both.

About Cyclamens.

Dear Junia.—Will you tell me how to treat my seedling cyclamen plants, the bulbs of which are now about the size of a small pea? In re-potting them should the bulbs be placed on the surface of the ground or should they be covered with soil? Any other information about growing these plants will be gratefully received.

Can you or one of your readers give me the words of the poem "The Girl I Left Behind Me." I have a gramophone record of the song, but cannot make out the words.

Quebec. C. W.

Probably Prof. Bailey of Cornell University is the greatest American Authority on flowers. Here is what he says about the cyclamen in his *Cyclopedia of Horticulture*: "It is preferable at all times to begin the culture of the cyclamen with seeds sown in the early winter months. Grow on without any check for the following year. They should bloom freely about 15 months after planting. Old tubers such as are offered in the fall with other florists' bulbs rarely give any satisfaction as compared with a packet of seeds. It is not the nature of the plant to have all its roots dried off, as if it were a hyacinth or a tulip. Our summers are rather too warm to suit the cyclamen perfectly, and it will be found that the most growth is

SAVO

Messrs. S. to The King known Infants Book entitled gives a great on the Infants.

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The book Teething, L ments, and Exercise and important f also contain baby's weight children, and ishing dishes useful mother find a place intended to advice, when will often anxiety, and to be pursued

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SAVORY & MOORE'S BOOK

Messrs. Savory & Moore, Chemists to The King, and makers of the well-known Infants' Food, issue a little Book entitled "The Baby," which gives a great deal of useful information on the Care and Management of Infants.

A USEFUL GUIDE

The book contains hints on Feeding, Teething, Development, Infant Ailments, and such matters as Sleep, Exercise and Fresh Air, which are so important for baby's well-being. It also contains a chart for recording baby's weight, a dietary for older children, and recipes for simple, nourishing dishes. It forms, in fact, a useful mother's guide, which should find a place in every home. It is not intended to take the place of medical advice, when such is needed, but it will often serve to allay needless anxiety, and indicate the right course to be pursued.

FREE TO MOTHERS

Those who are genuinely interested in the subject may obtain a Free copy of the Book by sending name and address on a postcard to Savory & Moore, P.O. Box 1601, Montreal.



Advertisements will be inserted under this heading, such as Farm Properties, Help and Situations Wanted and Pet Stock.
TERMS—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. No advertisement inserted for less than 60 cents.

BLACK, WHITE AND TAN TRI-COLORED collie pups: handsome, intelligent heelers; males, \$10; females \$7. Delivered in Canada. N.E. Bawtinheimer, Shelden, Ont.

FOR SALE—BELGIAN HARES, HIMALAY-ANS Rabbits, White Angora Rabbits, English Spotted Rabbits, Black Siberians. Robert W. Nicholson, Strathroy, Ontario.

WANTED—MARRIED MAN CAPABLE OF doing all kinds of farm work and of looking after pure-bred Shorthorn cattle and Yorkshire hogs if necessary. State experience and wages expected. Every convenience on farm. Apply Box 98, Farmer's Advocate, London, Ont.

WANTED—COMPETENT DAIRY BARN hand. Must be married man wanting all-year-round position. Wages seventy-five dollars month, free house, with bathroom and furnace; right in town; also fuel, milk and garden plot. State age and experience. Apply Box 23, Farmer's Advocate, London, Ont.

WANT TO HEAR FROM PARTY HAVING farm for sale. Give particulars and lowest price. John J. Black, Advocate St., Chippewa Falls, Wis.

\$3,870.00—56 ACRES; 45 ACRES BEST GAR- DEN soil; balance clay loam; House; Barn; Pig House; Chicken-house; Implement Shed; Orchard; Gravel Pit; on a Good Gravel Road; 2 Miles from 2 Stations. A. D. Uria, 897 Main St., East, Hamilton, Ont.

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.

EDITOR "THE FARMER'S ADVOCATE":
I wish to express my appreciation of "The Farmer's Advocate," which is all that its name implies.
York Co., N. B. WM. B. GILMAN.

made in the early autumn. It is best to give them a little shade in the hot months, such as the shade of trees, at midday. It will be found that the cyclamen seeds require a long time in which to germinate—often 2 months. This is due to the fact that the seed produces a bulb or corm before leaf growth is visible. As soon as 2 leaves are well developed, place the plants around the edge of 4 or 5-inch pots until everyone is large enough for a 3-inch pot. The roots are produced sparingly in the initial stages, and too much pot room would be fatal at the start. By the middle of summer another shift may be given, and in September all will be ready for the pots in which they are to flower, 5 or 6-inch pots, according to the vigor of the plants. It will always be found, however, that there will be a certain percentage that will not grow. Cyclamens should be removed to the house about the end of September, or before any danger of frost. In the house they should always have the lightest bench. It is impossible to grow them in a warm shady home. About 50° at night is the ideal temperature when in flower. The soil best suited to them is a fresh, tufty loam, with a fourth or fifth of well-rotted horse manure, to which add some clean sand if the soil is heavy. At all times the pots should be well drained. For green fly vaporize with some of the nicotine extracts.

Evidently your cyclamen seeded itself. Leave the tops of the small corns uncovered, and proceed as given above.

If any reader will forward to me (Junia) the words of the song asked for, in a stamped blank envelope ready for forwarding, I shall be pleased to write C. W.'s address upon it and mail it to her.

Dodging the Moth.

BY ELIZABETH PRICE.

A young friend came to me recently in much consternation because she had found a moth-miller in the cupboard where her best garments were hung. From that beginning our conversation led on to generalities, and it may be that other young housekeepers are interested in the same topic.

There are two ways of eluding the pesky moth—two ways which seem diametrically opposed, yet either may be efficacious. One is to put your woollens away, the other is not to do so.

Moths thrive in the dark and die in the light. Even if you pack your furs and blankets in tar bags, you must be quite sure that no moth eggs go in with them, else disastrous results are sure to follow. For, once the eggs have been deposited in the nap of a woollen article, or a moth-miller packed away in its folds, tar bags and cedar chests are alike useless.

If you have a roomy closet to spare, your garments may be safe simply hanging quarters, pigweed, young curly dock, young mustard shoots, purslane and young horseradish leaves. Greens that may be grown in the garden—Swiss chard, spinach, Chinese cabbage (sow in July), and lettuce. Lettuce, water-cress, garden-cress, green onions, celery, blanched endive and dandelion are raw foods that should be used every day if they can be procured. Served with salad-dressing, with or without the addition of other salad materials (e.g. tomato jelly, green peas, chopped beets, asparagus, potato, etc.) they are very delicious, and they are rich in vitamins, as you should remember by this time.

Berries for the Birds.

ENCOURAGE the birds to come about your place by planting shrubs whose berries they love to eat. The more birds the fewer insects; the fewer insects the better crops and the less the necessity for spraying. Birds love wild cherries of all sorts, and Mister Robin is not so likely to bother the "tame" cherry trees if wild ones are within easy reach. Shrubs from the nursery that are recommended as bird-attractions are: Berberry Thunbergii and Berberry vulgaris; Siberian dogwood; flowering red currant, high bush cranberry, Tartarian honeysuckle, Russian mulberry, mountain ash, snowberry, strawberry or spindle tree, Jun-berry and climbing bitter-sweet (yince). It is just possible that you may find the Jun-berry and bitter-sweet growing wild in your woods, but in many parts of Ontario those who wish to have them must order from a nursery.



PURINA COW CHOW

KEEPS YOUR COWS IN THE HEAVY MILKING CLASS

AN increase of from one to three pounds more milk per day at an increased cost of about one cent per cow per day is the result that may be expected from the use of Purina Cow Chow Feed when fed according to our directions—the perfect dairy ration—"The feed without a filler."

Purina Cow Chow not only guarantees you a record milk supply, but also keeps Cows in better condition—a 24% protein ration (20% vegetable protein)—all a cow can assimilate with no waste energy, and tip-top physical condition.

Purina Cow Chow is certainly a feed of quality value—a pure ration made from

- Gluten Feed from Corn
- Molasses
- Ground Alfalfa
- Linseed Oil Meal—Old Process
- Cottonseed Meal
- One Per Cent Salt

Purina Cow Chow balances so well with Hay and Silage, or Hay alone—that it increases the milk flow and reduces the overflow—in checkerboard bags only

"Make a Test and be Convinced"

The Chisholm Milling Co. Limited, Toronto

Foot of Jarvis Street



Save Against the "Rainy Day"

The thought of being dependent some day, when illness or old age takes away one's ability to earn, is rightly distasteful to the Canadian mind.

The simplest, surest way to offset this is to open a Savings Account and add something to it every week. Come in, and we will gladly explain.

THE BANK OF NOVA SCOTIA

Paid-up Capital \$ 9,700,000
Reserve Fund - 18,000,000
Resources - 220,000,000

We invite your account. Special facilities for Banking by Mail 310 Branches. General Office Toronto.

Protection and Profit

When money is in a Savings Account in The Merchants Bank, it is absolutely safe from loss, as far as you are concerned. All the time it is here, it is earning interest—so that the bank actually pays you to let it take care of your money. Don't carry unneeded sums on your person or hide them at home. Protect them against loss, theft and fire by opening a savings account.

THE MERCHANTS BANK

Head Office: Montreal, OF CANADA. Established 1864.
With its 138 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.

Boys and Girls—Do you want some money? You can earn it by acting as agents for THE FARMER'S ADVOCATE AND HOME MAGAZINE. Turn your spare time into money. Address: THE WILLIAM WELD CO., LIMITED, LONDON, ONTARIO

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POULTRY AND EGGS

A BEAUTIFUL FREE MATING LIST READY of trap-nested White Leghorns (wonderful producers). Baby chicks, eggs for hatching, choice pedigreed cocks, cockerels for sale. Drop a card. Bradley Linscott, Seven Acres, Brantford.

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

BRED-TO-LAY SINGLE-COMB WHITE LEGHORN eggs for hatching; fifteen \$1.75, thirty \$3, nine dozen \$8. Carefully packed. Addison H. Baird, R. 1, New Hamburg, 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.

BABY CHICKS—BRED-TO-LAY BARRED ROCKS, 25c each; S. C. White Leghorns, 20c each; hatching eggs, \$2 to \$4.75 per 15. Circular. G. W. Grieve, Parkhill, Ont.

BEAUTIFUL WHITE ROCKS, BRED-TO-LAY, large brown eggs; two dollars fifteen eggs. S. Hastings, Schomberg.

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.

BRED-TO-LAY BARRED PLYMOUTH ROCKS. Eggs \$2.00 per fifteen. M. T. Hagan, Port Dover, Ont.

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.

FOREMAN'S FAMOUS BARRED ROCKS— Winners Missouri Egg-Laying Contest. Leading winter and yearly records. Pedigrees of pen from 200-310 eggs. Eggs \$3 per setting. Mrs. Leonard Foreman, Collingwood, 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.

IF YOU WANT HATCHING EGGS FROM A heavy-laying strain of Barred Rocks, write C. L. Bishop, Oxford Mills, Ont.

O. A. C. BRED-TO-LAY SINGLE-COMB Rhode Island Reds—Eggs for hatching, two dollars for fifteen. Henry Hedges, Harrow, Ont.

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

ROSE-COMB RHODE ISLAND REDS, MARTIN'S White Wyandottes, Barron's White Leghorns, heavy winter layers; fifteen eggs dollar-fifty. Special pens \$3 setting. Wesley Shanklin, Ilderton, Ont.

S. C. ANCONAS—EGGS FOR HATCHING \$1.50 per 15, or \$8 per hundred. John A. Polard, Dashwood, R. 2, Ont.

SILVER LACED WYANDOTTE EGGS FOR hatching, from prize-winning stock. \$3.00 a setting. Frank McDermott, Tavistock, Ontario.

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. F. 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, lay speciality. Eggs \$3 per fifteen, \$5 per thirty. Frank Morrison, Jordan, Ont.

WHITE WYANDOTTES—EGGS FOR HATCHING 15c from Martin bred-to-lay strain; \$2.50 per dozen. A. C. Phlips, R. 4, Caledonia, Ont.

WHITE WYANDOTTE GUELPH CHAMPION HENS. Hatching eggs, \$3 per 15; \$4 per 30. \$4.75, 35 cents each. Good type. Heavy layers. R. F. French, Newmarket.

WHITE PLYMOUTH ROCK EGGS—PURE bred strain, \$2.00 per 15; \$10 per 100. M. T. Hagan, Port Dover, Ont.

Fertilizing Flue-Cured or Bright Tobacco.

(Experimental Farms Note.)

On account of the scarcity and cost of labor, the greatly increased cost of farming implements, the enhanced value of bright tobacco lands, and on account of the market price of bright or flue-cured tobacco, there is no more important subject right now than the rational and intelligent use of commercial fertilizers. Practically every acre devoted to bright tobacco is fertilized annually. The quality, color and yield are very dependent upon the proper kind and amount of fertilizer. Many bright tobacco growers are asking the following questions:

"Am I using a fertilizer that suits my land and crops, or am I making the land suit the fertilizer? Am I using the most profitable mixture for maximum yield and good color? What profit am I getting on the fertilizers used? During the past year the following growers sought answers to these questions on their own farms through co-operative fertilizer experiments; Wm. Settingington, and Morgan Hatch, Leamington; Cameron Wigle and Roy Wigle, Ruthven; Fred Wright and W. S. Corcoran, Oxley.

These growers know that tobacco requires nitrogen phosphoric acid, and potash for its growth. They also know that for tobacco the best source of nitrogen is sulphate of ammonia, that the best source of phosphoric acid is acid phosphate, and that the best source of potash is sulphate of potash. Each grower had ten plots staked off on his farm, nine of which were fertilized, and one of which received no fertilizer, and was used to check the yields and determine the increase due to fertilizers. The nine plots were divided into three sets of three plots each. One set of three were sulphate of ammonia plots. On these the applications of acid phosphate and potash were kept the same, and the sulphate of ammonia varied to 100, 150 and 200 pounds per acre. The second set of three plots were the acid phosphate plots. On these the applications of sulphate of ammonia and potash were kept the same and the acid phosphate varied to 200, 400 and 600 pounds per acre. The third set of three plots were the sulphate of potash plots. On these the applications of sulphate of ammonia and acid phosphate were kept the same and the sulphate of potash varied to 100, 200 and 300 pounds per acre.

One of Wm. Settingington's plots yielded at the rate of 1,840 pounds of flue-cured tobacco per acre, and sold at 70 cents per pound. This is very likely the highest yield of this type of tobacco ever recorded on the North American continent. Increase in yield or value due to fertilizers varied on Mr. Settingington's plots from two to five and one-half dollars for each dollar spent for fertilizer after paying the cost of the fertilizer. Increase in yield or value due to the fertilizer used on Roy Wigle's plots varied from three to six dollars for each dollar spent for fertilizer after paying the cost of the fertilizer, and on Fred Wright's plots from three to ten dollars for each dollar spent for fertilizer after paying the cost of the fertilizer.

Judging from the results obtained by the growers on these farms the following applications will give good profits, good color and maximum yields of Warne and Hickory Pryor tobacco.

Rate recommended per acre: Sulphate of ammonia—125 to 150 lbs. where no manure is used, or 50 to 100 lbs. where manure is used. Acid phosphate—500 to 600 pounds per acre whether manure is used or not. Sulphate of potash—150 to 200 lbs. where no manure is used, or 100 to 150 lbs. where manure is used.

The bright tobacco soils of Essex need all three of the fertilizers recommended. Potash is badly needed, and when used with ample supplies of sulphate of ammonia and acid phosphate the profits from its use are very good.

