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VOL. XLVII.

LONDON, ONTARIO, MARCH 21, 1912.

MAY 17 1912 No. 1017

Publications Branch.



Every telephone in a separate case, ready to go on the wall.

Investigate carefully this perfect telephone before you equip YOUR system

One special feature of this telephone is our patent hook switch, which does away with the non-interfering push-button, although giving the same non-interfering service. The telephone is so wired that when you ring with the receiver on the hook, you ring only the subscribers on your own line; by removing the receiver and ringing, you call only the switch-board. This one feature gives our telephone such a decided advantage, that, apart from its many other strong points, you cannot afford to go into the telephone business without fully considering our equipment.

There are a great many other details well worth investigation, but we would much rather have you test the telephone yourself.

Free Trial Offer

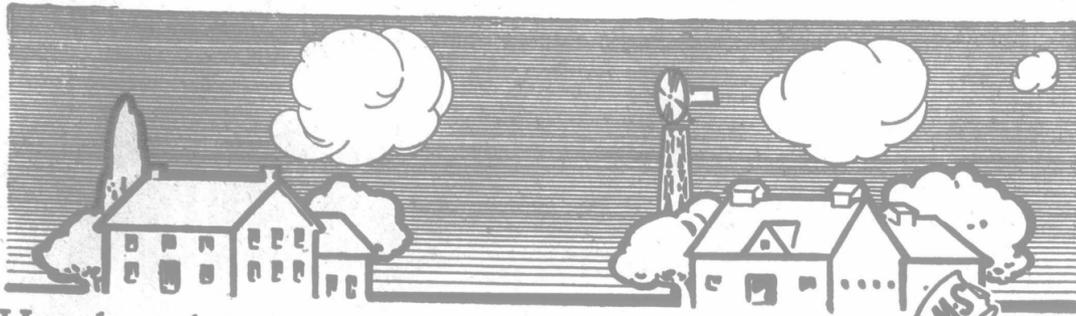
In order to personally test our telephones, write us about our FREE TRIAL OFFER, whereby you can judge for yourself the efficiency and quality of our telephones before you spend a dollar.

A Convincing Record

In 1910 our business doubled that of 1909. In 1911 we doubled our 1910 business. We feel confident that 1912 will show as great an increase as previous years, and consequently, we have planned to maintain our prompt service, and high efficiency in every department.

Write for our No. 3 Bulletin and complete information. Our engineers will render any assistance desired, as we are directly interested in seeing that you get started under the best conditions to insure success.

Canadian Independent Telephone Company, Limited
20 Duncan Street, TORONTO, ONTARIO



How long do you expect unpainted wood and metal to resist the wear and tear of weather and hard usage?

Here are the facts—the unpainted house or barn will probably be beyond repair in less than 25 years, while the properly painted building, will be practically as good as new. Leave a new buggy, wagon, or piece of farm machinery without repainting, and in less than seven years it will be beyond repair from the checking, splitting and rusting of unprotected surfaces. Paint your implements regularly and you will still be using them at the end of ten or fifteen years.

For a reliable first quality finish, ready for the brush, to meet any paint or varnish need around the farm or farmhouse go to your local merchant who sells

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SWP—Sherwin-Williams Paint—is the paint that will make the house look best and protect it the longest. SWP is a pure lead, zinc and linseed oil paint, ground and mixed by powerful machinery. It is as good as 40 years of paint-making experience can make it.

For the Barn and other outbuildings use **Sherwin-Williams Commonwealth Barn Red**. Spreads easily and covers economically. Put up in full Imperial Measure Cans.

Sherwin-Williams Wagon and Implement Paint is the paint to use to protect your wagons, tools, implements, etc. from rust and decay. Made for that particular purpose, stands severe exposure and hard usage.

Address all inquiries to **THE SHERWIN-WILLIAMS Co. of Canada, Limited**, Montreal, Toronto, Winnipeg, Vancouver. 81

Around the Farm and Farmhouse use

S-W Buggy Paint—for buggies, porch furniture, boats and other surfaces exposed to water and hard usage.

S-W Aluminum Paint—for metal surfaces and machinery, **S-W Floorlac**—an easy-to-apply combined varnish and stain for woodwork, furniture and floors.

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S-W Roof and Bridge Paint—for windmills, metal roofs, etc. Prevents rust and decay.

S-W Creosote Paint—a preservative paint for barns, sheds, fences and all rough lumber.

Remember there's a Sherwin-Williams agent in every town.

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Large areas of rich agricultural lands, convenient to railways, are now available for settlement in Northern Ontario. The soil is rich and productive, and covered with valuable timber.

For full information regarding homestead regulations and special colonization rates to settlers, write:

The Director of Colonization
DEPARTMENT OF AGRICULTURE
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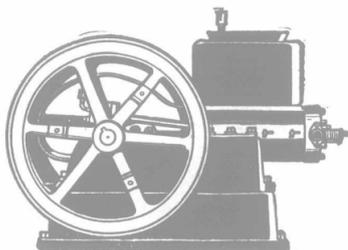
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Canadian-grown seed corn. Your money back if not satisfied.
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and balance
in easy
instalments
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IT IS EASY TO BUY the wonderful Gilson "Goes Like Sixty" Gasoline Engine on the above plan. Powerful, simple, durable, dependable, cheapest running, easiest to operate of any engine made. A positive guarantee given with every engine. Ten days' trial—if not satisfactory, hold subject to our shipping directions, and we will return every cent of your first payment. Can anything be fairer? Made in Canada—no duty. The Gilson has 30,000 satisfied users, proving that it is not an experiment but a tried and tested engine. Ask your banker about our reliability; founded 1850. Tell us just what work you have for an engine to do and we will name you price and terms on the proper horse power. All sizes. Send for free catalogue. Big money for Agents—write for our proposition.

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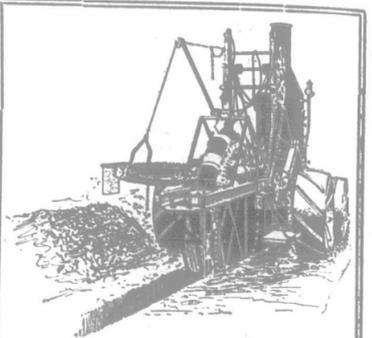
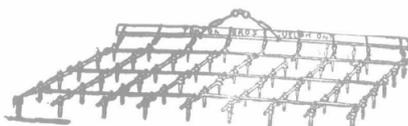
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TOLTON'S

High-grade Steel Harrows

Section and Flexible All-Steel Harrows with an unequalled record. Pre-eminently the most efficient, strongest and longest-wearing Harrows ever manufactured is our unprecedented guarantee. Send to-day for descriptive circular furnishing the facts. Address: Dept. F.

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Get Into a Paying Business and Become Independent

INVEST part of your savings in a **BUCKEYE TRACTION DITCHER**, which will pay you a greater interest on your money than any bank or individual.

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In brass or aluminum, with brass or steel interchangeable discs. Large liquid ways prevent clogging. Gives a perfect spray. Guaranteed. Sent on approval. Free treatise of crop diseases on request.

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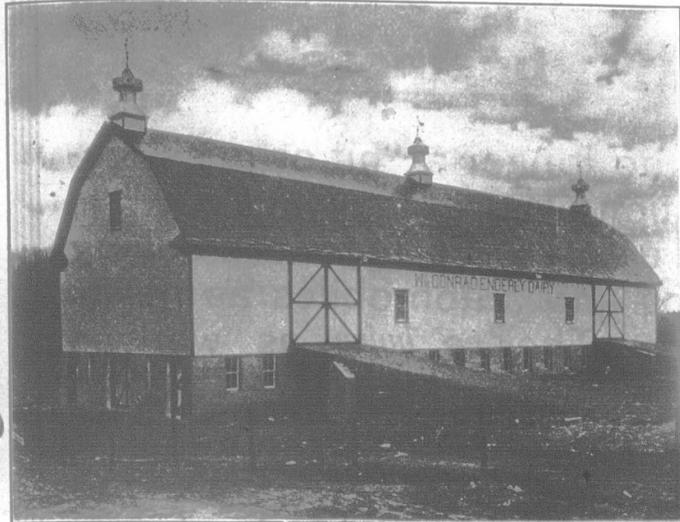
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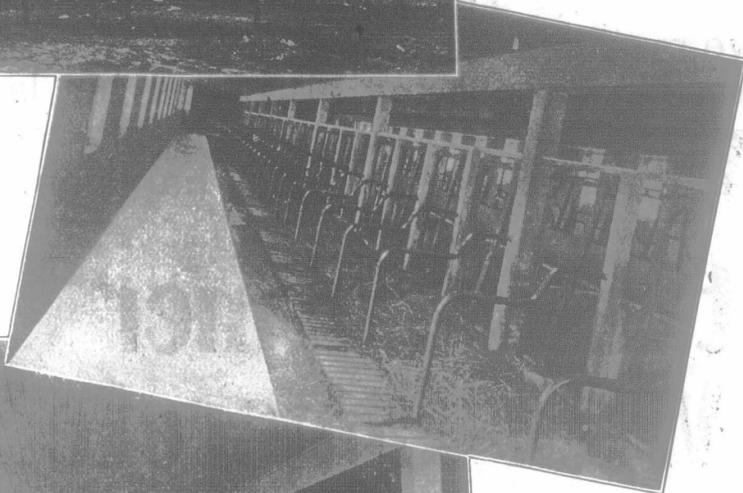
BUILD YOUR BARN LIKE THIS!

Your cows will produce more in a sanitary stable, and your work will be cut squarely in two



A FINE STABLE

It is a pleasure to work in a stable like this. The cows are clean and comfortable.



STEEL STALLS ARE SANITARY

Steel Stalls do not soak up manure. When used with a cement floor you have a perfectly sanitary stable. The main cause of the spread of tuberculosis in cattle is through urine and manure. No danger with Steel Stalls.

DON'T OBSTRUCT THE SUNLIGHT

Sunlight is the best disinfectant in the world. With Steel Stalls there are no dark corners. They allow a free movement of air and light. It is easy to keep a stable equipped with BT Stalls clean.

COW COMFORT MEANS INCREASED PRODUCTION

A cow tied in a BT Stall and Stanchion has the maximum freedom consistent with keeping her lined up in her stall. She can card herself on almost any part of her body. Tied centrally in her stall she is free to lie down to either side. She can freely get up or down, but at the same time she is prevented from moving backward and forward in her stall, so that she can be lined up on the cattle stand and all droppings go into the gutter, not on the cattle-stand. That means clean cows.

STEEL STALLS ARE DURABLE

When you put in BT Steel Stalls with a good cement floor you have a permanent job—no posts rotting off—no partitions breaking—no repairs to make. Isn't that worth something?

FIRE RISK IS LESSENER

A stable equipped with steel stalls and a cement floor is not nearly as liable to take fire as a wood stable. In fact, the lower part of the barn would be almost fireproof. Should fire occur, however, cows tied in BT Stanchions can be let out in less than half the time required with chain ties.

EASILY SET UP

In two hours you can set up 20 BT Steel Stalls, and as soon as the cement is dry your stable is ready for the cattle. Isn't that better than buying expensive lumber and posts, getting it dressed, hiring expensive carpenters and boarding them for days while they put in your stable? You can remodel your stable yourself if you use BT Steel Stalls. From our book on stable construction you get complete information as to how to lay cement floors—the best measurements for stalls and how to set them up quickly and properly.

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Steel Stalls are not all alike. Last year the Dominion and several Provincial Governments built some 20 barns in different parts of Canada, and every one of them was equipped with BT Stalls and Carriers. Why? Our book will tell you. It shows how BT Stalls lessen abortion, do away with the principal causes of big knees, ruined udders and many other injuries which cows are liable to. You will see how our individual mangers save feed—prevent overfeeding and underfeeding. You will also learn how the exclusive features on the BT Stalls mean

dollars and cents to you, by giving greater comfort and protection to your cows.

A Barn is a permanent investment—don't undertake building it without getting the latest information. Our catalogue is free. It will surprise you how little it will cost to equip your barn with BT Stalls. Fill out the coupon now and let us tell you.

ARRANGE YOUR BARN RIGHT

At cost of over \$2,000 we have produced a book on stable construction. It tells how to build a dairy barn from start to finish. It shows how the upper structure should be built and save much money over the ordinary methods of framing. It gives the latest and best system of ventilation, which has been carefully prepared by J. H. Grisdale, Dominion Agriculturist. It gives barn plans approved by the best dairy authorities, tells how to lay cement stable floors properly. It gives proper measurements for manger, cattle-stand and gutters for any size or widths of barn. This book is free. See the coupon.

The head of one of our agricultural colleges writes us: "Your book on 'How to Build a Dairy Barn' is of inestimable value to anyone building a stable."

WRITE US TODAY—USE THE COUPON

BEATTY BROS., Fergus, Ont.

We also manufacture Litter Carriers and Hay Carriers, Forks, Slugs, etc.

THIS BOOK FREE



BEATTY BROS., Fergus, Ont.

Gentlemen,—Send me (free) your book, "How to Build a Dairy Barn," and your catalogue on BT Stalls.

How many cows have you?

Are you going to remodel or build?

If so, when?

Will you need a hay track or litter carrier?

Name

Post Office

Province



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has become a specialized
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It's no longer a "hit-or-miss" occupation, where "any old way" is good enough. Farmers are buying pianos and automobiles as never before. They're *living* as well as *working*.

The farmer has learned that it *pays* to employ progressive methods. That's why he is ever ready to receive helpful suggestions for improving his crops, his land and his home. It's also the reason that more than fifty thousand Canadian farmers are enthusiastic about our handsome book,

"What the Farmer Can Do With Concrete"

It isn't a catalogue, nor an argument for you to buy something. It is clearly written, interesting, profusely illustrated. It describes the various uses to which concrete can be put on the farm. Not theories, but facts, based on the *actual experience* of farmers all over the continent. It is the most complete book on the subject ever published, fulfilling the pur-

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National Bank Building

MONTREAL



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are sold with this absolute guarantee:

"MONEY BACK IF NOT RIGHT"



That's fair isn't it? Apparently we stand to lose. But we don't really. Because the Selkirk Fence is so well made, of such strong, tough wire, with such staunch uprights and a lock that grips so tightly, that it's not the kind people bring back to the dealer. It isn't the cheapest fence, because every part of it is of the best material. But it's the kind that gives absolute satisfaction all the time it's in use—and it lasts longer than any other kind. Full particulars in our catalog, sent free on request.

Selkirk Fence Company, Hamilton, Canada.
I want to examine for myself the merits of Selkirk Stiff Stay Fencing and Gates. Send a free sample piece of the fence with descriptive catalogue and Agent's Terms.

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P. O. Prov.

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"Good as Gold"

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20-Year Endowments issued for 16 premiums. You cannot afford to miss the opportunity offered by this excellent plan.

Profits to the extent of four annual premiums are absolutely guaranteed, and surplus profits paid in addition.

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500,000 Canadian grown Strawberry plants for sale; 30 choice varieties for home or commercial growers. Write for free catalogue. Lakeview Fruit Farm, H. L. McConnell, Grovesend, Ont.

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Everywhere all the world over you will find the successful men and women are those who have "done things" and are doing things—you feel you can bank on them every time.

That's one reason why I always use The Metallic Roofing Co's. materials on my various contracts and work—they don't have to tell you what they will or might do but show you what they "have done" and "are doing".

One great advantage of the Metallic Roofing Co's. goods over any others, is that when your job is finished, whether Roofing, Siding, Walls, Ceilings or any old thing—you know it will never need any more attention—in your life time anyway. Now take

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by the
Philosopher
of
Metallic Town

EASTLAKE STEEL SHINGLES

They outwear any metal shingle on the market. They are of better steel than any other. The design and construction of the "EASTLAKE" Steel Shingle is a guarantee in itself—because unless the steel is of the highest quality it will not make an "EASTLAKE" Shingle, as inferior Steel will not stand the stamping and forming.

There are no other metal shingles on the market that can stand the "EASTLAKE" process.

"EASTLAKE" Steel Shingles were the first lightning proof shingles in Canada—and are just as far ahead of others to-day—in fact with an "EASTLAKE" Roof you need no lightning rods.

There are many other exclusive advantages I have experienced in using "EASTLAKE" Steel Shingles that I have no room to mention here, but if you are interested in building or roofing write to-day for free booklet and full information.

Fire,
Lightning,
Rust and
Stormproof
Have already
stood the test
for 26 years.

THE METALLIC ROOFING CO., LIMITED

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BRANCH FACTORY: WINNIPEG

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No. 65 Magneto Telephones



This is our standard rural line instrument, of which there are at present several thousand in use in Canada, some of which have been in service more than six years.

You will make no mistake in equipping your lines with CENTURY telephones.

Remember, we will send two instruments on 60 days' trial and prepay the freight, you can't lose on this proposition.

Our prices are right and deliveries prompt. Your request will bring catalogue and quotations.

Century Telephone Construction Co.
Buffalo, N. Y. Bridgeburg, Ont.

TOWERS FISH BRAND REFLEX SLICKER



THE SERVICE COAT THAT KEEPS OUT ALL THE RAIN

Even the front of this Slicker is WATERPROOF. See our patent REFLEX EDGES, out of sight when coat is buttoned, that guide every drop down and off. Another proof of

FISH BRAND QUALITY

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SATISFACTION GUARANTEED
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Bell PIPE TONE Organs

THE
MOST
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ORGANS

FOR
HOME
USE

IN BUYING A

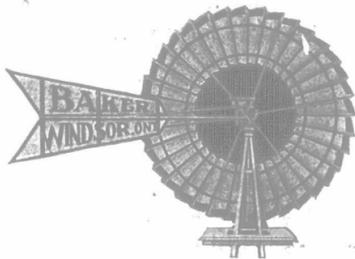
Bell Organ

you secure one with the charming tone of a pipe organ, and at a price that will please you. Buy a Bell and get the best made. We are the only makers of the patent Pipe Tone Reed Coils. Send for free catalogue No. 40.

The BELL Piano & Organ Co.
GUELPH, (Limited,) ONTARIO
Largest Makers of Pianos, Organs and Player-pianos in Canada.

"Baker" Wind Engines

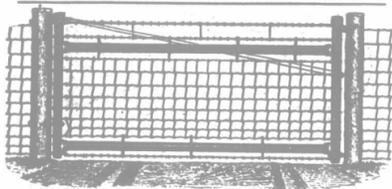
Are built for hard, steady work, and keep at it year in and year out.



It is the reputation which "BAKER" Wind Engines have fairly won and steadily held ever since their first appearance on the market, 30 years ago, that should be considered. They are famous for their durability, simplicity of construction and easy running. "BAKER" Wind Engines are so designed that the gears cannot wear out of mesh. The wheel is built on a hub revolved on a long stationary steel spindle, requiring no habbiting. It has a large number of small sails which develop the full power of the wind and enable them to pump in the lightest breezes. A ball-bearing turn-table and self-regulating device, and all the working parts are covered with a cast shield, protecting same from ice and sleet. The above is only a few of the many features that have placed "BAKER" Mills in the lead. Let the H.-A. Co. agent give you complete information, or write direct for booklet.

We make a full line of Steel Towers, Galvanized Steel Tanks, Pumps, Pneumatic Water Systems, Spray Pumps and Gas and Gasoline Engines.

THE HELLER-ALLER COMPANY
Windsor, Ontario



Clay Steel Farm Gates

are the strongest and best farm gates made. 20,000 sold last year. Every gate fully guaranteed. Sixty days' free trial allowed. Send for catalogue.

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MARRIED MAN wanted—Accustomed to fruit farm; must be good man with horses, and accustomed to all classes of work on fruit farm. Will provide a nice new cottage of seven rooms, large cellar, and water laid on, and land for garden, to right man. No objections to large family, if willing to work. Apply, stating experience, and give testimonials and references from previous employers in Canada.

GLEN ATHOL FRUIT RANCH
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in your old separator
on account of a new

DE LAVAL

CREAM SEPARATOR

38,796 Users did so Last Year
26,569 in the U. S. Alone

It's come to be an accepted fact that DE LAVAL Cream Separators are as much superior to other separators as other separators are to gravity setting systems, and that an up-to-date DE LAVAL machine will on an average save its cost every year over any other separator.

Aside from the actual saving in more and better cream and butter and in time of separation and cleaning, easier running, greater durability and less repairs, there's the pride, comfort and satisfaction which none but the owner and user of a DE LAVAL machine can feel in his separator.

In consequence, thousands of users of inferior and worn-out separators of various makes take advantage every year of the educational allowances which the DE LAVAL Company continues to make and trade in their old separators.

APPLIES TO OLD DE LAVAL USERS ALSO

While all this applies particularly to the users of inferior separators, it applies likewise to the many thousands of DE LAVAL machines 10 to 25 years old. They are not worn out, and are still superior to other new machines of to-day, but there are so many improvements embodied in the modern DE LAVAL machines that these old DE LAVAL users can well afford to make an exchange, and soon save the cost of doing so.

SEE THE NEAREST DE LAVAL AGENT

He will tell you how much he can allow on your old machine, whether a DE LAVAL or some other make, toward the purchase of a new DE LAVAL. If you don't know a DE LAVAL agent, write to the nearest DE LAVAL office, giving make, number and size of your present machine, and full information will be sent you.

DE LAVAL DAIRY SUPPLY CO., LIMITED
173 WILLIAM ST., MONTREAL 14 PRINCESS ST., WINNIPEG

The Firm Behind

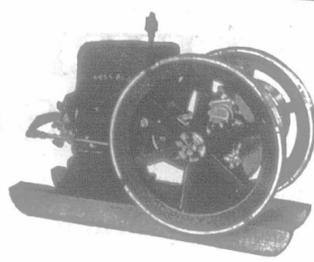
the seeds you buy is your only guide to quality. Whether the seeds are good or bad you cannot tell till you have planted them—you must buy on trust. A record of bumper crops for over 40 years proves beyond a doubt that

EWING'S Reliable Seeds

are trust-worthy. They are clean, vigorous, selected seeds, true to type, sure to grow. What's the use of taking chances, when by simply insisting on Ewing's you can get seeds that are sure to turn out satisfactory?

Your dealer should have Ewing's Seeds. If he hasn't, write for our illustrated catalogue and order from us direct.

Wm. Ewing & Co.
Seedsman
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Extra Serviceable

These 8, 12 or 16 h.-p. engines are extra strong and rugged, because intended for use under the hard conditions often met with on the farm.

The engine illustrated is one of the famous

"Bull Dog" Gasoline Engines

which are constructed especially for outdoor work. Drop a postal to our Canadian agents for our catalogue. It shows the different styles of "BULL DOG" Gasoline Engines, and explains their construction in detail.

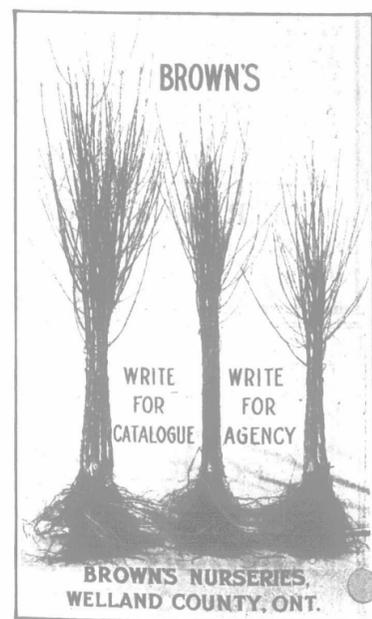
Bates & Edmonds Motor Company

Lansing, Michigan

General agents for Canada:

A. R. Williams Machinery Company, Limited

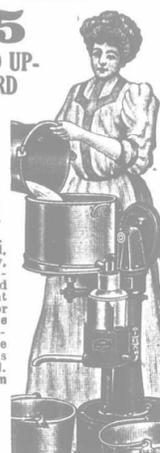
Toronto, Ont St. John, N. B.



15.95 AND UPWARD

AMERICAN SEPARATOR

THIS OFFER IS NO CATCH. It is a solid proposition to send, on trial, fully guaranteed, a new, well made, easy running separator for \$15.95. Skins hot or cold milk; making heavy or light cream. Designed especially for small dairies, hotels and private families. Different from this picture, which illustrates our large capacity machines. The bowl is a sanitary marvel, easily cleaned. Shipments made promptly from WINNIPEG, MAN., ST. JOHN, N. B. Whether your dairy is large or small, write us and obtain our handsome free catalog. Address:



AMERICAN SEPARATOR CO. Box 1200 BAINBRIDGE, N. Y.

The Farmer's Advocate and Home Magazine

PERSEVERE
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ESTABLISHED

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Vol. XLVII.

LONDON, ONTARIO, MARCH 21, 1912.

No. 1017

EDITORIAL.

Our national highways should be railroads. All the public highways we need are township and county roads.

The boy who has never helped tap maple trees and make syrup or sugar has missed one of the real joys of existence.

If there is not a shelf of good books of reference for the farm and home in the local library, why not take steps to have one filled before another year passes round?

The poles of the earth may be attained, but the poles of human endeavor in science, art, agriculture, education, government, and half a dozen other spheres, remain to be explored.

The Creator provides a Garden of Eden, and can't keep man in it. At the extremes of the earth He fashions inhospitable frigid wastes, but can't keep us out of them. Man is an adventurous creature, truly!

Can anyone suggest a better use for barnyard manure than spreading it over meadow land, to be eventually broken for crops like corn? We have been treating some of the poorest knolls in our new seeding that way this winter, and where there is anything to bring on, we expect some profitable results.

Some men save labor by rotting and leaching the manure pile to half its weight before applying to the land. But, while saving labor, they waste fertility. If, as Canadian and New England experiments indicate, a ton of fresh manure is worth practically as much as a ton of rotted, it would pay to hire men at five dollars a day to apply the extra quantity to the land.

Who wants a system of national trunk highways? Is it farmers, most of whom live from twenty to five hundred miles off the probable route of them, or is it automobile users wishing to tour the country, filling our nostrils and covering our fields with dust, while horse-drawn vehicles are crowded off to the side-roads? Whose axe is being ground by this agitation for Federal aid to roadmaking?

Is your harness oiled, seed grain cleaned, and bagged; clover and grass seed mixed; implement equipment ready for business; manure all out on the land; summer fuel supply on hand; heavy teaming done; team conditioned for spring work; any necessary fencing material on hand, and everything straightened up around the buildings? Spring is due, and every day is worth money in seeding time.

If you have not before kept a farm garden notebook, start this season. Put down the names of the varieties you grow, where the seed was obtained, the dates of planting, notes re cultivation and manuring, when the hotbed seeds were sown, when plants were transferred to the cold-frame or the open ground, date of ripening, yields, and other information that will be of value next season. Now is the time to plan the farm garden for 1912, and secure your supplies of good seed.

Hydro-electric versus Gasoline.