The rate recommended per acre where no manure is used would be equal to 1,000 pounds per acre of a fertilizer having the formula 3 8 9, and where manure is used would be approximately equal to 1,000 pounds per acre of a fertilizer having the formula 2 8 0. Manure should be used cautiously, and in light applications if good yields are to be secured.

As a result of yields during the past year, and the co-operative fertilizer experiments on bright tobacco we feel justified in asserting that under proper

CLEARING AUCTION SALE

REGISTERED

27 Shorthorns 27

Tuesday, April 20th, 1920, at 2 p.m.

Owing to ill-health and having leased my farm, I am offering for sale my herd of Shorthorns, headed by a great breeding bull, "Brownale Perfection" 109768.

There will also be a draft of twelve head from the herd of Renton Dunlop, and these cows are all great milkers and have been hand-milked.

These cattle are being sold in good breeding condition, and all females of breeding age will be bred and guaranteed breeders.

At the same time will be sold an imported Clydesdale stallion, Royal Ardlethem 6902; a high-class Hackney stallion, Warwick 615, by Warwick Model, Imp.

Both of these horses are good individuals and great producers.

Farm is situated at Mt. Pleasant, on The Lake Erie & Northern Railway, and can be reached by electric cars from Brantford, Galt or Simcoe.

A catalogue will be mailed on request.

Morgan E. Harris
Mohawk P.O.

Renton Dunlop
Mohawk P.O.

BISSELL SILOS



The Silo increases fodder value 40%, and saves one-third of other feeds. With a Silo you can give your cattle green feed in winter, and when a drought comes in summer. Silage stimulates and aids digestion, and assimilation of food, increasing flesh and fat.

Our Silos are made of Pine or Spruce Staves preserved in creosote oil; steel splines; steel hoops, large at bottom; doors on two-step plan, airtight; roof of "Barrett" roofing, cut into right size sections. Consult us freely as to particulars. All sizes; prices on request. Write for folders.

T. E. BISSELL CO. LTD.,
10 Mill Street, ELORA, ONT.

SILOS THAT SATISFY

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, 200 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.

I will pay you 28 cents a pound for LIVE HENS

any kind, any size, any age. No deduction for shrinkage. I pay express from any station in Ontario. Ship collect on delivery for full amount. Use crates or boxes or I will send crates free.

ALBERT LEWIS
666 Dundas West, TORONTO

conditions it will be of financial benefit to the farmers of the bright tobacco district of Canada to use fertilizers much more liberally on their tobacco than they have been doing. It is, of course, necessary to discriminate in order to make high fertilizing pay. A good soil should be selected, good cultivation and handling given, and no low-grade fertilizers used. It is more economical to buy the materials and mix them at home, if this is not desirable the next cheapest and most economical thing to do is to purchase high-grade high potash, ready-mixed fertilizers. —H. A. Freeman, Tobacco Inspector.

Presentation to the Nova Scotia Agricultural College.

The Canadian Ayrshire Breeders' Association have presented the Nova Scotia Agricultural College with a very handsome shield bearing the following inscription: "Sweepstakes Prize for the Highest Score over all Breeds in the Dairy Test at the Maritime Winter Fair, Amherst, N.S., 1919. Won by Gardrum White Floss 45352, for 198.1 lbs. milk, 8.74 lbs. fat, Score 270.97 points, owned by the Nova Scotia Agricultural College, Truro, N.S."

In explanation of this, the Agricultural College made a few entries at the Maritime Winter Fair in December last with the understanding that the stock would be placed as if it were privately owned stock, but that the prize money would not be accepted by the College. Among the animals so shown was a four-year-old Ayrshire heifer, Gardrum White Floss, bred by and the property of the Nova Scotia Agricultural College. Not only has this heifer proven a great producer, but she is a splendid type of Ayrshire. Since the beginning of the lactation period, which commenced about ten days before the Maritime Winter Fair was held, this heifer, milked twice a day except at the time of the Fair, has given up to March 1, an average of 54 lbs. of milk per day, testing 4.4 per cent. fat.

Ayrshire Sale at Springfield.

The second National Ayrshire sale that was billed for Chicago has been changed to Springfield, Mass., U. S. A., where a great Ayrshire event will be staged on June 10.



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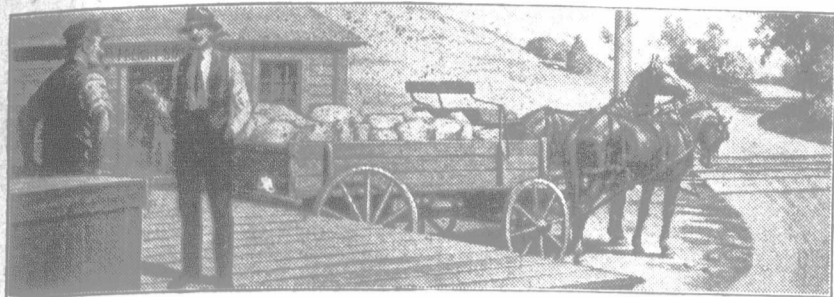
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HAT SATISFY



The longest way 'round is the shortest way to the station—

OVERHEARD at a village rail-road station:
"My farm is just a mile from the station, but I drive two miles to get here and two back again."
"You don't say so!"
"Yes; sounds foolish doesn't it? But it's true."
"Now, I'll tell you why."
"The short way is a mile of dirt road. Practically all the year round it's a regular mess—dust and bumps and ruts in dry weather."
"And in the Spring. My! No bottom at all! I could hardly drive an empty wagon through it without getting stuck or pulling my team all to pieces."
"So I go 'round the long way because it's a Tarvia road. Two miles of good firm road all the time, no matter what the weather is."
If you are interested in better roads and lower taxes, write for illustrated booklet and further information.

"I can make it in fifteen minutes easy. The team just trots along with the load."
"I figure that these two miles of Tarvia road are worth hundreds of dollars to me every year."
That's why many counties have gone solid for Tarvia for all their important roads. A Tarvia road costs less than any other kind of durable road and very little for up-keep.
Such roads mean less wear on teams, and with an auto you can go whizzing where you like in any kind of weather, with less gasoline consumption per mile, and much less wear and tear on car and tires.
Any way you look at it, the longest way 'round, if it is a Tarvia way, it not only the shortest, but the cheapest way to the station.

Tarvia
Preserves Roads—Prevents Dust.

The **Barrett** Company Montreal Toronto
St. John, N. B. Halifax, N. S. Winnipeg Vancouver
Sydney, N. S.

Lowe's

Before you paint this spring— send for this book

Costs so little as 10 cents in stamps. May save you gallons and gallons of paint, not to mention days of time. Saving paint and painting time, at the present price of both, means something.
Don't think this book is just another one of those bragging advertisements that tells with a loud noise that the paint we sell, is "the only paint on earth worth buying." It isn't that kind of a book at all.

It is not even written by a maker of paint, but by a one time farmer, who has used lots of inside and outside paint, and is now living in town and still using paint. You'll like the way he tells things, because you will at once know he's telling exactly what's so.
The book's name is the Happy Happening, a paint tale of inside and out. Send 10 cents in stamps for it.

LOWE BROTHERS, LIMITED
263 Sorauren Ave. Toronto, Ontario
Agents: J. A. BROWNLEE & SON
385 Talbot St. and 121 Dundas St., London, Ont.

Paints

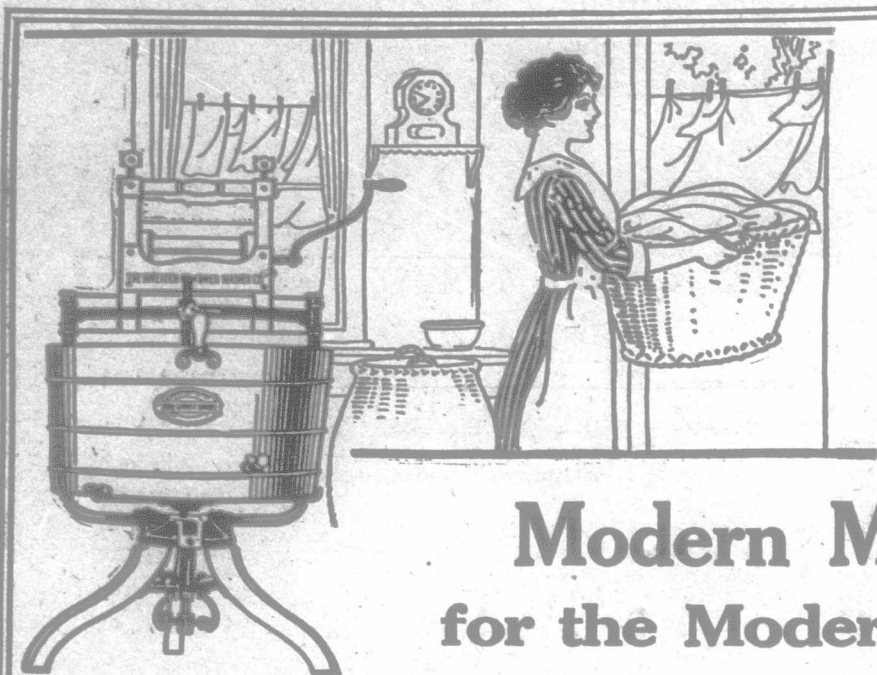
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Where Does the Money Go?

BY RICHARD IRVING.
Money has the faculty of disappearing. The pocket of the average individual bears mute testimony to this fact. The earning capacity and energy of the mass of people is a guarantee that it existed. They toil, and generally speaking, toil hard. Have they been able to retain a fair share of the rewards of their labor? Many people repeatedly assert, No! Well, where did the money go? Our whole financial and economic system must necessarily be called on to answer. I believe this opens a great field for popular investigation and analysis. It is beyond my feeble pen to unravel in brief space. Yet we think we know where and how some of the leaks occur.
Some time ago a statement was accredited to John D. Rockefeller, the American oil king. He is reported to have said that if one were to draw six per cent. interest on his money, no matter how little he had to begin with, and if he could live long enough, he would gather to himself all the money in existence in the world. Meaning, of course, that six per cent. was above the average earning capacity of money. While we have no means of verifying John D.'s statement, except by a mass of fabulous calculations and statistics beyond our ability, we more than suspect that there is a great deal of truth contained therein. What, then, of the individuals who demand a profit of ten, twenty and even a hundred per cent. on their investment of time and money—and, perhaps, water? If the individual

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drawing six per cent. is sapping the accumulations and vitality of great masses of people, how much more those drawing their larger sum by a more highly developed system of pressure and control?
Concentration of wealth is evidently the answer to our original question. Almost everything points to it. There are plenty of available illustrations in any of the large centres of population. Go to New York, for example, as this city probably shows concentration in its most acute forms on this continent. There, we are told, you will find buildings whose total yearly rent roll will go as high as a million and a quarter dollars, and aristocratic apartments in exclusive apartment blocks which rent for twenty-five thousand a year. Why these abnormal conditions? Chiefly, it is evident, because of excessive ground values caused by concentration of people, in turn caused by concentration of wealth. Find the causes of wealth concentration and you have the solution of the question of excessive rents. High costs follow high rent values. A good deal of social unrest is directly attributable to the high cost of necessities of life and production. The system is to blame. I do not believe human nature is naturally socialistic, as we commonly understand the organization of that name. There is a basic cause driving certain masses of people against their wills. Let economists spend less time gathering statistics to prove how wealthy our country is becoming, and let them help to reverse a system which allows special privileges to some—the basis of all accumulation.
The city draws like a magnet. Retiring farmers, small town merchants, and professional men move to the city. A greater



Modern Methods for the Modern Woman

Thrifty Housewives Approve this Means of Saving Time and Labor

SCIENCE offers you a skilled servant—the "1900" Gravity Washer. With one of these machines in your kitchen, you can face wash day with a smile. For it will make it possible to wash clothes more efficiently than human hands can do. You need a

"1900" GRAVITY WASHER

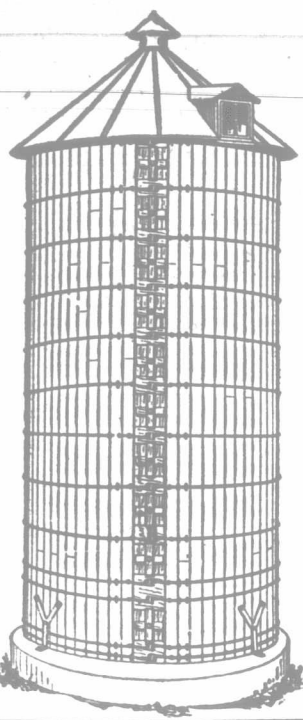
This machine will save you labor, worry, time, clothes and money. There are 5 important points about a Washing Machine

- 1. Does it Wash Clean?**
With a vigorous motion the "Gravity" drives the soapy water clear through the fibres of the clothes until they are thoroughly clean.
- 2. Is it Easily Operated?**
Because gravity plays so large a part in its action, our Washer requires the least labor of any machine on the market. Gravity does all the hard work.
- 3. Does it Wash with Speed?**
The "1900" Gravity Washer takes just six minutes to wash a tub full of very dirty clothes.
- 4. Does it Save Wear and Tear?**
Because the clothes are held still while the water and tub are in motion, there is absolutely no strain on linens, lawns, or laces washed the "Gravity" way. No frayed edges—no broken buttons.
- 5. Is the Tub Well Built?**
The "1900" Gravity tub is made of Virginia White Cedar, which we know, from 20 years' experience, is positively the best wood for making washing machines. It is bound together with heavy galvanized steel wire hoops, which will not break, rust, or fall off. The tub is detachable—an important feature.

If you are interested, let us tell you more about it. There's a book about the "1900" Gravity Washer, which we will send to you if you will ask for it.

We make a full line of washers—machines that operate by Hand, Engine Power, Water Power and Electric Motor. And we have descriptive literature on each of them. So when you write, state which you are particularly interested in—and ask about our Free Trial Offer.

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We are now manufacturing two silos to meet the demands and means of every Canadian farmer. Both are wood silos. Experiments prove that cement and tile silos do not preserve silage perfectly—that nothing but wood will do this.

1. BURLINGTON CABLE BAND SILOS are the strongest-hooped silos on the market. The hoop, instead of being a solid iron rod, is a seven-stranded galvanized cable. This cable is protected by patent No. 168358. We use No. 1 Norway Pine Staves, side and end matched and treated with red preservative. **THE SILO THAT GOES UP WITHOUT TROUBLE.** No scaffold needed. See inside front cover, Christmas number, Farmer's Advocate, London, Ontario.

2. We also make CRAINE THREE WALL SILOS. They are absolutely the best equipment that can be purchased by you today. They are permanent buildings. They preserve silage perfectly, and the cost is moderate.

In the CRAINE THREE WALL SILOS there are three distinct walls. An inner wall of 2"x6" side and end matched staves (same as in Burlington Cable Band Silos). The centre wall is weather and acid-proof felt, similar to Roofing felt. The outer wall is clear B.C. Fir wound spirally from top to bottom of silo, ship-locked and metal protected. No bands required; an absolutely permanent building.

Both of these silos have Continuous Refrigerator Door System and Interchangeable Doors. We want you to know all about them. Let us send you free complete information. Sold direct from Factory to Farm. Write to-day. Fill in the coupon now.

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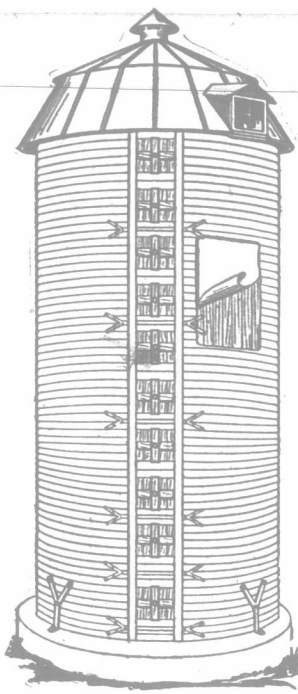
The NICHOLSON LUMBER COMPANY, Ltd., Burlington, Ont.

Send me full information on Burlington Cable Band and Three

Wall Silos

NAME.....

ADDRESS.....



Dear Sirs.—In enclosing you the subscriptions for your Magazine I cannot but express my appreciation of the paper, it should truly be in every home, especially where there is a family of girls and boys. The high standard as taught by Dora Farncomb, and the other writers of the paper cannot fail to have a lasting impression for good upon the young and growing lives.

Again wishing you success with the paper, I remain,

Yours respectfully,
JOHN C. McLEAN,

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or lesser portion of their accumulation of money stays there. Branch banks collect money and forward to head office. Chain stores and line elevators serve the communities and send every possible cent of profit to the man or men comprising headquarters. Railway stocks are held in quantity by men of wealth. They aim at large dividends. And so as far as the country goes the money is all flowing outward. How much flows in? As the farmer usually pays the other man his price, and takes what he can get for his own products, it can be easily seen that the dice can be easily loaded to his disadvantage.

The wealthy men who distribute their accumulated wealth, such as Carnegie did, during their life-time, have never worked out a system that can return the money to the community drawn from. Rural United States and Canada provide a fair share of Carnegie's wealth, but if I mistake not, the major portion of his distributions went to cities and towns in proportion to population. No doubt Carnegie could see how impossible it was to return the money to its original owners. At any rate such benefits as were conferred were more or less indirect, and did not give the maximum of value. Voluntary distribution of wealth during life-time is rare, and a difficult task when attempted.

We are not trying to draw a line between city and country—far from it. Portions of our cities bear witness that they have suffered quite systematically also. The contrast shown between sections of cities is much more marked than between country and city. In spite of this fact, monopolistic selfishness, by shrewd propaganda, has kept the farmer and the middle and lower classes of the city apart, making any movement by either into a strictly class movement, even though it was not intended to be so—the aims of one being more or less identical with the aims of the others. We need co-operation between urban sections and rural people, with the ultimate aim of making money go "round" instead of in one direction, that direction not always being in the best interests of the people at large. The farmer and labor man can quite easily find a common aim and common basis on which to combine their efforts. It will never be more timely than now when politics are going to find them in active participation.

Questions and Answers.

1st—Questions asked by bona-fide subscribers to "The Farmer's Advocate" are answered in this department free.

2nd—Questions should be clearly stated and plainly written on one side of the paper only, and must be accompanied by the full name and address of the writer.

3rd—In veterinary questions, the symptoms especially must be fully and clearly stated, otherwise satisfactory replies cannot be given.

4th—When a reply by mail is required to urgent veterinary or legal enquiries, \$1.00 must be enclosed.

Miscellaneous.

Executorship.

One executor of an estate dies, does his executor take his place in helping administer the estate he was executor of? If not what proceedings are necessary to fill his place?

Ontario.

A. B.

Ans.—He does if the deceased executor was the sole executor, but if there were more than one then the surviving executors or executor would act and the executor of such deceased executor would not.

Liability on Note—Claiming Crops.

A man dies leaving widow and children. A relative holds a note against him for a large sum of money. His mother went as security for same with signature on face of the note.

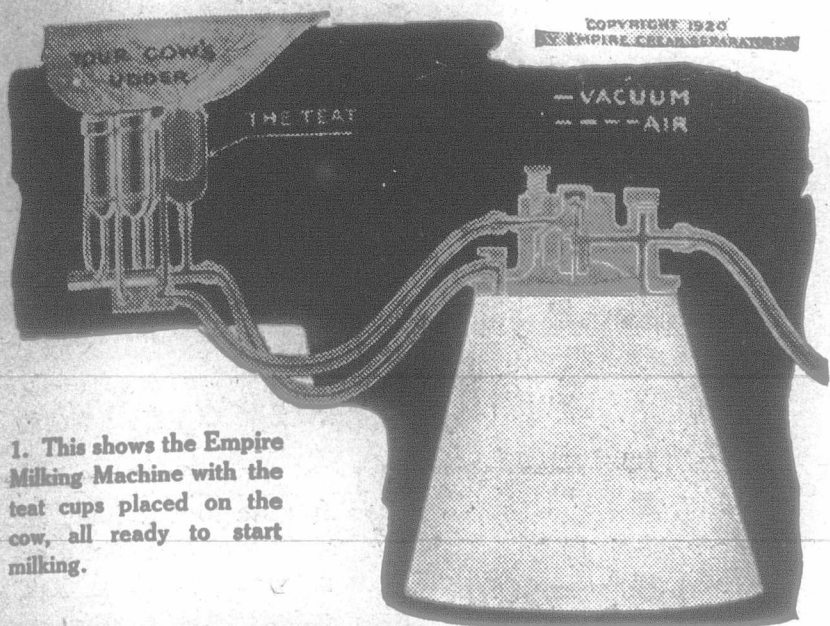
1. Who is held responsible for payment, deceased having the amount in personal property? 2. A and B are brothers, A has lived on B's farm for five years by paying interest on mortgage and taxes, without any written agreement of any kind. Can the widow of A claim fall wheat and hay?

Ontario.

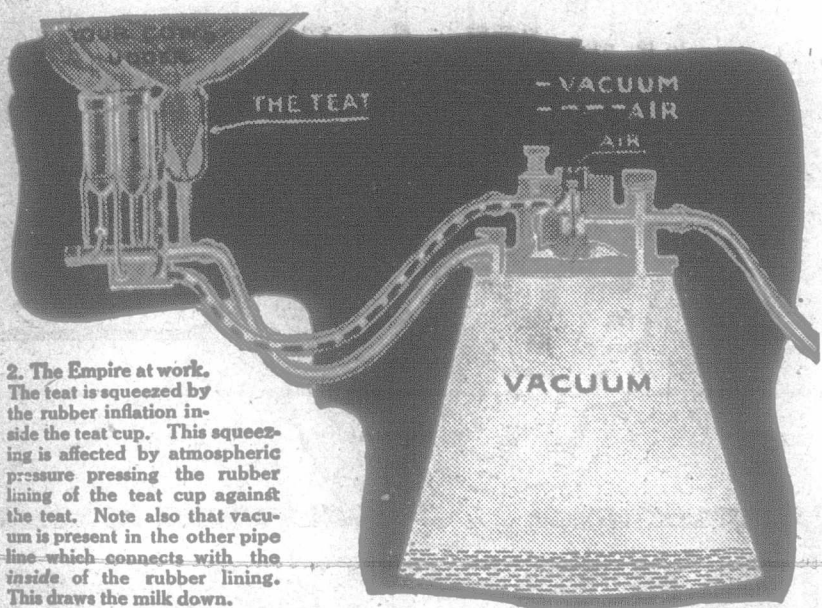
A. S.

Ans.—1. 1. Both mother and the son's estate. As between them the estate is, of course, responsible.

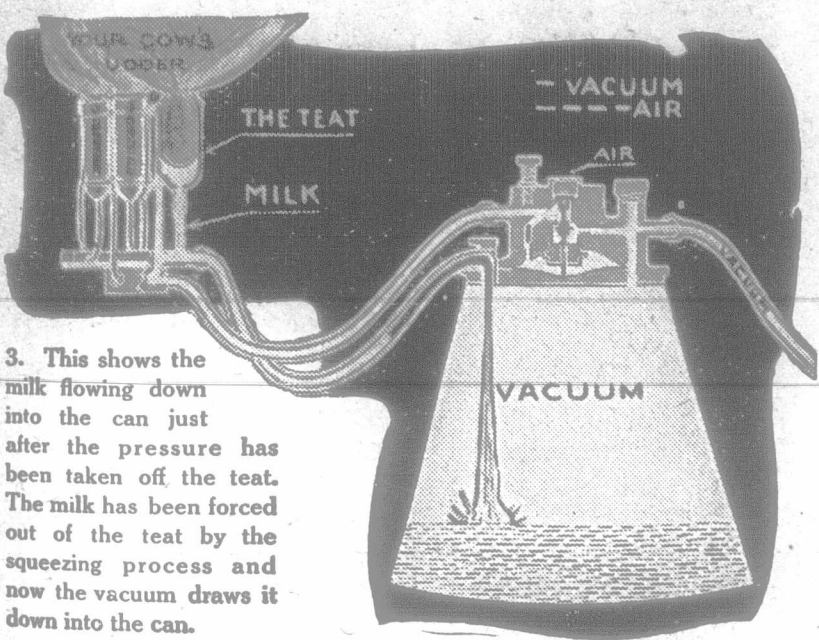
2. We presume that there was an agreement although it was not in writing, and that such oral agreement can be proved; and we would say that A's estate could claim the wheat and hay or an allowance in respect of same.



1. This shows the Empire Milking Machine with the teat cups placed on the cow, all ready to start milking.



2. The Empire at work. The teat is squeezed by the rubber inflation inside the teat cup. This squeezing is affected by atmospheric pressure pressing the rubber lining of the teat cup against the teat. Note also that vacuum is present in the other pipe line which connects with the inside of the rubber lining. This draws the milk down.



3. This shows the milk flowing down into the can just after the pressure has been taken off the teat. The milk has been forced out of the teat by the squeezing process and now the vacuum draws it down into the can.

Why does the action of the Empire teat cup go the calf one better?

The young calf sucks—creates a vacuum which pulls the milk from the teat. So does the Empire Milker.

Then the calf swallows and—here's the important thing—its tongue massages the teat from tip to udder. That pressure of the calf's tongue relieves the teat by sending back into the udder the blood drawn down into the teat during the sucking process. The Empire teat cup inflation does exactly the same thing, by the gentle application of atmospheric pressure—NOT compressed air—between the teat cup shell and the soft, pliable rubber inflation.

BUT—the poor little calf may be very hungry; he may suck too hard. That's one instance where the Empire "goes the calf one better". BECAUSE, the action of the Empire is always uniform and gentle—since the vacuum is controlled by a relief valve. And you can't put a relief valve on a hungry calf. He wants milk, and he's not particular how he gets it.

Now let's talk on hand milking. Even a casual study of the diagrams on the left will prove that it is impossible for hand milking to be as uniform as that of the Empire, no matter how experienced the hand milkers may be. It would be about as impossible as making pins by hand and expecting them to be as uniform as those turned out by the pin-making machine. And note this: The Empire is not only uniform, but it is so simple to operate that it makes everybody an expert milker.

Now take a glance at the pulsator on the top of the Empire pail. Note its extreme simplicity. There are only five moving parts. Note that it has no piston. You can readily appreciate how much such simplicity practically eliminates wear and tear—Empire means life-long satisfaction.

We can't tell you our complete story here. We haven't said a word about the increased profits that follow the installation of an Empire Milking Machine. We haven't touched on the endless time and labor saving. And there's a hundred and one other things you should know about the Empire, BUT THERE'S ONLY ONE WAY YOU CAN GET OUR COMPLETE STORY—and that is by sending for our catalog 13. Why not drop us a letter in the next mail.

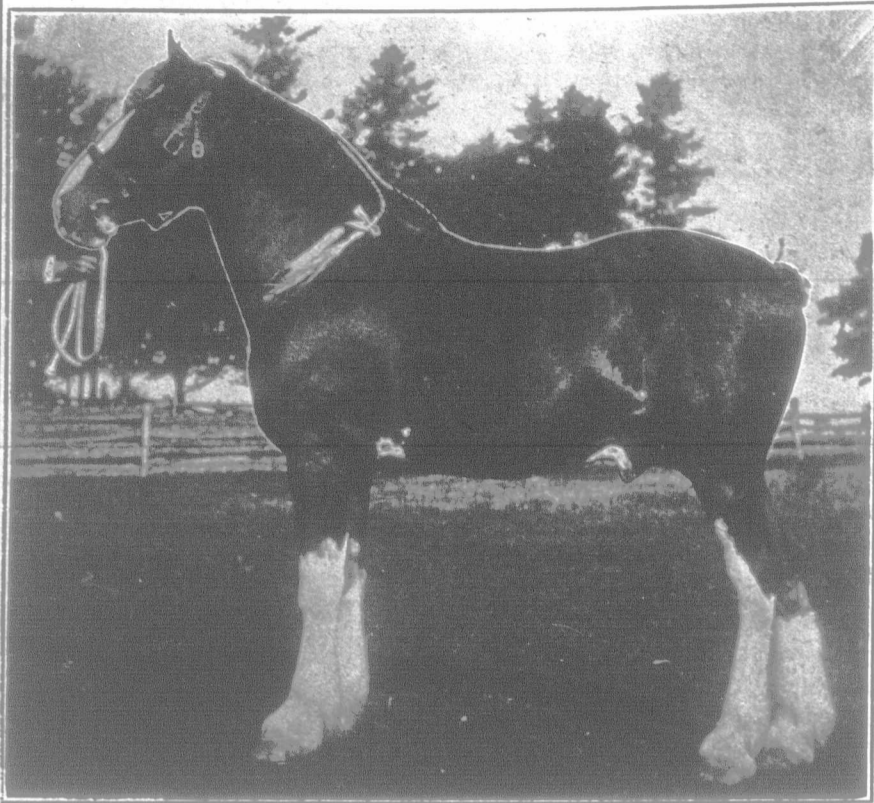
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Dunlevie 18331; reg. in 22nd Vol. Am. Clydesdale Stud Book, No. —21274—. The unbeaten 2-year-old of the open, or imported class of his year, Toronto, Ottawa, etc.

Sire, **Dunnottar (imp.)**. Dam, the famous show and brood mare **Manilla (imp.)**, by **Bonnie Buchlyvie**, and perhaps the best daughters of her famous sire and one of the best mares of the breed in any country, a horse bred for size as well as show yard quality, with plenty of evidence of possessing both in a marked degree. A proven getter.

Dunbar, same age, same sire, out of the prize mare **Seaham Bonnie**, by **Bonnie Buchlyvie**, is a colt of big size, wide wearing feet and outstanding quality; was 1st with his dam in the (imp.) class at Toronto and Ottawa. The dams of both these horses each weighed well over one ton.

Two other Colts for sale, same age, one of them out of an imported daughter of the great **Silver Cup**. If interested write

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HILLSDALE FARM

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Highest prices paid. We will buy any kind of 4 foot wood.
Write at once, stating what you have.

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**Questions and Answers.
Miscellaneous.**

Firewood.

A rented a farm to B. One condition of the lease was that B was to have firewood for his own use. But it was understood he would be living on A's farm. In the meantime B rented another farm from C on which he lives. Having never lived on A's, can B take firewood off A's farm while living on C's place?

Ontario. A. R.
Ans.—We think so.

Heirship.

A man dies without a will leaving a widow and a two-year-old son, a brother, and a sister.

1. In case the baby dies before the estate is settled, can the brother and sister claim anything?

2. Is the widow the baby's sole heir?

3. Is the baby the mother's sole heir?

Ontario. W. M.
Ans.—1. No.

2. Yes.

3. Yes.

Mother and Son.

A farmer lived on the old homestead all his life, 49 years. He, died 33 years ago and I worked the place for my mother. The other boys all went west. My mother went ten years ago and left me the place. I put up a lot of fences, a silo, garage, summer kitchen, cement in the stables, put stanchions in and lots of other repairs; for she used to tell me that she would give me the place. She came home last fall and said she wanted



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the place so I rented it off her for a year. But I never got any papers out for I thought her word was good. So about two weeks ago she said she wanted me to get off this spring. I did the fall plowing, put in fall wheat and rye. I paid \$2.30 a bushel for the seed wheat. Can she put me off this spring after renting me the place. I asked her what she would give me for the repairs and the fall wheat and rye and she said she wouldn't give me anything; to take what belonged to me and get off. Can I claim anything for the repairs? If I can't, could I move the silo take the stanchions and the cistern pump? She told me to take everything that belonged to me. She asked for money when she was away and I sent her a hundred dollars a year.