Within the zone served or likely to be served by the Ontario Hydro-Electric power scheme, about the most live practical question of the hour is the subject of farm power. Whether hydro-electric energy will be more economical or otherwise more advantageous than gasoline is the interrogation point on almost everybody's mind. The gasoline engine has already given a good account of itself on thousands of farms. By hydro-electric advocates large hopes have been raised, but most of the claims advanced on its behalf have been very general. The problem is immensely complicated by the varying cost of distribution and by the uncertainty as to how much use the farmer would be able to find for electric current. In an endeavor to reduce the problem to a comparison of figures, "The Farmer's Advocate" has asked for experience from users of different kinds of farm power, and also referred a special request to Prof. Wm. H. Day, Department of Physics, O. A. C., Guelph. Prof. Day was asked to suppose a typical or representative case, and calculate whether gasoline or hydro-electric would be more economical under such a set of stated conditions. Instead, he has approached the question from a somewhat different angle, comparing the cost of grinding with a ten-horse-power electric motor with the cost of grinding with two gasoline engines, one six and one eight-horse-power. For purposes of comparison, Prof. Day reckoned gasoline at 20 cents per gallon, while hydro-electric was estimated on a flat-rate basis, at \$50 per horse-power per year, an estimate attributed to Hon. Adam Beck, speaking some time ago at Guelph. A flat-rate basis means that the power contracted has to be paid for whether used or not. The economy of hydro-electric, then, as indicated by Prof. Day's tests, resolves itself into a question of how many hours per day a farmer could employ the maximum amount of current he would need for his ordinary work. In this connection, we quote here the essential part of Prof. Day's tables:

From four tests, the average cost of grinding 100 pounds of grain was as follows:

By gasoline, at 20c. a gallon.....	1.98 cents.
By hydro-electric, if full amount of current were used continuously for 24 hours per day	0.293 "
By hydro-electric, full current used 12 hours per day	0.586 "
By hydro-electric, full current used 6 hours per day	1.172 "
By hydro-electric, full current used 3½ hours per day.....	2.010 "
By hydro-electric, full current used 2 hours per day	3.516 "
By hydro-electric, full current used 1 hour per day	7.032 "

From this table, it will be inferred that a farmer who could use his full amount of current for 3½ hours per day, or a lesser amount for a proportionately longer time, grinding with hydro-electric would cost practically the same as grinding with gasoline. Where less than this amount of power were needed, the cost with hydro-electric would be greater, while, with more extensive employment of current, the cost of grinding with hydro-electric would be less than with gasoline. In short, hydro-electric, at Mr. Beck's estimate, would be very cheap power if all the current purchased could be used. If only a little of it could be used, it would be very dear.

There are, of course, such further points to

consider as the relative interest and depreciation charges on gasoline engine and electric motor; their relative convenience in use, reliability, fire risk, and the fact that electricity is readily adaptable for lighting. Along these lines we are pursuing our inquiries further. Meantime, the figures published in this issue will stand some rumination.

Build Silos.

One of the best monuments a farmer can rear to his own enterprise is a big and permanently-constructed silo. Of materials he has plenty of choice, from wood to steel. In making a selection, he may be guided by a number of important considerations. Where buildings are not permanently arranged, there is much to be said in favor of a removable structure; but, on the other hand, where the layout is definitely decided or fixed, cement-concrete presents strong claims. Lasting as the hills, almost, it has the further advantages of being practically rat-proof and fire-proof, while it is also an easy silo to roof rigidly. That it is virtually proof against rats is obvious enough, but readers may not all be aware of its fire-resistant qualities. However, in "The Farmer's Advocate" of Nov. 9th, 1911, appeared an illustration of a round cement-concrete silo on the premises of the Boys' Farm and Training School, at Shawbridge, Que. This silo, it is said, stood practically intact after a fire which destroyed the other farm buildings surrounding it. Whether this favorable experience would always be repeated; we cannot undertake to say, though we suspect that a well-built silo would stand a fairly severe test.

As to the keeping of the silage, nothing could be better than a properly-built cement silo, made of material mixed about 1 to 8, smoothly finished and washed both inside and out. The only objection is a tendency of the silage to freeze to the sides during cold weather. For this reason it might be desirable, in very cold climates, to build of cement blocks or some other form of hollow construction. In our own monolithic silo at Weldwood, about a foot of material adhered to the wall during January and early February. About the middle of the latter month, when the weather moderated and the sun warmed the south side of the wall, we took advantage of the opportunity to pry off the accumulation from day to day with the ensilage fork, allowing it to thaw out in the stable before feeding. We have now been feeding this for a full month, and, notwithstanding that there has usually been a certain amount of frost in the silage when fed, the cattle have eaten it up clean, and have done well on it. It smells good when thawed out, and the kernels of corn have that tart, sub-acid taste characteristic of first-class silage. Had there been any imperfect keeping, it would be evident here at the wall. But there is no such sign. Moreover, since the first two or three feet from the top, we have not found a moldy forkful in the silo to date. Of course, our silage was made from well-eared, well-matured corn, distributed in the silo with a jointed pipe reaching down from the blower mouth, and solidly tramped by two men, assisted at the top by a third, and afterwards a fourth. Our silo and silage have been an unqualified success. Since filling, about the first of October, we have fed an average number of about 25 cattle an average quantity of about 40 pounds silage per head per day, and at present writing, in the middle of March, we still have a solid ten feet of number one feed, unrivalled as

THE FARMER'S ADVOCATE AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL
IN THE DOMINION.

PUBLISHED WEEKLY BY
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JOHN WELD, MANAGER.

Agents for "The Farmer's Advocate and Home Journal,"
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a means of tiding over the usual period of discontent between seeding and pasture. If not all used this winter, what a splendid insurance against midsummer drouth it will be! To every dairyman and stockman in the corn-growing region of Canada who is not already provided, we would say: Build a silo.

Rural School Criticism—Jack Miner as a Nature Study Teacher.

Editor "The Farmer's Advocate":

The more one thinks of it, the larger measure of truth he finds in your contention that rural-school education is a matter of most vital concern to the agricultural population. A farmers' journal certainly does well to hold the aims and methods of the rural-school subject to continuous but judicious criticism. I am not using the last term in the sense of fault-finding, but as synonymous with that discriminating observation which notes with approval every step taken in the right direction, and exposes and censures the measures or conditions that directly or indirectly disqualify for successful and enjoyable life on the farm. An enlightened sentiment on this, as on any other question that obtains a firm hold on the farming community at large, will eventually find expression in legislation. The process of improving the rural school may be hastened by calling the attention of the teachers to what farmers are observing and saying about their work. There is probably not a rural-school section in the country into which a copy of "The Farmer's Advocate" does not find its way. If the reader has children attending the school, it would not be any trouble for him to lend the teacher a marked copy for an evening or two. If the six or seven thousand rural-school teachers in Ontario were thus to see themselves occasionally as others see them, who would venture to estimate the benefit of the adjustments that would likely ensue. If farmer-correspondents express views that are not warranted by the facts, you would, I am sure, Mr. Editor, welcome replies from teachers setting them right.

In a recent issue (Feb. 29th), Mr. Duke claims that the rural schools are putting the farmers' boys into two classes, namely, (1) factors,

employees, street-car conductors, etc., and (2) rutters on the farm, making "the same old mistakes their fathers did." Now, cannot Mr. Duke and the teacher of his section "put their heads together," and get their school at least to turn out a third and a better class than either, and, having done that, communicate their method to "The Farmer's Advocate"?

In the same issue, James Love alleges that time is wasted in the present method of teacher-training at the Normal Schools, in spending four months out of the nine in work that is of "no practical value."

In illustration, he instances as useless one or two problems in psychology; but he should be more explicit. If all the psychology were eliminated, it would not shorten the course by four months. He broaches a very practical topic when he refers to the subjects which should be emphasized in the High Schools by persons intending to teach in the rural schools. His contention, and we should hear more of it, that they ought to stress the subjects they will teach, is impregnable. The same cannot be said for his rejection of subjects "that merely enrich the mind." Man cannot live by bread alone.

As to nature-study, some people may, as Mr. Love says, give that name to the anatomy of the butterfly, etc., but it is a misconception of nature-study. Pickled butterflies may be useful in the Zoology class-room, but they have no place in the nature-study lesson. As a genuine nature-study, I should like to commend Jack Miner's article on "Caring for Quail in Winter," on pages 374 and 375 of "The Farmer's Advocate" of the 29th. If the reader of this letter sends a marked copy of the paper of that date to the teacher, let him pencil in the margin of Mr. Miner's letter, "An ideal nature-study lesson."

J. DEARNESS.

HORSES.

Geo. Harcourt, Deputy Minister of Agriculture for Alberta, is authority for the statement that the Sunny Province last year got \$400,000 worth of horses from the Brandon district, Manitoba.

High prices have, during the past few years, depleted the farms of the supply of big, drafty mares. Farmers have often been induced to part with their best mares by the large prices offered. The high prices still obtain, but it seems that horse owners and breeders have awakened to the fact that the profit for them lies in keeping the best fillies as breeders in the stud or on the farm.

Buyers and shippers in Canada are having difficulty in purchasing desirable draft mares, because the present owners are beginning to appreciate the real value of the mare, and, in place of disposing of her, she is retained to reproduce her kind, to the betterment of the horse industry. According to an American contemporary, similar conditions are gradually evolving in the United States. This cannot but be in the best interests of horse-breeding. The best drafters cannot be produced without good dams, and the place to keep the good breeding fillies is on the farms.

That Annual Spring Tonic?

More than one farmer will have under consideration, at this season of the year, the matter of how he is going to get his horses into fit again, and what tonic he had best use for this purpose, or else, without any thought of the matter, he is using the same tonic as was used during past years. To insist that a tonic is of little or no assistance in bringing the horses into fit, and is an unnecessary expense, the writer admits is not a popular argument. Many farmers have beliefs founded on long experience which would go to show that a spring tonic is necessary to condition the horses for the season's work, but they fail to give the diet of bran mashes, boiled barley and oats, or linseed meal, which usually accompanies the tonic, the credit deserved for its part in conditioning the horse.

Anyone is ill-advised to allow his horses to become run down during the slack winter season. It requires more feed and care to bring them again into fit than it does to keep them in tone the whole winter; but one is also ill-advised to use tonics, more or less expensive, in fitting horses, during the spring months, that have been run down. Bran mashes and boiled grains, easily-digested foods as they are, are also mild laxatives, which will rid the digestive and circulating systems of impurities, and quicken their activities, and the secretions of digestive enzymes and fluids will be increased, the results being a renewed normal appetite, a loose skin, and a glossy coat, if the horse has not been diseased. If he is diseased, he requires a specific treatment, and not a general tonic.

Horses, in the best of farmers' hands, may go out of fit, particularly during the slack season, and then after a tonic is resorted to to bring them

into condition, when, in reality, all they need is a laxative in the form of mashes, coupled with a slight change of feed, and perhaps more exercise.

Veterinarians, in discussing the matter of tonics, say that many times they are forced to give some drug to suit the fancy of customers who insist that their horses require a tonic. While they say that the medicine given is harmless, and usually a laxative, they feel that better results would be obtained by consistent feeding and exercise.—"Wicklow," in The Farmer's Advocate and Home Journal, Winnipeg.

Navel-ill Prevention.

What is best treatment for young foals' navels?
H. A. K.

Norfolk Co., Ont.

The season is again at hand when many mares will be foaling, and, as is always the case, joint-ill or navel-ill will be more or less prevalent. All writers on the subject admit that the trouble is very difficult to treat, and, in fact, not curable, unless intelligently treated during the very early stages.

A great variety of supposed causes have been put forth by breeders, but that the disease is due to a germ has been conclusively proven. The organism has been isolated from the exudate from diseased navels, and thus all doubts as to the origin of the disease are dispelled. The germ has an affinity for the colt's joints, which it reaches through the blood, and where it lodges, multiplies rapidly, and so irritates as to cause soreness and swelling. The germ is generally supposed to gain entrance through the navel, hence the names "joint-ill" and "navel-ill."

The germ which is responsible for the trouble exists in the soil, in dust, on stable floors, in dirty bedding, and in many kinds of dirt and filth. Observations have led us to believe that the prevalence of the disease is much greater some seasons than others, and that in some localities it works much more havoc than in others. Almost immediately the germ gains the circulation some of the symptoms of the ailment are manifested. The symptoms are fairly easy to identify, although at times persistence of the urachus is mistaken for this disease. Sometimes within a few hours, and seldom more than a few days after birth, the foal becomes dull, and when made to move is sore or stiff on one or more legs. Upon close examination, one or more joints are found to be swollen. As the disease progresses, the swelling increases, and the foal becomes weaker and weaker, and the desire for nourishment gradually vanishes, and the colt succumbs.

It is readily seen, from the nature of the disease, that a colt foaled in a stall, especially one where precautions against the disease have not been taken, and where there is always a certain amount of dust and dirt, is more liable to contract the disease than one foaled in a clean grass paddock, although there is danger even in the latter. Prevention, therefore, consists in keeping the germ from entering the colt's system. Cleanliness and a liberal use of antiseptics are essential where the germ exists.

Where a mare is to foal in the stable, regular and thorough cleaning of the stall is imperative, and a little slacked lime scattered over the floor each day will be found beneficial. It is also recommended to wash the external genital organs and the hind quarters of the mare from time to time with a 5-per-cent. solution of one of the coal-tar products, as creolin, zenoleum, etc. This treatment is all right as far as it goes, but the most essential measure for the prevention of joint-ill is the local treatment given the navel immediately after birth, and several times daily until it is dried or healed up. For this treatment, mare owners should always make it a point to have a bottle of some good antiseptic on hand at the time the mare foals. A five to ten per cent. solution of carbolic acid, a ten-per-cent. solution of formalin, a ten-per-cent. solution of some coal-tar product, as creolin or zenoleum, or corrosive sublimate, 20 grains to a pint of water, will do the work effectively if applied to the navel immediately after birth, and four or five times daily until healed. The disease seldom appears where these precautions are taken, but it may happen, even after all known preventive measures have been resorted to, to gain access. However, such cases do not prove that the treatment has not been correct.

When the first symptoms of the disease are noticed, long-continued bathing with hot water and thorough rubbing with camphorated liniment is advised, locally, while five to ten grains of iodide of potassium should be given four times daily in a little of the dam's milk. The mare also should be given potassium iodide in one-dram doses three times daily, and she should be liberally fed on milk-producing food. It is necessary that the colt, where it is unable to rise alone, be helped to suck every hour. Such treatment may effect a cure, but, as before stated, the greatest hope lies in prevention.

REPEATED

Itchy Legs

1. I bought a heavy Clyde mare, with beefy and very hairy legs. Until about three months ago she was used in a city. She bites and scrubs her legs until they bleed. The condition now appears to be grease.
2. Will this trouble render her useless in a short time?
3. How can the itchiness be prevented?
4. Would it be wise to clip her legs as soon as the weather becomes warm?
5. She is in very poor condition. What can I feed her to build her up?

P. R. D.

Ans.—1. Clydesdales with beefy legs, with coarse feathering, are greatly predisposed to itchiness, and high feeding acts as an exciting cause. No doubt this mare has been used for dray purposes in the city, and highly fed, until the legs became in such a state that she was no longer serviceable, and she was disposed of. When the stage known to veterinarians as "grease" has been reached, a cure can seldom be effected. The progress of the disease can be checked to some extent by daily attention, but, unless a man is looking for trouble, he should not purchase an animal with an eruptive disease of the legs.

2. This depends upon the stage the disease has reached. If it really has reached the stage that is properly called "grease," it will render her useless in a short time, unless the legs be well looked after and dressed two or three times daily. In case there are always raw surfaces or cracks, and in warm weather very careful attention is required to prevent fly-blow, which, of course, is soon followed by maggots. If this stage has not been reached, she should not soon become useless, and it is possible to cause a healing of the cracks.

3. Where itchiness is not accompanied by raw places or cracks, it can usually be checked and prevented by applying once or twice daily a solution of one teaspoonful of Gillett's lye in a quart of warm water; but, where rawness or cracks exist, this dressing is too irritant. Dress once daily with a solution of 15 grains of corrosive sublimate in a pint of warm water. The hair must be carefully parted, and the lotion rubbed on the skin, cracks, etc. In cold weather, keep excluded from draughts, and rub well after dressing. Do not apply ointments, oils, or anything of a greasy nature.

4. It is not considered wise to clip the legs of horses of this type, but it is hard to properly apply the dressings without removing the hair; hence, if treatment has not been successful by the time hot weather appears, it might be wise to clip.

5. Have her teeth examined, and, if necessary, dressed. Give her two ounces Fowler's Solution of Arsenic in damp food night and morning, for a week. Feed on good hay, oats, bran and a little linseed meal and a few raw roots. You must remember that high feeding tends to aggravate the condition of legs, hence, unless working regularly, do not try to fatten quickly. "WHIP."

LIVE STOCK.

What to Look for in Selecting Breeding Stock.

No man ever has succeeded, and no man ever will succeed, for any length of time in breeding live stock who does not have as his slogan that one word "utility."

No man ever has succeeded, and no man will ever succeed for any length of time in breeding live stock who attaches his kite to "faddism," which is the tendency on the part of many men to disregard the really useful features in an animal, and go to the extreme on certain blood lines, color markings, shape of ear, head, etc.

The longer I study and handle live stock, the more I am convinced that the first and most important point to be observed in all meat and milk-producing animals is a good middle. The signs of constitution and digestive capacity present their most visible manifestations in the body, and not in the extremities. The animal is simply a machine to convert feed into more edible products, such as meat and milk. Its capacity is governed almost solely by the size of the middle.

We must pay more attention to the question of size and vigor in our animals. Size always has and always will be a vital point. It is usually associated with heavy and economical gains. Vigor is absolutely essential. It is associated with heavy gains, and also helps to safeguard the animal in time of disease outbreaks. One of the chief causes for deterioration in both size and vigor of our animals is the use of immature sires and dams for breeding purposes. While both sire and dam exert an influence, it has been clearly

proven that the immature dam is the most detrimental to progeny. The continued use of immature sires and dams, especially where corn rations are fed, will seriously reduce both the size and vigor of any breed or class of live stock. Anything which lessens the size and vigor of the animal renders it less profitable on high-priced land. Too much attention cannot be given to the importance of selecting breeding stock from mature parents. In this way, and only in this way, can we retain size and vigor in our herds and flocks.

Few lines of work offer greater financial returns for the capital invested than a good flock of breeding sheep. This is especially true when good mutton conformation is combined with a long, dense, fine fleece. The question of constitution is very important in sheep. In selecting rams, blockiness, lowsetness, wide backs, loins, and heavy, well-filled hind quarters should always be demanded. The head should be broad and masculine in appearance, the neck short, and the shoulder broad and compact. The legs should be short and straight, especially at the hocks. The skin should be pink in color, and the fleece long, dense, fine and uniform on all parts of the body. Too much attention cannot be given the importance of density of fleece. It insures a heavier clip of wool, protects the sheep from rain, snow and cold weather, and also sheds chaff and other foreign material so detrimental to the wool.

Breeders of hogs will do well to pay more attention to the utility end of the business, and

value for his sheep, which I think would be a great encouragement to the sheep industry in Ontario. **ONE WHO IS INTERESTED.**

[Note.—If all men were absolutely just, there would be good reason for raising the proportion of indemnity, but human nature being what it is, we have to be more careful not to make sheep more valuable dead than alive. A self-interest motive must also be preserved to insure vigilance on the sheep-owner's part.—Editor.]

Handling Early Litters.

Winter pigs are often about as interesting a proposition as winter chicks, seemingly out of season, a little previous, judging from the heavy mortality among February and March litters, and the results with the few surviving pigs. Notwithstanding that it is a comparatively easy matter to bring a litter along to weaning age in a fine and thrifty condition during the warmer season, we consider many advantages are to be gained by having the first litters of the year arrive at an early date. On the dairy farm skim milk is generally plentiful during the early spring months, and by having the pigs for summer feeding as early as possible, they are able to make much better use of this than were they later. Again, for winter feeding, in order to have the feeders in best condition, fortified against constitutional weakness, it is imperative that they be allowed a run out of doors during the fall months, while if they arrive too late climatic conditions at weaning time are unfavorable for such young pigs outside, and they are deprived of this essential towards their development. We also look forward to giving the fall pigs a nice start with skim milk again, and this being plentiful early in the fall season, the feeders are better for an early start, in order that they may dispose of the whole supply to best advantage. Profitable gains are made by the growing youngsters if there is a piece of clover aftermath in a not too distant field, while over the corn field, root field, orchard, etc., they act the part of scavengers, turning to profitable account what would otherwise be wasted.

For market reasons, also, it is well to have the pigs farrowed in time to avoid late fall prices. After September, the market does not revive until past the New Year. From this resume of the advantages of early farrowing, we see that it is worth trying and trying hard for success with February and March litters. In order to obtain best results with winter-farrowed pigs, we must at least have the largest and strongest youngsters possible to start with. Weanlings at this season, above all others, are to be avoided, and in eliminating this falling in the young things, we must first discriminate in the selection of our breeding stock, selecting only those which, under favorable conditions, are most likely to produce litters of uniformity of strength, size and vitality in a large degree; while, secondly, these dams must be properly cared for previous to farrowing to ensure such results.

During this time our sows are not kept closely confined, nor are they housed inside, where the winter feeders are kept. A colony house, that serves as a summer shelter from the hot sun and cold rains of autumn is hauled near the feeding pen on the approach of cold weather, a heavy curtain hung over the entrance, any battens replaced that may have been loosened, and a good bed of straw provided, which completes arrangements of winter quarters for the breeding stock. The feeding trough is at a distance of a few rods from this house, sufficient to afford a good deal of exercise in the fresh air in travelling from their sleeping quarters to their feeding trough two or three times a day in severe weather, while on a mild day much more outdoor exercise is taken.

These sows are fed a good nourishing ration of ground barley and oats, a little corn, and what skim milk can be spared. Otherwise water is the substitute. We are not at all afraid of getting them too fat when wintered in this way. Wintered inside, without exercise and fresh air,



Warton Draughtsman.

Shire stallion; four years old. First and supreme champion, London, England, Shire Show, 1912.

much less to the fad end, as illustrated by the pedigree craze, shape of head, ear, nose, dish of face, etc. The one great need to-day in the hog business is a hog with size, quality and prolificacy, combined with early maturity. In selecting breeding swine, attention must be given to size, quality, strength of bone, evenness of fleshing, and the use of more mature boars and sows. All pigs intended for breeding purposes should be selected from well-developed mature sows. If the sires are mature animals, so much the better. These pigs should be fed on rations calculated to produce bone and muscle, not fat alone. In this way we could materially improve our swine herds without changing breeds.—[From an address by Prof. W. J. Kennedy, Iowa State College, before the Interstate Breeders' Association.]

Indemnity for Sheep Destroyed.

Editor "The Farmer's Advocate":

I have been reading several articles lately in your valuable paper, encouraging farmers to go more into keeping sheep, and all admit the greatest drawback to the sheep industry is the dog nuisance. Now that we have compulsory taxing of dogs for the protection of the farmer who keeps sheep, and for the encouragement of the sheep industry, is there any just reason why the farmer who has his flock destroyed by dogs should be compelled to take two-thirds their value, as he has to under the present law. I would like to see all farmers that are interested in keeping sheep take this question up, and ask the Government to so amend the Act that the owner of sheep worried or killed by dogs shall get a fair

heavy feeding would very likely be conducive to different results at farrowing time. Each sow is removed to a farrowing pen three or four days before due, in order to get her acquainted with her new surroundings, and on feed consisting largely of bran and shorts, thus conditioning the sow against constipation, a potent cause of milk fever, and is considered most suitable in preparation for this critical time and for a flow of milk.

With severe weather at hand, or likely to follow, about the best place for the sow will be found in a stable, where the temperature is kept up steadily by the inmates, and where surroundings are pretty free from dampness. The stall provided should be light, the floor warm and dry. It is not so important that the stall be extra warm when the pigs arrive as that the floor be dry. Young pigs cannot withstand a wet, cold floor. We always have them come on a plank floor, well bedded down with dry chaff. Any chaff that may become wet is easily removed, and a little dry litter again scattered around. From a plank floor there is also the outstanding advantage of being able to keep the quarters dry without furnishing sufficient litter to enable the sow to make a hollow bed, where she would be almost sure to smother pigs.

A frame built along the wall, at a distance of six or eight inches from the sides of the stall, is a good precaution against smothering pigs, while it also keeps the sow much quieter, as the little ones are able to travel all the way around the dam without disturbing her. After a few days this frame should be removed, as the young pigs, receiving plenty of nourishment, are very likely to have a nest or hiding place under this, where they will spend much time, failing to take the necessary amount of exercise to safeguard against the trouble so often met with, viz., thumps. This disease consists in the formation of fat around the lungs and throat that finally smothers. It is most liable when the pigs are receiving too much nourishment and taking too little exercise, as we have often noticed the best pigs of the litter are generally the first to be affected with this malady.

To encourage this exercise, the atmosphere of the stable or pen must be congenial, not too cold, yet dry, the floor dry and clean, and kept so by the liberal use of chaff, which the youngsters take great delight in digging in when supplied fresh occasionally. We have found that a stall so cold that the little pigs will not run around freely in it, and with a heavy damp atmosphere, is most conducive to this trouble. When the litters are in the hogpen, we find it a splendid idea so to arrange that the young pigs are allowed out in the gangway, while the dams are retained in the stalls. While some may object to this from the standpoint of cleanliness, when once the pigs become accustomed to these runways they get a great deal of exercise thereby, besides learning to eat from what they gather in front of the feeding stalls.

In every case we aim at teaching them to eat from a trough before weaning. This is imperative, as we do not wean before six weeks, and sometimes later, and before this age is reached a large litter requires more than can be furnished by the dam.

Fed in this way, they make perhaps their most profitable gains, and suffer no check when finally weaned. For the sows, prior to weaning, we find a ration of skim milk, ground oats and shorts and bran most suitable, feeding all they will consume in a thick slop.

Dundas Co., Ont. CLARK HAMILTON.

Corn and Alfalfa First for Fattening Hogs.

The Nebraska Experiment Station has just issued a bulletin entitled, "Fattening Hogs in Nebraska," and a few important findings, based on extensive experimental work, are contained in Director E. A. Burnett's summary of the work.

Part I. gives the results of fattening hogs on corn and alfalfa hay. In the experiments reported, the hogs were fed the following rations. The proportions of alfalfa and corn are given by weight.

- Corn and alfalfa hay in a rack.
- Corn 9 parts, chopped alfalfa 1 part.
- Corn 9 parts, alfalfa meal 1 part.
- Corn only.
- Corn 3 parts, alfalfa meal 1 part.
- Corn 3 parts, chopped alfalfa 1 part.
- Corn 1 part, chopped alfalfa 1 part.
- Corn 1 part, alfalfa meal 1 part.

The hogs were given all the feed they would eat twice daily. Part of the experiment was repeated three times, and part of it four times. There were ten spring sheats used in each lot. The feeding period began about Nov. 1st, when the sheats weighed 135 pounds each, and continued for three months, at which time the average weight ranged from 190 pounds for those fed one-half alfalfa and one-half corn, to 238 for those fed one part alfalfa and nine parts corn.

The prices used in computing the results were the average prices for corn and for hogs at the North Platte Sub-station during the six years

preceding 1911. The price of corn was 47 cents per bushel. The price of hogs when put into the experiment and when taken out was \$5.90 per 100 pounds. The price of alfalfa hay was \$8.00 per ton, of chopped alfalfa \$10.00 per ton, and of alfalfa meal \$15.00 per ton. The only item of cost taken into account is the feed. The labor and investment being about equal for all lots, is not considered.

The corn was ground for all the hogs. The chopped alfalfa and the alfalfa meal were mixed with the ground corn. All feed was moistened in the trough. The hogs were fed from the first of November until the first of February, or three months.

The rations are arranged above according to the profit on the pigs fattened on each ration. The most profitable ration, corn with alfalfa hay fed in a rack, is at the top of the list. The first three rations stand closely together. Corn seems to have a stationary place between a ration of 10 parts of alfalfa and 90 parts corn, and a ration of 25 parts alfalfa and 75 parts corn.

With corn worth 60 cents per bushel, a ration of one-fourth alfalfa and three-fourths corn gives nearly the same profit per pig fattened as a ration of corn alone.

Where alfalfa was fed in the rack, or where chopped alfalfa or alfalfa meal were fed in the proportion of one pound of alfalfa to nine pounds of corn, a pound of alfalfa was worth more than a pound of corn.

Part II. gives the results of substituting other grains and mill products for a part of the corn in a ration of corn and alfalfa for growing and fattening hogs. The experiments were conducted during the summer and winter. The number of pigs in each lot varied from 10 to 30. The prices used in computing the results are the average prices paid for the various kinds of feeds during

90 parts corn and 10 parts chopped alfalfa, increases the cost of gains and decreases the profit per hog during the fattening period, excepting emmer, which in this test only increased the profit per hog. The wheat increased the gains, but decreased the profit. The emmer also increased the gain. Barley and milo decreased the gain, as well as the profit. Milo was worth the same price per bushel as barley in this test.

The results of one test indicated that a bushel of corn was worth as much as a bushel and a half of cane seed, when fed with alfalfa for fattening hogs.

Where fall pigs were wintered, and turned on alfalfa pasture in the spring, there was more profit per pig from those grown out largely on pasture and then fattened, than from those fed out more quickly.

Four seasons' records show that old sows being fattened on corn and alfalfa pasture gained 2 pounds per head daily, ate 355 pounds of corn for 100 pounds of gain, and gave a net profit of over 5 cents daily.

A summary of the results recorded in Bulletin 121, together with data from this Bulletin, 123, indicates that the cost of feed to produce a 225-pound market hog was \$3.35 per 100 pounds, and that keeping the hog until it weighed 325 pounds increased the cost to \$3.57 per 100 pounds. This includes only the cost of feed, and does not include the cost of labor, equipment, unusual risk, or interest on investment.

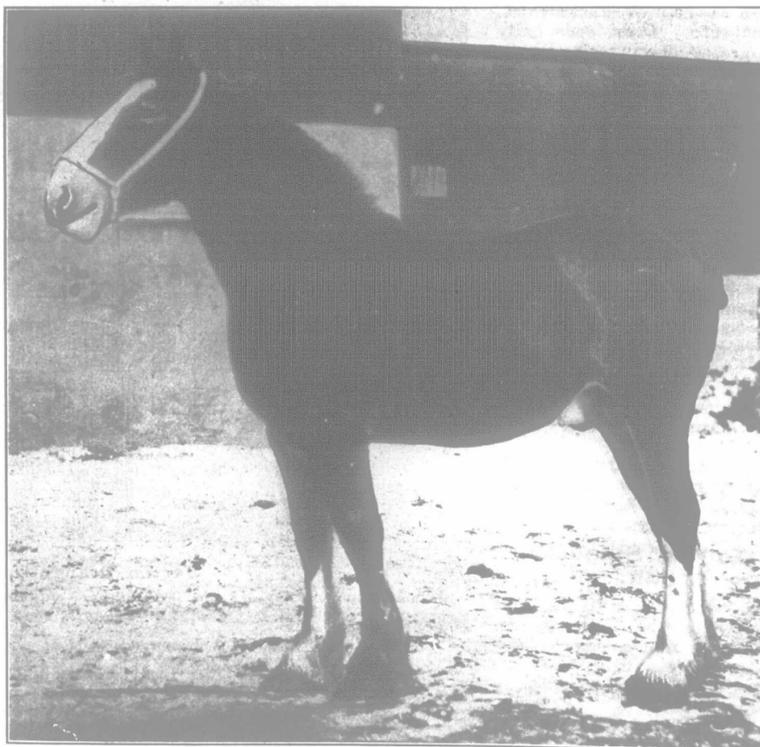
Sheep Notes from Australia.

Calcium phosphate, as a lick for sheep, has given results which are apparently good. At the Glen Innes State farm, N. S. W., where experiments are being carried out on an extensive scale, the rock phosphates as a manure for oats have

been used, but so far it cannot be ascertained whether the sheep fed on the crop were benefited. At this farm they are using the calcium phosphates as a lick, mixed with sulphate or iron and Liverpool salt, in the proportion of 4-1-40, respectively. It is also used in the proportion of 5-1-40. The manager believes that phosphates in lick and for top-dressing of pastures are both likely to play an important part in the future. A Riverina farmer, who raises sheep for the meat market, says that sheep topped off on a paddock of stubble where superphosphates had been used to produce the crop, were three pounds in weight heavier per sheep than another flock topped off in a stubble paddock where no phosphates had been introduced during the season.

During the past 10 years or so the Romney Marsh sheep have come to the front in New Zealand in a most pronounced fashion. As a result, there are twice as many of them in the North Island as Lincolns. One authority recently argued that, paradoxical though it may seem, the present decline in the quality of the wool has been due to the use of heavy types of sheep. It seems that a number of farmers have been using types because others have succeeded with them, unmindful of the fact that the character of the country often changes in a few miles. He points out that, though the Romney has done so well in a great number of cases, other farmers on high country have been tempted to introduce the breed there. He urges that the old plan of crossing the Lincoln and Merino should be re-introduced, to see by comparison how the change will compare with present circumstances.

The days of the pure-bred Merino sheep are rapidly passing out in New Zealand, excepting in the high country in the South Island. Many of the breeders are resolutely opposing this tendency, as the production of fine wool is rapidly decreasing all the world over. It pays better at present, however, to raise other types, and the farmer cannot



Kelvin's Pride (imp.).

Yearling Clydesdale stallion. Second at Toronto; first at Ottawa last fall; second at Guelph, and first at Ottawa Winter Fairs. Owned by Smith & Richardson, Columbus, Ont. Sire the Toronto and Ottawa grand champion, Baron Kelvin (imp.).

the progress of the experiments. The results of these tests, given very briefly, are as follows:

Of the many rations tried for fattening hogs, none has been found the equal of corn and a small percentage of alfalfa.

Wheat gives faster gains, with less grain per 100 pounds of gain, than corn, but the high cost of wheat makes the gains from wheat more expensive than from corn. The profit per pig, if fed one-half wheat and one-half corn while being grown and fattened, is less than if fed corn. This is when both grains are fed with alfalfa.

A ration of barley and corn with alfalfa does not give as fast gain or as much profit per hog during the growing and the fattening periods as a ration of corn and alfalfa.

The substitution of 5 parts tannage, 5 parts bone meal, or 25 parts shorts, for corn, in a ration containing 90 parts corn and 10 parts chopped alfalfa, increases the cost of gains and decreases the profit per pig during the fattening period.

The substitution of 25 parts emmer, barley, wheat, or milo, for corn, in a ration containing

be blamed for looking after his individual interests. So far as New Zealand is concerned, the breeders have improved the long-wool sheep very considerably, notably the Romney Marsh, the change in which is almost beyond recognition. Cross-breeds are, however, mostly used for wool production, but it is stated that the yield is not so high from them now as it used to be, owing to deterioration. That is the danger which dairy-men are recognizing. The first and second crosses are all right, but when you begin to breed from these cross-breeds, the decline is sure. If the breeder could be always provided with first and second crosses, the principle would be all right, so far as the producing of flocks is concerned, but how is this to be done, unless studs of immense size are to be kept to constantly replenish?

The old question as to whether lambs should be docked with a knife or the hot iron is rather prominent this season, owing to the number of deaths from lockjaw. The mortality appears to be greater amongst the lambs treated with the iron, even amongst ewe lambs. With the knife, the deaths, in the main, have been limited to ram lambs. At a meeting of wool-growers, at which this question was discussed, it was stated by several speakers that tetanus was more prevalent since the hot iron had been introduced. Breeders have been advised to use Stockholm tar, applying it freely to the bleeding tails, and also to the incision made in the scrotum of the male. This, it is contended, will prevent the tetanus germ gaining entry into wounds in the lambs.

At Barraba Station, N. S. W., there is a cross-bred sheep which turned the scale at a show at 246 pounds, and cut 17 pounds of wool.

There has been no end of trouble in Australia in regard to the systems of show judging. All methods known to be in use in other parts of the world have been tried, with varied results. The single judge has given the most satisfaction, but there are many complaints. The Royal Society in Victoria tried to get some idea of public opinion in the matter, and took a referendum vote of members, but very few recorded their opinions, mainly because they had none on the point, or they were afraid to give them. Those who did vote favored by majority the two-system judge, with a referee when needed. It was accordingly tried at the last show in Melbourne, and worked fairly well. But in the case of the Ayrshires it was shown that the three judges would, if they had been acting singly, have given the championship to three different animals. It seems that it will not be possible to adopt a system which will give universal satisfaction.

J. S. DUNNET.

THE FARM.

Home Cured Bacon and Ham.

Farmers may very often not get enough for finished bacon hogs to "let them out" with a profit, but they need not, at all events, contribute an additional share to the fortunes of the packers by buying "store meats" at 18 to 24 cents per pound. They can kill and cure their own, and, with care and cleanliness, have something just as good. Probably one of the most popular bulletins ever issued by the Missouri State Board of Agriculture was entitled "Butchering Hogs on the Farm," prepared by a farmer who was a student of the Agricultural College. Looking around the railway stations and town stores, he saw enormous quantities of meat coming in from the packing plants, and a lot of it bought by farmers who paid a profit to the local hog-shopper, twice to the railway, to the packer and the retail grocer, and then did not get as nice meat as he might have made at home.

In "The Farmer's Advocate" of Nov. 30th, 1911, the methods of killing hogs, scalding, curing, etc., recommended in the bulletin referred to, were described. Additional quotations of service are as follows:

George B. Ellis, former Secretary of the Missouri State Board of Agriculture, recommends the brine method, and writes as follows:

"For thirty years I have used a method for salting and curing meat that has been very satisfactory, and our meat has been complimented by a great many people who have eaten at our table. I do not think this is the only way, but it is surely a good way, and I will give it to you for what it is worth. Some people prefer dry-salting, but I prefer the brine method, as it keeps the meat cleaner, and I think safer, in a very warm spell of weather.

"It is necessary to have good healthy and well-fattened hogs to start with, and to know how to properly divide and trim the carcass, but that phase of the question I will not take up. I would prefer to butcher when the weather is only moderately cold, and when it is just a little below freezing. If the meat is allowed to become frozen hard before it is put into the brine, it will not take salt readily. After the carcasses are cut up, spread the hams, shoulders and sides upon a table

or boards in the smokehouse, but where they will not freeze; do not pile them up. Rub a little salt on each piece, particularly the hams and shoulders, and let the meat cool out for twenty-four to thirty-six hours. Then pack closely in a clean barrel and cover with a brine made as follows: Soft water, three gallons; good salt, six pounds; brown sugar or a good quality of sorghum, one pound. Make this proportion a sufficient amount to cover the meat well. The brine should be boiled and skimmed and cooled. It will require from four to six weeks, owing to the size of the hams, for the meat to be salted properly. The sides require less time; usually four weeks is sufficient for them, but the proper time to take the meat out of brine can be determined by sampling it.

"For curing, I use clean corncoats or hickory and maple wood. I hang the meat in a dark, tight closet, made in the coolest corner of the smokehouse. I put the fire for the smoke in a stove, and conduct the smoke into the closet through a pipe, thus avoiding too much heat under the meat. It is best to take plenty of time to allow the meat to cure, and I would like to have a smoke under the meat about half the time each day, and it will require about three weeks. Then the meat should have a nice straw color and be sufficiently cured that it may be immediately sacked and hung back in the same place. The butchering should be done early, so that the meat may be salted and cured before the warm weather of March sets in. I prefer meat cured in this manner to any of the packing-house products on the market."

A Famous Dry Cure for Hams.—H. J. Waters, formerly Dean of the Missouri Agricultural College, but now President of the Kansas Agricultural College, recommends the following recipe for curing hams: "For each 1,000 pounds of meat use the following: Forty pounds common salt, ten pounds New Orleans sugar, four pounds black pepper; one and one-half pounds saltpetre, one-half pound Cayenne pepper. Weigh the meat, and take such part of the ingredients as that is a part of the 1,000. Let the meat cool thoroughly. After thoroughly mixing the ingredients, one-half of the amount should be rubbed well into the meat. Put the meat in a dry, cool place (never in a cellar). Let it remain two weeks, then rub on the remainder of the cure, and let it lie about six weeks, when it is ready to hang. It is important that the meat be well rubbed each time the cure is applied, and that plenty of the cure be forced in the hock end and around the joints. Less cure should be used on the thin sides than on the joints. The heavier and fatter the meat, the longer the time required for curing. The warmer the weather, the more quickly the meat will take the cure. These arrangements are estimated on the basis of about 200 or 225-pound hogs, and ordinary January and February and March weather. While in general a light straw color would indicate sufficient smoking, it is always safe to try a piece of thin bacon or shoulder, to be certain that the process has been carried far enough to give proper flavor and cure. The hams may be kept one, two or three years without detriment, and will improve in flavor up to the end of at least two years. No deterioration will take place for even five years if a ham is properly cured. Smoking should be done slowly. It should occupy four to six weeks, a little every day, and with little heat. Slow smoking gives a delicate flavor. After the smoking is finished, wrap each piece in a paper, put in an unwashed flour sack and hang in a dry place."

Hanging the Meat.—After the meat has taken salt for a sufficient time, it should be taken up and the salt brushed off. Place a kettle near the smokehouse and have it full of hot water. Have some wire stretched near-by, and see that meat hooks are ready. These meat hooks may be made of No. 7 or 9 galvanized wire, and if taken care of will serve more than one season, but, if very rusty, throw them away, as wire is cheap. Place several pieces of meat in a washtub, and pour the hot water over it. Rinse off the salt, and hang on the wire to drip. Proceed with this operation till all the meat has been washed, and by that time the first pieces washed will be ready for the next process. Get a baking powder can and punch the lid full of holes, making a big "pepper box" out of it. Punch the holes from the inside of the lid, leaving it smooth on inside and rough out. Fill the can with powdered borax and shake this over the meat. Then hang it in the smokehouse, ready to be smoked. The borax should be put on before the meat is dry, so that it will adhere to it. The top of your smokehouse should be strung with a lot of wires laid over the joists. The wire hooks before mentioned should then be hung over this wire. This hook method has a great advantage over the old string system, in that it takes a much less hole in the meat to insert the wire than the string, and this damages less meat and makes but little place for vermin.

Smoking the Meat.—After all is hung, we are ready for smoke. Place an old stove or open

kettle in the smokehouse, and keep a fire of green hickory or sassafras, or both together, for several days. The exact time would depend upon how closely-built the house was, and thus how well the smoke was confined. The only sure way to test it is to try some of the meat. If the meat is to be kept until late summer, it should be canvassed during dry weather and dipped in a preparation of ochre or whitewash, and kept in a cool, dark place.

KEEPING SMOKED MEATS.

The following concerning the keeping of smoked meats and the use of yellow wash is from Farmers' Bulletin No. 183, issued by the United States Department of Agriculture:

Smoked meat may be left in the smokehouse for some time during moderate weather. The house should be kept perfectly dark, and well enough ventilated to prevent dampness. A dry, cool cellar or an attic with free circulation, will be a satisfactory place for smoked meats at all seasons, if it is kept dark and flies excluded.

If to be held only a short time, hams and bacon will need only to be hung out separately, without covering. For longer keeping, it will be necessary to wrap them first in paper and then in burlaps, canvas or muslin, and bury them in a grain bin or other suitable place, the object being to gain a uniform temperature and to keep away insects. A coat of ground pepper rubbed into the piece before wrapping will be distasteful to them. For absolute safe-keeping for an indefinite period of time, it is essential that the meat be thoroughly cured. After it is smoked and has become dry on the surface, it should be wrapped in parchment paper, or old newspapers will do where parchment cannot be had. Then inclose in heavy muslin or canvas, and cover with yellow wash or ordinary lime whitewash, glue being added. Hang each piece out so that it does not come in contact with other pieces. Do not stack in piles.

Recipe for Yellow Wash.—For 100 pounds ham or bacon take—

- 3. pounds barytes (barium sulphate).
- 0.06 pound glue.
- 0.08 pound chrome yellow (lead chromate).
- 0.40 pound flour.

Half fill a pail with water and mix in the flour, dissolving all lumps thoroughly. Dissolve the chrome in a quart of water in a separate vessel, and add the solution and the glue to the flour; bring the whole to a boil and add the barytes slowly, stirring constantly. Make the wash the day before it is required. Stir it frequently when using, and apply with a brush.

Lard and By-products.—To make good lard, cut into small pieces and cook over a slow fire. When about done, add a teaspoonful of soda to a 20-gallon kettle of lard. The lard should not be too hot when the soda is added, as it may cause it to boil over. The tongue and heart are very fine to boil and serve cold, either with or without vinegar; or they may be used in mince-meat or scrapple ("raunhouse"). The heads should be cut up, the eyes taken out, and the ears removed, then place heart, livers, heads, tongues and other scraps, if any, in a large iron kettle out in the yard and boil until well done. It will be found profitable to make mince-meat or other by-products out of the scraps. It will be "up to" the farmer to create a market for some by-product to be made from these odds and ends, then make what his market calls for.

Commercial Fertilizers.

I have been thinking of trying some commercial fertilizer this spring, and thought probably you could give me some information, either through your paper or by letter, whichever you choose.

1. What kind would you recommend?
2. Can it be sown with grain drill, or do you require special drill for the purpose?
3. What quantity per acre would you advise for peas, oats or barley?
4. Would it be advisable to drop a handful of fertilizer in the hills of corn, or how would be the best way to apply same to corn or potatoes or mangels?

SUBSCRIBER.

1. There are many kinds or brands of ready-mixed fertilizers, containing varying proportions and percentages of the three essentials, nitrogen, phosphoric acid and potash, on the market, but, considering that various crops differ in their fertilizer requirements, we would advise you to purchase the separate materials, and do your own mixing. Apart from enabling one to mix according to special requirements of crops and soils, the purchase of the separate materials is more economical, at least 25 per cent. of the purchase price being saved in this way.

2. Some grain drills, corn and potato planters have special fertilizer attachments, whereby the fertilizing is effected simultaneously with the seeding, but this method we cannot strongly advocate, believing that, under average conditions, fertilizers should be broadcasted either by hand or by special broadcasting fertilizer distributor.

3. The nature of the soil and previous treatment would determine to some extent the exact amounts of fertilizers required for the crops you mention, but the following would be approximately right: For peas, 350 pounds acid phosphate, 120 pounds muriate of potash, per acre. This being a leguminous crop, there is no need to apply artificial nitrogen, unless the soil be very poor in humus, when the application of 75 pounds nitrate of soda per acre at seeding time would give your young plants a good start. For oats—200 pounds acid phosphate, 75 pounds muriate of potash, 100 pounds nitrate of soda, per acre. For barley—300 pounds acid phosphate, 100 pounds muriate of potash, 100 pounds nitrate of soda, per acre.

Oats have less difficulty in obtaining their

plant-food requirements than barley, since oats ramify more deeply in the soil. Barley, on the other hand, is a shallow-rooted surface-feeder, hence the necessity of an available supply of plant food in the surface soil. We would mention here that, when possible, a grain crop should follow corn, roots, potatoes or peas, which have been liberally fertilized, as the fertilizer residue, not used up by these crops, would usually suffice to satisfy the more modest requirements of a grain crop.

4. As already noted, in question 2, we advocate broadcasting fertilizers, for the following reasons: If the fertilizers are evenly distributed through the soil, a more extensive root system is encouraged, and consequently the plants have a

much wider feeding area. On the other hand, if the fertilizers are concentrated directly around the plants, the root system becomes restricted, and thus cannot reach the supplies of plant food gradually being rendered available from the soil's original stock. An extensive root system, besides enabling the plants to stand more firmly in the soil, also adds to the soil's humus content.

The phosphate and potash may be mixed together and applied to the land early in the spring, but the nitrate of soda, being extremely soluble, should not be applied before seeding. In fact, on very light soils it is advisable to apply it after the plants appear above ground. B. L. E.

Can the Farmers Afford to Use Hydro-electric Power.

Editor "The Farmer's Advocate":

Replying to your inquiry regarding gasoline vs. electric power, I would say that recently we made a series of tests upon this point, and I will endeavor to give you an account of the same.

We had at our disposal gasoline engines of various sizes, from 2½ to 8 h.-p., and motors from 2½ to 10 h.-p.; also, a plate grinder, with 10-inch plates. At first sight it seemed a simple matter to make the test, but several unforeseen difficulties arose.

We selected white oats, 500 pounds, rather light in quality. Also 500 pounds of third-grade Manitoba wheat, which proved exceedingly hard to grind; also, some Dawson's Golden Chaff.

We began with a 2½-h.-p. gasoline engine, running at a speed of 266 r.p.m. (revolutions per minute) under load, with a pulley 12 inches in diameter. The pulley on the grinder was 5 inches in diameter, so that the speed of the grinder was 638 r.p.m. It was soon apparent that an engine of this size was not of sufficient strength for a 10-inch plate, especially with No. 3 Manitoba wheat, and so the test with this engine was abandoned, not, however, before our coming to the conclusion that, with a smaller plate and higher speed, good work, though at a slow rate, could be done even with this small engine.

We next tried a 6-h.-p. engine, running at 226 r.p.m., and with a 16-inch pulley; thus, the speed of the grinder was 722 r.p.m. Oats were tried first; 375 pounds, or 11 bushels, were ground in 57 minutes, the plates being set very close. The gasoline used was 2½ quarts, which, at 20 cents a gallon, or 5 cents a quart, cost 12½ cents, so that the gasoline for grinding these oats cost a shade over 11-10 cents a bushel, or 3½ cents per 100 pounds. This result is very close to that given in your issue of Feb. 29th by J. Morgan, when he reports having ground 20 bushels of oats and barley fine with one gallon of gasoline. The same engine ground much faster and more cheaply in later tests.

A 10-h.-p. electric motor was next tried. An ordinary ammeter for measuring the strength of the current was attached, and 500 pounds, or 14.7 bushels of oats were ground. The average speed of the motor was 850 r.p.m., and its pulley 6 inches in diameter, so that the speed of the grinder was 1,020 r.p.m. The voltage was 225, and the current 20 amperes, so that the motor was "drawing" almost exactly 6 h.p. We wondered why it wouldn't "draw" more. It took 32 minutes to grind the 500 pounds, but it was not ground as fine as in the former test.

The wheat was next begun; 500 pounds of Dawson's Golden Chaff was ground fine in 21 minutes. The speed was the same as before; also the power.

Five hundred pounds of No. 3 Manitoba wheat was next ground. Time, 33 minutes; speed and power as before, but the plates had to be set closer.

Thus far the plates had been set by examining the meal. When it seemed to be fine enough, the jam-nut was tightened to set the plates. However, we now concluded that, to make a fair comparison, the plates should be set the same for the motors as for the engines. Consequently, the present position of the screw for the No. 3 Manitoba was marked.

An 8-h.-p. gasoline engine was next used, and this engine was run by its manufacturer, my assistant and myself measuring the gasoline and determining the speed, while others tended the grinder. The gasoline man thought the belt we had been using was too light and narrow, so a heavier, wider one was used. Five hundred pounds of No. 3 Manitoba was first ground, the plates being set the same as for the Manitoba wheat with the motor. Speed of engine, 260 r.p.m.; size of pulley, 28 inches diameter; speed of grinder, 1,456 r.p.m.; time, 27½ minutes. We found the gasoline used to be 2.15 quarts, costing 10½ cents, or 1½ cents per bushel, or 2½ cents per 100 pounds. The manufacturer was surprised that the cost was so high. It was afterwards pointed out that the engine was new, and the

test was begun before the engine was warmed up. However, this compares favorably with later tests with the 6 h.-p. engine.

The oats, 500 pounds, were then ground. The plates were opened nearly one-quarter turn, giving a coarse meal. The screw was marked so the plates could be set the same for the next oats. We again measured the gasoline personally. The amount used was 1.17 quarts, and it took 26½ minutes to grind the 500 pounds. Cost of gasoline, 5.85 cents, or about 2-5 of a cent per bushel, or almost 11-5 cents per 100 pounds. It was our turn to be surprised this time. Had I not myself measured the gasoline into the can, and also the balance left over, each count being witnessed, and been present throughout the entire time, I should have been inclined to reject the experiment entirely, but under the circumstances I cannot do so. When making the averages, I shall figure both with and without this result.

As this 8-h.-p. engine appeared to have outstripped a 10-h.-p. motor, it was decided to retest the latter. A delicate Weston ammeter, the best manufactured, was secured, the same heavy belt as in the last tests being used. The motor was not loaded so heavy this time, so that a higher and more uniform speed was obtained. The motor ran 940 r.p.m., and drew 17.5 amperes for wheat, and 15.5 amperes for oats, so that the motor actually used 5.28 h.p. and 4.98 h.p., respectively.

In this test the plates were set exactly the same for the oats and wheat as with the 8 h.-p. engine. The 500 pounds of wheat were ground in 46½ minutes, and the same weight of oats in 40 minutes.

Another 10-h.-p. motor was called into requisition, and tested. Speed, 980 r.p.m. for wheat, and 1,010 r.p.m. for oats. Size of pulley, 6 inches diameter. Speed of grinder, 1,071 r.p.m. for wheat, and 1,154 for oats. The plates were set the same as before. The heavy belt was used. Volts used, 225; amperes used, 19; horsepower used, 5.73. Time of grinding wheat, 28 minutes; time of grinding oats, 26 minutes.

As the 6-h.-p. gasoline engine had been tested before the position of the plates was marked, it was retested, with the plates set as with the others. The engine was warmed up before the tests were begun. The wheat was ground in 38 minutes, using 2.31 quarts of gasoline, so that the cost was 2.31 cents per 100 pounds. The oats took 30 minutes and 2.30 quarts of gasoline; cost of grinding oats, 2.31 cents per 100 pounds. As the engine was speeded only 330 r.p.m. for the wheat, whereas it was run 355 for the oats, we concluded afterward that the wheat might have been ground in considerably less than 38 minutes.

The time taken by the various engines and motors led us to inquire what was the factor that determined the rate of grinding. Was it the rated h.p. of engine or motor? The 6 h.-p. engine ground the oats in 30 minutes. An 8-h.-p. would have been expected to grind them in ¼ of 30, or 22.5 minutes, but it actually took 26½. A 10-h.-p. motor ground 500 pounds of oats in 40 minutes, while another did it in 26 minutes. So we concluded that it was probably not the "power" of the engine or motor that was limiting us. What was it? The friction of the belt on the pulleys.

In all cases the grain was fed in as fast as the grinder would take it without making the belt slip (slipping indicated by belt tending to run off). The slipping would depend upon the tightness of the belt—a variable factor that did not occur to us until the tests were nearly completed. Hence, since the belt was the limiting factor, these tests cannot be taken as a comparison between the work that the various sizes of engines and motors are capable of doing. Even had we foreseen the bearing of this variable factor, it is doubtful if we could have even started for it. We had no way of securing equal tightness of the belt in all cases. Doubtless, a device could be devised, if all tests were to be taken in one place, but it would be very difficult to

one suitable to the different conditions found at the various engines and motors.

In the tests with the h.-p. engine it was necessary to run the belt crossed, and hence it was run that way in all subsequent tests. Whether the crossing of the belt tended to produce slipping, I am unable to say definitely.

If we had had our belt tighter, so that the slipping would not have occurred so easily, we could have made those motors draw more than from 5 to 6 horse-power.

However, this does not affect the comparison of cost of power. For each kind of grain, the plates were set the same for all tests that will be compared, and consequently, each kind of grain was ground to the same fineness in all cases. Hence, the amount of work done was the same. If that work was distributed over a longer time, the gasoline or electricity consumed per minute was correspondingly reduced, thus compensating for the longer time, so that the total amount was unaltered.

In the argument to be based upon these tests we shall use only those made after the positions of the plates were marked and the heavy belt used. Thus, the only factors not uniform in these tests are those of speed and tightness of belt. The price of gasoline has been taken at 20 cents a gallon, which is probably about an average. I know some who buy for considerably less, and others who pay considerably more. The average cost with gasoline was: For oats, 1.73 cents per 100 pounds; for No. 3 Manitoba wheat, 2.28 cents per 100 pounds. Average of the four tests, wheat and oats combined, 1.98 cents for 100 pounds of grain. Average of the three tests, leaving out the one which seemed abnormally low, 2.25 cents per 100 pounds of grain.

We must determine the cost of grinding with the motors. That would be an easy matter if the current could be bought at straight meter rates. In Guelph, for lighting purposes, where, from the nature of things, the service required is very intermittent, the present rate is 10 cents per k.w.h. (kilowatt hour), with 20 per cent. off, making 8 cents net. New rates are being worked out which will probably make it about 7 cents per k.w.h., net. Three-quarters of one kilowatt equals 1 h. p. At this rate, the cost with the first motor would be as follows: For oats, 3.47 cents per 100 pounds; for No. 3 Manitoba wheat, 4.27 cents per 100 pounds. With the second motor, the cost, at 7 cents per kilowatt hour would be: For oats, 2.59 cents per 100 pounds, and for wheat, 2.79 cents per 100 pounds. Average for both motors, 3.03 cents per 100 pounds of oats, and 3.53 cents per 100 pounds of wheat. Average for four tests, 3.28 cents for 100 pounds of grain. Comparing these with the former averages, we see that grinding by electric power, at 7 cents per k.w.h., would cost about 1½ times as much as by gasoline at 20 cents per gallon.