Ontario. A. S.

Ans.—You do not say whether it was your father or your mother who owned the farm. If your father was the owner, there would be the question of whether he left a will or died intestate and so many other question would have to be considered, respecting which the facts are not stated that upon the whole we feel we cannot safely venture upon answers to your questions, but must recommend you to consult personally a local solicitor.

EDITOR "THE FARMER'S ADVOCATE":

Enclosed please find \$3 for two years' subscription to "The Farmer's Advocate." We enjoy reading "The Farmer's Advocate," there is something in it for every member of the family.

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Go to the Manager of the nearest Roy. Bank branch with your financial difficulties while they are small and he can usually help you.

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A Forward Policy for the United Farmers' Co-operative Company.

The following is a copy of an address given by W. C. Good before the annual meeting of the United Farmers' Co-operative Company some time ago. Mr. Good goes very fully into the subject of co-operation and clearly compares the centralized and decentralized methods:

He who would travel across the ocean to distant parts will, if he be wise, provide himself not only with a stout ship and a good crew, not only with a compass for guidance, and a good store of provisions for the voyage, but also with a chart on which all treacherous reefs and shoals are well marked. So, too, we, who purpose travelling across the stormy ocean of competitive industrialism to the co-operative commonwealth, must have not only a clear vision of the end to be sought, and a ship built to withstand the ocean's storms, not only the compass of service and brotherhood to guide us on the long journey towards the distant haven, but also a knowledge of the rocks and sandbanks on which so many have come to grief in the past. There is an old saying that "Fools rush in where angels fear to tread," and certainly he would be a fool who made no effort to acquaint himself with the experience of others, but jammed ahead regardless of the lessons of the past. History is, as Carlyle has said, "Philosophy teaching by Experience," and he is no statesman who has not garnered precious experience from the past, for use and guidance in the present. I take it, therefore, that it is incumbent on us, who are gathered here to guide this great co-operative enterprise, to be circumspect, to be deliberate, and to try to see our company in proper prospective and in its wider relationship to the co-operative movement as a whole. And this is especially necessary at this critical period in our history, when events are moving with unusual rapidity.

I begin then, by stating that the principle of competition is incompatible with that of co-operation, and that its introduction is necessarily subversive of true co-operation. Take an example from recent history. The Co-operative Union maintains an Organization Department for the purpose of assisting local organizers by lectures, conference, the securing of charters, etc., and in various other ways rendering assistance in an advisory capacity. A few weeks ago this Department received a request from a number of working men living in one of the suburbs of Hamilton for advice and assistance in the formation of a local co-operative society. On enquiry it became evident that the Industrial Co-operative Society of Hamilton was doing business in the territory in which it was proposed to organize the new society. And under these circumstances the organization of a new society in territory already served by one in existence would have been unco-operative, and could result in nothing but harm to both societies and to the movement at large. The Organization Department therefore replied that the Union could not assist nor recognize a co-operative society in territory which was already served by an existing one for a similar purpose, without the latter's consent. The suggestion was tendered that they should consult the Management Committee of the existing society, and if they could command sufficient membership, capital and trade, in the suburb which, with the trade the present society is doing, would insure a branch store, the same could be established.

Take another example. The Kingston Co-operative Society, Limited, commenced business on 1st May, 1919. It was organized under the guidance of, and is affiliated with, the Co-operative Union of Canada. A few weeks ago the Finance Committee of the Kingston Society, in making a report to the Union, added the following note:

"By the way, there is a farmers' co-operative society started here in this town lately but we know nothing about them. We don't know whether they are genuine or not. At any rate, they show no desire to co-operate with us. In fact they seem more in the nature of a rival with us. Yet they handle commodities that we use, such as hay and feed for stable use, also a certain amount of

Lister PREMIER Cream Separator

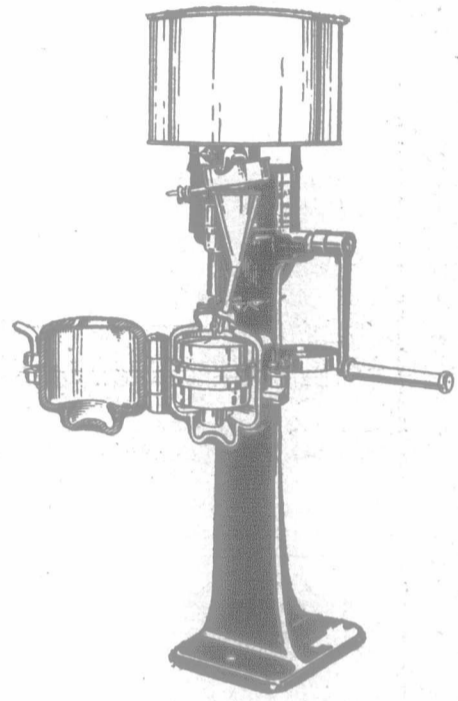
YOU have always had the highest opinion of the thoroughness and reliability of machines made up to the high British standard, and rightly so.

The Lister Premier Cream Separator helped to build the world-wide reputation. One trial will convince you that for clean-skimming, easy cleaning and easy running it has no equal. No working parts are exposed to dust. It is the simplest machine made—can be taken apart and reassembled in a few minutes.

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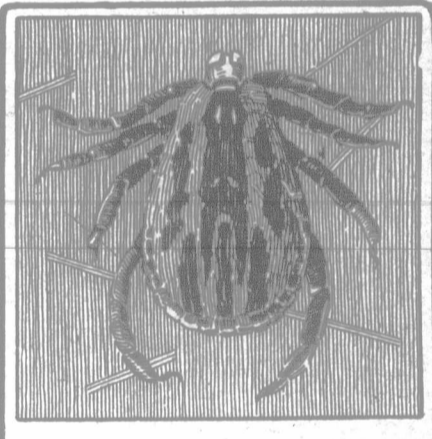
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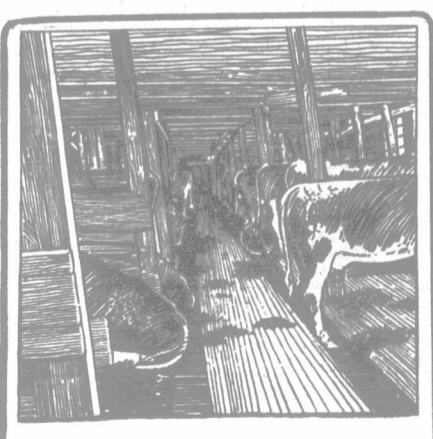
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2. If stock are kept in stalls that are infested with lice, feed is wasted in another way. It does not matter how much expensive feed you give your stock, cattle ticks will keep them thin. There is no surface on which cattle ticks can breed on BT Stalls.



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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.

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FOUNDED 1866

poultry feed. You would desire to supply articles to their advantage. They also handle groceries. Can you give about this Society?"

seemed to me so brought it to the manager of the U. F. company at the next opportunity, and gathered aid that he considered co-operative Society to long the wrong lines failure, and that con-justified in establish- in the same place. I about the local situa- but I have since made d that in the first five existence the Kingston a business of \$25,080.12, a net surplus of \$821.19, of a balance of \$100 for- ses. Its capital invest- 50, and on the day on month period ended all id off. They are declar- e dividend on the busi- term. I find, too, that were out of work for the society commenced to a strike in the s. I have been in- a considerable portion has been with farmers. refore, that they are all events, and to me much alive, and de- recognition and con-

friends at Queen's taken a great interest Society and as they terested in the farmer's whole, they must feel introduction of competi-

ot have two co-opera- erating in the sup- e involving terrific incurring the risk of ies and friction and izing the success of inseparable from such like that involved in ilroad systems in the in distributing our l services, or in having agons chasing one the same street. To of thing is to make economies which the m is designed to effect. here is danger of di- ole movement or of g its development. I that some method must oiding this competition ly a disgrace but a success of the cause ve sacrificed so much. iberate judgment that ght to recognize the co-operative societies throughout the pro- are, during the last reasing at such a is an obligation from no escape, and it is imperative by reason se political association orkingmen in our pro- t. What would be the , upon the workingmen supported the U. F. O. t to have this company store in opposition to tive store, particularly they have had a hard ng in competition with ers. It would be an -operation, and in my must not be allowed. invite certain disaster. company can be best the various co-opera- ies already in exist- multiplying, I shall o say presently. But h this I deem it my t another rock upon hip may go to pieces, oid you look no farther ago, when the failure ommercial ventures of hat movement a blow recovered.

principles of the co- at is that of democracy self-government, real responsibility. There cy in all human affairs

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MAIL CONTRACT

Sealed 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 Contract for four years, six times per week over 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, CHAS. E. H. FISHER, London, 2nd April, 1920. Post Office Inspector

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towards the concentration of power in the hands of the few. It seems, for a time, to conduce to efficiency—of the German type. But surely we have suffered enough during the last five years to have learned that lesson. And yet the spirit of Prussianism is constantly undergoing re-incarnations. We farmers have learned to our sorrow that in a death struggle with Prussianism in Europe we have had to fight Prussianism at home; and is it too much to say that we are likely to meet this same spirit, in a Hydra-headed form, so long as mankind exists? Centuries of hard experience have shown that it is not wisdom to entrust great powers to the few, and gradually the ideal of "Government of the people by the people and for the people" has been forging to the front. We farmers at all events are committed to democracy, and I believe, therefore, that we are under a special obligation to apply the principles and practice of democracy to our co-operative enterprises. We ought, therefore, to resist the movement towards the concentration of power, or provide, at all events, that any such centralization of authority shall be held in check by adequate safeguard. Now it is from this point of view of democracy that I wish to present for your consideration two plans for reaching the co-operative ideal, and to advance the claims of one plan as against those of the other.

Experience has shown us that whether under the capitalistic system or the co-operative, the distribution of commodities must proceed along somewhat the same lines. From the manufacturer to the wholesaler, from the wholesaler to the retailer, and from the retailer to the individual consumer is a method which, on the average, works out with greatest economy; and this statement, with some minor modifications, applies to the distribution of farm produce as well as to that of factory products. Now under the co-operative system the various parts in this scheme are the property of those whom they serve. But the relationship between the parts and their owners may vary. For example, in Great Britain, the retail store comes first and is owned by those whose immediate needs it serves. The Co-operative Wholesale Society is owned and managed by the retail societies, while the various factories supplying commodities are owned by all whom they serve, through the wholesale society. This system is known as the federal system, and is comparable to our political system in Canada. As our municipalities have complete control over their own local affairs, so the British Co-operative Retail Society has also complete control over its local affairs. And as our various municipalities, in groups, send delegates to a provincial legislature to manage provincial affairs, so the British Co-operative Wholesale Society is managed by delegates from the retail societies whom it serves. This is the system of decentralized authority.

(Continued in an early issue.)

Still a Subscriber.

EDITOR "THE FARMER'S ADVOCATE": I enclose a postal note for \$1.50 to pay my subscription to "The Farmer's Advocate" for another year. I wish you every success with the good old farm journal. I have sold my farm of 200 acres but reserved a small piece on one corner, built a house and retired, but have still enough interest in the business not to give up "The Farmer's Advocate." Halton Co., Ont. WM. SMELLIE.

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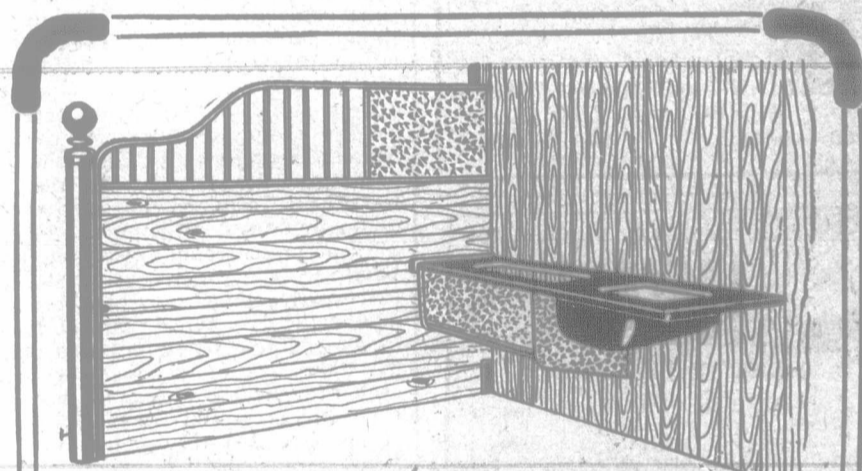
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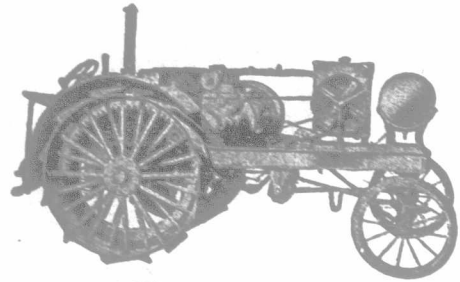
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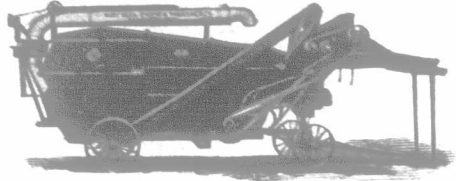
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Dewy Design (20796), rising three years. On imported sire; weight about fifteen hundred. Price reasonable.

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"Advocate" Advt. Pay.

Pure-Bred Versus Grade Dairy Cattle.

(Experimental Farms Note.)

The old question "would you advise me to start into the pure-bred dairy cattle business", is being asked as frequently these times as ever before and is receiving just as many negative replies as formerly. There are so many factors which enter into the problem that one has to study the question from every angle. Good pure-bred cattle of either sex are selling for such good prices now that men who have proven themselves successful with grade stock, cannot afford to continue without pure bred. We all know of certain grade herds making more money for the owners than some pure-bred herds in the same locality, but every community has examples of men in the pure-bred business who never should have invested money in live stock.

The most economical and the most satisfactory way for the average farmer to start into pure-breds is to purchase good females to start with. Care should be taken to see that they are good. They should be healthy, of the proper type, and either proven producers or with proven ancestors. It is better to have only one good cow than several medium quality animals. A comparatively small outlay is necessary when starting in this manner.

It is remarkable how quickly a herd can be built up from a few foundation cows. The dairy herd on the Agassiz Experimental Farm was started by the purchase in December 1911 of twenty-eight grade cows and the following year three pure-bred cows. Then in the fall of 1915 two pure-bred heifer calves and the next year a pair of two-year-old heifers also pure-bred were purchased. To-day there are forty-two pure-bred females in the herd including the above and their descendants. As the pure-bred herd increased in size we have gradually decreased the number of grades until at present only twenty-one are on hand.

A yearly comparison has been made during the last three years of the five most profitable pure-bred cows and the five most profitable grade cows. In each instance the pure-breds have been the more successful from a commercial standpoint. On the average the pure-breds produced 4,476 pounds more milk and 153 pounds more fat per cow per annum, and yielded an average profit over feed cost of \$27.64 more per cow than the grades.