But I understand it is not practicable to sell to farmers at meter rate; it would require a large staff of men to read the meters, especially so as they would be much farther apart than in cities and towns. Hence, even if it were practicable, the rate would be higher than in cities and towns. But, as a matter of fact there would be no advantage to the farmer in buying by meter, rather a disadvantage. Any farming community supplied with hydro-electric power will pay for it just what it cost to deliver the power to that community. If a meter had to be provided for every user, and a staff of men paid to read the meters, the cost of delivering the power would be increased thereby, and the price to the community increased by the same amount. Then, a flat rate being the cheaper and more practicable, it will in all probability be the method adopted, although in it there is room for some inequality. Suppose three users are supplied from one line, and each consumes for three horse-power, then each is entitled to 24 h. twenty-four hours in a year, or 8760 h. per year. Suppose, further, that ten users actually use their full share of the power, and the other twenty use theirs,

on an average, only 6 hours per day, then these twenty men are paying four times as high a rate as the others for the power actually used. The blame for the inequality, of course, rests with the twenty themselves. They had the right to use just as much as the others, but did not avail themselves of it. On the flat rate, each user pays for the right to use a certain amount of power. All the users collectively must pay for the power actually used, since the power is to be delivered at cost.

Understanding, then, that, when hydro-electric power comes to the farmers of a certain community, it will in all probability be paid for on a flat rate, let us inquire what the rate will be. The Hon. Adam Beck, speaking at Guelph some time ago, stated \$50 per horse-power per year as an approximate figure. Taking this as a basis, let us calculate the cost of the grinding done with the motors in our experiments. If 1 h.p. for 365 days costs \$50, then 1 h.p. for 1 minute costs \$50.00 divided by 365 times 24 times 60, which equals .0095 cents, or a shade less than 1-100 of a cent. With the first motor we used for the oats 4.98 h.p. for 8 minutes, to grind 100 pounds, hence the cost was .0095 cents times 4.98 times 8, which equals .379 cents, or just a shade under 2-5 of a cent for grinding 100 pounds of oats. Calculated in the same way, the cost of grinding 100 pounds of No. 3 Manitoba wheat was .429 cents, or a shade over 2-5 of a cent. For the other motor the figures are: For grinding 100 pounds of oats, .281 cents, and for 100 pounds wheat, .305 cents. Taking both motors, the average is .293 cents per 100 pounds of grain. This average is much less than that for the gasoline, but it is based on the assumption that the full amount of power contracted for be used 24 hours a day every day in the year, and hence costs only .0095 cents per horse-power per minute. If it were used only one hour each day, the cost of grinding would be 24 times as much as the above, or 7.032 cents for 100 pounds of grain. This is about 3 1/2 times as much as with gasoline. Then, here is the crux of the whole matter: How many hours a day must the farmer use hydro-electric power to make it as cheap as gasoline power?

Perhaps this question can be best answered by putting the results in tabular form, as follows:

FINAL COMPARISON OF GASOLINE VS. ELECTRIC POWER.

From the four tests, the average cost of grinding 100 pounds of grain was as follows:

	Cents.
By gasoline, at 20c. a gallon	1.98
By hydro-electric, at 7c. per k.w.h.	3.28
By hydro-electric, at \$50 per h.p. per year:	
1st.—Full power used all the time	.293
2nd.—Full power used 12 hrs. per day	.586
3rd.—" " " 6 " " "	1.172
4th.—" " " 3 1/2 " " "	2.010
5th.—" " " 2 " " "	3.516
6th.—" " " 1 " " "	7.032

From this table it will be seen that, when the electric power was used 3 1/2 hours, the cost was 2.01 cents per 100 pounds of grain, exactly the same, within three-one-hundredths of a cent as the cost of gasoline. For shorter times, the electric power cost the more. Therefore, if the electric power cannot be used, on the average, at least 3 1/2 hours per day, Sundays included, or 4 hours 5 minutes on week days, it will be more expensive power than gasoline. Rejecting the one gasoline test, which seemed too low, make a difference of only 20 minutes in this result. If gasoline is reckoned at 25 cents a gallon, it makes the time 2 1/2 hours, instead of 3 1/2. Moreover, the farmer must use all the power he contracts for during that 3 1/2 hours, in order to get that result. If he contracted for 10 h.p., and then used only 5, he would have to use it 7 hours, instead of 3 1/2, to grind at 2 cents per 100 pounds. Hence, he should buy a small motor, rather than a large one, and do his heavy work, like grinding, at a slow rate, and his light work at a rapid rate, in order to be near his limit all the time, and thus make his power as cheap as possible. Here, of course, the cost of labor for attendance comes in. Whether the farmer can use the power for the required time, is outside the scope of this article, as are also the questions, whether the engine or the motor will be the more convenient, and more easily handled by the average man.

Perhaps, for convenience of reference, it might be well to summarize the data in tabular form.

COMPARISON OF GASOLINE ENGINES AND ELECTRIC MOTORS.

8 H.-P. Gasoline Engine:		No. 3 Manitoba	
	Oats.	Wheat.	
Speed of grinder	1,136 r.p.m.	1,056 r.p.m.	
Pounds per hour	1,000	798	
Time for 100 lbs.	6 min.	7.6 min.	
Cost of gasoline per 100 lbs., at 20c. a gallon	2.30 cts.	2.21 cts.	

8 H.-P. Gasoline Engine:		No. 3 Manitoba	
Speed of grinder	1,456 r.p.m.	1,456 r.p.m.	
Pounds per hour	1,122	1,080	
Time for 100 lbs.	5.3 min.	5.5 min.	
Cost of gasoline per 100 pounds	1.17 cts.	2.15 cts.	

Average for engines:
From the four tests the average cost of gasoline for 100 pounds of grain..... 1.98 cts.
Average, leaving out oats with 8 h.p.... 2.25 cts.

10-H.-P. Motor:		No. 3 Manitoba	
	Oats.	Wheat.	
Speed of grinder	1,128 r.p.m.	1,128 r.p.m.	
Pounds per hour	748	852	
Time for 100 lbs.	8 min.	9.3 min.	
Horse-power used	4.98	5.28	
Cost per 100 lbs., at 7c. per k.w.h.	3.47 cts.	4.27 cts.	
Cost per 100 lbs., at \$50 per h.p. per yr., power in use all time.	.379	.429	

10-H.-P. Motor:		No. 3 Manitoba	
Speed of grinder	1,212 r.p.m.	1,196 r.p.m.	
Pounds per hour	1,154	1,071	
Time for 100 lbs.	5.2 min.	5.6 min.	
Horse-power used	5.73	5.73	
Cost per 100 lbs., at 7c. per k.w.h.	2.59 cts.	2.79 cts.	
Cost per 100 lbs., at \$50 per h.p. per yr., power in use all time.	.281 cts.	.305 cts.	

Average for Motors:
From the four tests, average cost of electric power for grinding 100 lbs. grain, power costing 7c. per k.w.h. 3.28 cts.
Average cost for 100 pounds, power costing \$50 per h.p. per year, and in use all the time293 cts.

Comparison of Averages:
Least number of hours per day the total current contracted for must be used to make grinding by electricity as cheap as by gasoline, at 20c. a gal. 3 1/2 hrs.
at 25c. a gal. 2 1/2 hrs.

Least number of hours' use, if the current contracted for is used at half strength 7 hrs.
or 5 1/2 hrs.

It should be borne in mind, as already pointed out, that, owing to the rate of work being determined by the slipping of the belt, these tests cannot be taken as a comparison between the power of the engines and motors, but only as a comparison as to cost.

In conclusion, I might say that the result of the investigation is very different from what I expected.
WM. H. DAY.
Ontario Agricultural College.

Plank Frame for Straw House.

Editor "The Farmer's Advocate":

Would you please give me an estimate in your valuable paper for a straw house 42 x 36, 16-foot posts, on stone basement. Would you please lay out this building with the plank-frame. What kind of timber is used, hardwood or hemlock? And give an estimate of this building in the plank, and also of the same building with hewed timber, and state which would be the better and cheaper. I saw some plank-frame barns in "The Farmer's Advocate," but they are so much larger than the one I intend building. E. F.

I would advise you very strongly to use the plank-frame in constructing your straw-house, as it will be cheaper to build, and the form of construction is ideal for this class of building. I have prepared a complete bill of material for both plank and timber frame, for your building, as requested by you.

PLANK FRAME FOR BUILDING 36 x 42 FT., 16-FOOT POSTS.

	Sq. ft.
Two interior bents:	
8 pcs. 2x8 in. x 16 ft., for posts	168
8 " 2x8 in. x 28 ft., for purline posts	296
4 " 2x8 in. x 28 ft., roof supports	148
4 " 2x6 in. x 12 ft., sub-supports	48
8 " 2x4 in. x 4 ft., struts from roof supports to purline posts	20
4 " 2x8 in. x 5 ft., main ties	28
4 " 2x6 in. x 5 ft., main struts	20
4 " 2x6 in. x 5 ft., intermediate ties	20
4 " 2x6 in. x 3 ft., minor ties	12
8 " 2x8 in. x 18 ft., cross sills	192
4 " 2x12 in. x 4 ft., collar ties	32
	984

One end bent:		
4 pcs. 2x8 in. x 16 ft., side posts		84
4 " 2x8 in. x 28 ft., purline posts		148
4 " 2x8 in. x 18 ft., sills		96
4 " 2x8 in. x 18 ft., beams		96
4 " 2x8 in. x 16 ft., center posts		84
2 " 2x4 in. x 16 ft., center post fillers		54
2 " 4x6 in. x 16 ft., center posts, stiffeners		64
1 " 2x12 in. x 18 ft., end-beam stiffener		36
9 " 2x6 in. x 12 ft., end girths		108
4 " 2x6 in. x 20 ft., end braces		80
2 " 2x6 in. x 12 ft., purline post braces		24
2 " 2x8 in. x 18 ft., center gable stiffeners		48
2 " 2x8 in. x 14 ft., gable girths		28
2 " 2x6 in. x 13 ft., gable girths		26
2 " 2x6 in. x 12 ft., gable girths		24
1 " 2x6 in. x 12 ft., gable girths		12
		1,005

Side timbers:		
7 pcs. 2x8 in. x 12 ft., side sills		112
3 " 2x8 in. x 12 ft., end sills		48
7 " 1x8 in. x 12 ft., top piece of side sill		56
3 " 1x8 in. x 12 ft., top piece of end sills		24
18 " 2x6 in. x 14 ft., side girths		252
12 " 2x8 in. x 14 ft., side plates		216
6 " 2x10 in. x 14 ft., top pcs. of side plates		188
12 " 2x8 in. x 14 ft., purline plate		216
8 " 2x8 in. x 4 ft., splicing piece for purline plates		40
6 " 2x6 in. x 16 ft., uprights at center of spaces between bents		96
12 " 2x6 in. x 18 ft., side braces		216
12 " 2x10 in. x 12 ft., corner ties to hold end from bulging		40
4 " 2x6 in. x 20 ft., pur. post stiffeners		80
4 " 2x6 in. x 16 ft., roof support stiffeners		64
12 " 2x4 in. x 6 ft.,		48
		1,646

End next barn:
2 pcs. 2x6 in. x 16 ft., pieces spiked to sides of the old barn 32
4 " 2x8 in. x 12 ft., purline posts at old barn 64
2 " 2x6 in. x 12 ft., purline posts at old barn, braces 24
120

Total amount of square feet, 3,755, in plank frame, at \$20 per M., \$75.10.

TIMBER FRAME.

	Lineal ft.
2 pcs. 8x8 in. x 42 ft., side sills	84
1 " 8x8 in. x 36 ft., end sills	36
2 " 8x8 in. x 36 ft., cross sills	72
3 " 8x8 in. x 36 ft., cross beams	108
6 " 8x8 in. x 16 ft., side posts	96
2 " 8x8 in. x 42 ft., side plates	84
2 " 7x7 in. x 42 ft., purline plates	84
6 " 7x7 in. x 14 ft., purline posts	84
1 " 8x8 in. x 12 ft., center end post	12
3 " 7x7 in. x 22 ft., purline beams	66
2 " 7x7 in. x 12 ft., purline posts at old barn end	24
	752

Total lineal feet, 752, at 12 cents per foot, \$90.24.

18 pcs. 5x5 in. x 14 ft., side girths	
4 " 5x5 in. x 18 ft., end girths	
2 " 5x5 in. x 22 ft., gable girths	
1 " 5x5 in. x 14 ft., gable girths	
12 " 3x4 in. x 12 ft., brace stuff	
4 " 3x4 in. x 12 ft., braces for purline posts at old barn end	
Estimated by sq. ft., 994 ft., at \$20 per M. \$ 19.88	
Amount forward from timber bill	90.24

Total cost of timber frame \$110.12

TIMBER COMMON TO BOTH FRAMES.

52 pcs. 2x8 in. x 18 ft., joists set on 18-inch centers	
30 " 2x6 in. x 13 ft., rafters set on 36-inch centers for lower roof	
30 " 2x6 in. x 13 ft., rafters set on 36-inch centers, for upper roof	

Joists and rafters, at \$20 per M., \$40.56.
There will be some girders required for the floor in basement, but as I do not know how it is to be arranged, it is impossible for me to say if there will be one in the center, or two, one to each side of center, or at whatever point the carrying columns in the basement can be set. I have gone into the question sufficiently to enable you to have your logs cut to the required sizes.
A. A. G.

Perfection.
"The Farmer's Advocate" is the best paper I know of. I congratulate the publishers, as it seems to me it would be impossible to make the paper more useful than it now is. You discuss just what we want to hear about, and tell us just what we want to know about it—and this is the case with every number. I mean it all, and wish you every success.
Elgin Co., Ont. MASON D. HYNDMAN.

Farming in Newfoundland.

Editor "The Farmer's Advocate":

I am afraid I cannot claim to be much of a writer; therefore, I fear I can do but scant justice to the subject, "Farming in Newfoundland," but still I can give you my views of what I have seen. Some may take it as presumptuous to attempt to handle it, seeing I have but eighteen months to back it with. However, I take the sole responsibility of my views, in case any challenges may be forthcoming, duelling having of late become quite fashionable in the literary world!

To say that Newfoundland was solely an agricultural country is to draw down the fishermen on one's head, to heap opprobrium on the famous cod, besides telling an untruth. However, Newfoundland is not without its fertile spots, more especially in the valley alongside streams and various other places where nature has left her best gift. There are huge expanses of marshes for which the caribou have a great weakness; what might be done with these, with proper drainage and communication, it is hard to conjecture. I have seen drained swamps in New Zealand supporting many head of cattle with the succulent grasses, where once flourished reeds, etc. The alder flats, which abound up most streams, when cleared—and this is not a very hard task—just grow root crops for fun. There is another scrub that flourishes on these low alluvial deposits, called by some "Ironwood," most innocent in appearance, but its looks belie its roots, which conform to Major Baggs' opinions, "Deep, sir; devilishly deep!"

The present Government are giving an impetus to the somewhat neglected industry, fully realizing the farmer is the backbone of every country. In October, 1910, at St. John's, the first agricultural exhibition was held, surpassing all expectations. No one credited the country with being able to produce such splendid potatoes, portly turnips, and gigantic cabbage. From a stock-breeder's point of view, the sheep, pigs and cattle are capable of improvement. Most of the best came from Canada. It seems in but few cases are careful breeding and selection carried out by the people themselves. What sheep I saw on the East and West coasts were of no marked breed. Traces of Border Leicesters, Shropshire and Lincoln, possibly a bit of Southdown, too, were to be seen. It would be interesting to follow up the original source of the flocks now in the country—some few hundred thousand, I believe. The system of running everybody's sheep with everybody else's seems to call for improvement. A kind of general round-up once or twice a year, in places where this method prevails, to shear and claim lambs, is all that seems to be done. In most, if not all, other countries where sheep are kept in any large numbers, dipping for the prevention of scab and to kill ticks and parasites is compulsory by law. Here it is little known or practiced; consequently, not half the amount of wool is shorn through the sheep constantly rubbing themselves. The ticks spread at once from the ewe to the lamb; they at least know what's what in mutton. Besides, it is hard to fatten a tick-infested wether. This operation, most important to all sheep-breeders, must soon come when they awake to the vast difference it makes to the quality of the wool and general improvement of the sheep's health.

Pigs are in the minority, and a few good stock boars would improve the average strain usually seen. I have in mind one pig I saw on the East coast, which reminded me for all the world of an ant-eater; the wild pig of New Zealand was a gentleman to him. To the man who can keep cows and grow potatoes, pigs should be a good investment. Cows are just cows. Around St. John's there are some excellent specimens, which supply that city with milk. Fowls do as well here as anywhere else.

The handicap a man has is that the feedstuffs, as oats, corn, bran, etc., have to be imported, but there is no reason why, in time, under a paternal Government, the country should not support itself in this respect. Oats are grown in large quantities, but cut green and made into hay to feed cattle. Hay, especially timothy, grows well, and yields a big cut.

No one could wish to see better potatoes, and so on, than are grown here. The whole thing necessary to advancement is education in what is suitable to plant, and more careful selection of seed. From what I've heard, apples do as well in this country as in Canada.

Clearing land is pretty much the same everywhere on timber lands; the first cost is heavy, but the results well repay the outlay. A settler in all countries, who wants to carve out a home for himself is all the better for some capital, a large heart, patience, and stiff backbone. The initial expenses of house, buildings and implements necessitate capital, and happy is the man who can start clear of debt.

WOODLANDS,
Newfoundland.

More Fertilizer Experience.

Editor "The Farmer's Advocate":

About a year ago I gave you an account of an experiment with various fertilizers applied to potatoes in the season of 1910, and as I see a good deal of interest being evinced in this subject at the present time, I think perhaps a further account of these plots may be found useful. Although I have been using fertilizers now for several seasons, this is the first time that I have been able to see really pronounced benefit to the second crop, and on most of the plots the improvement was very marked. Each plot consisted of one row of potatoes about 72 yards long (one-eighth part of an acre), and the 17 rows were at one corner of a 5-acre field of potatoes. The whole field received an application of 10 to 12 loads of barnyard manure during the winter or early spring. This was plowed under with a shallow furrow, and land well worked with cultivator and harrows. When planting time came, drills were opened 30 inches apart. In the test rows, the different materials were carefully scattered by hand along the bottom of the drills; on all the rest of the field, superphosphate (acid phosphate) was sown broadcast, at the rate of 300 pounds per acre. The potatoes were dropped in the drills and covered with the smoothing harrows. It follows that, in the case of the plots, the fertilizers were almost entirely at the bottom of the furrows, and that over the rest of the field, while equally well in the drills, it would be more intimately mixed through the soil. However, this did not appear to affect the results in any way. Along the side of the field opposite to the experimental plots, a few rows were left without any phosphate, except at two or three points, where belts were sown right across. The potatoes were lifted with a potato plow, and the ground afterwards harrowed smooth, lengthwise, so that the soil thrown up by the plow was replaced in practically its original position. In spring of 1911 the ground was cultivated twice lengthwise, and once across, and barley sown at the rate of one bushel per acre, mixed with 15 pounds of alfalfa seed. There was a full crop of barley, and a magnificent stand of alfalfa, which covered the ground like a mat when winter set in. Quite early in the season I noticed that the barley was coming in narrow ridges, and that each potato row could be distinctly traced in the grain. As the crop neared maturity, the rows became more distinct. Had it not been for the check rows and the strip left without any fertilizer, I might have thought it was the extra cultivation that caused the better growth over the potato drills, but where no fertilizer was applied the crop was one "dead level," and probably six inches shorter than the rest. When the barley was nicely headed out, I took a notebook and made careful memoranda of the appearance of each plot. Here is the result obtained in the potato crop and the apparent effect on the barley, of each fertilizer or combination tested.

Plot.	Fertilizer applied.	Yield of potatoes per acre.	Effect on appearance of barley.
1	Nothing	172	None
2	Nitrate of soda, 1 appl'n.	162½	None
3	Nitrate of soda, 2 appl'ns.	180	None
4	Barnyard manure, 20 tons.	249	Very rank
5	Potato fertilizer	204	Good
6	Royal Canadian	160	Very good.
7	Muriate of potash	78½	None
8	Nothing	92	None
9	Acid phosphate	196	Very good
10	Mixed fertilizer	170½	Good
11	Complete fertilizer	192	Very good.
12	Same—omitting nitrate.	182½	Very good
13	Same—omitting mur. pot.	186½	Very good.
14	Same—omitting phosphate.	117	None
15	Nothing	122½	None
16	Acid phosphate	186½	Very good
17	Acid phosphate	186½	Very good

The extra yield of potatoes on Plot 1 was no doubt due to its being the outside row, and should not be used for comparative purposes. In the barley, no sign of the rows Nos. 1, 2 and 3 could be detected, while No. 4 was decidedly the heaviest of all; in fact, for a normal season, it was altogether too rank; it would have gone down flat long before it reached maturity. No. 5, a special potato fertilizer, which gave a triple the best yield in that crop, was distinctly behind in its effect on the barley. Potash seems useless on this soil for either crop, and it would appear from the series, 11 to 14, that phosphoric acid is the only element required at present. The same results were apparent all over the five acres; the rows could be distinctly traced by the more vigorous growth until the strip was reached where no phosphate was applied. Here the crop was level, no sign of rows was discernable, and the average length of straw was 4 to 6 inches less; the stand was also thinner. In fact, I am con-

vinced that the added yield of barley was fully sufficient to pay for the fertilizers, and, from the results obtained, I figure the increase in yield of potatoes from the use of phosphate alone at fully 70 bushels per acre. I should have said that the acid phosphate was applied at the rate of 320 pounds per acre; muriate of potash and nitrate of soda at the rate of 160 pounds. No. 10 was composed of one-third the quantity of each of these, while No. 11 was each one in full quantity, hence the cost of No. 10 would be practically the same as where any one was applied alone, and No. 11 would cost three times as much. The cost of the single applications was in the neighborhood of \$4 per acre.

In another part of the same field was grown in 1910 two acres of turnips, also treated with acid phosphate. Oats were sown on this ground, and here, again, the drills were discernible by the more vigorous growth of the grain, though on a plot that received no phosphate not the faintest sign of a row could be seen, showing, beyond a doubt, that the fertilizer was having a good effect on the second crop.

Applied to fall wheat, acid phosphate had a remarkable effect in hastening maturity, the treated plots ripening fully a week ahead of the rest. However, a combination of 160 pounds phosphate and 80 pounds muriate of potash gave distinctly the best results on this crop. The straw was inches longer, the stand thicker, and the head larger. I did not weigh, so cannot give any definite conclusion; but I was so well satisfied with the appearance of the crop that we applied the mixture to six acres last fall, and dressed three acres with barnyard manure. When winter set in, it was impossible to detect any difference between the crop on manured land and that on ground that was treated with the mixed fertilizer, right alongside of it.

Nitrate of soda applied in the fall did not appear to have any effect whatever. Potash applied alone gave about the same result as phosphate, but the combination was better than either. Sown alone, double the quantity of each was used. I had intended giving some account of the effect of various fertilizers on mangolds in season of 1911, but this letter is already so long that I must leave it for another.

ALFRED HUTCHINSON.

Wellington Co., Ont.

[We appreciate very highly this letter, as we always do any letter reporting experience accurately. At the same time, we should perhaps point out that the Experimental Union system of fertilizer experiment, which Mr. Hutchinson has been following, has been criticised as open to improvement. Instead of applying a certain element like nitrogen or phosphorus or potassium separately to determine the soil's response to that particular ingredient, it would be more satisfactory to employ the three elements, paired, in various combinations, using, also, the three together, and reserving check plots for comparison. Then, by subtraction, the economy of a certain ingredient could be ascertained, by comparing the yield of a complete fertilized plot with the yield of a plot treated with a combination lacking the one element in question. However, it is pretty clear that the great need of Mr. Hutchinson's soil is phosphorus. His letter is to be commended, too, as bringing out the residual effect of fertilizers, especially the mineral ones, and also as indicating, incidentally, the uneven effect of the second crop from applying fertilizers in drills or hills, instead of broadcasting.—Editor.]

Australian Notes.

Federation wheat has this year more than ever justified its claims to be the best grain for Australian conditions. It is one of Farrer's creations. The breeder's idea was to produce wheat for the dry belt, and he succeeded eminently. There are numerous cases this season where 12 to 15 bushel crops were produced on a four-inch fall of rain from the time that the grain was planted till the crop was harvested. In a few cases the fall was as low as three inches. But there were good results, except in those cases where the land was fallowed and manured. The policy of doing this has been forcefully demonstrated this season in the country, as the year was dry. One thing is certain, which, it is admitted, is exceptional, is that the value of conserving the manure in farming. The land was in very good condition after the last autumn rains, but it was not until the 6th and October 30th, only a few inches of rain fell. Eight bags to the acre were applied in a row, from unfallowed land, not in a row, that quantity was taken.

Further tests have been made in New Zealand this year with the Federation wheat, which is said to be blight-proof. It was raised by a Kaikouri farmer. In the tests, the wheat was placed in a box with diseased wheat of other variety, and there allowed to grow in the same place. The hybrids did not, however, show any test taint

of disease after planting. This year they were planted with potatoes of the Up-to-date variety, scattered amongst them here and there in the field, but in no case were the hybrids affected, though the Up-to-dates were badly diseased. The Department is so impressed with the possibilities of the hybrid that they have taken up the work of exhaustive tests this season.

J. S. DUNNET.

Cultural Conditions for Seed Growing—II.

Address by J. H. Grisdale, Director, of Experimental Farms, before the Canadian Seed-growers' Association.

GOOD SEED NOT ENOUGH.

I would emphasize the point that every man who is a member of this Association, if he would make the best use of the seed which he selects, or of the varieties which he evolves himself or gets from others, must remember to make himself at the same time a student of soil cultivation, and put much of his best effort in this line. The object will, of course, be still to get good seed. Good seed is essential. I would be the last man to deny the importance of growing good seed, of growing the best seed possible, but let me say that I think it is quite possible to pay too much attention to seed, and too little attention to soil cultivation. The effect of good seed is to increase our crops. Good seed is evolved only after years of breeding and selecting. It is possible, however, for the best seed to give very unsatisfactory results under adverse conditions, and I am inclined to think, although I am not in a position to say positively, that good seed handled badly for a series of years will lose much of that quality of large yields, of early maturity and of superior quality which years of selection or breeding had evolved. Therefore, if we are to succeed as grain-growers, in increasing the returns from our fields or from our seed, we must, in my opinion, give more and more attention to the soil upon which we produce our seed; that is, to the preparation of the seed-bed, and to the drainage of our fields.

WHY ROTATION IS NECESSARY.

Every grain-grower is, I am sure, sufficiently awake to his own interests to follow some rotation on his farm, and, in my opinion, the following of a suitable rotation is essential to the getting of the best results, both from the area under grain, and from the farm in a general way. No producer of high-class seed can hope to make a success of this business for any length of time, unless he is careful, at the same time, not only to keep his farm, in so far as the soil is concerned, in as good a condition as when he started, but to gradually improve it. That can be done only by following a rotation suitable to the upbuilding and the increasing of the fertility of the soil. It is not the soil that will give the rankest growth of straw or of hay that is likely to give the best crop of seed. Therefore, he wants to follow a rotation where the surplus, or the most readily available part of the fertilizer applied is used up in some crop from which he can use to the greatest advantage the straw, the stem and leaf, or the root, and leave the field after the surplus of manure, or surplus of plant food, has been absorbed—leave the field next year for the use of the grain, when the more slowly available plant food, such as the phosphates and some of the less-easily available nitrogen, can be used by the grain, and so insure a growth of straw of moderate dimensions, and the full supplying of the kernel or seed with the food which it requires for its best development, and for maturing at the right time.

DEPTH OF PLOWING.

Mr. Raynor.—I should like to ask Professor Grisdale where he thinks the application of stable manure gives the best advantage. I think he spoke first of a hoed crop. Would that be on sod, on low lands?

Mr. Grisdale.—On sod.

Mr. Raynor.—Another question. There has been considerable controversy about the depth to plow land, especially clay soil. If I remember rightly, Prof. Grisdale recommends plowing clay soil deeper than the lighter soil. Now, would he recommend that, if the soil is well loosened with clover roots, or through the clover plant, it would be necessary to plow a clay soil, where good clover lea had been, deeper, notwithstanding the fact that the subsoil might be loosened up with the clover roots?

Mr. Grisdale. I did not say anything about the depth. Of course, "deeper" is a relative word. I am not an advocate of plowing to any great depth in any soil. My experience is that, if you are desirous of loosening up a soil, it is better to use a subsoil plow, or a subsoil hook, behind your plow, and so loosen the subsoil, rather than bring it to the surface. I do not think it is necessary to plow a clay soil more than four or five inches deep. Five inches, I think, is quite sufficient. Then it is necessary to loosen it still

deeper, on account of the peculiar character of the subsoil, as, for instance, where hardpan exists, which is practically impermeable to moisture; if it is necessary, it can be loosened to a little greater depth. The moisture in hardpan is very hard to control. It does not rise readily, and it won't sink; so it neither drains nor feeds the plant, and the results are unsatisfactory. But if you loosen it up a bit with a subsoil hook or a subsoil plow, then the bed available for the retention of moisture is considerably increased, and root room is considerably increased, so the return from the crop is more certain; it is both greater and more uniform. I would, however, just like to say here, Mr. President—to change the subject—that we cannot pay too much attention to that matter of firming the seed-bed in light or average soils. That is a point that we have been studying for five or six years at the Experimental Farm, and I have become more and more convinced, year by year, of its importance, the importance of getting the seed-bed firm, solid. The loose seed-bed once in four or five years will give excellent returns; but, under average conditions, we may say the well-prepared seed-bed, the solidly compacted seed-bed, is the seed-bed that wins out. Get your seed-bed solid. If you have a soil-packer, put that on; and if you have to roll it twice, all right. If you have to roll it three times, do so, but get your soil solid.

A Member.—Not on heavy clay soil?

Mr. Grisdale.—No. I am talking of lighter soil.

A Member.—In harrowing, would you use your packer, and harrow afterward?

Mr. Grisdale.—Yes. If you have a clay soil which has been plowed when it was rather hard, and broken into lumps, then putting your packer over it will help greatly.

A Member.—I find that a neighbor of mine who does not roll his land had equally good results as I had with rolling.

Mr. Grisdale.—What kind of soil?

A Member.—Well, we are neighbors, and the soil is about the same. It is a mixed soil; that is, some sandy loam and some clay land.

Mr. Grisdale.—Well, on clay land I can understand it. It is just possible.

A Member.—I can't find much difference in rolling and not rolling, in my own experience.

WHY ROLL?

Mr. Grisdale.—Not necessarily rolling, but packing it down and getting a firm seed-bed, is the method to follow. Of course, if one is rolling a field with a light roller, that has practically no more value than not rolling it at all; it is of very little value. When I say "rolling," I mean not merely with a 1,000-pound roller, or an 800-pound roller—that is not compacting the soil at all; it is only smoothing the surface, which has practically no value; in fact, is often an injury. When I say packing the soil, I mean packing it down solid, getting a good solid foundation. I don't know what kind of a roller you are using. It is just possible you might as well be using none.

A Member.—Just a light roller.

Mr. Grisdale.—That is not of much value. What time do you roll?

A Member.—Well, if the land is dry enough, I roll immediately. If not, I wait.

Mr. Grisdale.—Why do you roll?

A Member.—Well, in order, I think, to smoothen the ground.

Mr. Grisdale.—Well, that is not the right object in rolling, and, while your light roller will smoothen the ground, it won't have the effect I mentioned. I do not care to have the ground smooth and clear on top; I would rather have it a little roughened. After packing the soil, I have the surface scratched with a harrow. The idea is to get the soil which has been worked compacted into close association, as it were, with the subsoil; to get your seed-bed well prepared for the retention of moisture, connected with the subsoil, and so get a much better condition for plant growth.

A Member.—I have been harrowing after rolling. I usually harrow after I roll.

Mr. Grisdale.—That is a good idea.

A Member.—Mr. Grisdale, there are some people under the impression, when you speak about drainage, that, on very stiff clay, underdrainage is not practicable. I wish you would give your opinion of that.

VALUE OF DRAINAGE.

Mr. Grisdale.—The value of underdrainage on clay soils is probably greater than on any other soil. It is on the clay soil that underdrainage shows itself, and pays for itself most quickly. I won't say more quickly, but more certainly than on any other soil. Now, I have used that term "more certainly" for the reason that it takes two or three years on clay soils to get the drains into full operation. The channels from the surface to the drains are formed gradually, one now and one again, but once they are formed they continue. For that reason, the drains put into place in a clay soil are likely to come into operation

and to have their full effect some little time later than it pleases the fancy of the man who is putting them in. He may think that he is not getting the results that he expected. Of course, there is this about it: In making your drains on clay soil, if you are careful to put the surface soil in first; that is, to dig your drains, lay your tiles, put on a small amount of clay, and then put all the surface soil down and your subsoil on top, you will get results very much more quickly.

The Use of Fresh vs. Rotted Manure.

Most people have an idea that rotted manure is a much more valuable fertilizer than manure fresh from the barns or yards. This idea prevails because of the heavy, compact nature of the rotted manure. The value of manure is determined by the amount of various elements of fertility contained therein. These elements are mainly nitrogen, phosphoric acid and potash. They are usually figured at 15c., 6c. and 5c. per pound, respectively. On this basis, a ton of fresh barnyard manure is worth \$1.98. A ton of rotted manure is worth \$2.04, or only 6c. more. When the fact is considered that it takes nearly two tons of fresh barnyard manure to make one ton of rotted manure, owing to the loss from evaporation and leaching, it can be seen that much of the fertilizing matter originally contained is lost in the rotting process.

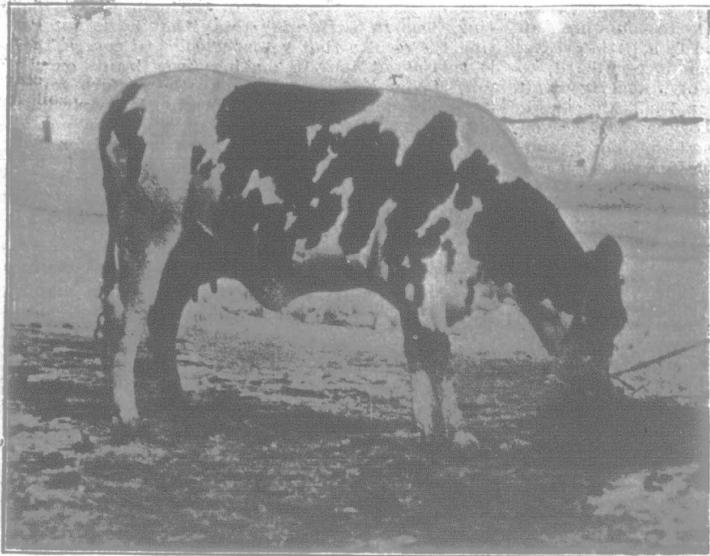
In Bulletin No. 122, the Maryland Agricultural Experiment Station reports some interesting observations on the experimental use of fresh and rotted manure. Both were used on the corn and wheat crops, in comparison with unmanured land. The yield of corn on unmanured land was 38.1 bushels per acre. On land dressed with rotted manure, a yield of 65.1 bushels were secured, and where fresh manure was applied the yield was 70.7 bushels per acre. The increased yield of corn from the use of rotted manure was 27.6 bushels, and from the use of fresh manure 32.6 bushels, an increase of 5 bushels per acre in favor of the fresh manure. On the wheat crop the effect was similar, though not so marked. On the unmanured land the wheat yielded 16.1 bushels per acre; where rotted manure was used, 19.1 bushels; and on land dressed with fresh manure, 19.7 bushels, per acre, were secured. The increase in favor of the fresh manure is only .6 bushels per acre on the wheat crop.

While the increased returns are comparatively small in both cases, it illustrates clearly the fact that fresh manure is at least as good as the rotted manure, and for some crops even better. The prevention of loss by leaching and in the rotting process should be kept in mind, and the saving in labor by applying manure fresh from the barns, is worthy of consideration. It should not be understood that the coarse, fresh barnyard manure is adapted to all crops. It would not be suitable for certain forms of garden and vegetable crops; and even for the small grains, on light soil, it probably would not give as good results as the rotted manure. Where manure is applied as it should be, however, on the grass land, or just ahead of the corn crop in rotation, the coarse, fresh manure is better adapted to the succeeding crop than the rotted manure. The heat and the effect of the acids developed in the process of decomposition aid greatly in liberating plant food, and result in greater crop yields.

Some objections may be made on the score that weed seeds, or possibly plant diseases, are spread with the unrotted manure. Where applied as suggested above, however, at the proper place in rotation, neither the weeds nor the plant diseases resulting therefrom will be a serious consideration.

The late winter and early spring offer many opportunities for getting manure on the land. These should be taken advantage of, though one should avoid driving over the land when it is very wet from melting snows or from heavy rains. The good effect of the manure may be entirely offset by bad handling of the land.—(Andrew Boss, Prof. of Agriculture, Minn. University Farm.)

As winter wheat makes a very good nurse-crop to seed down with, many practice this method of securing catches of clover. The proper time to sow the seed is just as the snow is going off in the spring. When the weather gets warm and the snow is nearly gone, mix the seed and sow it either by hand or with a hand machine right on the snow and wheat. The freezing and thawing during the early spring, and the rains which follow, together with the moisture from the melting snow, cause the seed to work into the soil and become well covered. Good stands of hay or clover usually follow this method, where the soil is in good condition and the wheat does not get too stout and lodged.



Lady Boutsje De Kol.

Two-year-old Holstein heifer in auction sale of Fred. Abbott's herd, Harrietsville, Ont., March 28th.

THE DAIRY

Herd Testing in the Antipodes.

Herd-testing is growing in all the dairy centers of both Australia and New Zealand, especially in the latter. In some cases the butter factories are taking up the work of supervising the tests, and charging the cost to the suppliers. The Queensland Government has just taken an important stand in the matter, which will have a good effect. The Minister of Agriculture proposes to fix a standard for dairy cows, and then brand them with a distinguishing mark. This will compel breeders to test their cows under official supervision before they have any value in the market, and it will prevent culled cows being put up for sale. The New Zealand Dairy Association are doing the work free of charge. They regard this expense as less costly than the erection of new creameries to increase their milk supply, as, by grading the cows, every supplier will shortly increase their output. J. S. D. Sydney, Australia.

Points in the Dairy Animal.

In selecting dairy cattle, it is always difficult to judge accurately with the eye. The real test must be the weigh scales and the Babcock tester. The cow is a machine to convert food into milk; thus, she must have a large middle and a strong constitution to insure best results. She must also have a large udder, large milk wells, large, crooked milk veins and good-sized teats. Her head should be lean and angular in appearance, with the eyes standing out prominently. The neck should be rather long and lean in appearance, the shoulders pointed, and the backbone rather prominent. The skin should be loose and soft to the touch. In selecting herd bulls, either mature animals which have already demonstrated their worth as sires, or younger animals from high-testing dams, and sires, only should be used. Remember that the best and surest results will always follow the use of a mature sire which has sired heifers with good records. A good dairy bull should be kept until he is twelve or fifteen years old; in fact, as long as he is a sure sire. Real good sires are so rare that, when we do find one, he should die only of old age. All breeders of dairy cattle should secure yearly tests on each and every cow in the herd. Shorter tests do not really mean very much. It is the cow that stays by her job that is really valuable.—Prof. W. J. Kennedy, Iowa Agricultural College.

Varying Overrun.

Editor "The Farmer's Advocate":

I am sending cream to a butter factory. In the month of December I sent 500 pounds of cream, test 39; paid for 195 pounds butter-fat; value pound butter-fat, 33.6. In the month of January I sent 471 pounds of cream; test, 37; paid for 174.27 pounds of butter-fat; value of pound butter-fat to patron, 31.6. Butter sold for 31½ cents for both months.

I would be very much obliged if some of our dairy officials would answer this question, why I did not get the same price per pound of butter-fat for each month, or, will it take more pounds

of butter-fat to make a pound of butter some months than others?

PATRON.

If butter sold for \$0.315 cents per pound, we will assume that 3½ cents is charged for manufacturing, which would make butter worth net, to the patron, 28 cents per pound. Taking the figures furnished by the patron, the overrun for December would be about 20 per cent., while in January it would be about 12 per cent.. This accounts for the difference in the price per pound of fat. The average overrun for the two months (December and January) would be about 16 per cent., which is a good average overrun. As the overrun depends on (1) efficiency of churning, (2) composition of the butter, (3) richness of cream, (4) mechanical losses, (5) correct reading of

tests, this overrun may be greater one month than another. By overrun is meant the number of pounds of butter made over and above the number of pounds of fat delivered, and is made up of principally (1) water, (2) salt, (3) casein.

F. H.

Feeding Dairy Calves.

Many dairymen make it a point to have a large number of their cows freshen in the autumn, because of the increased price of dairy products, but, taking the country as a whole, undoubtedly the greater number of cows commence their period of lactation in the spring. Dairying is recognized as one of the best-paying branches of agriculture. What has made it so? Increased demand for dairy products is largely responsible, but, at the same time, the improved condition of the dairy herds has had much to do with rendering the business more remunerative. Cow-testing and milk records have made it possible to weed out the poor cows and keep only those giving a profit. This has had a marked influence on the class of calves kept for breeders. It stands to reason that a calf from a heavy-producing strain is far more likely to be a profitable investment than one from a strain of indifferent milkers. There is no surer method of improving a herd than by selecting and raising calves from the best producers. In the past, too many calves have been turned away for veal, calves which, had they been properly fed and managed, could not but have developed into the right kind of milking matrons.

Selecting the calves is not all that is necessary. Feeding and management are important factors in the development of the dairy heifer from the time she is dropped until she takes her place at the pail. Rearing dairy calves requires considerable care if best results are to follow. The calf must be kept growing and in a thriving condition, but over-feeding, which has a tendency to cause the animal to run to fat, instead of rapid growth, must be avoided. Few animals are more responsive to skillful treatment than the dairy calf, and few are more easily permanently injured by injudicious feeding and bad management. The good and careful feeder will just keep within the appetite of the calf, not permitting it to leave any feed, and at the same time giving it all it requires. Calf-rearing is recognized to be one of the most interesting phases of stock raising, and cannot receive too much attention.

Starting out, then, by selecting as far as possible, all the heifer calves from the best

cows in the herd, the calves should get new milk entirely for at least a week after birth. At the end of a week, small quantities of sweet skim milk can be introduced into the whole milk, and gradually increased until, at the end of three weeks, the calf is getting skim milk altogether. All changes must be made gradually, or the calf's digestive system will receive a severe shock. At first the calf should be fed three times daily. At the end of the third week, or when the calf goes on skim milk, the mid-day feed can be omitted, and all the milk given in two feeds of from three or four quarts each. A good substitute for the fat in the milk can be made by soaking flaxseed in water for twelve hours, one part of seed to six of water by volume, then slowly boiling and simmering to a jelly, and starting to feed about a third of a cupful, gradually increasing to a cupful as the whole milk is withdrawn. Such jelly is not long required, for the calf will soon learn to eat meal or whole oats; in fact, a little ground oats or ground flaxseed can be added to the milk, oftentimes, in place of jelly. The calf can easily be taught to eat pulped roots, and nothing will be found to be better relished than a few of these with a little meal, mixed. Bran and oats, equal quantities by weight, make a good meal ration. Avoid cold or hot milk. Milk fed at near the body temperature gives the best results. As the calf grows, the amount of skim milk can be increased until ten or eleven quarts are fed daily at from four to five months of age. At five months of age the calf is old enough to wean, and solid food can be substituted entirely for the milk. Plenty of good green clover or alfalfa hay should be before the calves at all times. A little ensilage will be relished, and is a good feed. When green feed comes, give it in abundance. The calves will be found to do better to remain in the stable during the hot summer days, away from the heat and flies. They should be allowed out in the paddock at night. Keep fresh water before them at all times, and see that they are thrifty, clean and dry. The value of the future dairy cow depends largely upon her treatment during the formative period of her life.

Remember to give the calf a liberal grain ration at weaning time, and under no circumstances stunt the feed of the growing heifer before her first calf is dropped, and never will it be found profitable to do so afterwards.

POULTRY.

A Flock Easily Cared For.

Editor "The Farmer's Advocate":

After reading the letter, in the issue of Feb. 8th, as to whether it paid to get the hens laying in winter, I thought I would write about my little flock, but waited until I saw other letters on the subject, as we are only new readers and subscribers. In my opinion, it doubly pays to get the hens laying early in winter, for, besides filling up the egg-basket when eggs are a high price, the early layers are the early sitters, and one can make more from a hen which lays well all winter and has a nice flock of early chicks, than from the one that fattens up all winter and lays when eggs are cheap. Besides, I find that my best



Belantha J. J. Garen.

One of the high-producing Holsteins in Fred. Abbott's herd of Holsteins at Harrietsville, Ont.

profit from hens is in the chicks, although they also pay in winter. Last year, several of my hens were sitting early, and three of them became broody the second time, so I had three to bring out two broods of chicks each. I have now fifteen hens, five old ones (my sitters), and ten pullets; and since the 26th December, 1911, until March 5th, 1912, I gathered 370 eggs. During some of the very cold weather they slacked off, although I never missed getting a few eggs, but lately we get from 6 to 9 a day, and one week in each month we got 46 eggs. I do not mean to intimate that this is a large record, but I think it is pretty good for (as "Jack's Wife" remarked) just barnyard grades. We keep about a half a foot of chaff on the floor of the henhouse, and their breakfast is a quart of wheat thrown among the chaff, so that they must scratch for their breakfast, and this gives them needed exercise. Before noon they are given plenty of water (with just the chill off), and the raw peelings from the vegetables, with sometimes large pieces of or whole turnips; and at night, a quart of either oats or wheat. We give them plenty of wood ashes and sand, and I also burn bones and break up for them. They are easily broken up fine with the hand after they are well burned. Plaster from the walls of some old building (if one can get it) is also good to break up for them, and takes so much less time to break up than the old dishes. I only tried pounding up broken dishes once, and if all dishes were as hard to break as those dishes were, the manufacturers, I am afraid, would soon have to go out of the business of making them.

I daresay the editor will think I have said enough, and perhaps the waste-basket will pick up my lines, anyway, but, before closing, I would like to say that my hens are paying me better, with far less trouble, than when I spent half my time waiting on them, heating their grain and getting up hot mashes for them.

Hants Co., N. S. MRS. ED. CARROLL.

Treatment for Egg Bound.

Editor "The Farmer's Advocate":

It will most probably be instrumental in saving many of your readers heavy losses and numbers of birds much suffering if you insert the following in your valuable journal. Many hens die annually at this season of the year from the distressing, painful malady, egg-bound. Scores are simply allowed to strain, moan, day after day, and eventually die in great agony, because their owners feel that relief is entirely out of the question, and there is no alternative but to allow them to pass away in deplorable agony. I have relieved and cured many during my thirty years' experience. A week last Monday a lady called at my residence, and implored me to visit her poultry-yard, as one of her hens was presumably dying. I complied with her most urgent request by accompanying her back home. On my arrival I was grieved to find a most beautiful bird lying on its side, prostrate, apparently dead; she was too fatigued to strain, and in an exceptionally inflamed, deplorable state. I perceived immediately it was a very serious, almost hopeless case of egg-bound, prolonged. Being fully cognisant that my only chance of pulling her through the difficulty was to bring her to my home, so that I could attend the poor creature entirely myself in every way. Nearly a fortnight has elapsed, and she can now be seen here walking about out of doors, and becoming quite strong again.

This hen, like hundreds of others, had been overfed during the severe weather, and rendered considerably too fat. It does not necessarily follow that all hens which suffer from egg-bound are martyrs, resulting from being too well fed; frequently, hens that lay double-yolk or exceptionally large eggs suffer, although not fat. All poultry-keepers should carefully watch their hens at least twice daily, and if a hen is seen drooping her wings and moving aimlessly about with her tail-feathers lowered to the ground, going on nest and coming off without laying, she is suffering from egg-bound, and should be taken to a warm place at once. A piece of pure hog's lard should be rolled to size and shape of finger; place it in cold water to solidify. Then hold the hen with her head downwards, while the lard is being pressed slowly up the egg passage into the oviduct; continue to hold hen in the same position fully fifteen minutes; allow her to rest twenty minutes, then give her half a teaspoonful of flour of sulphur, well mixed with one ounce pure lard, made into pills. Give a second dose of this mixture after an elapse of twenty-four hours. This is a certain cure, but care must be taken to keep the bird warm, and fed on soft food. It is cruel folly to ever insert finger in the passage.

J. R. D.
Toronto.

GARDEN ORCHARD.

Planting and Growing Vegetables III.

By Prof. W. S. Blair, Macdonald College, Que.

SALSIFY.

The salsify, like the parsnip, requires a deep, loose, rich soil. It may be sown at the same time as the parsnip, and thinned to three inches apart in the row.

RADISH.

The radish may be sown as soon as the ground is fit to work, in rows one foot apart, and the plants thinned to one inch apart. Successional sowing may be made one week apart until the first of June.

PEAS.

Garden peas may be sown as soon as the ground is fit to work. The land should be fall manured with ten to fifteen tons of well-rotted manure per acre, and plowed. This is well worked in the spring to a depth of five inches. The seed is usually sown in rows 2½ feet apart, and the seed planted 1 inch apart in the row.

Dwarf and semi-dwarf varieties do not require staking. It is advisable to stake the tall-growing sorts.

If one variety only is used, successional sowings should be made every week or ten days, until the first of June. The garden pea is a cool-season vegetable, and will not do well during the heat of summer. The season may be extended, also, by planting late-maturing varieties. The early seeding is usually made 1 to 1½ inches deep. The later seeding 2 to 3 inches deep.

BEANS.

Beans do best on a fairly rich soil, and, unlike the pea, require a warm situation and warm soil. While the pea will do well on a fairly heavy soil, the bean likes a loose, friable soil for best development. The seed should be sown not earlier than the middle of May. They are usually planted in rows 2½ feet apart, and the seed dropped 2 to 3 inches apart, and 1 to 1½ inches deep.

Successional sowing may be made every two weeks until the middle of July, for the purpose of extending the season into the fall.

CORN.

A warm, friable, rich soil should be selected for garden corn. The seed is sown in hills 3½ feet apart each way, and 3 to 4 plants allowed to develop in a hill. The seed is sown soon after the middle of May. Early and late varieties should be planted to extend the supply of table corn into the fall. As is the case with peas and beans, constant surface cultivation to keep the weeds down and maintain a loose surface mulch, is necessary.

EGG PLANTS AND PEPPERS.

These may be handled the same as tomatoes for the planting out. It is better not to set them to the open ground until the first of June. They require a rich soil. The egg plants may be set in rows, 3 feet apart, and 2 feet apart in the rows. The peppers are set 3 feet, by 1 foot apart in the rows.

SPINACH.

Spinach is one of our best pot herbs. It should be sown very early, usually in rows one foot apart and the plants thinned to 2 inches apart. The ground cannot be made too rich for this plant. The richer the soil, the less liable are the plants to go to seed quickly. A later sowing may be made in the middle of May and June 1st. This last seeding should be watered some, if dry weather prevails. A fall crop may be obtained by seeding the last of August, on well-prepared soil. This is a cool-season crop, and will not thrive during the heat of summer.

LETTUCE.

Any good garden will grow lettuce. The ground should be rich and fairly friable. The seed may be sown inside six weeks before planting outside is possible. The plants are developed as is the case with cabbage. They may be set in rows 1 foot apart, and 6 inches apart in the row. Seed may be sown in the open ground as soon as it is fit to work, and the plants thinned to 4 or 6 inches apart.

Successional sowings may be made every two weeks until the first of June. Seed may be sown the last of August for a fall crop, on well-prepared soil.

PARSLEY.

Parsley may be grown from seed sown ten weeks before planting-out time in the early spring, and the plants handled the same as lettuce. The seed may be sown to the open ground in the early spring. This is not a very particular plant as to soil requirements.

SWEET HERBS.

Summer savory, sage, and sweet marjoram may be grown from seed sown to the open ground in the early spring. They are not particular as to soil requirements, although a fairly rich, friable soil is best. Summer savory and sweet marjoram should be cut when in full bloom, and the sage should be cut before fall rains and the foliage too much. To prevent this, sowing of the foliage, the ground at each side of the plants may be mulched with straw.

ASPARAGUS.

Asparagus may be started from seed sown in rich, well-prepared soil in the early spring, in rows about 2½ feet apart, dropping the seed 3 inches apart in the row, and covering one inch deep. These will make good plants for planting permanently the following spring. One-year-old plants are better than older ones, for the reason that they suffer less from transplanting, and will develop a good cutting bed as soon as were older plants used. Select the best-developed plants, with large buds, discarding all inferior ones.

The best soil for asparagus is a rich, deep loam, well drained. Asparagus may be grown on any type of soil, from light to heavy loam. A stony, gravelly or heavy clay soil should be avoided. The ground should be as rich as it is possible to make it. Thirty to forty tons of stable manure may be applied at the start, and the ground plowed deeply and well worked.

After this thorough preparation tillage, plow out V-shaped furrows, by turning two furrows on one side, and one on the other, spacing them 5½ to 6 feet apart. The plants are set in these furrows 18 inches apart, by shovelling out some of the loose soil to give a good level base to set the plant on, spreading the roots in all directions. The crown of the plant should be about 6 inches below the level of the soil. Cover the plant with three inches of soil, and tramp the soil firmly with the feet. After the plants make growth, the furrow may be cultivated in level around them.

Frequent cultivation during the summer to keep the surface soil loose and all weed growth down, is all that is required.

An annual application of manure at the rate of 20 tons per acre, is advisable. This may be applied in the fall or spring, spread broadcast, and plowed under. Commercial fertilizer, at the rate of 800 to 1,500 pounds per acre, may be used in place of manure, if the soil contains a good supply of humus.

It is advisable to plow lightly towards the plants in the fall, crowning the soil over the row. In the early spring this is worked level again with disk and smoothing harrow, making the surface in good tilth to a depth of 3 to 4 inches.

Cutting is commenced the third year after the plants have been set, and may be continued until the middle of July, but not later. In the late fall, the stalks are cut off with a scythe, removed, and burned.

RHUBARB.

Rhubarb thrives best in a deep, rich, mellow soil. A clay soil, or one with a hardpan subsoil, should be avoided. The ground should be heavily manured, and worked deeply. It is impossible to overfeed this plant. The tendency to produce seed stalks will be greatly lessened by fertilizing heavily. The plantation may be started from seedling plants one or two years old, or from divisions of the crown. In dividing the crown, each piece should have at least one good strong eye. The planting is done in the spring, and the plant set so that the top of the bud or eye is level with surface of the soil.

Old plantations may be improved by plowing off the side of the old plants, manuring heavily, and cultivating thoroughly; or the plants may be divided, and reset into fresh soil. A plantation properly handled and thoroughly manured should give good results for ten years.

The early spring growth depends largely upon the leaf growth made the previous season, hence the importance of not removing too much foliage at once, and encouraging good strong foliage during the summer and fall, for the purpose of storing in the root nourishment for the next spring's growth. The importance of cultivation during the summer, keeping the soil well worked and all weed growth down, is, therefore, obvious.

The usual practice is to manure in the fall, and work this in the following spring. Some follow the practice of manuring heavily, which prevents the frost from penetrating the ground, and then remove the bulk of this in the early spring; others allow this heavy mulch to remain around the plant during summer, do not cultivate, and pull out any weeds that may start.