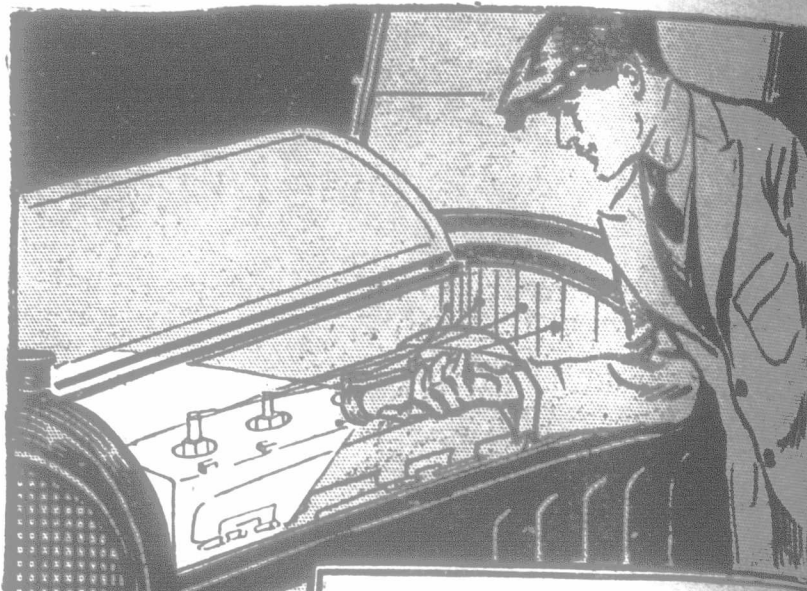
After a pure-bred herd reaches a suitable size the most money is made by selling the surplus stock for breeding purposes. The Holstein bull, Inka Sylvia Beets Posch, was used as senior sire in the Agassiz herd from December, 1916 to July 1918. From his service during that period fifteen grade and twelve pure-bred females were raised and are in the herd at the present time. Putting the very topmost value on the fifteen grade heifers they are worth \$1,875, while the dozen pure-bred heifers are worth just about twice that amount yet they cost no more to raise than the grades. The pure-bred male calves born in the herd during the same period were sold for \$100 each and up while the grade bulls were sold for veal.

Not only is it more profitable to produce pure-bred cattle than grades, under suitable conditions, but the pleasure and interest are much greater.

W. H. HICKS, Superintendent,
Agassiz, B. C. Experimental Farm.

The Forty-Sixth Renewal.
EDITOR "THE FARMER'S ADVOCATE,"
I enclose my forty-sixth subscription to "The Farmer's Advocate." During these years many changes have taken place in the "Advocate" itself has been improved and changed many times in its 46 years. We all admire the honest and practical manner of its teachings, and trust that "The Farmer's Advocate" will continue to prosper and advance the interests of the farmer.

W. H. HICKS, Superintendent,
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For...
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and therefore...
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through use...
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GEO. DAVIS...
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Give the Boy a Chance.

Travelling on the train the other day, I was impressed by an oldtime farmer's idea of the agricultural college. Many and violent were his arguments that college was not the place for a man who intended to farm. To send the boy to the city was to lose a farm hand. It would wean him away from the farm and when he came back he would be afraid to get his hands dirty. He wouldn't be able to settle down to the ordinary routine of the farm again. The lure of the city would grip him and he would become a city guy—"writing home for money and going to the dogs."

Casually I ventured to ask another man, whom I knew was a progressive, up-to-the-minute farmer, owning a modern and prosperous farm, what his idea of agricultural colleges, and their effect on the boys was. He was an average type of present-day farmer and I was sure his views on these subjects would represent the views of the farmer of to-day, who was making things go, and whose opinion would be well worth respecting.

His words were brief but conveyed a world of meaning: "College is all right and I wish I had a son of my own to go. It won't be long before a man without a college education won't take the stand he otherwise would in this world."

So we have the two types of farmers—oldtime and modern. I wonder if the difference in their views on this subject was the reason why one owned a modern farm, where he enjoyed life and had a happy, contented household, and who held a highly respected place in his community, and the other an oldtime sixteen-hour a day farm, in which he took a mercenary interest, and which he was vainly striving to make his pile on, and then get out—to Florida or California?

The very evidence of the oldtime's arguments goes to prove that education, in its various forms, is gaining a place of paramount importance in recent years. We see this statement verified every day. Boys on the farm want to leave because they cannot get the education other boys do, and consequently they cannot take the stand that more educated boys do. They see nothing but work ahead, and when father retires, they take-up the old homestead and run it the same old-fashioned way he did.

I think that it's up to every farmer to see that his boys put in a few winters at college. It costs money, of course, but aren't they working as hard as the hired man? Almost any farm hand's wages will put them through the winter. If it weans them away from the farm, then they never would have made farmers anyway. We have too many farmers farming just because they can't do anything else.

There is more than one side to college life. The educational side of course occupies the larger part of the time. Then there is the social side. I don't know any place where social life has a better chance to develop than at college. Mixing with other fellows does a chap a world of good and is sure to help him in later life, regardless of what business career he enters. I've seen some pretty green fellows come to college who did not know the difference between a pure-bred and a scrub, and at the end of one term, I've seen them go home filled with visions of improvements they will make on the old farm.

College life gives a man a chance to choose his vocation and to make a reputation for himself. He has the chance to specialize, as he proceeds with his course and to delve into depths of knowledge, which were hitherto absolute mysteries to him. After all, the courses given at college are intensely practical and every subject taken up has a direct bearing on the daily life of a farmer. I would urge every boy who has a spark of ambition in him to at least try one winter at college and I'm sure he will be back for more. I would say to every father that, even if he must sacrifice something, he will be well repaid by giving his son a square deal, consisting of a three or four years' agricultural course. Sisk. "STUDENT FARMER."

EDITOR "THE FARMER'S ADVOCATE":
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Leeds Co., Ont. ZILA G. GILES.



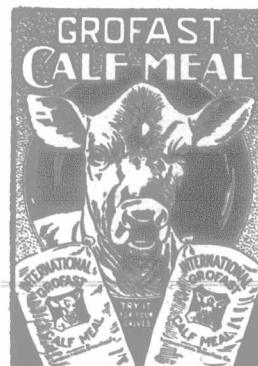
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Spring Valley Shorthorns—Herd headed by Sea Gem's Pride 06365. We have a number of good bulls for sale, including the Champion Ivanhoe 122760, and his full brother also, an extra well bred Rosewood, and others. Write for particulars.
Telephone and 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.
R. M. MITCHELL, - - R. R. No. 1, - - FREEMAN, ONT.

Boys' Baby Beef Book Aberdeen-Angus

\$3,500 and gold watches for prizes for boys and girls feeding Aberdeen-Angus calves in 1920. For the girls, wrist watches, and for the boys open-face gold watches for grand champion prizes, as well as \$100 cash prizes in Minnesota and Wisconsin State contests, and \$25 in county shows where Aberdeen-Angus calves to the number of 10 appear. Boys and girls won championships in six States last year with Aberdeen-Angus calves, and were reserve champions in the other two. Write for booklet, "Boys' Baby Beef Book."

AMERICAN ABERDEEN-ANGUS BREEDERS' ASSOCIATION
817 Exchange Ave. CHICAGO

SUNNY ACRES Aberdeen - Angus

The present string of young bulls for sale includes some classy herd bull prospects, winners themselves and sired by champions. If interested in Angus, write your wants. Visitors welcome.

G. C. CHANNON, Oakwood, Ontario
P.O. and 'phone. Railway connections:
Lindsay, C.P.R. and G.T.R.

Messrs. A. J. Hickman & Co.

Halse Grange, Brackley, England
Exporters of all Breeds
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Send for an illustrated catalogue and see what we can do for you. Whether you want show or breeding stock, buy direct from England and save money.

GLENGORE Aberdeen-Angus

Do not miss the opportunity to secure some of the choice males and females of wonderful smoothness, quality and strain type that are being offered by GEO. DAVIS & SONS, R. R. 1, Erin, Ontario
Herd sire a son of Black Abbot, Champion Angus bull of Canada. Write for particulars.

Aberdeen - Angus

Meadowdale Farm
Forest, Ontario
Alonzo Mathews H. Fraleigh
Manager Proprietor

ALLOWAY LODGE STOCK FARM

Angus, Southdowns, Collies
Choice bred heifers. Bulls 8 to 15 months. Southdown ewes in lamb.

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

Springfield Farm Angus

I will price for quick sale: 5 bulls from twelve to fifteen months old; 6 heifers from one to two years old; also my herd bull, Middlebrook Prince 5th 11155. Come and look these over, or write at once.

KENNETH C. QUARRIE
Fergus G.T.R. R. No. 5, Belwood, Ontario
Belwood C.P.R. Phone, Fergus 141 ring 24

Aberdeen-Angus—Middlebrook Abbot 2nd, a prize winner at Toronto and Ottawa, for sale, as have had 5 years—price \$500. Young bulls and heifers \$175 and up. Get a pure-bred sire even if herd grades—It pays. A. Dinsmore, Mgr., "Grape Grange" Farm, Clarksburg, Ont.



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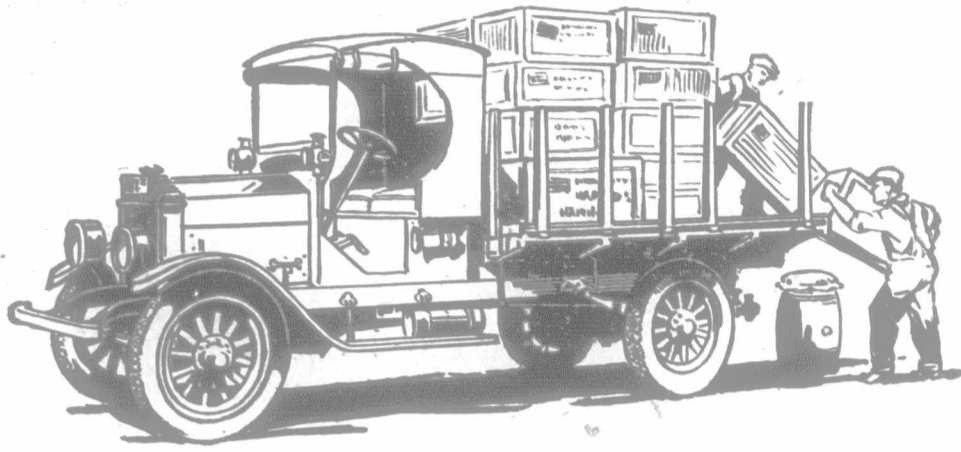
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THE fast mounting and exacting requirements of Canadian Industry are being met by National Motor Trucks.

The National offers permanent maximum truck service and economy under extreme conditions. Every day the National is rendering a sturdy co-operation to the Government, and to cities and business houses from coast to coast.

The National acknowledges no superior. It is built up of units that are absolutely standard. Each unit is a leader in its class. Such names as these are an indication of the quality in the National.

Eisemann Magneto	Zenith Carburetor
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Another thing. The National is built in Canada. Canadian capital, labor and raw materials are responsible for it. That means more to Canadians today than ever before.

The National pays substantial returns for the money invested. We want you to become acquainted with it—to study its many advantages and to see wherein it is best suited to the needs of your business. The National offers largest haulage capacity at lowest cost per ton mile. Put it up to the truck. Arrange for a demonstration and watch it make good in every detail.

Built in five models—1 ton, 1½ ton, 2 ton, 3½ ton trucks and 6 ton tractor. Bodies to suit your individual needs.

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For Reinforcing Bridges
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Cut any Length

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58 Front Street West, Toronto

SUNNY SIDE HEREFORDS
12 bulls, serviceable ages; 5 by breeding size and individual merit are good enough to head any pure-bred herd. Females of different ages. Inspection invited. They are priced to sell.
Arthur F. O'Neil & Sons, Denfield, Ont., R. No. 2.
Phone 27-12 Granton

Sunny Side Herefords—Herd headed by Brummel's Chance (imp.), Champion at London and Guelph, 1919. For sale: Three bulls, 10 to 15 months old. MRS. M. H. O'NEIL & SONS, Denfield, Ont. R.R. No. 4. Phone 1lderton.

A NEW IMPORTATION OF 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.

Plaster Hill Stock Farm

The Home of Dual-Purpose Shorthorns

I have now a large number of cows running in the Record of Performance, and have a few bull calves for sale from these. Can also spare a limited number of females. Herd sires: Green Leaf Record 96115 and Commodore 130056. The two nearest dams of the latter average 12,112 lbs.

ROSS MARTINDALE :: CALEDONIA, ONTARIO

Roan Bull—Calved April 23rd, 1919

Sire, Chief Orator = 122585 = (Imp.). Dam, Spring Beauty = 138815 = (Imp.). Good enough individually and in breeding to head a good herd. Could spare a few females.

J. T. GIBSON, Denfield, Ont.

When writing advertizers, will you kindly mention "Farmer's Advocate."

Incubation and Brooding of Chicks.

(Experimental Farms Note.)

Which is it to be, hens or incubators? If less than 100 chicks are to be hatched it is not generally considered advisable to buy an incubator, but if more than that number are wanted it is almost a necessity to have an incubator. If hens are used, select only birds that appear to be determined to set and are not clumsy or nervous on the nest. Do not allow hens in the same pen with sitters. Be sure that your hen is perfectly free from all vermin and see that she has a supply of fresh water and some whole grain every day.

If artificial methods are used, a well-ventilated cellar with a fairly even temperature makes a suitable location for the incubator. Buy a well-made machine of a well-tested make. Study the general directions sent with each machine and have it started several days before trusting the eggs to it.

The first essential of a good hatch whether under hens or in incubators is to have eggs from healthy, vigorous breeding stock. The fresher the egg the better chance of a good hatch. Select only eggs of a normal size, discarding all rough, uneven, thin shells or any peculiar or abnormal shape. Do not allow the eggs to become chilled before being set. Give the hens or incubators a fair chance with good hatchable eggs and under most conditions they will produce good healthy chicks.

To be successful in the brooding and rearing of chicks requires constant care and attention to details. If chicks are hatched by hens, let the hen remain quietly on the nest until the chicks get so lively that they insist on leaving it, then remove the hen with her brood to a coop previously prepared for her. All coops should be thoroughly disinfected before use each season and also between broods.

A hen should be given no more chicks than she can keep comfortably warm. The artificial method requires a brooder so made that it will be possible to produce and hold heat enough to provide for the comfort of the chicks in any weather, easily and well ventilated. The chicks should be left in the incubator until perfectly dry and great care must be taken to avoid chill in changing them to the brooder. The brooder must be almost the same temperature as what they were accustomed to in the incubator for a start. Extremes of heat or cold are very disastrous.

Chicks require no food for 48 to 60 hours after being hatched, as a chick when it leaves the shell has a sufficient supply of nourishment to last it for several days. Feed small quantities at a time and often during the first two weeks. Dry breadcrumbs slightly moistened with milk, rolled oats, pinhead oatmeal and finely cracked mixed grains may be allowed but all changes should be made gradually. Give them plenty of green food and place grit, water or sour milk where the chicks will have free access to it. Self feeding hoppers containing cracked grains and dry mash are the best means of feeding the growing stock while on a good grass range.

J. D. LANG, Poultryman,
Lennoxville Experimental Farm.

Questions and Answers. Miscellaneous.

Scours in Calves.

A number of our calves are affected with white scours. Several of them have died. What treatment do you advise?
V. H.

Ans.—The trouble which you mentioned with your calves is generally considered to be an infectious disease, and very often causes serious loss in the herd. It is recommended that one ounce of formalin mixed with fifteen ounces of water, and a teaspoonful given with each pint of milk taken, gives good results. About one-quarter of the bulk of milk given may be of limewater. This trouble is due very often to a specific virus, and the calves are sometimes infected before they are born. It has been found that this trouble, and also pleuro-pneumonia, is more common in herds where there is abortion than in normal herds. As soon as the calf is born the navel should be disinfected with formalin, and care taken that the stall is thoroughly cleaned and disinfected.