A Fine Farm Home.

A better effect might be produced if the tree-planting and pruning were not so formal.

Instead of Cold Storage.

A Tasmanian orchardist has discovered that if citrus fruits are subjected for 24 hours to the hot air of a hop kiln, the effect is wonderful on the keeping qualities of the fruit. It is stated by those who have inspected the process that it would be quite possible to keep fruit by this process for twelve months. A plant capable of putting through 2,000 cases in a week costs £4,000. It is estimated that the process shows a great saving, as compared to the cost of cold storage. The heat of the kiln is generated by steam, while a large fan keeps up a regular supply of fresh air, which, passing through the steam heater, regulates the temperature so that it does not exceed 110 degrees. The effect of this treatment is that, while the water is driven out of the skin of the fruit, the essential oils remain, but neither the appearance or flavor of the fruit is interfered with. The skin maintains a wonderfully fresh appearance. The fruit treated must be perfectly sound. The New South Wales Government propose to make extensive trials with the process, and for that purpose cases of the treated fruit will be sent to both America and London. If it proves the success that the inventor claims, the State Government will loan money to the fruit-growers to erect plants at suitable localities. J. S. DUNNET.
Sydney, Australia.

THE FARM BULLETIN.

Liability for Selling Unwarranted Seeds.

If a seed dealer says to you that he won't guarantee the seed to you, and sends a sample of the seed to you, who will become liable under the Seed Control Act, if the seed is deficient in purity? S. G. F.

Under the Seed Control Act of 1911, seed dealers are required to have all timothy, red clover, alsike and alfalfa seed that is exposed for sale for seeding purposes marked with one of the four following grades: Extra No. 1, No. 1, No. 2, and No. 3. The standards for these grades are:

(a) Extra No. 1.—Pure as to kind, clean sound, plump, of good color, free from the seeds of any noxious weeds, and containing not more than thirty seeds of all kinds of weeds, including other useless or harmful plants, per ounce.

(b) No. 1.—Clean, sound, reasonably plump, of good color, containing not more than five noxious weed seeds per ounce of timothy, red clover, alfalfa, or ten per ounce of alsike seed, and not more than 100 seeds of all kinds of weeds, including other useless or harmful plants per ounce.

(c) No. 2.—Reasonably clean, sound, containing not more than twenty noxious weed seeds per ounce of timothy, red clover or alfalfa, or 40 per ounce of alsike seed, and not more than 200 seeds of all kinds of weeds, including other useless or harmful plants per ounce.

(d) No. 3.—Containing not more than 80 seeds of noxious weeds per ounce of timothy, red clover or alfalfa, or 160 per ounce of alsike seed, and not more than 400 seeds of all kinds of weeds, including other useless or harmful plants, per ounce.

weeds, including other useless or harmful plants, per ounce.

Any seed dealer selling timothy, red clover, alsike or alfalfa seed that will not grade at least No. 3 is liable to prosecution under the Act, regardless of any non-guarantee. The grade on the seed is the guarantee of quality, and no person, either seedsman or farmer, is allowed to sell for seeding purposes any seed that will not come up to No. 3 standard, whatever representations of quality may be made. Farmers or retail dealers who have seed delivered to them that they have reason to suspect is below the standard allowed by law, should send a representative sample to the Seed Laboratory, Ottawa, Ont., to be tested and graded. E. D. E.

International Institute.

At a recent sitting of the Senate, at Ottawa, Hon. Arthur Boyer, of Montreal, delivered an informing speech in support of the appointment of a Canadian representative to the International Institute of Agriculture at Rome, Italy. As readers of "The Farmer's Advocate" may remember, the Institute was established through the instrumentality of an American, David Lubin, of California, in 1905. The Hansard report of Senator Boyer's speech incorrectly gives the name as David "Newman."

Senator Boyer pointed out that the object was to create a central representative Bureau of Agriculture, to collect and disseminate promptly reliable information regarding crops and other economic subjects, and a start was made through a liberal personal gift from the King of Italy; together with a magnificent site on which the building used was erected.

The Institute is organized in three divisions: First, Finance; second, statistics, diseases of plants, etc.; and, third, co-operation, which, by the way, has brought so much prosperity to European farmers, despite the burdens of militarism. Already, 172 nations, or countries, are sending their official crop statistics and other in-

formation to the Institute, at which twenty-two different languages are spoken by the staff. Its information is published in five languages, English, French, German, Spanish, and Italian, but at its meetings French is the official tongue. Later on, the information will be distributed in twenty languages. Canada has no direct delegate at the Institute, but is represented there by H. G. Dering, of the British Embassy.

In many ways Hon. Mr. Boyer urged that Canada would be advantaged by direct representation, and urged that one should be sent, but it is not the present intention of the Government to do so. It might be added that Hon. Mr. Boyer is chairman of the third division of the Institute, relating to co-operation, and has discharged his duties with marked ability.

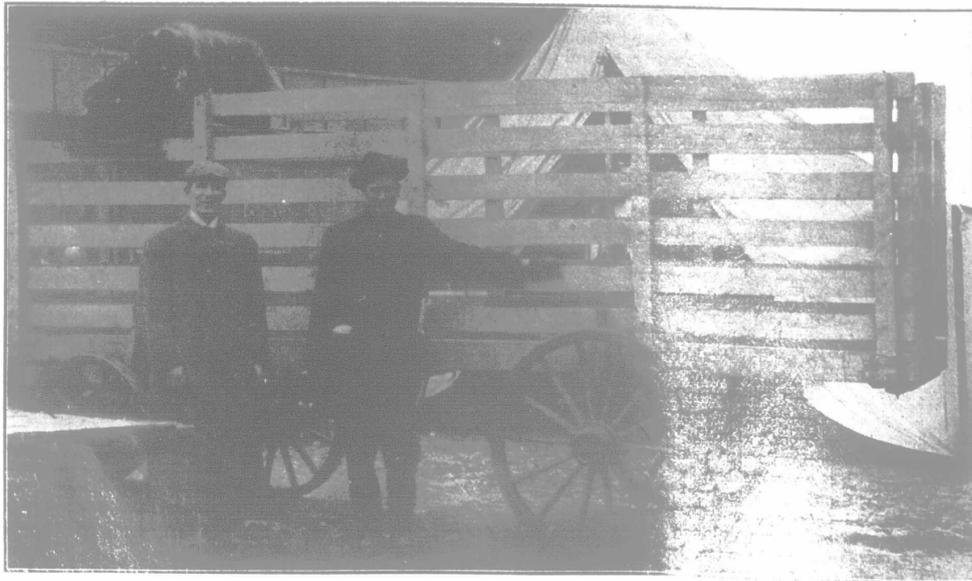
Treatment for Smut.

Every year more or less smut makes its appearance in grains, especially oats and wheat. Experiments carried on in the Field Husbandry Department of the O. A. C., Guelph, proved that greatest yields of these grains were obtained where the seed was immersed in a solution made by adding one pint of formalin to forty-two gallons of water, for twenty minutes. Of seven treatments made, this was the most effectual. Bluestone solution, made by dissolving one pound of bluestone in twenty-five gallons of water, and the oats immersed in it for twelve hours, also gave fair results. This treatment seemed to have a slightly injurious effect upon the germination of the seed. A solution of one pound of copper sulphate in one gallon of water, immersing for five minutes, also injured the seed germination. Sprinkling with formalin, one-half pint in five gallons of water, was not as satisfactory as the immersion in formalin solution. Smut is, in reality, a living parasitic plant, and when the loose smut of oats and the stinking-smut or bunt of wheat can be so easily controlled, there is little excuse for its giving much trouble. There is no difficulty in the formalin treatment. Get a little from your druggist and have it on hand to treat the spring wheat and oats before sowing.

Prices Still Soaring.

The Dominion Department of Labor's wholesale prices record up to date shows a still higher level for February than for January, notwithstanding that the latter month was reported as having seen the highest prices since 1882-4, and possibly since 1873. The index numbers rose during Feb. from 131-4 to 134-3, these being percentages of the average level of prices during the last decade of the last century. The upward movement was largely the result of advances in grains, animals and meats, dairy products and potatoes. Retail prices were also upward, especially in the food products derived from the lines above mentioned.

Many persons will doubtless sow a field or two to mixed grain this spring. If it is not already prepared, now is the time to do the mixing. Oats and barley, one bushel to one bushel, give the highest yield of all mixtures so far experimented with, and Mandscheuri or O. A. C. No. 21 barley, and Daubeney or Alaska oats, have been found very suitable varieties, as they ripen close together. Have the seed mixed and ready.



A Sensible Line of Manual Training for Rural Schools.
Hog rack made by students in Minnesota Agricultural School.

The Situation in the Maple Industry.

Editor "The Farmer's Advocate":

The alert maple-syrup maker descries upon his horizon to-day a number of important developments. For some time the manufacturing processes of this romantic industry of the woods of North-eastern America have been undergoing an evolution which has rendered it possible to turn out a product much more pleasing both to the eye and to the palate than that produced in the primitive kettles of our grandfathers. The modern—the genuinely modern—sugarmaker not only uses a shallow-boiling evaporator, which keeps his syrup hot for the minimum time, but he is careful, also, to avoid contamination of the sap before and during collection, careful to keep the sap waiting as short a time as possible before evaporating, and careful to keep it cold while it is waiting. The successful dairyman ought to make a successful sugarmaker. He has only to carry into the sugar bush the same ideas he keeps constantly in mind in his dairy. For sap is, like milk, a very perishable substance, subject to deterioration by bacterial action. And the sap bacteria, like the milk bacteria, are prevented from multiplying by keeping the liquid cold and not keeping it any longer than is absolutely necessary. Moreover, were the same attention devoted to keeping clean the spouts, buckets and collecting tanks, as is paid to the udders and milk pails, we should hear less of "buddy," "sour," and "milky" sap, and produce much less of that unsightly and unpalatable sugar, fit only to be concealed in chewing tobacco, which is only too commonly made in Canada to-day, especially towards the close of the season.

Up to the present, the advance of the industry has been chiefly in the direction indicated above, the improvement of the manufacturing process—more rational tapping, cooler and shorter storage of sap, more expeditious evaporation, and more effective clearing by filtration. To-day the marketing problem is coming more into prominence, and it looks as if the next advance must be in the direction of securing for the producer a more adequate return upon the capital invested and the labor expended in the sugar bush.

In the adulterator, the maple industry has, and has long had, an energetic and insidious foe. The sugar of the maple sap ("sucrose," we chemists call it) is identical with that of the cane and beet. The superior commercial value of maple syrup and sugar is due solely to the fact that the flavoring matters which accompany the sucrose in maple sap are so pleasant to the taste. Were it profitable, it would undoubtedly be feasible to manufacture granulated sugar from the sap of the maple. Actually, the profit lies in the opposite direction, and granulated sugar is the most common adulterant added to maple products. Now, granulated sugar is sucrose. In adding granulated sugar to maple syrup or maple sugar, then, the adulterator is merely increasing the amount of the predominating constituent of the genuine substance. This circumstance makes the detection of the adulteration by chemical means difficult. Our only resource is to determine the amounts of the non-sugar substances in the material under analysis, and examine whether the quantities found lie within the range of variation of these substances in the genuine maple product. The proportion of each of the non-sugar substances, small as it is in genuine syrup, will obviously be smaller in an adulterated syrup than in the pure syrup from which the adulterated is made. By way of example, let us consider the "mineral matter" or "ash." Ten thousand pounds of genuine maple syrup yields, when burned, from 45 to 85 pounds of ash. Granulated sugar is practically ash free. Now, if a syrup yielding, say, 60 pounds of ash is adulterated with an equal amount of syrup made from granulated sugar, the adulterated product will evidently yield only 30 pounds of ash. As this is less ash than is yielded by any pure syrup, the adulteration will be detected. Even a syrup yielding 80 pounds of ash could scarcely be adulterated with its own volume of granulated-sugar syrup, without the adulteration being detected by an ash determination. But if nine parts of such genuine syrup were mixed with seven parts of the granulated-sugar syrup, the product would yield as much ash as is obtained from some genuine syrups. If we merely determined the amount of ash left by the syrup, such a syrup as this would pass as genuine. It is even possible that, by using a less pure sugar-cane product than granulated sugar, the adulterator might contrive to use a still larger proportion of the cheaper ingredient, and still keep within the limits of the ash of genuine maple syrups. The same principle which we have applied to the ash applies likewise to the other non-sugar constituents of maple products. But it is, of course, much more difficult for the adulterator to meet the requirements for a number of constituents than for a single one.

A circumstance which has added to the difficulties of the analyst is that the high-grade maple

goods produced by the modern methods—the clear, light-colored and milder-flavored syrups—contain a smaller proportion of the non-sugar constituents than do the old-fashioned, dark-colored, "tangy" products produced either by antiquated apparatus or by careless handling of the modern evaporator. The better a genuine syrup is, the harder it is for the chemist to distinguish from an adulterated syrup.

When the Chief Analyst of our Inland Revenue Department recommended to the Government the standards for maple syrup and sugar, which were adopted in March, and came into effect in April, 1911, he was doubtless depending upon the past experience of his laboratory with products of the older type—the type which still is, by far, the most prevalent—the dark-colored, strong-flavored syrup. When it was pointed out to him that under this standard there was danger of condemning the very best quality of genuine goods, the Chief Analyst undertook a comprehensive study of the genuine syrup of the season of 1911. He invited farmers to send samples of their syrup to Ottawa, with a declaration of its genuineness, and no doubt many of the readers of "The Farmer's Advocate" were among those who responded. In all, about five hundred samples of syrup were analyzed. As a result of his study, a full report of which has been published as Bulletin 228 of the Laboratory of the Inland Revenue Department, the standards were revised. It was found necessary to lower the standards in some items, else genuine goods of high quality were apt to be condemned. The amount of ash in every one of the pure syrups was, however, found to be considerably greater than the old standard required. In respect of this item, therefore, the standard was raised.

It is doubtful whether the new standards will afford anything like adequate protection to the makers of genuine maple products. Adulterated goods, if judiciously compounded, will continue to escape detection. Nor does there appear any immediate prospect of a chemical test that will succeed in "spotting" every case of adulteration. I have myself devised a rapid method of testing maple syrup, which consists in measuring the power of the syrup (diluted with two volumes of water) to conduct an electric current. Adulteration with granulated sugar reduces the conducting power. But this test is (to say the least) no more delicate than those now in use, and the only advantage I can claim for it is in the matter of rapidity.

I do not wish to be understood as suggesting that chemical analysis is unimportant in relation to maple products. Chemical analysis (as well as measurement of the electrical conductivity) will serve to point out many cases of adulteration. But it is important that the maple producer should be warned not to depend too much on the chemist in the fight against adulteration.

As to what the producers should do, I shall have some suggestions to make. But before leaving the subject of the standards, I should like to call attention to one item which is of particular importance to the producer, as it refers to a matter that is entirely under his control. The standards require that maple syrup should not contain more than 35 per cent. of water, nor maple sugar more than 10 per cent. In order to avoid the possibility of having his syrup declared adulterated, the producer should see to it that its water content is correct. And this is something that he can very easily regulate. No actual determination of the quantity of water is necessary. There are at least three simple ways of finding out whether the syrup is sufficiently strong to comply with the standard.

1. By weighing. An accurately-measured Imperial gallon of syrup at room temperature should weigh 13 pounds 3 ounces. The Inland Revenue Laboratory Bulletin erroneously gives 13 pounds 2 ounces as the correct weight of an Imperial gallon of maple syrup. This error was probably copied from a bulletin of the Bureau of Chemistry of the United States Department of Agriculture, in which 13 pounds 2 1/5 ounces is the exact correct figure.

2. By use of a hydrometer or saccharometer. A saccharometer graduated according to the Baume system will sink to the mark 35.6 degrees when placed in standard maple syrup of ordinary room temperature. A hydrometer will sink to the point 1320, corresponding to a specific gravity of 1320.

3. By use of a thermometer. Syrup with 35 per cent. water boils 7 degrees higher than water. The thermometer should be tested in boiling soft water (which may be made by melting clean snow). When placed in the boiling syrup, the thermometer should read 7 degrees higher than it did in boiling water. Differences in elevation and in atmospheric pressure have some slight effect on the boiling temperature of water, but these will affect the boiling temperature of the sap to exactly the same extent.

Whether the dipper test, by which many makers determine when the syrup is ready to be drawn off from the evaporator, is sufficiently reliable, I

cannot say. Of the samples examined by the Inland Revenue Laboratory last summer, 12 per cent. had excess water (that is over 35 per cent. of water); 8 per cent. were exactly on the standard; 24 per cent. had 33 or 34 per cent. of water; and 45 per cent. had 31 or 32 per cent. of water. Very few of the remaining 11 per cent. had less than 30 per cent. of water. This seems to indicate that, while the great majority of makers err on the safe side, greater precision in this matter is desirable. It is obviously unprofitable to evaporate too far. One uses more fuel and gets less syrup. Moreover, if the syrup is made much heavier than standard, crystals of sugar may separate out on cooling. On the other hand, syrup made too light (thin) is not only subject to condemnation as adulterated, but is also very apt to spoil by fermentation. It is better, then, to make the syrup too heavy than too light; but it is best to make it just right.

Returning to the question of adulteration, I may remind your readers that in the six years, 1905-10, out of 904 samples collected by the Inspectors of the Inland Revenue Department, the analysts of the Department have adjudged 271 adulterated, and 35 doubtful. As far as I can make out from a cursory examination of the bulletins of the Department, the proportion of samples condemned would have been very little different had the present standards been in force. We may take it, then, that about one-third of the syrup sold as genuine maple in Canada to-day is adulterated. Some of it, indeed, is entirely spurious, being made from cane sugar and artificial maple-flavor imitations. Last fall I had ten samples of syrup purchased in two of the cities of Saskatchewan, for use in trying my electrical conductivity test. Six of these were labeled pure, two compound or mixed, and two "maple flavor." While in itself, my experience with so small a number of samples is not of great significance, it happens that two of the six syrups sold as genuine were really adulterated, one being a compound, the other a gross imitation, containing either no genuine syrup whatever, or so little that it could not be detected. Moreover, this friend who made the purchases for me wrote that "Out of eighteen grocers visited, about one-third produced the compound when asked for maple syrup. One grocer insisted on calling a can of Small's mixture pure, even when I called his attention to the label on the can." Of the two syrups sold as compound, one was really an imitation syrup, containing little, if any, genuine maple.

The most aggravating feature of the situation is that so little appears to be done in the way of punishing the adulterator. From the bulletins of the Inland Revenue Laboratory it appears that the goods of certain manufacturers are year after year condemned as adulterated, and yet these firms are permitted to go on making these spurious goods and passing them off as genuine. It is hard to understand why this should be so, if the officials of the Inland Revenue Department are exercising due diligence in prosecuting offenders against the Adulteration Act, and in pressing for the maximum penalties of the law upon persistent offenders.

It might be well for sugar-making farmers to get their Parliamentary representatives to ask for a return showing what prosecutions have been made by the Inland Revenue Department for adulterating maple products and for selling the adulterated products.

I have been told, on the authority of an official, that there is some reluctance on the part of the Department to prosecute retail grocers, many of whom are poor and ignorant people. It is questionable whether such an attitude is correct, when it protects dishonest middlemen against honest producers and honest consumers, many of whom may be quite as poor as the middleman. But the excuse, whether good or bad, does not apply to the large manufacturers engaged in the sophistication of maple goods. Perhaps an amendment to the Act, enabling the grocer to throw back upon the manufacturer the responsibility for the adulteration, whenever the goods have been invoiced as pure, might be useful in facilitating the assembling of evidence against the manufacturer.

At present the grocer does not escape responsibility, unless he has taken the precaution of obtaining from the manufacturer a special form of warranty of the purity of the goods. An amendment such as I suggest should remove any scruples the officials may have against prosecuting poor and ignorant grocers. Another excellent suggestion for the amendment of the law is made by the Chief Analyst in Bulletin 228, viz., that a reward should be offered to any person able to prove the manufacture and sale of adulterated maple products. To quote: "If a substantial penalty for adulteration of maple goods were specifically named, one moiety of it to go to the informer in case of his making good his charges, this would, I venture to think, prove a powerful deterrent to fraudulent practices which now prevail."

These two amendments, (1) going away with the requirement of a warranty which affords the dishonest manufacturer some protection, and (2) offering a reward for evidence of adulteration, would, in my humble opinion, be of far greater influence in the protection of the maple industry than the one which is being so vigorously demanded by my friend John H. Grimm, of Montreal, and those who have signed his monster petition. What Mr. Grimm and his associates are asking for is the prohibition of the use of the word "maple," or any of its derivatives, on any but genuine maple goods. This would render it illegal to sell goods honestly labelled "maple-syrup compound." While the sugarmakers have undoubtedly quite as good a claim to such legislation as have the dairymen and beekeepers to the prohibition of the manufacture and sale of oleomargarine and of imitation honey, I cannot regard any legislation of the kind as other than wrong in principle. To prohibit the manufacture and sale of any wholesome variety of food, in the interest of any body of producers, however numerous and important, is, to my mind, iniquitous; and to prohibit the honest labelling of such a manufactured good is only a little less so. While I have every sympathy for an honest firm like the Maple Tree Producers' Association, which has for several years been making a gallant fight for a market for genuine maple goods, and while I can congratulate the sugar-making farmers in having found so energetic and devoted a champion of their rights as Mr. Grimm, the head of this firm, I cannot but regret that the emphasis is being laid upon this proposed addition to the Adulteration Act, rather than upon such amendments as would lead to the more effective enforcement of the general principles of the Act.

A co-operative society of maple-sugar makers is being organized in the Province of Quebec. It is to be hoped that a strong organization extending to all those engaged in the industry will be the outcome of this movement. Such an organization would have great influence in securing effective protection against adulteration. It might also render valuable service by undertaking an advertising campaign for pure maple products. How necessary such advertising is is perhaps not realized by the majority of producers. They have only to think of the large number of new Canadians in the West who have probably never heard of maple syrup and sugar, and to reflect how little thought is probably given to these products even by Canadians of Eastern birth, who have moved west of the limits of the sugar-maple territory, to understand that a persistent effort is necessary to keep up and increase the demand for maple products.

This effort to create a demand is a good deal more important in Canada than in the United States; for, while that country produces only half a pound of sugar per head of the population, our annual production is about three pounds for every man, woman and child in Canada; and the United States duty of four cents a pound practically excludes us from the American market. The Dominion Government might reasonably be asked to endeavor to create a market for maple goods in the countries beyond the seas. A sugar-makers' association would be influential in inducing such action on the part of the Government. I believe that proper advertising might even create a high-class market for that little known but most admirable maple product, maple vinegar, to my taste, and that of many others, the most delicious of all the vinegars. Another by-product of the maple industry, which I hope may soon be of some little value, is the sugar sand. From this can easily be obtained malic acid, the sour principle of apples, sumac and mountain-ash berries, now sold at about ten dollars a pound. Unfortunately, there is as yet but little demand for this acid; but when its production is cheapened—as I am sure it can be by making it from sugar-sand—I believe that new uses for the acid will be found. The farmer may then find it doubly profitable to separate the sand from his syrup and sugar, not only improving the quality of the latter, but realizing a little from the sale of the sand itself.

On the whole, the outlook for the industry is not a discouraging one. Attention to the marketing end of the business, and particularly to the suppression of adulteration, will, I believe, result in a gratifying augmentation of the farmer's profits.

J. F. SNELL,
Macdonald College, Que. Prof. of Chemistry.

The Canadian Budget.

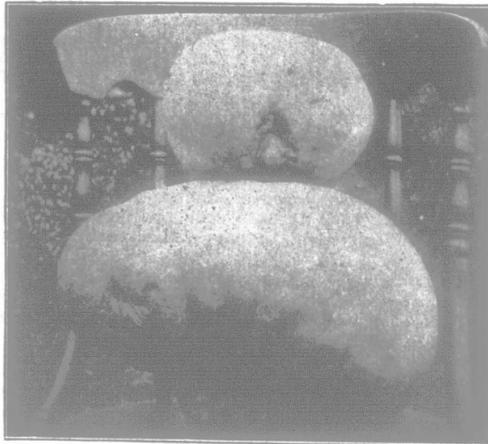
Hon. W. T. White, Finance Minister, delivered his first budget speech at Ottawa last week, estimating the revenue for the year at \$136,000,000, and expenditures on revenue account, \$97,000,000, leaving a record surplus of \$39,000,000. After deducting expenditure on capital account, the national debt would be reduced \$1,150,000. No tariff changes and no bounty renewals were announced.

Ayrshire R. O. P. Test Fees Cancelled.

At the annual meeting of the Canadian Ayrshire Breeders' Association, held in Toronto on February 7th last, it was decided that, after May 1st, 1912, a registration fee of \$5.00 would be charged the owner of every cow and bull that registers in the test. This fee was intended to recoup the Association for all expense in connection with the test. Owing to the small majority by which this resolution carried, the directors thought it wise to reconsider it at the next annual meeting before putting it into effect. It, therefore, is cancelled until the next meeting of the Association.

Big Puffballs in New Zealand.

In view of the recent item in this paper regarding a gigantic mushroom found in the West-ern States, readers will be interested in the accompanying illustration, reproduced from the



New Zealand Puffballs.

Otago Witness, of New Zealand, showing two large puff-balls (*Lycoperdon giganteum*), found at Hooper's Inlet, in the Otago Peninsula. The footnote stated that the large ball measured 43½ inches, and the small one 25 inches.

Rivalling the Rich.

The cry against the increased cost of living is heard throughout the world. The farmer or anybody else doesn't need to consult statistics nor to read discussions. They find out the real conditions when they consult their own expense accounts.

Many causes are given for the prevalent irregularities. Now and then a "John the Baptist" will come out of the wilderness to announce his views. In most cases they confuse, more than they teach. Someone tells us, for instance, that the greater supply of gold is the principal cause. Another insists that the abandonment of farming and the consequent augmentation in the population of the cities has lessened the available food supply. Another blindly conjectures that the land, like the land of ancient Carthage, has commenced to depreciate, and, so to speak, only 30 bushels of wheat grows where 60 bushels grew formerly. Another "wise-acre" is insolent enough to say that the farmers are culpable for the existing prices.

Now, I don't believe the cost of living has really increased. There seems to be a general conviction to the contrary, but I am sure, if a comprehensive comparison of prices were made, it would show that it isn't well founded. I don't think the purchasing power of a dollar has declined since two or three decades ago. Instead of declining, it seems to have increased. Food and clothing and all the basic necessities don't seem to have increased. Our fathers have told us how high flour was following the Crimean war. It was, of course, much higher than it is at the present time. They have also told us how much higher tea was, and how much more they had to pay for clothing.

Despite, however, the enhanced value of a dollar, household expenses have materially increased, and are still in the ascendant. What has happened to bring about this change? The answer is obvious: The scale of living, not the cost, has increased. We have confused our wants with our necessities. We could live as cheaply as they, and still be comfortable, if we would cut down the scale of living. A good many gross incomes have trebled, and some have possibly quadrupled, since twenty years ago, yet these same persons are insolvent to-day, where twenty years ago they had working capitals of their own. A waste somewhere.

Are the people made any happier or more com-

fortable by the present scale of living? Apparently not. I don't think the present conditions have been as perceptible amongst the farmers as the consumers. Amongst the consuming population, between the very wealthy and the very poor, whose circumstances, measured by their respective incomes, have greatly increased during the last twenty years. Some are educated, refined, and capable of the highest citizenship. They belong to the salaried class. They try to imitate the Goulds and Drexels. It is upon these, I believe, that the lure of extravagance exercises its most potent spell. It seems to be these that are struggling. They shall have to break away from the thralldom of fashion, adopt frugality in the place of waste, and assert their own lives, without regard to "Jack" or "Harry" next door, and cease blaming the farmers, or the struggle for subsistence will go on incessantly. M. H. Essex Co., Ont.

Protect the Quail.

Editor "The Farmer's Advocate":

That article on "Caring for Quail in Winter," by Jack Minor, hits the nail on the head. I have had the pleasure of visiting his place, and was very much interested in the splendid results he has had from the protection, not only of the quail, but of other birds, and, judging by the work he has done, and the results he has attained, he might well be regarded as an authority on this question.

What he has accomplished in Essex can be done in counties considerably farther to the north. In this County of Middlesex, for instance, quail are any farmer, in a few years, by posting his ground and preparing a little jungle for the birds, to have a good quail population which would repay him very well for the labor and care expended, even if he took no personal interest in the birds, and counted the sentimental and aesthetic result as nothing.

I cannot at this moment lay my hands on the published investigations into the food of quail, but I know that the calculations deduced from the work that has been done gives each quail millions of weed seeds per year, to say nothing of insects, which are a favorite food in summer.

Reverting again to our own county, it is quite true that at present we have practically no quail-shooting, because there are no quail to be shot. This is not quite true of the south and west portions of the county, but, when considering the whole county at once, one cannot truthfully say that there is any material quantity of quail-shooting in it, and everyone will readily grasp the two facts that we have neither shooting nor quail. It seems to me that the time is ripe for a division of the Province, as far as quail and partridge-shooting is concerned; and, if absolute protection were given to these birds in the counties in which they are now practically extinct, we would eventually restore them to a reasonable abundance, while, on those farms where they received special care and attention, the quail, particularly, would be likely to become very abundant. At present we have "No Shooting and no Quail," whereas we might have "No Shooting, but Plenty of Quail," and it is simply a matter of choice with us as to which it shall be, even if the proper legislation cannot be obtained, as every farmer is legally entitled to privacy on his own ground, and can protect the birds if he cares to do so.

It has always been rather a surprise to me that the game hunters have practically taken the attitude that they are the only ones who should have any consideration in the matter of the protection of game. It is true that they are much interested, but it is from a standpoint of sport and recreation only, whereas the farmer may be interested not only from the same standpoint, but also from those of sentiment and financial profit.

Speaking for myself and for my friend Jack Miner, I should say that sentiment stands highest. If you asked him, he would tell you that even if the quail caused him some injury each year, he would still protect them for the pleasure of their presence and the process of mind that has changed him from an ordinary quail-shooter to one of the most ardent protectionists in the whole country, might fairly come over anyone else who gave the matter thought and care.

These notes merely touch the fringe of a great subject. Most of our numerous bird friends may be liberally increased in numbers by judicious protection, and the results will inure to the benefit of the protector every time.

London, Ont. W. E. SAUNDERS.

THE CANADIAN BANK OF COMMERCE

ESTABLISHED 1867

Capital paid-up, \$11,000,000.
Reserve, \$9,000,000.

The Canadian Bank of Commerce extends to farmers every facility for the transaction of their banking business, including the discount or collection of sales notes. Blank sales notes are supplied free of charge on application.

Accounts may be opened at any branch of The Canadian Bank of Commerce to be operated by mail, and will receive the same careful attention as is given to all other departments of the Bank's business. Money may be deposited or withdrawn in this way as satisfactorily as by a personal visit to the Bank.

MARKETS.

Toronto.

At West Toronto, on Monday, March 18th, receipts of live stock numbered 87 cars, 1,672 cattle, 294 hogs, 94 sheep, 44 calves; quality of cattle medium to good; trade active; prices about steady. Export steers, \$6.80 to \$7.05; bulls, \$5.25 to \$5.45; best butchers' heavy steers, \$4.65 to \$6.75; prime picked butchers', \$6.25 to \$6.50; good, \$6 to \$6.25; medium, \$5.50 to \$5.90; common, \$5 to \$5.40; inferior, \$4.50 to \$4.90; cows, \$3 to \$5.25; extra choice cows, \$5.35 to \$5.75; milkers, \$30 to \$50 each; calves, \$4.50 to \$8.50. Sheep, \$4.50 to \$5.25; rams, \$4 to \$4.50; lambs, \$6.50 to \$8.30. Hogs, \$7.50 fed and watered, and \$7.15 f. o. b. cars country points.

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

REVIEW OF LAST WEEK'S MARKETS
Deliveries of all classes of live stock at both yards continue to be light. But notwithstanding the light runs of cattle, prices have remained about stationary for them, but should these light receipts continue, we expect values for the best finished cattle to advance, as the market at the end of the week closed firm.

	City.	Union.	Total.
Cars	165	186	351
Cattle	2,057	2,405	4,462
Hogs	3,205	2,519	5,724
Sheep	731	553	1,284
Calves	572	58	630
Horses		513	513

The total receipts for the two yards for the corresponding week of 1911 were as follows:

	City.	Union.	Total.
Cars	165	128	293
Cattle	2,056	1,832	3,888
Hogs	4,202	923	5,125
Sheep	1,193	1,392	2,585
Calves	282	63	345
Horses		251	251

The combined receipts of live stock at the City and Union Stock-yards for the past week show an increase of 58 cars, 574 cattle, 599 hogs, 285 calves, and 262 horses; but a decrease of 1,301 sheep, compared with the same week of 1911.

Exporters.—About 200 steers, 1,200 to 1,300 lbs. each, were bought for export to the London and Liverpool markets at prices ranging from \$6.70 to \$7.25. There were 36 cattle bought at \$7.25.

Butchers'.—Best butchers' sold at \$6.60 to \$6.85; prime picked cattle, \$6.25 to \$6.50; good, \$6 to \$6.25; medium, \$5.50 to \$5.75; common, \$5 to \$5.25; inferior, \$4.50 to \$5; cows, \$3 to \$5.25; extra quality cows, \$5.30 to \$5.65; bulls, \$4 to \$5.60.

Stockers and Feeders.—About 200 cattle for feeding purposes changed hands last week. Steers, 850 to 950 lbs., sold at \$5 to \$5.50; stockers, 700 to 800 lbs., at \$4.75 to \$5.

Milkers and Springers.—There has been a lot of common and medium cows put on the market. The demand for these

is not good, but they sold all the way from \$38 to \$50 each. Good to choice cows sold from \$60 to \$75 each.

Veal Calves.—Receipts of calves were fairly liberal, but prices were unchanged, at \$5.50 to \$8.50 per cwt.

Sheep and Lambs.—Sheep firmer, at \$4.50 to \$5.50 for ewes, and \$4 to \$4.50 for rams. Lambs sold from \$6 to \$7.75, and \$8 to \$8.40 was paid for a few choice quality.

Hogs.—Receipts only moderate, and prices were higher. Selects sold at \$7.35 fed and watered at the market, and \$7 to drovers, f. o. b. cars, country points.

BREADSTUFFS.

Wheat.—No. 2 red, white or mixed, 96c. to 97c., outside points. Manitoba No. 1 northern, \$1.13; No. 2 northern, \$1.10; No. 3 northern, \$1.06; track, lake ports. Oats—Canadian Western extra No. 1 feed, 50c.; No. 1 feed, 49c., lake ports; Ontario No. 2, 45c. to 46c.; No. 3, 44c., outside points; No. 2, 47c. to 48c., track, Toronto. Buckwheat—68c. to 70c. per bushel, outside. Rye—No. 2, \$1 per bushel, outside. Barley—For malting, 98c. to 95c. (47-lb. test); for feed, 63c. to 78c. Corn—American No. 3 yellow, all rail from Chicago, 75c., track, Toronto. Peas—No. 2, \$1.15 to \$1.25, outside. Flour—Ontario ninety-per-cent. winter-wheat patents, \$3.95, seaboard. Manitoba flour—Prices at Toronto: First patents, \$5.60; second patents, \$5.10; strong bakers', \$5 in jute bags, and 10c. more in cotton.

HAY AND MILFEED.

Hay.—Baled, in car lots, track, Toronto, \$16 to \$18.50; No. 2, \$14 to \$15 per ton.
Straw.—Baled, car lots, track, Toronto, \$9 to \$10.
Bran.—Manitoba bran, \$25 per ton; shorts, \$27; Ontario bran, \$25 in bags; shorts, \$27; car lots, track, Toronto.

COUNTRY PRODUCE.

Butter.—Market firm, at steady prices. Creamery pound rolls, 37c. to 39c., and Locust Hill brand, 40c.; creamery solids, 37c.; separator dairy, 34c. to 35c.; store lots, 32c. to 34c.

Eggs.—Case lots of new-laid are 25c. per dozen.

Cheese.—Large, 16c.; twins, 17c.

Honey.—Extracted, 18c.; combs, per dozen, \$2.50 to \$3.

Beans.—Market unchanged. Broken lots, \$2.35 to \$2.40 for primes, and \$2.45 to \$2.50 for hand-picked.

Potatoes.—Receipts from England, Ireland and Scotland have caused prices to be lower. Ontario potatoes, \$1.60 to \$1.65; New Brunswick Delawares, \$1.60 bag, track, Toronto; English potatoes, \$1.65 per bag.

Poultry.—Receipts of fresh-killed have been light, at unchanged prices. Cold-storage prices are as follows: Turkeys, 23c. to 26c.; geese, 14c. to 16c.; ducks, 16c. to 20c.; chickens, choice, milk-fed, 20c.; chickens, 14c. to 18c.; broilers, milk-fed, 28c.

HIDES AND SKINS.

E. T. Carter & Co., 85 East Front street, have been paying the following prices: No. 1 inspected steers and cows, 11c.; No. 2 inspected steers and cows, 10c.; No. 3 inspected steers, cows and bulls, 9c.; country hides, cured, 11c. to 11c.; green, 10c. to 10c.; calf skins, 12c. to 15c.; sheep skins, 85c. to \$1.15 each; horse hides, No. 1, \$3 to \$3.25; horse hair, per lb., 33c. to 35c.; tallow, No. 1, per lb., 5c. to 6c.

TORONTO SEED MARKET.

Following are the prices at which re-cleaned seeds are being sold to the trade: Alsike No. 1, per bushel, \$15 to \$15.50; alsike No. 2, \$13 to \$14; red clover No. 1, per bushel, \$15 to \$15.50; red clover No. 2, per bushel, \$13.50 to \$14.50; timothy No. 1, per cwt., \$18 to \$19; timothy No. 2, \$16 to \$17 per cwt.; alfalfa No. 1, per bushel, \$11 to \$12; No. 2, \$9.50 to \$10.50 per bushel.

FRUITS AND VEGETABLES.

Apples.—Spies, \$3.50 to \$5; Baldwins, \$3 to \$4; Russets, \$3.50 to \$4.50; Greenings, \$3 to \$4 per barrel. Onions, Canadian, per bag, \$2.50 to \$3; parsnips, per bag, \$1.25 to \$1.50; turnips, per bag, 40c. to 50c.; carrots, per bag, \$1.15 to \$1.25; cabbage, per barrel, \$2.50 to \$2.75; beets, per bag, 75c. to \$1.

Montreal.

Live Stock.—The local cattle market was quoted firmer last week. Buyers were apparently all in need of stock, and as the quality of the stock offering was good, the prices paid were all that could be looked for. Some very choice steers were held at upwards of 7c. per lb., but it is doubtful if this figure was granted. In a general way, buyers would not allow more than 7c. per lb., and more changed hands at 6c. per lb. than at the higher figure. Some really nice stock changed hands at 6c., and from that down to 6c. covered the bulk of the trading in the firmer qualities. Some fine cows sold at 5c., and some bulls at the same figure. Common cattle sold down to 4c., and canners' were firm, being 2c. to 3c. per lb. Choice milkers were \$75 each, medium being \$50, and springers \$30. Sheep—Ewes sold at 5c. to 5c. per lb., and bucks and culls at 4c. to 4c. per lb. Lambs sold at 6c. to somewhat over 7c. per lb., while calves were \$3 to \$12 each. Hogs were 7c. per lb. for selects.

Horses.—The demand for horses was a good deal quieter, particularly for the local trade. Until the wheels begin to turn again, it is likely that the demand for horses will be a little slack for the local market. There has been a fair demand from the Northwest for farm horses. Heavy draft horses, weighing from 1,500 to 1,700 lbs., \$300 to \$350 each; light draft, 1,400 to 1,500 lbs., \$225 to \$300 each; light horses, 1,000 to 1,100 lbs., \$100 to \$200 each; broken-down animals, \$50 to \$100 each. Choice carriage or saddle animals sell at \$350 to \$500 each.

Dressed Hogs.—There was a good demand for dressed hogs, and abattoir-killed sold at 10c. to 11c., and country-dressed at 9c. to 10c. per lb., these prices being high.

Poultry.—Market showed very little alteration. Turkeys continued to be sold at 19c. to 20c. per lb.; geese at 13c. to 14c.; fowls, 10c. to 12c.; chickens, 16c. to 20c.; ducks, 17c. to 17c. This is for choice stock, and even some cold-storage is said to have brought the figures mentioned.

Potatoes.—Practically no change in the market for potatoes. Green Mountain stock was quoted at \$1.65 to \$1.70 per 90 lbs., carloads, on track, while English potatoes brought about the same figure, and common varieties about \$1.50. Smaller quantities brought higher prices.

Honey and Syrup.—Market dull. Prices 10c. to 11c. per lb. for white clover comb honey, dark grades being 8c. to 10c., white extracted, 7c. to 8c., and buckwheat, 7c. to 9c. Maple syrup in wood was quoted at 7c. to 7c. per lb.; in tins, 70c. to 75c., and sugar at 8c. to 9c. per lb.

Eggs.—Dealers have been trying to buy in the country at 22c. to 23c. per dozen, and declared they would not pay more. Sales of Canadian eggs were being made at 26c. to 27c., and down to 25c., and the range is wide at all times, and much influenced by the supply. Bad roads may soon set in and possibly limit the offerings.

Butter.—No change in the butter market. Prices were around 34c. for choice, and a cent less for inferior stock. Demand good.

Grain.—There was but little change in prices during the past week on oats. Canadian Western oats were 53c. to 53c. for No. 2; No. 1 feed oats, extra, 52c. to 52c.; No. 3 Canadian Western, 51c. to 51c.; No. 2 local oats, 50c. to 51c.; No. 3, 49c. to 50c., and No. 4, 48c. to 49c.

Flour.—Market firm, being \$6 per barrel for Manitoba spring-wheat patents, firsts, and \$5.50 for seconds, and \$5.30 for strong bakers', in wood, bags being 30c. less. Ontario winter-wheat patents were \$5.10 to \$5.35 per barrel, while straight rollers were \$4.60 to \$4.75 per barrel.

Millfeed.—Market held steady, at \$25 per ton for bran, and \$27 for shorts, middlings being \$29, pure grain mouille being \$32 to \$34, and mixed mouille being \$29 to \$30, in bags.

Hay.—\$16 to \$16.50 per ton for No. 1 hay; \$15 to \$15.50 for No. 2 extra; \$14 to \$14.50 for No. 3 ordinary; \$13 to \$13.50 for No. 3 hay, and \$10.50 to \$11 for clover-mixed.

Seeds.—Demand dull on account of high prices and wintry weather, being \$22 to

\$26 per 100 lbs. for alsike or red clover, and \$16.50 to \$20 for timothy.

Hides.—Market not very active, but moderate trade passing. Prices were about steady, being 11c., 12c. and 13c. per lb. for Nos. 3, 2 and 1 hides; 11c. and 13c. per lb., respectively, for Nos. 2 and 1 calfskins; lamb skins, \$1.10 each; horse hides, \$1.75 to \$2.50 each. Tallow, 1c. to 2c. per lb. for rough, and 6c. to 6c. for rendered.

Buffalo.

Cattle.—Prime steers, \$7.50 to \$7.85; butcher grades, \$3 to \$7.

Calves.—Cull to choice, \$6 to \$10.25. Sheep and Lambs.—Choice lambs, \$7.60 to \$7.75; cull to fair, \$6 to \$7.50; yearlings, \$6 to \$6.75; sheep, \$2 to \$6.

Hogs.—Yorkers, \$7 to \$7.50; pigs, \$6.25 to \$6.40; mixed, \$7.30 to \$7.40; heavy, \$7.25 to \$7.35; roughs, \$6 to \$6.50; hogs, \$5 to \$5.50.

Chicago.

Cattle.—Beeves, \$5 to \$6.80; Texas steers, \$4.60 to \$6; Western steers, \$5 to \$7; stockers and feeders, \$4.10 to \$6; cows and heifers, \$2.80 to \$6.65; calves, \$5.75 to \$8.25.

Hogs.—Light, \$6.80 to \$7.05; heavy, \$6.80 to \$7.15; roughs, \$6.80 to \$6.90; pigs, \$4.50 to \$6.50.

Sheep.—Native, \$3.70 to \$5.60; yearlings, \$5 to \$6.40; lambs, native, \$5.25 to \$7.50; Western, \$5.75 to \$7.60.

British Cattle Market.

John Rogers & Co., of Liverpool, cable quotations from 14c. to 15c. per lb. for both States and Canadian steers.

GOSSIP.

A PROLIFIC COW.

An English exchange, "The Farmer and Stock-breeder," reports a remarkable record of fecundity in the case of a Short-horn cow owned in Oxfordshire. She has had five pair of twins, four of these in consecutive years, and has produced altogether fifteen live calves during the period of nine years and one month.

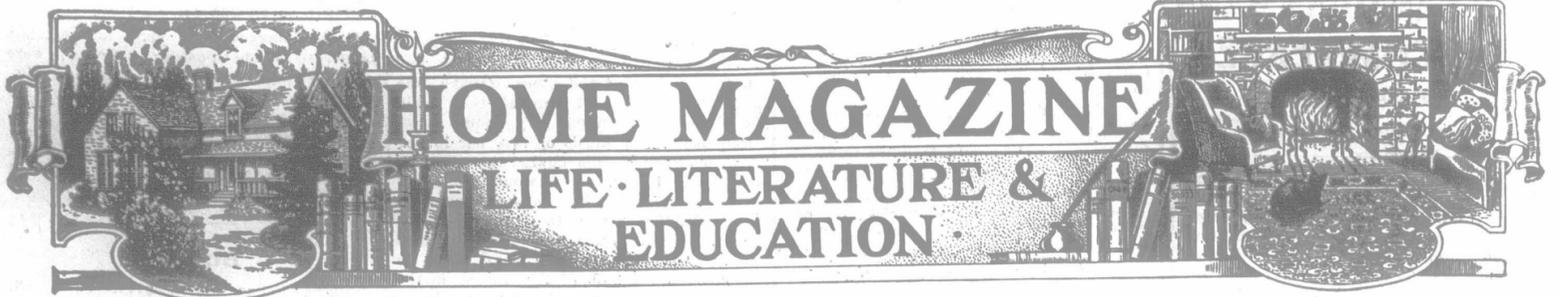
STOCK SALE DATES CLAIMED.

March 25th.—S. Macklin, Weston, Ont.; Holsteins.
March 26th.—L. E. Morgan, Milliken, Ont.; Hampshire and Southdown sheep.
March 28th.—Fred. Abbott, Harrietsville, Ont.; Holsteins.
April 3rd.—Holstein-breeders' Club; consignment sale, Belleville, Ont.

Official records of 261 Holstein-Friesian cows were accepted for entry in the American Advanced Registry from February 11th to February 19th, 1912. This herd of 261 animals, of which nearly one-half were heifers with first or second calves, produced in seven consecutive days, 106,028.5 lbs. of milk containing 3,838.833 lbs. of butter-fat; thus showing an average of 3.62 per cent. fat. The average production for each animal was 406.3 lbs. of milk containing 14.706 lbs. of butter-fat; equivalent to 68.04 lbs. or 27.6 quarts of milk per day, and 17.16 lbs. of the best commercial butter per week.

LANDED.

There was a bachelor who had courted a young lady for a long time without coming to the point, and one evening in leap year, the young lady being very musical, he took her to a concert. The orchestra played No. 6, a selection that seemed to the bachelor very beautiful. He bent over his companion and whispered: "How lovely that is! What is it, do you know?" "It is the 'Maiden's Prayer.'" And at the same time she handed him her programme, pointing to No. 6 with her finger. He read and started, for the real name of the selection was "Mendelssohn's Wedding March." The bachelor bought the ring the next day.



The School Garden.

[An address given by Mr. H. M. Gayman at the last annual convention of the Ontario Horticultural Association.]

When asked to address you on the subject "The School Garden," I was somewhat reluctant to respond, knowing as I did that your city represents the highest educational ideals of the Province, and that Toronto would bring educationists of maturer years and wider experience than has been my privilege.

At the beginning of my address (if such it may be called), I confess I have nothing new to tell. If, however, I may place the old in different form, or lead someone to see a new relation of garden work to our youth, the ever-changing child of our public school, I shall then feel that I have not spoken in vain.

To be orthodox, I should define education. In doing so I am not original, for I have borrowed an old saying which answers my purpose:

"Education is an effort to relate the child to his environment," and the work of gardening is one of the means which may be developed to that end.

Again, "Education comes through what a child does, and says, and thinks, and feels in the presence of the environment, which the teacher supplies," and I would go a step further and add to this what the ratepayers supply. After all, a great deal of the child's knowledge may be had by nature's method, and is not gotten from books. In education "The teacher teaches the child, the child educates himself. In being taught the child is passive; in being educated he is active. The thing to be stressed is that teachers educate more, even if to gain the time for it they have to teach less. Education is self expression, not impression alone. Every impression made by the teacher upon pupils should be followed by expression in some fashion by pupils."

In no better way could we apply the above principles of education, especially as a summer work, than by introduction of school gardening in some tangible form in our public-school system.

It is strange that our country, which prides itself upon progressiveness, is so behind in establishing this line of work. The school-garden idea is not a new one, for it was commended to the public in the European Universities early in the fifteenth century, and the noted educator, Comenius, maintained that a garden should be connected with every school. Pestalozzi and Froebel urged that all children should do garden work.

In all the leading European countries school gardens have a prominent part in their educational system, and only recently our Ontario Government, in the appointment of Prof. S. B. McCready in the Dept. of Nature Study at the Ontario Agricultural College, and afterwards as Provincial Director of Elementary Agricultural Education, has already called attention to the commendable efforts of a distinctly conservative people to make closer adaptation of the rural school to the life of the country child. A more intimate acquaintance with Prof. McCready's purposes and plans must convince all that the new departure of the Provincial Department of Education is eminently wise.

Our Province of Ontario has some thirty schools which are eligible for the grants. There are many more which deserve recognition. In many instances the work may be fragmentary and indefinite, due to misgivings and inexperience on the part of the teacher and the prejudices of ratepayers. These, we are glad to say, will soon adjust themselves, since each year brings many Normal trained teachers in touch and sym-

pathy with nature study and school gardening as carried on at Guelph. In our county we have six gardens, and W. W. Ireland, P. S. Inspector for Lincoln County, says that at least ten gardens could be established if the teachers were qualified.

The school garden is a very desirable adjunct to the teaching of nature study and elementary agriculture. One does not really know a practical fact until he has given it practical application. Children will develop an intense interest in a school garden. Its place in the elementary school is to furnish a rational or working basis for a great deal of the work included in nature study. Much of the failure of nature study to accomplish what it ought has been due to its fragmentary character. Its greatest success as a school subject has been where the child's activities have been enlisted in the real business of his life. The business of rearing plants involves more of nature than almost any activity in which the child may participate.

The problem of school gardening for the teacher is to make it the center of as large and varied a circle of activities as possible. He is thus able to make much of the formal work of the school seem worth while in the child, thereby increasing the efficiency of his work. This gain in interest and efficiency in itself is sufficient to meet objection as to the lack of time and a crowded curriculum.

growth of plants, and to do things that will help him to understand work that he has been doing or sees his father doing.

In the city the aim should be social rather than economic. Experience has shown that the gain in civic conscience which reduces vandalism and destructive activities would more than justify the necessary outlay for this purpose. A school garden in the city would also give indispensable material for nature study. It would also furnish much of the illustrative material otherwise given by charts and pictures. Indeed, the amount expended in these devices might maintain a school garden.

If the lesson be one in art, nature study, scientific work, or an observation lesson, it will add much to the interest and efficiency of the work to have the objects.

The influence of the school garden does not stop with the school. Children carry the interest home and often change unpromising situations and unsightly corners into places of beauty and health. This wholesome interest reacts upon their lives, making them useful members of society. The friendly contact with the home brings a bond of sympathy between the school and the home. The children and the parents have interests in common, and are not as far apart as my school days and yours might suggest.

In garden work we are taking a step

end. As Principal Scott used to say, the child upon completing his examinations said, "Thank God I'm done with Botany," and he was done, for he never touched the subject again. Andrew Stevenson, B.A., most humorously quotes in the introduction of his book, "The Nature Poets," this couplet, which serves to throw in bright relief the character of the child:

"See, grandpa, my flower!" she cried;
"I found it in the grasses!"
And with a kindly smile the sage
Surveyed it through his glasses.

"Ah, yes," he said, "involucrate,
And all its florets ligulate,
Corolla gamopetalous,
Composite, exogenous,
A pretty specimen it is,
Taraxacum dens-leonis!"

She took the blossom back again.
His face a wistful eye on;
"I thought," she said, with quivery lip,
"It was a dandelion."

The child looks upon nature as a whole and is interested in life and living things.

The teaching of nature study and gardening will now be more correctly expressed by Walt Whitman's poem:

There was a child went forth every day,
And the first object he looked upon,
That object he became,
And that object became part of him for the day,
Or a certain part of the day,
Or for many years or stretching cycles of years.

The early lilacs became part of this child,
And grass, and white and red morning glories,
The white and red clover, and the song of the phoebe-bird,
And the noisy brood of the barnyard or by the mire of the pondside,
And the fish suspending themselves so curiously below there,
And the beautiful curious liquid,
And the water-plants with their graceful flat heads,—
All became part of him.

And the apple tree covered with blossoms and the fruit afterward,
And wood-berries and the commonest weeds by the road,
The hurrying, tumbling waves, quick-broken crests, slapping
The horizon's edge, the flying sea-crow,
The fragrance of salt marsh and sea mud,—

These became part of that child who went forth every day and
Who now goes and will always go forth every day.

You will, I hope, pardon several personal references which may be made from an intimate association for the past five years with the Rittenhouse School Gardens. What may be said will at least have this compensation, that it is actual experience rather than theoretical knowledge. I wish to say that the generosity of Mr. Rittenhouse by the gift of one acre of land to our school for garden purposes, as well as what he did in beautifying the lawn and yard proper, introduced very strong factors in starting this work, and a broader educational policy has been the result.

We have three-quarters of an acre for our school garden. At the front we have a beautiful approach or design planted and cared for by our caretaker. Then come the individual plots for the third, fourth and fifth classes, which are six feet square. In these they grow flowers and plants arranged according to



Part of Fruit Exhibit.
At Rittenhouse School Fall Fair.

In the rural school the aim is both social and economic. It is social in the sense of creating a wholesome interest in country life. It is economic in the sense of stimulating activities along the line of the actual business of the community.

If elementary agriculture is ever to become efficient in the country schools there must be a place for its practice. The school garden is the laboratory for such practice. School gardening in the country, therefore, has broad significance, and refers to any work directly or indirectly concerned with rearing plants. The country child has vastly more experience in this sort of work than the city child has, and would he be content to do what the city child finds of great interest? Again, he is ready to take up definite problems relating to the

direction of the open-air schools in Europe. Sketching, drawing, measuring, collecting, budding, weeding, are all exercises which assist in developing the body and mind. Great physical benefits are derived from the fresh air and sunshine, of which the growing child of the elementary school, who is kept so persistently and doggedly at his books is too often deprived. Too often the test of education to the trustee-board or some fond parent is the written examination. Again, teachers are to blame, as they are anxious to make a good show at the entrance and promotion examinations, and neglect much that would be most useful to the child.

Our education of a few years ago was of such a nature that it crushed the spirit of the child, as it taught largely in the abstract and began at the wrong

their taste and previously planned by themselves. They are given assistance when needed, and suggestions are offered as to the arrangement. The smaller classes have plots about half this size, and are required to plant their flowers according to the direction of their teacher.