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Ship you
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Three young b
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For Sale—Thre

One n
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from Broadbook
by one year, from
Bridgroom (Imp
Marchioness 2nd
ported bull. All
Farm 3 miles from
Walton, C.P.R.

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Present offering
Roans, also a r
rise, quality and
Prices moderate.

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9 bulls, all a
Herd bull 2,4
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Stewart M.

Mardella D

8 choice young b
All of good size,
by The Duke; de
butter-fat. He
binations of bee
All priced to sell
THOMAS GRA

Evergreen Hil

Present offering:
bull St. C
heifer

S. W. Jackson

Scotch Shorth

Gainford Marqu
Also Oxford Do
GEO. D. FLI

Dual-Purpose

by Darlington
Lady Maude = 1
ages 6 to 13 m
Box 231, Tillson

SPRUCE

Shorthorn
Two choice you
one and two-ye
Chief Imp. = 6
Caledo

Two Register

One white, 13 m
other red, impor
2-year-old; both
Elmer Ford

Dual-Purpose

Present offering
and some young
VALMER E

Brooding Chicks.

Farms Note.) Hens or incubators are to be hatched considered advisable, but if more than one is almost an incubator. If only birds that are to be set and are on the nest. Do the same pen with your hen is permin and see that fresh water and some

is used, a well with a fairly even suitable location. Buy a well-made nest. Study sent with each it started several the eggs to it.

of a good hatch or in incubators is healthy, vigorous fresher the egg the good hatch. Select small size, discarding thin shells or any al shape. Do not come chilled before hens or incubators good hatchable eggs conditions they will chicks.

in the brooding and requires constant care tails. If chicks are get the hen remain until the chicks get so sist on leaving it, with her brood to prepared for her. e thoroughly disin- ch season and also

iven no more chicks comfortably warm. requires a brooder e possible to produce h to provide for the ks in any weather. ilated. The chicks the incubator until great care must be in changing them to brooder must be mperature as what t to in the incubator s of heat or cold are

food for 48 to 60 hatched, as a chick shell has a sufficient t to last it for several quantities at a time e first two weeks. slightly moistened ts, pinhead oatmeal mixed grains may be ges should be made n plenty of green water or sour milk have free access to ers containing crack- mash are the best the growing stock range. ANG, Poultryman, mental Farm.

Questions and Answers.

Calves. calves are affected Several of them have ent do you advise? V. H.

le which you men- calves is generally a infectious disease, serious loss in the ended that one ounce with fifteen ounces spoonful given with n, gives good results. of the bulk of milk water. This trouble a specific virus, and times infected before has been found that o pleuro-pneumonia, herds where there is rmal herds. As soon the navel should be ormalin, and care s thoroughly cleaned

Heaves CURED

—by removing the cause—and cured to stay cured—If 3 boxes of Fleming's Tonic Heave Remedy fail to effect a cure of any case, old or new, we will refund the full amount paid.

Per Box, \$1.00; 6 for \$5.00 Mailed on receipt of Price.

Scratches Disappeared

Gentlemen:—I gave a course of your Tonic Powders, which has put a horse and his mate in fine shape, and a touch of scratches has quite disappeared.

Geo. A. Miles, Oxville, Alta.

Full information in Fleming's Vest Pocket Veterinary Adviser

Write us for a Free Copy

FLEMING BROS., Chemists
75 Church St. - Toronto, Ont.

Cream Wanted

Ship your cream to us. We pay all express charges. We supply cans. We remit daily. We guarantee highest market price.

ONTARIO CREAMERIES Limited

LONDON ONTARIO

SCOTCH-TOPPED SHORTHORNS

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,
R. No. 2, Mitchell, Ont.

For Sale—Three Young Shorthorn Bulls—

One nearly 2 years (a proved calf getter); sired by Sultan's Choice =107452 = and from Broadhocks Gilt =118440 =. Another nearly by one year, from same dam, sired by Bethelnie Bridegroom (Imp.) =116006 =. One from Lovat Marchioness 2nd (Imp.) =132777 =, sired by imported bull. **ARCH. HISLOP, Brussels P. O.** Farm 3 miles from Brussels, C.T.R.; 3 miles from Walton, C.P.R.

DUAL-PURPOSE SHORTHORNS

Present offering: Six young bulls, Reds and Romans, also a number of females. They have size, quality and breeding from good milking dams. Prices moderate. Satisfaction guaranteed.

CHAS. GRAHAM - Port Perry, Ontario

Buy Glenfoyle Shorthorns

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.

Stewart M. Graham - Lindsay, Ont.

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.

Evergreen Hill Farm—R.O.P. Shorthorns

Present offering: Two 12-month bulls by the R.O.P. bull St. Clare =84578 =, also a few heifers and heifer calves.

S. W. Jackson, - Woodstock, Ont.

Scotch Shorthorns—Herd headed by Master Marquis =123326 =, by Gainford Marquis. Stock of either sex for sale. Also Oxford Down ewes.

GEO. D. FLETCHER, Erin, R.R. 1, Ont.

Dual-Purpose Shorthorns—Herd sire, Darlington Major Maude =101212 =, by Darlington Major =91279 = (Imp.); dam Lady Maude =104585 = (Imp.). For sale, 6 bulls, ages 6 to 13 months. **R. H. & W. S. SCOTT, Box 231, Tillsonburg, Ont.**

SPRUCE LODGE STOCK FARM

Shorthorns and Leicesters For Sale

Two choice young bulls, 6 and 11 months old, also one and two-year-old heifers, all got by Roan Chief Imp. =60865 =.

W. A. DOUGLAS, Caledonia, - Ontario

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.

Dual-Purpose Shorthorns and Dorset Horned Sheep

Present offering: A number of 2-year-old heifers and some young bulls. Write, or come and see.

VALMER BARTLETT, Canfield, Ont.

Questions and Answers. Miscellaneous.

Fertilizer for Potatoes. Which is the better for potatoes, horse or cow manure? What kind of manure is best for celery? P. M.

Ans.—Horse manure would be the better for potatoes, and would possibly be preferable also for celery.

Sweet Clover. Is sweet clover, either white or yellow-blossomed, an annual plant? Or will it grow from year to year the same as alfalfa? J. A. O.

Ans.—Sweet clover is a biennial plant, the same as red clover, and must be seeded accordingly. If the plants are allowed to mature they will re-seed the field and thus make pasture from year to year, but it is well to keep the plant in its place. It does not grow from the root year after year the way alfalfa does.

Concrete Curb. Last August I curbed my well with cement brick, but the water has tasted of the cement ever since. The bricks were a little too green when put in. What remedy would you or some of your readers suggest for this trouble? C. S.

Ans.—Concrete tends to make the water hard, but we have not experienced the trouble of having it taint the water. Plastering may overcome the trouble. Possibly some of our readers have had experience and can offer suggestions for treatment.

Profiteering. If a seed merchant bought seed at \$9 per bushel and sold it at \$29 would he be profiteering? 2. Where can I secure ferrets? C. A.

Ans.—1. Twenty dollars' profit on a nine-dollar investment would surely put a man in the profiteering class.

2. We do not know of anyone just at present having ferrets for sale, but if you make your wants known through our advertising columns you will no doubt meet with success.

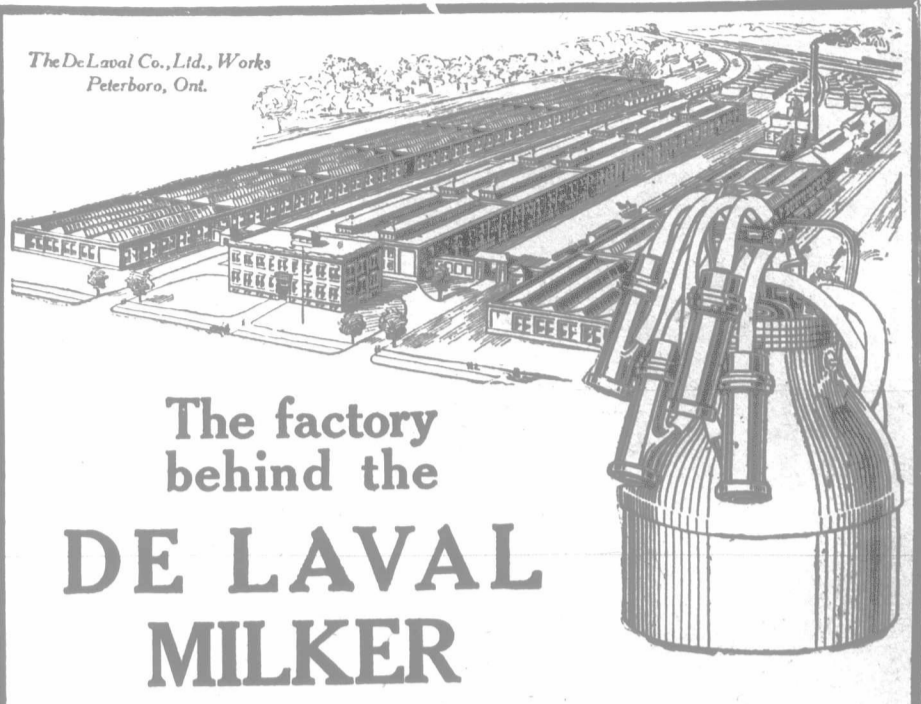
Tar the Corn. What treatment can I apply to corn to keep the birds from pulling it up? The past two years I have had to sow my corn three times? J. M.

Ans.—Applying coal tar to the corn before it is sown has on many occasions kept the birds away. Care must be taken not to use too much tar to avoid difficulty in sowing. The best way is to put the corn in a bucket, then dip the end of a stick in the tar and stir it in the corn until each kernel takes on a brownish shade.

Overcoming Difficult Churning. A Bruce County subscriber writes that he had noticed several inquiries in "The Farmer's Advocate" regarding trouble in getting cream to churn readily, and has found the following method of handling the cream to be quite satisfactory in overcoming the trouble mentioned. "Bring the sweet cream to a temperature of 140 to 150 degrees Fahrenheit, and then cool before mixing with the other cream. When time to churn, the cream is heated to 58 degrees and put in a warm churn. The butter comes quite firm, in about twenty minutes to half an hour. In a nutshell, the remedy for difficult churning is to pasteurize the sweet cream."

Scratches—Cow Pox. What is a remedy for scratches? What a remedy for cow pox? P. G. M.

Ans.—Give a purgative of 8 drams aloes and 2 drams ginger. Follow up with 1½ ounces Fowler's solution of arsenic twice daily for a week. Hot linseed poultices may be applied to the affected parts for two days and two nights, then dress the parts three times daily with a lotion made of 1 ounce each of acetate of lead and sulphate of zinc in a pint of water. Keep the legs dry. Do not give the purgative to mares that are in foal. Cow pox is carried from one cow foal. Cow pox is carried from one cow foal. The sores on the teats should be dressed three times daily with an ointment made by mixing four drams of boracic acid and 20 drops of carbolic acid with 2 ounces of vaseline. Sometimes when the teats are very sore the milk may be drawn with a teat syphon for a time.



The factory behind the

DE LAVAL MILKER

Wherever cows are milked, the name DELAVAL stands for quality and honest value to the user.

De Laval represents the highest degree of service-to-user. The De Laval Company recognizes that when a sale is made, its obligation to the purchaser has just started.

These facts are important considerations when buying a mechanical milker.

The man who buys a De Laval Milker can ask for no stronger guarantee that it will give him the service claimed for it than the fact that it bears the name DE LAVAL.

The De Laval Milker is a distinctly different type of milker, positive and uniform in action. It is faster, more reliable, more sanitary than any other method of milking.

Write to nearest De Laval office for Milker Catalog, mentioning number of cows being milked

THE DE LAVAL COMPANY, Ltd.
MONTREAL PETERBORO WINNIPEG EDMONTON VANCOUVER
50,000 Branches and Local Agencies the World Over

GRAND RIVER DUAL-PURPOSE SHORTHORNS

Herd headed by Prince Lavender 104440—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.

—When in want of Shorthorns visit our herd. We have 80 head to select from—Minas, Fames, Florences, Emilys, Red Roses and Elisas—good milkers; a few heifers for sale; also several young bulls of breeding age, thick, level, mellow fellows and bred just right.

JAMES McPHERSON & SONS, Dundalk, Ont.

Newcastle Herd of Shorthorns and Tamworths for sale—Several young bulls ready for service; several heifers bred to Primrose Duke =10754 =, and several young things of nice quality and breeding. Two young cows with heifer calves at foot, all of 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.

A. A. COLWILL, R.R. No. 2, Newcastle, Ont.
Long distance 'Phone.

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.

WELLDWOOD FARM, - Farmer's Advocate, - London, 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 grandson of Gainford Marquis (Imp.), and two others are Nonpareils. One of these is got by the 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 Ottawa. Look up our past winnings and call on us if you want something choice. We also have Shorthorn bulls and females of show individuality.

ROBERT DUFF & SON, Myrtle, Ontario

Irvin Scotch Shorthorns—Herd Sire, Marquis Supreme, by Gainford Marquis (Imp.). We have at present three young bulls of serviceable 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, Elora, Ontario

Glengow Shorthorns and Clydesdales—Recently advertised bulls have all been sold. Sultan =100339 =, 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.

Shorthorn Females—Shorthorn Bulls—We are now offering a number of choice heifers good families and good individuals. Many are well forward in calf to our Roan Lady-bred sire, Meadow Lawn Laird. We also have bulls ready for service. Prices right. Satisfaction guaranteed.

J. K. CAMPBELL & SONS, Palmerston, Ontario

BLAIRGOWRIE SHORTHORNS

3 Imported bulls. 10 Imported females in calf or calf by side. 2 Scotch bred bulls. 5 Scotch bred cows with calves by side.

JNO. MILLER (Myrtle C.P.R. and G.T.R.) - ASHBURN, ONT.

Grandpa
says —
"Show me
the Cows"



No need to put the
strongest men on the
farm at milking!

An old man—a boy or girl, can do
as much with a Hinman Milker as
three able-bodied men by hand.

Think what this means when hours
are precious!

Think what it means in saving the
wages of highly-paid help!

Over 50,000 Hinman Milkers are in use to-day—many of them
milking prize cows.

Investigate. Write for illustrated booklet
and testimony of dairymen you know.

HINMAN
CANADA'S
STANDARD MILKER
H.F. BAILEY & SON, MFRS., GALT, ONT.

Maple Shade
SHORTHORNS

A dozen young bulls
imported and my own
breeding at moderate
prices.

W. A. DRYDEN

Brooklin - - - Ontario

Burnbrae Shorthorns

Eighty-three years without change we have been breeding Scotch
Shorthorns. The foundations of many of the best herds in America
were laid from our farms.

I am in a position to furnish you now with the BEST in FORM
and in BREEDING that can be found any place. Twenty-five young
bulls, from small calves to fifteen months old. Sixty-three cows and
heifers, every one of them bred right, not a plain looking one in the
lot. Every animal that I have sold in two years has been satisfac-
tory; 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 to your station. A Grand Champion and the son
of a Grand Champion at head of the herd.

Post Office, Telegraph, Telephone and Station is Stouffville, Ont.

ROBERT MILLER

Stouffville, Ont.

Questions and Answers.
Miscellaneous.

Black Terrier.

Where could I get a black and tan
rat terrier pup, and what would the price
of same be?

Ans.—An advertisement placed in the
columns of "The Farmer's Advocate"
would no doubt put you in touch with
someone having a terrier for sale.

Horses Sweating—Fleas.

1. How would you account for horses
sweating when standing in the stable?

2. We have moved into a house which
is infested with fleas. Despite all our
efforts to rid the place of them they are
with us yet. What treatment would
you advise?

Ans.—The perspiring in the stable is
hard to account for unless it is that the
horses have a heavy coat of hair and there
is lack of proper ventilation. It may also
occur due to the digestion not being quite
normal. Dilute 2 drams of nitric acid
in a pint of water and rub a little well
into the parts which perspire the most
freely. This tends to check perspiration.

2. The following treatment, taken
from an encyclopedia, may give results:
2 ounces oil of pennyroyal, 2 ounces oil
of sassafras, and 4 ounces of alcohol.
Shake well together and spray around the
room with an atomizer. Using the com-
mon insect powder in a closed room will
also give results.

Share Farming.

In taking a farm on shares, does the
owner provide half the seed? Can the
man who works the place sell his share
of the crop off the farm? Does the owner
have to pay all the taxes, or only half?
Does the owner have to pay for threshing
the grain? Can he cut a second crop of
clover? What about the manure in the
yard?

Ans.—It depends altogether on the
agreement made. Sometimes the owner
only supplies the land and the man
who works the place—supplies stock,
implements, labor, pays taxes, etc.,
and secures about sixty per cent. of the
returns. Where the owner of the place
pays taxes, half the threshing, and supplies
implements and part of the stock, he
may receive sixty per cent, and the other
man forty per cent., for his labor. These
matters should be settled definitely at the
beginning. If there is a second crop of
clover, it may be cut and the returns
divided. It will depend on the agree-
ment as to whether or not the man who
works the place can sell hay, grain and
straw off the farm. The manure must
stay on the place, and the man who is
working the place should see that it is
applied to the land.

Feeding Cows.

What is a good ration for cows? I
have rough pasture land and would like
to know what seed to scatter over it to
help out the feed.

Ans.—For the summer months, the
pasture will fairly well supply the cows,
especially through June and early July.
The trouble is that the grass usually
dries during the latter end of July and
August. If a person had silage to supple-
ment the pasture during July and August,
it would certainly help out and would
lessen the need for feeding grain. A
pasture crop may be sown in the spring.
Oats and red clover make a very good
pasture and the cattle should be turned
on when the oats are coming into head.
This crop would give the regular pasture
a chance to pick up. The concentrate
ration to go with the pasture will depend
a good deal on the price and availability
of the various feeds. Bran and oats
are very good feeds. A little corn might
also be fed. Some feed quite a bit
of oil cake and cotton seed. We doubt
the advisability of feeding much of these
if the cows are on legume pasture; if
on timothy or blue-grass pasture, they
would help balance the ration. In
order to help out pasture on rough land,
you might try scattering a little orchard
grass, tall oat grass and Kentucky blue
grass seed over it. Four pounds of
each would be sufficient to give a good
bottom. The orchard grass is one of the
earliest pasture crops and also is good on
in the fall.

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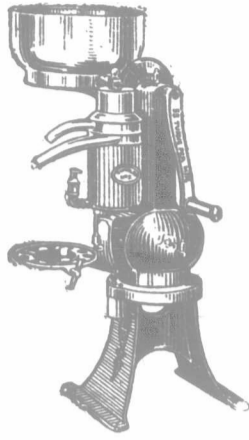
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High Efficiency in Separators



The new and up-to-date improvements on the Simplex Separator bring it to a point of such high efficiency and real merit that it is unequalled in points of superiority.

IMPROVEMENTS:

THE BOWL.—The bowl cover and shield is now made in one solid piece, which is more convenient in handling and cleaning. There is also a wider range for adjustment of cream density on the new bowl.

THE FRAME.—A great convenience, and a necessary one, is found on the "Simplex" frame. The body of the separator is held on extra heavy hinges with a self-closing spring. This allows ready access for cleaning and oiling. Ready access to these parts is essential on any separator, but the "Simplex" Separator is the only one claiming this advantage.

THE BEARINGS.—Very high-grade annular ball-bearings, not known to be used on any other separator, gives the

SIMPLEX CREAM SEPARATOR (LINK BLADE)

the record of being the easiest running separator on the market. Write to us now for pamphlets, which give full information on the Simplex Separator.

D. Derbyshire Company, Limited
BROCKVILLE, ONTARIO

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

Questions and Answers. Miscellaneous.

Dry Batteries.

I have been experimenting with dry batteries for lighting purposes, and have heard that there is a solution with which to re-charge them. Where can this be obtained?

C. L. D.

Ans.—Re-charging the dry batteries with a solution is not practicable. It would be better to secure new batteries.

School Age.

Is there a law compelling children to continue at school until 18 years old? Can anyone be exempted from it on the grounds of scarcity of help?

G. M.

Ans.—There is a law on the statute books making the school age eighteen years, but so far as we are aware it has never been enforced, and it is quite customary for the boys and girls to help out with the work on the farm after they are fourteen or fifteen years of age.

Sore Heels.

What is the treatment for grease heel in horses?

C. A. T.

Ans.—If the mare is not in foal, purge with 8 drams aloes and 2 drams ginger, and follow up with 1 1/2 ounces Fowlers' solution of arsenic twice daily for a week. Poultice the legs with boiled turnips and charcoal, or hot linseed poultices, then dress three times daily with a lotion made of 1 ounce each of acetate of lead and sulphate of zinc to a pint of water.

Basic Slag.

What value has basic slag as a fertilizer? Does it contain much plant food? Is it beneficial to the soil for growing clover?

A. C.

Ans.—Basic slag contains phosphoric acid and lime, which substances are beneficial to the soil. Many authorities claim that the slag gives better returns than its analysis would indicate that it would. It is especially beneficial on grass land or for the growing of clover. The lime aids in neutralizing the soil, which is necessary for the best returns with clovers,

HOLSTEIN HERD SIRES—I have at present several young show calves nearly ready for service; all of which are from tested dams and sired by my 30-lb. sire, Gypsy Pontiac Cornucopia. This bull is a grandson of May Echo Sylvia, and our entire offering in females are bred to him. Prices right.

JOSEPH PEEL, Port Perry, Ontario

WALNUT GROVE HOLSTEINS

I am offering a choice lot of bull calves sired by May Echo Champion who is a full brother of world's champion May Echo Sylvia, also a few cows just fresh.

(Take Radial Car from Toronto to Thornhill) **C. R. James, Richmond Hill, R. R. No. 1, Ont.**

Sylvius Walker Raymondale is the sire of the majority of our young bulls now listed. If you see these calves you will appreciate them. Their dams are mostly daughters of King Segis Pontiac Duplicate. Don't delay if you want a good bull at a right price. We are also offering females.

R. W. WALKER, & SONS, Port Perry, Ont.

ELDERSLIE HOLSTEIN-FRIESIANS

Am all sold out of heifers, just have three bull calves left, from four to six months old. They are sired by Judge Hengerveld De Kol 8th, a 32.92-lb. bull. The dam of one is a 20.225-lb. cow. Write for prices and come and see them.

ARCHIE MUIR, Elderslie Farm, SCARBORO' P.O., ONT.

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.

Craigielea Ayrshire Herd Sires—THREE YOUNG BULLS SPECIALLY PRICED and special individuals—No. 1. A 13 months' old bull by a son of Milkmaid 7th, 16,696 lbs. milk, 729 lbs. fat (former Canadian Champion), out of White Lady of Craigielea 2nd, 11,700 lbs. milk, 450 fat in one year, milked twice a day. One of our very best breeding cows. No. 2. Four months' old bull. Dam's 2-year-old record, 9,157 lbs. milk, 389 fat. No. 3. Two months' old bull. Dam's 3-year-old record, 13,959 lbs. milk, 559 lbs. fat. Also some young cows safely bred and younger heifers. Give us a call.

H. C. HAMILL, MARKHAM, ONTARIO

Locust Hill, C. P. R.

Westside Ayrshires and Yorkshires—Have one bull 12 months old and two bull calves, all from record dams. Am also booking orders for spring pigs.

DAVID A. ASHWORTH, Denfield, Ontario, Middlesex Co.

SPRINGBANK R. O. P. AYRSHIRES

Our Ayrshires win in the show ring and they fill the pail. We hold more present R. O. P. champion records than any other herd in Canada. Present offering, 9 young bulls seven months and under, all from high record dams.

A. S. Turner & Son, Railway Station, Hamilton Ryckman's Corners, Ont.

Stockwood Imported and Ayrshires—Write me for your next herd sire. I have several youngsters at present sired by my Canadian-bred Ayrshires, and from imported dams that are still in the herd. My own herd sire, Killloch Gold Flake (imp.) 51225, and from a few young cows safe in calf to herd sire. Call and see the kind we breed. Also pricing a few young cows safe in calf to herd sire.

D. M. WATT, St. Louis de Gonzague, P.O.

High-class Ayrshire Heifers—One rising two, the other rising three. Both are choice, as they were the pick of a herd of thirty-five and out of R.O.P. cows. The owner is going into other business, so offers these for sale at \$300, and they are a bargain for some one wanting the best in Ayrshires. Apply

BOX 498, PORT HOPE, ONTARIO

Glencairn Ayrshires—Herd established 40 years. Producing ability from 8,600 to 11,022 lbs. If that sort of production appeals to you, we have heifers all ages and young bulls for sale. **Thos. J. McCormick, Rockton, Ont. Copetown Station, G.T.R.**

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—they contain much valuable information.

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.

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 7-day records up to 32.66 lbs. of butter, 755.9 lbs. of milk, 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 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, milking higher and tested 4.4% butter-fat). Also a pair of bulls from untested sisters of our 18,864-lb. milk and 777.5-lb. butter, 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).

and the phosphoric acid is made use of by clover and grass plants. We have seen very good results from an application of basic slag on fall wheat and roots.

Lump on Flank.

I have a cow that had a large lump on her flank about a month ago. This broke and considerable pus discharged from it. It healed but now two more lumps are coming higher up on the side. She seems hearty and milks well.

C. H.

Ans.—The first lump may have been caused by a bruise setting up inflammation and causing pus to form. It is probable that the pus did not all escape before the opening healed and this has set up infection in other parts of the body. Bathe these lumps with hot water, and, when ready to lance, operate on them at the lowest point. It is well to keep them open until all the pus has been discharged. Syringing them out with a weak carbolic acid solution is advisable.

Messrs. R. Honey & Sons, breeders of Holsteins, Cotswolds and Yorkshires, in changing their advertisement in "The Farmer's Advocate," write that the bulls from their two heavy-producing cows have been disposed of, and they are now offering a show bull from a two-year-old heifer that has a record of 14,763 lbs. of milk, also a pair of untested sisters from an 18,000-lb. four-year-old.

Volume 8 of the Canadian National Records for Sheep has been received at this office. It is a larger volume than usual and gives the breeding of a large number of individuals of the different breeds. It contains the pedigrees of Shropshires numbering from 22289 to 25823; Leicester, 13779 to 15415; Cotswold, 3460 to 3866; Oxford Down, 10515 to 13237; Lincoln, 1357 to 1414; Dorset Horn, 1898 to 2259; Suffolk, 3412 to 3767; Hampshire, 2105 to 2485; Southdown, 1625 to 1873; Cheviot, 609 to 835; Romney, 388 to 520; Rambouillet, 24 to 278.

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.

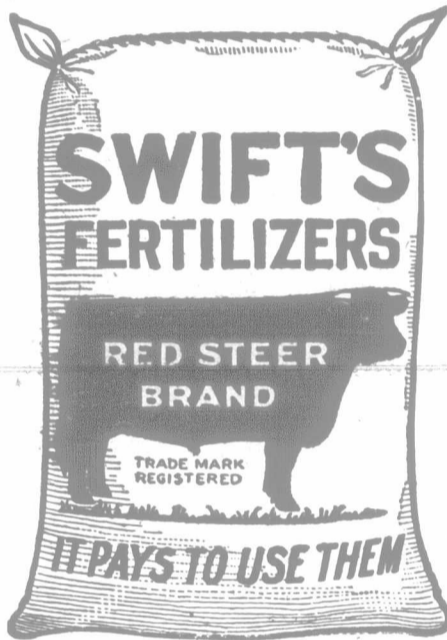
We ship in 125-lb. Bags or Carlots

WRITE TODAY FOR PRICES AND LITERATURE

SWIFT CANADIAN CO.,
Limited

Fertilizer Dept. TORONTO, ONTARIO 1958 St. Clair Ave. W.

Agents wanted in unrepresented territory.



Hampshire Down Sheep Breeders' Association, England

SALISBURY

The following shows and sales of Highly-bred Pedigree Sheep will be held under the auspices of the association

Wednesday, July 7th, 1920

A Show and Sale of Ewes, Ewe Lambs, Ram Lambs, Shearling and older Rams

Wednesday, July 28th, 1920

A Show and Sale of Ram Lambs

When many grand specimens of the breed will be on offer, consisting of, Fitted Show Sheep and a grand assortment of Field Shearling Rams, Ram Lambs, Shearling and older Ewes and Ewe Lambs.

These sales will offer a unique opportunity to Colonial and Foreign buyers to supply their requirements for the forthcoming season. Full particulars and catalogues in due course, of the secretary

W. J. Wooff, 49 Canal, Salisbury, England

Maple Shade Farm

Imported Shropshire ewes served by best imported rams, very desirable for foundation flocks.

W. A. DRYDEN

Brooklin - - - Ontario

Jersey Bull for Sale

Do you want production? This young bull's dam has R. O. P. test of 624 lbs. butter, was a prize cow, registered in both U. S. and Canadian Herd Books; as also is his sire, who is from Register of Merit stock. Price very reasonable considering his breeding. For particulars, apply to

J. A. MACPHERSON
R. R. No. 1 Port Stanley, Ont.

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 Torono, sire of 73 and 24 sons; Pogis 9th 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. 5633, 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.** Farm at Morin Heights - F. J. WATSON, Manager

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.)

DON HERD OF PRODUCING JERSEYS

We have three young bulls of serviceable age—good individuals and priced right. Could also spare a few choice bred heifers. Visitors welcome. **D. DUNCAN & SON, TODMORDEN, ONT.**

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. **JNO. PRINGLE, Prop.**

LABELS Live-stock Labels for cattle, sheep and hogs. Manufactured by the Ketchum Manufacturing Co., Ltd., Box 501 Ottawa, Ont. Write for samples and prices

Shropshire Yearling Ewes, bred to Bibby's 84 (imp.) ram and Two Clydesdale stallions. **W. H. PUGH, Myrtle Station, Ont.**

"Advocate" advts. Pay.

Questions and Answers

Veterinary.

Miscellaneous.

Some time ago I wrote you re paralysis in calves, caused by a weed in the hay. You advised the administration of nux vomica. One calf died before we commenced treatment; the one we treated recovered, but in about a week he took suddenly ill and died.

1. Should we have continued giving the drug?

2. Would it effect a perfect cure?

3. The calves that died were castrated last spring, one that lived was not castrated. Would this account for these facts?

4. Cow milked well until New Year and then went dry. She got very thin. She is not in calf. I want to fit her for the butcher. Would you advise giving nux vomica?

5. What would be the best feeds to fatten her?

6. Feed is very high priced. Would it be more economical to carry her over until spring?

7. We have a pair of horses, but only 2 months' work yearly for them. Would it be more economical to get a second-hand Ford car with tractor to do the work?

Ans.—1. Not after recovery. The calf either became re-infected or died from other trouble.

2. Not in all cases. The probability of recovery depends upon the severity of the attack.

3. The results were not influenced by castration.

4. Nux vomica is not particularly indicated in the case. A general tonic should give good results, as a heaped tablespoonful 3 times daily of equal parts powdered sulphate of iron, gentian, ginger, nux vomica and bicarbonate of soda.

5. Good hay, chopped oats, linseed meal, silage and raw roots.

6. You, being conversant with local conditions, should be the better judge. It appears to us that there is little prospect of a decline in the price of foodstuffs. If you expect to have good pasture and the season be favorable you would probably be able, with the addition of a daily grain ration, to fatten her more cheaply on grass, but you must remember that it will cost considerable to "carry her over" until pasture becomes good.

7. This is another question upon which your opinion may not be valuable. We are of the opinion that a second-hand Ford car, with tractor attachment, would not satisfactorily perform the general work on a farm, but we must admit that we are not in a position to say just what satisfaction the outfit will give. This, of course, depends largely on the state of repair of the car, and the skill with which you can handle it, and even if it should give good results the economy of the change must depend greatly upon the cost of the outfit. As the outfit should do at least the work of two teams of horses, you would have, at most, 1 months' work yearly for it, but you should be able to get some service (other than farm work) and pleasure out of the car.

Gossip.

New York State First Aberdeen-Angus Sale.

On April 20 there will be held in Albany, New York, a sale of Aberdeen-Angus cattle. It is claimed that this is the first public sale of Doddies to be held in the State for many years. Eastern breeders and several from Ohio and Indiana are contributing high-class individuals. A large percentage of the offering will be cows with calves at foot, and re-bred to high-class bulls. There will be an opportunity of securing young females of excellent breeding and individuality. The bulls range all the way from undefeated show animals to farmers' bulls. In breeding, the offering presents a variety of blood lines that will afford plenty of opportunity for selection. This is an opportunity of obtaining high-class cattle, and Ontario breeders might advisedly attend this sale. Catalogues may be had by writing Dr. K. J. Seale, Ithaca, N.Y.

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APRIL 15, 1920

Questions and Answers.
Veterinary.

Tendon Contraction.

Horse seventeen years old has tendon contraction. The tendons from the knee to the body are contracted, have been contracted since the early part of the winter. I am using sweet blister without results.

FARMER.

Ans.—It is hard to understand just what you mean by "tendon contraction." The diagnosis is certainly incorrect, as the tendons of the muscles of the leg commence at the knee and proceed downwards, hence there is very little tendon above the knee. The muscular tissue (flesh) extends from the knee to the body. Contraction of tendons is very rare and when it does occur the only effective treatment is severing of the tendon, and this seldom gives satisfactory results. A blister tends to cause contraction of tissue, hence if there be contraction your treatment is radically wrong. If there be contraction of muscular tissue you may be able to give some relief by bathing the parts frequently and long with warm water, and after bathing rubbing well with a lotion made of 2 oz. of the fluid extract of belladonna with water sufficient to make a pint.

Washy Horse.

Last July my 7-year-old horse commenced to fail. I had his teeth dressed and got some powders for him, but he got no better. He is quite lively and apparently in good health, but his coat is dry and his legs swell when he stands for a while. He drinks considerable water in the morning, but little during the rest of the day. When being driven he does all right for a couple of miles and then commences to purge, and the excrement has a foul odor.

J. H.

Ans.—Horses of this kind are called "washy." It is due to faulty digestion, due to weakness of the digestive glands. Some horses are so strongly predisposed to the trouble that it is almost impossible to check it. Have his mouth examined again, and if necessary, his teeth dressed. Give him a laxative of 1½ pints raw linseed oil. Get a mixture of equal parts of powdered sulphate iron, gentian, ginger, nuxvomica and bicarbonate of soda and give him a heaped tablespoonful 3 times daily. Add to his drinking water ¼ of its bulk of lime water and give him only small quantities at a time, especially if going to drive or work him. Endeavor to give in such quantities that he will consume about the same quantity 3 times daily. Feed on good hay and oats, hay in only limited quantity for each meal, and if possible give quite a limited amount if you expect to drive him shortly after a meal. Arrange so that he will get the bulk of his hay ration at night, with only a limited quantity in the morning and at noon.

Fatality in Colt.

1. Two-year-old colt in good condition when we brought her to the barn in the fall, soon became apparently unable to eat. We doctored her and gave her condition powders, but she gradually became worse, and died. A post mortem revealed an abscess at the back part of the roof of her mouth, which when opened discharged a large quantity of pus. She also had bots. Is this contagious?

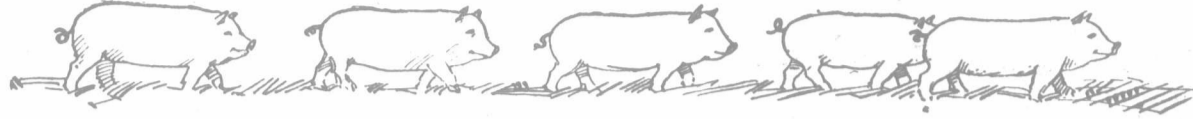
2. We had an old horse die a year ago very much the same way. Our veterinarian said it was tetanus and that few cases recovered.

W. B. D.

Ans.—1. This abscess was doubtless due to some foreign matter as a piece of stick, sliver, nail or something of that kind becoming fixed in the hard palate. An examination of the mouth by a veterinarian would have revealed the trouble; he would have lanced the abscess, allowing the escape of pus and cause of the trouble and the filly would have recovered. All horses that were on pasture during fly time last summer have many bots in their stomachs. They very seldom cause trouble, in fact, the only cases in which trouble occurs is when they let go their attachment to the stomach in large numbers, form a ball and block the passage from stomach to intestine. They do no harm in this case. The trouble is not contagious.

2. Tetanus is altogether a different ailment, and your veterinarian was correct in saying that in many cases it causes death.

V.



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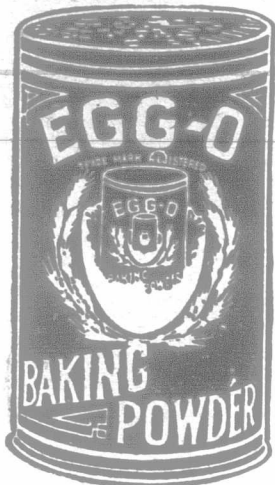
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Our School Department.

Arbor Day in Rural Schools.

(A Successful Plan Tried by One Teacher).
Arbor Day, the first Friday in May
'Twill soon be here again;
Sometimes we had a holiday,
More often 'twas our "clean-up" day.
But it's different now, from then.

What memories it does recall! To me it brings back vividly the smell of soapsuds, vigorously applied to grimy desks; a dust-filled atmosphere, as chalk brushes and black boards were attacked by small hands; and a siege of window-polishing which gradually reveals outside a few small boys aimlessly raking sticks and paper on to a smouldering bonfire. Perhaps, in the afternoon there was some such diversion, as a trip to the woods, sometimes accompanied by the teacher, but more often not. Is not this all too true a picture of the typical Arbor Day not so many years ago?

Can you wonder then that Arbor Day, in the register, always marked the lowest attendance; or, with such a program in view accuse parents for keeping children home?

But, a change has come, with each year an improvement on the last, and in no place, so well as in the rural school has the teacher such opportunities for making this a red letter day.

The following is a brief outline of a plan, based on what one country teacher did, which may prove a helpful suggestion to others.

At least, a month previous begin to arouse interest by talks on the real meaning of the day; how it originated, from arbor—a tree, then proceed to show how this idea can be enlarged upon always keeping uppermost the thought that it is to start things growing. The schoolhouse itself is to get no attention whatever so far as cleaning is concerned, that having been previously attended to in the recent vacation by the janitor. Do not fail to impress this on the children's minds so that the parents will have no excuse for saying, "I've plenty of cleaning for them to do at home."

Then, as to the gardening. Prepare for this by having each child under your guidance select and purchase his or her own seeds, ready for planting that day. The land (if it be a regulation school garden) should have been plowed in the fall, or if it be only a small plot, at least spaded. An Arbor Day program may be prepared, consisting of songs, drills, etc., appropriate to the occasion. To this invite the parents for either afternoon or evening, whichever seems most suitable. With such a prospect in view you should find every seat filled; with eyes and ears ready for the word to begin.

Start with the gardening as it is the most strenuous work, and the planting of the trees (previously selected), but brought that morning fresh from the woods. The care of these should be assigned to certain pupils so that, with this responsibility will grow added interest in their development. Then, a quick clean-up of the yard may be easily accomplished through competition—the girls against the boys. If the program is set for afternoon no time is left to pass wearily, but if it is to be in the evening, arrange a trip to a neighboring woods, to bring branches, flowers, ferns, etc., and convert the school room into a spring-time bower for the evening's festivities. Such an occasion always affords ample opportunity for Nature Study.

Thus, every minute the boys and girls are busy, not having time to think that this is Arbor Day. When the guests arrive allow the children to escort them through their newly-made gardens. This, followed by their efforts in singing and speaking will go far towards obliterating their old-time prejudice against Arbor Day as well as being them in closer touch and sympathy with their children's work.

Mrs. E. J. JOHNSON,
Lambton Co., Ontario.

The Birds in April.

A LESSON PLAN.

Aim—To interest the pupils in observing the return of the birds in spring, and to teach them to distinguish between the song sparrow and the chipping sparrow in particular.

Materials.—Pictures of some of the birds that arrive in April—robin, blue-bird, blackbird, kingfisher, song sparrow, and chipping sparrow.

Method.—1. Inquire if the pupils have noticed any birds about now which were not here all winter. Have them describe any they know. Ask questions such as "Why do birds go away in autumn and come back in the spring?" How can a song sparrow be distinguished from a chipping sparrow?

2. Show pictures of the birds to the children. In a general way speak of the striking differences of these birds, as to their color, size, and habits. Notice especially the song sparrow and the chipping sparrow. Notice the reddish-brown crown and the gray breast of the chipping sparrow? How does the size of the song sparrow compare with that of the chipping? Where does the song sparrow usually live? The chipping sparrow? Discuss the song of the song sparrow. Try to imitate its song, by making three strong notes and then running down the scale. Can the chipping sparrow sing? Does it make any noise? Why do gardeners like to have the song sparrow about their gardens? Where does this bird get its food? What does the chipping sparrow eat? Discuss the resting habits of the two birds.

3. Compare the song sparrow with the chipping sparrow as to size, color, songs, and habits. Which is the better singer? Which is the prettiest? Which tamer?

4. Name all the birds you know that arrive in early spring. Which usually come in April? How could you know each? Why do you like the song sparrow? The chipping sparrow? Where do they build their nests? What do they eat?

5. Watch for the first appearance of the birds and observe their colors, and listen to their songs. Try to distinguish one from another. Watch them obtaining food. What do they find to eat? Keep in simple form a record of their return.

6. Draw a chipping sparrow and try to show how it is colored by using crayons. Read and tell stories and relate experiences about the lives of the birds.

The above lesson plan is from Nature Study Lessons by Dr. D. W. Hamilton.

Dodgeball.

A GAME DESCRIBED BY A. MACLAREN.

The players are divided into two even groups. One group forms a circle (this need not be marked on the ground). The larger the circle the more sport in the game. The other group stands within the circle, scattered promiscuously. The object of the game is for the circle men to hit the centre men with a basket ball, or football, the centre men dodging to evade this. They may jump, stoop, or resort to any means of dodging except leaving the ring. Any player hit on any part of his person at once joins the circle men. The last player to remain in the centre is considered the winner. The groups as originally constituted then change places for the next game, the centre men becoming circle players and the circle men going to the centre.

There is no retaliatory play of the ball by the centre players; they merely dodge it. The ball is returned to the circle either by a toss from a centre man or by a circle man stepping in for it if it should not roll or bound within reach. When two centre men are hit by one throw of the ball only the first one hit leaves the centre. The ball can be thrown only from your place in the circle.

Watch Nature's Diary in the first part of each issue for comment on birds and plants. Become a regular reader of that column, you will find it interesting and instructive.

Department.

Birds in April.

A LESSON PLAN.

Interest the pupils in the return of the birds in spring. Show them to distinguish between the sparrow and the chipping sparrow.

1. Pictures of some of the birds that arrive in April—robin, bluebird, kingfisher, song sparrow, chipping sparrow.

2. Inquire if the pupils know any birds about now which were here all winter. Have them say what they know. Ask questions like "Why do birds go away in autumn and come back in the spring?" How does the sparrow differ from the chipping sparrow? Show pictures of the birds to the pupils. In a general way speak of the differences of these birds in color, size, and habits. Notice the song sparrow and the chipping sparrow. Notice the reddish-brown and the gray breast of the chipping sparrow? How does the song sparrow compare with the chipping sparrow? Where does the song sparrow usually live? The chipping sparrow? Discuss the song of the song sparrow. Try to imitate its song by three strong notes and then a fourth on the scale. Can the chipping sparrow sing? Does it make any sound like the song sparrow? Do gardeners like to have a sparrow about their gardens? What does this bird get its food? What does the chipping sparrow eat? Discuss the habits of the two birds. Compare the song sparrow with the chipping sparrow as to size, color, and habits. Which is the better bird? Which is the prettier? Which of all the birds you know that come in early spring. Which usually come first? How could you know each? Do you like the song sparrow? The chipping sparrow? Where do they build their nests? What do they eat? Watch for the first appearance of each and observe their colors, and their songs. Try to distinguish between the two. Watch them obtaining their food. What do they find to eat? Keep a record of their return. Show a picture of a chipping sparrow and try to tell it is colored by using crayons. Tell stories and relate experiences of the lives of the birds.

Lesson plan is from Nature's Diary by Dr. D. W. Hamilton.

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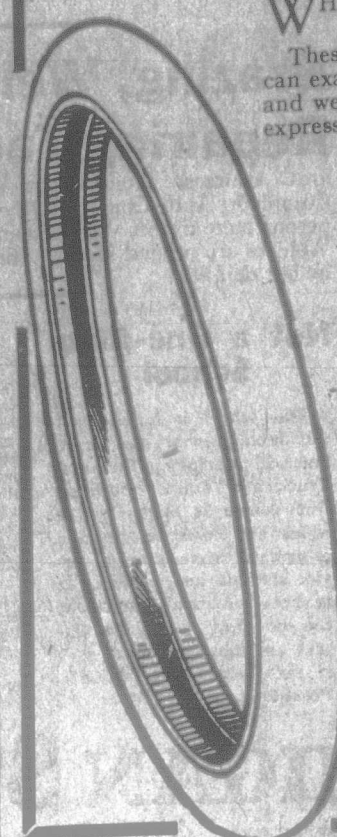
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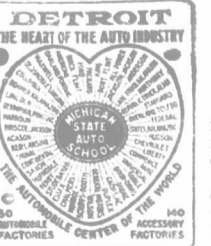
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I am making good (thanks to the "Old Reliable" M. S. A. S. faculty, par excellence), with every job that happens along, which is to say that I am kept more than busy, although I haven't opened a garage yet. I am out on the road nearly every day, starting autos and gas engines, locating electrical troubles, etc., etc. So you can see that I am busy.

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I intend to start a garage in this town, Vineland, next spring as I now own a nice large building 30 x 60 feet, and intend to fit it up this winter when I have a little time. One of your satisfied graduates. FRED. HAIST, Vineland, Ont., Canada.

I am just getting along fine. Working in a Chandler Garage have more work than I can do, not just on Chandlers, but all makes. I have charge of the garage, am making \$300 per month at the least, have made \$375, but as an average between \$250 and \$375. That is pretty good, but will do better. Yes, and by the way, I'd rather hear a motor hit than eat. Your western M. S. A. S. friend and booster. ED. WAMHOF, Alva, Okla.

The fundamentals I acquired at the school stand me in good stead, and I have not struck a difficulty about autos yet that the knowledge acquired at the school has not helped me to solve successfully. Yours faithfully. H. D. LUKEMAN, Tulsa, Okla.

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