As all the flowers are kept to the front this arrangement adds to the beauty of the garden. In a few weeks time the ground will be covered with foliage and a profusion of color. Little labor is required, and all the children will need to do with these individual plots then, will be watch them grow, admire their beauty, pluck some bouquets, and gather seeds.

Farther back we have their vegetable garden, which is marked off into several community plots, where all the leading and new varieties of vegetables are grown. The children help to get this ready by assistance in levelling, tilling, measuring, and planting the stakes. They also bed out the little plantlets, and sow the seeds in drills or hills as directed. The vegetable garden will, with four or five vigorous hoeing and weeding lessons, be sufficient for a good harvest. Watering with anything other than the hose is not known to our pupils. They have learned to till the soil in order to retain the moisture.

In the center of the garden we have a summer-house built of lattice, by the boys, as part of their manual-training work in the spring, which is used in the summer for the little children's play-house. This is covered with vines of the cucumber and cobeia, and is a nice, cool retreat in which they may eat their dinner or spend their play-hour. Here they are in close proximity to their individual plot, and surrounded by beautiful flowers and plants.

Along one side of their individual plots we have a large experimental one for varieties of pumpkin and squash, and on the other side we have our perennial border and wild flowers.

In the rear of the flower garden we grow our melons, which comprise about one-fifth of the garden space. This is a most interesting experiment in several ways. It shows that garden-work has a strong tendency to influence the moral tone of the school. Seldom is a melon taken, and if so it is by other than the school child. Situated as our gardens are, open to the public, and visited constantly by people of our community and other visitors, we must congratulate ourselves that so few depredations have been committed.

In our fruit plot at the rear of the garden we have several peach trees grown from the pit, and budded by the boys, showing the development of the young peach tree, a row of grape-vines, and several varieties of the smaller fruits.

In the forestry plot we have the seedling trees, and the propagation of many shrubs from our yard.

Early in the autumn we have a fall fair, before the frost comes, and while the flowers are still in their beauty. At the fair we have our basement filled with the products of the children's gardens, supplemented by fruits brought from their homes.

Each year a most creditable exhibit has been tastefully arranged by the children and teachers, to which at least three or four hundred people testify as to its popularity.

One whole day is most profitably spent in arranging this exhibit and viewing it. After this, it is allowed to remain several days until the children have had ample time to learn the varieties of apples, grapes, peaches, and vegetables.

The real climax of garden-work is reached when we have our annual fair, and most interested are the children and parents. The first year the parents responded liberally, and several prizes were offered. Since then the children suggested no prizes other than the card which names the exhibit and exhibitor. When the children improve their exhibit each year, we must conclude they do their work in the true spirit. Jealousy, and that competitive spirit which sometimes shows grown people to disadvantage, is not prevalent among the children. They are there to learn, and each glories in the others' success and learns the points in their selection of fruits and vegetables which have contributed to those good results. This is also a day when we invite the neighboring schools to participate in a short programme. The first

four years have brought on an average of at least six neighboring schools. On this day we always secure some speakers. One year we were fortunate enough to have your own Mr. Atkinson, of Broadview Institute, and this year Professor McCready, of Guelph. These men are always an inspiration to garden-work.

At the present time we are teaching the children to observe the preparation of trees and plants for the winter, are placing cuttings of geraniums in sand, teach-

ing lessons in germination, gathering seeds, studying seeds and their dispersal. Much of their knowledge is gained incidentally, and most of the garden-work is looked upon as play. However, we do not let it interfere in any sense with their play hours. If a child cares to work in his garden he may. We have regular stated times when we do definite work.



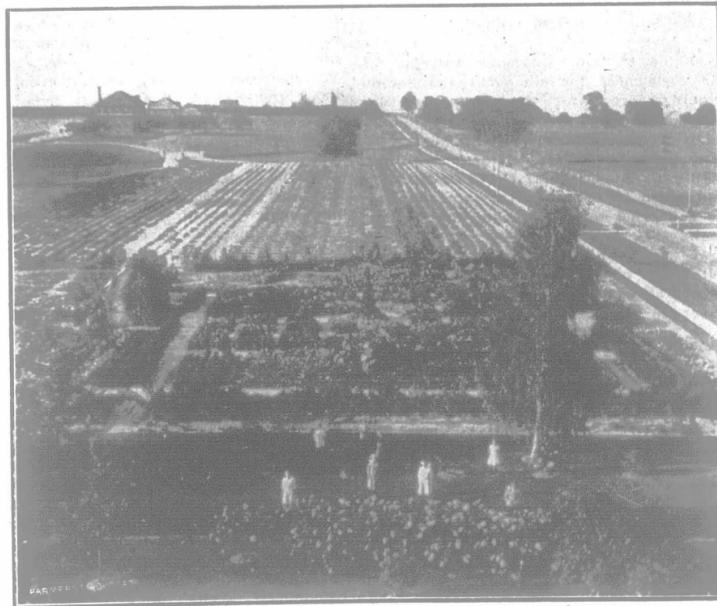
Propagating, Rittenhouse School.

since they were original, and represented the real experience and life of the boys.

OUR SCHOOL GARDEN.
(Written by a Schoolboy.)

"We were all very much pleased when we found we were going to have a garden at school, but we never realized what pleasure we would have, and what we would learn, until we were thoroughly started.

"Our school-garden of one acre, given by Mr. M. F. Rittenhouse, is situated on



Bird's-eye View.

Lawn, School Gardens, and Experimental Farm, Rittenhouse School, Jordan Harbor, Ont.

vidual plot and surroundings, and also an older child's collection, which consists of thirty seeds in all, fifteen garden seeds, and fifteen weed seeds. This did not take much time from the regular school period, as they were required to have the collection prepared in a few days. Some of the fifth classes also, for the pleasure of the work, are getting an additional collection in vials. The children are much interested, and are often seen before school in the morning, at

the north side of the school grounds. There are twenty-four plots, each six feet by ten feet, and four experimental plots, ten by eighteen feet.

"About two weeks after Arbor Day we began to make paths and clean up the plots. This done, we planted a row of lettuce, a row of onions, one of beans, and one of beets, and about two weeks later we transplanted flowers into the beds. Among them were phlox, pansies, asters, balsams, and helichrysum.

"In watching these flowers, and the ones at the entrance of the garden, we learned a great deal about the bees. In watching them work, we noticed how the pollen adhered to their bodies, and was thus carried from one flower to another. We also saw many beautiful butterflies among the flowers.

"The mangel contest, in which eight boys are competing, has been a very interesting one, each boy trying his best to have the finest mangels by cultivating and fertilizing. There are also eight boys competing for the pumpkin prize.

"We have shown by our three small rows of peanuts what some parts of Canada can grow. The peanuts are not ripe yet, but we expect them to do well, from their appearance. In growing peanuts, the blossoms must be all carefully covered with earth in order to have a good crop. This is a fact that we did not know until this summer.

"We have a good chance to distinguish the different varieties of tomatoes, for we have thirteen of them. Among the best are Marvel, Livingstone's Favorite, and New Globe, a large, pink tomato.

"We have had all the melons that we could eat this year at school from our small patch of twenty hills.

"Surrounding the garden is a row of summer cypress, and about this most questions have been asked by visitors. It was very beautiful in the spring when it was green, but now that it has reached its full maturity and is of a dark red color, it is still more beautiful, but as it is an annual it has to be planted every year.

"At the south of the garden is a row of sunflowers in which some of the largest are fully ten feet in height. They are so tall, and the heads so heavy, that the north wind has blown some of them over and disfigured the whole row.

"We have learned a great deal this summer, but next season we will endeavor to learn more and surpass anything done this year."

That year four pupils secured honors in their examinations, and each year since has had some pupil to secure honors.

Failures are the exception, and not in any way attributed to the garden. For the past five years 90 per cent. of the pupils passed their examinations, showing that results as far as book-work is concerned were quite satisfactory.

It would be folly for me to try to tell in the allotted time, all details of the work connected with a garden. Probably, I have given sufficient to convince the most skeptical that much good may accrue from this work. If more information is desired regarding the garden movement in our school, you may have a copy of a booklet on "School Gardening," which will illustrate and explain more definitely the work carried on at Rittenhouse school. A copy may be secured by writing to the Rittenhouse Library, Jordan Harbor.

It seems a shame that so many of our playgrounds are cramped and small, and that so little land is available for garden purposes, when our country possesses so large an area.

After an experience of five years in garden-work, I should feel it an irreparable loss to attempt to teach in either the rural or city school without the inspiration which a garden affords.

Whittier said, "Knowledge never learned at school," but he had no school-garden, and would not that education have been a greater force if guided by a qualified teacher? Think of the wonderful potentialities of a seed. A child is like a seed in many respects. The possibilities which may result from favorable conditions are all a great revelation to him, and very likely to be unobserved unless he is directed in his education.

Let me say in conclusion; the well-kept garden, as a means of education, also develops the sense of beauty, and increases the happiness of the child by his acquisition of so much that is of real interest to him. If the child received nothing more than the nobler tastes and refined ideals by such congenial environment, this alone would be a most potent factor in the formation of his character.

The aim of education, is not, as many suppose, the acquisition of knowledge, but the making of character. Personal habits which largely form the basis of right action are more easily acquired in childhood. If the physical, intellectual

and moral powers are properly directed in early life, the foundation is laid for good citizenship. Since school-gardening promotes these ends, we cannot afford to neglect this important branch of education.

An Opportunity for Rural Schools.

We trust that Mr. Gayman's address on school-gardens, given above, will be read, not only by the teachers and trustees of rural schools, but also by all others who are interested in children and their development into "citizens of the world." That Mr. Gayman is an authority on school-gardens will be understood when we state that it was under his direction that the famous Rittenhouse School-garden Experiment was successfully demonstrated.

As may be gathered from his address, the results to be gained from the school-garden, as he describes it, are chiefly educational. Through it the children are to be taught to measure, to observe, to compare, to think, and to learn the principles of growth, tillage, etc.; incidentally, their interest in the beautiful is to be stimulated.

Now, there is another and a correlated phase of the school-environment to be considered, viz., the planting of the school lawn in such a way as to transform it from the Sahara which it usually is to a spot of coziness and beauty, which may exercise an unconscious influence in stimulating the love of refinement and the beautiful in the minds of the children. This is no unimportant matter; refinement smooths the pathway of life in more ways than one, and the man possessed of a love for beauty in nature and art, and wherever else it may be found, is endowed with a priceless possession, one which must add tremendously to his interest and happiness on the "long path" which all must follow.

Recognizing this fact, and the opportuneness of introducing the question at the time of publication of Mr. Gayman's address, we wrote to Professor Hutt, the head of the Landscape Gardening Department at Guelph, asking if he could give assistance to any school board, anywhere in Ontario, that might ask his help. The following is his reply:

"In answer to your inquiry, I may say that I am willing to assist any school board either in the town or country that is desirous of improving their school grounds. The Department has allowed me to undertake this work, and provides for my travelling expenses in connection therewith, so that I may visit any section when necessary to meet a school board and give suggestions on the spot. All I require of them is that they are in earnest in the matter, and will go ahead and make improvements when I take the trouble to prepare plans for them which will insure the work being done systematically. Too often such work is left entirely to the teacher and the pupils, whereas I think it should be undertaken by the trustees, as they should be as much interested in having the school grounds outside properly equipped as the classroom inside. When a teacher desirous of improving the grounds writes me regarding the matter, I usually ask her to take the matter up with the trustees, and as soon as she can get them interested in the work to let me know, and I will be at their service to render any assistance possible."

We are delighted to be able to give this publicity, and trust that teachers and trustees will not be slow to avail themselves of Professor Hutt's assistance. Over fifty schools in Ontario have already taken advantage of it, and are undertaking systematic improvement of the grounds under the direction of the Department.

Mrs. Ballington Booth's children were playing with an ark when she observed that they put all the animals with broken tails and legs together in a pile.

"What are you going to do with the broken ones?" she asked.

"We've goin' to sac'fice 'em," said her four-year-old hopeful.

Just what most people do, reflected the mother.

Hope's Quiet Hour.

The Gain of Pain.

"Measure thy life by loss instead of gain;
Not by the wine drunk, but the wine poured forth;
For love's strength standeth in love's sacrifice;
And whose suffers most hath most to give."

We are drawing near to Good Friday, that day when we are especially called to think of our Lord's triumphant endurance of suffering, and of the great gift of redemption which His Sacrifice won for all mankind. We hear a great deal about the "mystery of pain." Those who are walking in the darkness of unbelief very often display, as a reason for their want of faith in a God of love, the undoubted fact that the innocent often suffer in this world far more than the guilty. They say that it is unjust, and therefore they cannot believe that a good and merciful Father is ruling the universe. The cry is often raised: "What has that good woman done that she should suffer so?"

Of course, if our faith in the love of our Father is to be lost every time He allows an innocent person to suffer the slightest pain, then we do not need to wait until we see such a case for ourselves. One case would prove that His love or His power to help were weak. It would be enough to point to the Holy One upon the Cross, and say: "The Father could not have loved His Son, or He would never have allowed Him to suffer."

Just think how disappointed our Brother would have been, when He came to live with His brethren, if He had been sheltered from all the pain which sin had brought upon them! Dying on the Cross, He saw of the travail of His soul, and was satisfied that He had not taken the easy path when a hard path would help others most. He knew that in order to save others He could not save Himself.

The Son of God goes forth, conquering and to conquer. Who follows in his train?

"Who best can drink His cup of woe,
Triumphant over pain,
Who patient bears his cross below,
He follows in His train."

Outside of the mysterious doctrine of the Atonement for sin, of the Innocent winning pardon for the guilty by His death, we can see for ourselves that JESUS—by being lifted up on the Cross—draws the hearts of earnest men and women to Himself. If He had come into this world to live in luxury and ease, if He had tried to found a kingdom by the might of armies or the supernatural power of angels, He might have compelled our obedience, but we should not have laid our hearts at His feet. His power to inspire patient endurance, to uplift souls, is one glorious result of the pain so grandly endured. How disappointed He would have been if He had not been permitted to suffer, and so had failed to win the highly-prized love of the multitude which no man can number, and had been unable to help men in their struggle after holiness.

Those who are trying to follow in His train, would also feel very disappointed if they failed to win power to help their brethren—the power that is gained through brave endurance of pain. Only God knows what such victorious sufferers are able to do. A few months ago I received a letter from a friend whose sister had for many years endured great pain, and who had at last entered into rest. I have received permission to pass on to you that sacred record of the death of one of the noble army of Christ's victors. My friend wrote: "My sister, through awful agony of suffering, was so wonderful I cannot write of it, only she lived in heaven most of a whole week, and quite naturally described it to us. She saw those she loved . . . and such myriads of people. She sang so beautifully, keeping time with one hand to heavenly music, and asking us to try to hear it. She said she had learned what she should have to do after death—I am to help other people to bear

pain' (people in this world she meant). So I said, 'You've always done it, dear. Now will you help us?' and she promised. She does help us."

What a joy it must be for one who has patiently borne the cross below, to have won—through that patient endurance—the power to help loved ones on earth to climb from strength to strength. How light the past affliction must seem now to such a glad and loving helper. Ask her if she is sorry now that God laid the cross of pain on her, and see how she would answer. A child at school may wish to escape the drudgery of hard lessons; but, when his work in the big world calls for the fullest exercise of his powers, how heartily he thanks the wise father who would not let him shirk discipline and difficult tasks. If you love one who is called to the hard and great task of suffering, do not be short-sighted enough to blame God, or foolish enough to think He is making a mistake. When this school-life is over, and the soul you love steps out eager-eyed to the work of the big world beyond the misty veil of death, you may perhaps wish that you, too, had been given such pain-won power. Instead of pitying, you may feel inclined to envy, instead of blaming the Father for giving another hard lesson to learn, you may perhaps ask, "Why did He not give me that lesson, too?"

And you, who are every day given that strengthening task of enduring pain, remember that it is a high privilege to be called into the fellowship of Christ's sufferings. Not one pain, that is bravely accepted and patiently borne, is thrown away. It is not lost when it has ceased to hurt you, but is transformed into power. Its virtue has entered into you and made you stronger, more beautiful in spirit, and more able to clasp helpfully the hand of a struggling brother.

This morning I saw one of God's victors who has been a helpless invalid, tied to her bed with rheumatism, for more than ten years. She lies there, looking bright and sweet; waiting uncomplainingly until the angel comes to release her. What wonderful power she must have stored up during all these victorious years, power that will bless the world in God's own time and way.

There is a beautiful little story, called "The Jester's Sword," which describes how a king's son goes out with the mighty Sword of Conquest, fired with the ambition to be the bravest of all the sons of men. He is young and strong, and his deeds of daring win admiration and praise everywhere. But one night an overhanging rock falls on him and he is hopelessly crippled, unable even to draw the Sword of Conquest from its scabbard. At first he is overwhelmed with despair, thinking that it is impossible to keep his oath and win his high ambition. But one day a Jester found him and laughed sympathetically at his despairing view of the situation. "Why, look ye, man!" he exclaimed. "Here thou dost go a-junketing through all the earth to find a chance to show unequalled courage, and when kind Fate doth shove it underneath thy very nose, thou turn'st away, lamenting. . . . Knowest thou not it takes a thousandfold more courage to sheathe the sword when one is all on fire for action than to go forth against the greatest foe? Here is thy chance to show the world the kindest spirit it has ever known! . . . 'Twill be a fight till death. Art brave enough to lift the gauntlet that Despair flings down and wage this warfare to thy very grave?"

Then this man who thought his life was a failure began the splendid task of bringing good cheer into the lives of everybody within reach. Having no light of his own, he reflected the sunshine from God's Face. He mended a broken toy for a child instead of fighting mighty foes, he helped unhappy people to find joy in the songs of the birds and in the countless blessings of common life, and so grew more glad of heart continually.

"And then it came to pass, whenever he went by, men felt a strange, strengthening influence radiating from his presence—a sense of hope. One could not say exactly what it was, it was so fleeting, so intangible, like warmth that circles from a brazier, or perfume that is wafted from an unseen rose." When he passed away, and the body was brought to his royal father, his feet

shining with the peace of mighty triumph.

"Whoso suffers most, has most to give"—so it is possible to rejoice in tribulation, and even to rejoice when those you love are being perfected in the furnace of pain.

"Therefore gird up thyself, and come, to stand
Unflinching under the unfaltering hand,
That waits to prove thee to the uttermost."

Because God loves His obedient children, He will not let them miss the gain of pain, nor go out of this school into the life of service beyond death untrained and untaught.

"How poor were earth if all its martyrdoms,
If all its struggling sighs of sacrifice
Were swept away and all were satiate-smooth."

DORA FARNCOMB.

The Ingle Nook.

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

Dear Ingle Nook Folk,—You will be surprised, perhaps, to see a new name at the end of the Ingle Nook introductory chat to-day.—May I stop a question, however, by hastening to state that "Dame Durden" has neither died, married, nor absconded. Indeed, it is I, "Dame Durden" until now, who sit here, pen in hand, in the same old spot, nothing changed whatever save that I have resolved that henceforth I shall not be known as "Dame Durden." And now the reason for this decision:

Some years ago, when I first joined the staff of "The Farmer's Advocate," the name "Dame Durden" was given me, and for two or three years my screeds appeared under this signature in both Eastern and Western editions of our journal. At the end of that time the expansion of both papers rendered advisable some additions to the staff, and a new Home Department editor, Miss L., was sent out to Winnipeg. This editor, however, still kept the signature, "Dame Durden," so that there were now two people writing under that name, Miss L. and myself.

For some time this arrangement worked all right, then a hint of confusion appeared. Miss L. joined the Women's Press Club, a step which, as yet, I have not found convenient to take, and naturally references in regard to "Miss L., 'Dame Durden,' of 'The Farmer's Advocate,'" began to appear in the Women's Press Club notices. Naturally, too, inquiries began to pour in upon me to this effect, "How is it that you are 'Dame Durden' when such-and-such a paper states that 'Dame Durden' belongs to Winnipeg?"

Still the tale is not ended. Last Christmas Miss L. severed her connection, as editor, with the Winnipeg branch of our paper, and a new editor, Miss C., was appointed in her place. She also continued the name "Dame Durden," while making announcement that her predecessor, Miss L., would still contribute occasionally under her old name, "Dame Durden, No. 1" (that is No. 1 of Winnipeg paper). So now there were three Dame Durdens on the tapis,—the original (myself), Miss L., and Miss C.

Foreseeing "confusion worse confounded," at this end of the line at least, I wrote, thereupon, to Miss C., requesting that she change her pen-name, a suggestion which she accepted very graciously and pleasantly, deciding to be known as "Dame Dibbins."

The fact remained, however, that there were still two Dame Durdens on the journalistic campus, Miss L. and myself, and that announcement had already been made in the Western paper in regard to Miss L.'s continuance, though occasionally, under the old pen-name. In short, there seemed no way out of the difficulty save the abandoning of my claim to the name—so I boldly crossed the Rubicon, threw the well-worn old "D. D." behind, and launched out, with a flourish of

capitals, if not trumpets, upon writing out a list of "possibles" by which I might henceforth be known!

I didn't shed any tears. Between you and me, I never was very fond of that cognomen, "Dame Durden," as applied to myself. By the wildest stretch of imagination, I never could see any kinship between scribbler me and that dear, demure little Esther Summerson,—Dickens' "Dame Durden"—with her housekeeping ways and her big bunch of keys,—not that I don't like housekeeping,—for I do.—But—well, I just didn't feel that I was "Dame Durden," and so I sought refuge, for the most part, by writing my signature as "D. D." . . . That wasn't so very much better, either, for, believe me, I never wrote it once without thinking of a grave Doctor of Divinity, and imagining myself masquerading in gown and bands! Now, wasn't that a wildly irreverent fancy? And wasn't that the chuckle that invariably went with it dreadfully wicked?

Well, then, what was the new name to be? Something characteristic?—And my thought flew to the big out-doors that I love beyond all things, the great forests and lakes and rushing rivers, and mighty, solemn mountains. . . . Pocahontas,—How would that do?—"Pocahontas," eloquent of all these things! Every time I wrote the word, would it not banish the piles of papers, and the roar of machinery, and the dust of the city pouring in at the window, and bear me far away to my beloved wildernesses?—"Pocahontas,"—Surely—

And then down to earth again! For I had caught a glimpse of a fearful possibility,—the possibility of being referred to—perhaps made to stand up in full view—sometimes, at some Women's Institute meeting, or "sumpin'," as—"Pocahontas," of "The Farmer's Advocate." . . . Think of it!!! Ye shades of poor Pocahontas! Why, the respectable audience would expect to see one step up in feathers and tomahawk (a la civilization's idea)—and what a slump, what an ignominious slump, to see a very commonplace "body" creep timidly out in tweeds, and carrying a twiddly little hand-bag!

That was enough. Assuredly no risks could be taken with "Pocahontas."

What then? . . . Um-m-m. How would "Flotsam" do?—Short, distinctive, characteristic enough of the varied junk that must needs appear in Ingle Nook. . . . But there, that was the rub,—if one could only keep it fastened down to Ingle Nook, not to one's self. . . . No, "Flotsam" would not do. Could one ever, on writing it, free one's self from the vision of a cask or box, maybe water-logged, bobbing about among whales and things, and filled up—perhaps with cheese,—maybe Limburger? And who would like to associate herself, even in thought, with a bobbing box of Limburger cheese? . . . Dorothy Dean? Daisy Dover? Marian Moore? Grace Greenway? . . . No alliterative name this time. There are so many of them already, and one gets tired of too much of even a good thing.

Well, what then? All of a sudden the echo, "Junius," came floating down from the mists of the past. "Who was 'Junius'?"—a question never satisfactorily answered.—Now, every journalist who writes under a pseudonym, preserves, to a certain extent, his or her little secret. To a great many people the question as to who he or she is, must forever remain unanswered. Why not, then, adopt the feminine of "Junius,"—"Junia"? "Junia,"—short, easy to write, unappropriated so far as I know. So be it. And so I come forth once more to make my bow to you, but this time, and henceforth, as, "JUNIA."

Some Fashion Forenotes.

Dame Fashion's mandates for this season are now well under way. Gray, green, and gray-and-green mixtures, so far, are the colors most favored, although navy blue, which always holds its own, is much shown, and in the lighter shades of blue the soft or "pastel" tones. "King's blue," brought in at the time of the coronation, is quite of the past.

In suits, the materials most favored are soft goods, rather loose in weave,—soft diagonal serges, wool corduroy, etc. Still, hard-finished, wiry goods, are

scarcely shown at all. In dress materials, the silks are in high favor, especially surah, chiffon, taffeta—if one is willing to risk its wearing qualities—and foulard. The last-named, notwithstanding its "run" of last season, is as popular as ever, but in softer coloring and smaller patterns. Besides these is a host of soft silk-and-wool materials, light in weight and dainty in tone. Later, of course, the wash-goods will be introduced,—indeed, some of the stores are already showing a fine selection of linens, mulls, reps, zephyr gingham, cotton voiles, and other old favorites.

Skirt-lines are still straight and narrow in effect, although, in reality, much more stepping-room is given, either by greater width in the gores, or by pleats cleverly set in at the sides. Coats have changed but little, the one especial proviso being that collars on summer-jackets must be narrow. Although the kimono sleeve still appears on many dresses, the tendency is towards either the large arm-hole or the "set on" sleeve, that is a kimono top with a portion of the sleeve set on below. The high waist-line is also seen frequently, although the tendency is to lower the line to the natural waist.

The hats shown for early spring are small, close-fitting, and drawn well down on the head. Later in the season, broad-rimmed, low-crowned effects will be most in favor, and the broad "sailor" will return to a popularity that it has not known for some time.

skin forms on the top, before putting it away for the cream to rise. I suppose this would not work where a cream separator is used. Thanking you in advance. **HOMEMAKER.**

Norfolk Co., Ont.

Triple windows are usually trimmed by giving each individual window a pair of net curtains, plain, or with an edge of lace or insertion; then at each side of the group a heavier curtain is hung, and a valance, from 10 to 14 inches deep, of the same material is run quite across the top. You will see what I mean by referring to the accompanying picture. The heavier material may be of colored linen (made for the purpose), of pongee, printed scrim, madras, chintz, or cotton voile, in coloring to harmonize with the tone of the room. Cotton crepe trimmed with bands of flowered chintz also makes very nice curtains, or even five-cent factory cotton, with insertion or stenciling as a border.

The muresco finish that I have seen was put on by professional house-decorators, but probably the merchant from whom you buy the paint can give you a pamphlet with directions for applying. I should imagine that it would be no more difficult to put on than alabastine or water-paint. However, it is safe to secure specific directions either from the hardware merchant or from the manufacturer.

Yes, piece-work quilts seem to be quite in fashion again. Making them at



Curtains for a Triple Window. (Permission of "House Beautiful," Chicago.)

A BUDGET OF QUESTIONS.

Dear Dame Durden,—I have read your page for so long that I feel as if I knew you well, so now I come to your page for help and advice. We have in our dining-room a triple window, all three windows being of the same size, having two panes each. Will you kindly tell me how to curtain it? I have had green blinds on it, and wish to use them again. The wall is to be papered with brown-toned paper, and the ceiling to be cream, done in muresco. Also, will you kindly tell me just how to apply muresco, and if a very green amateur can apply it successfully? Also, will you or some of your readers be good enough to describe in detail the way to quilt a quilt on the sewing-machine? I was surprised to see so many inquiries for quilt patterns, as I had considered quilt-making in fancy blocks to be almost one of the "lost arts." I think the time spent piecing quilts could be put to better use, do you not, Dame Durden?

In regard to child-training, what do you think of corporal punishment? I think that the same rule which applied in Bible times still holds good, viz.: "If you spare the rod, you spoil the child." Do climbing vines on a frame house tend to cause decay of the house material? I have heard so.

If any of the Ingle Nook friends have had trouble getting butter this winter, I would suggest that they heat the milk on the back of the stove until a wrinkled

"quilting-bees" is said to be quite a fad of the hour in society circles on the "other side." Personally, I agree with you with all my heart. I never could have patience to piece even one fancy quilt. I would rather do with plain ones, put a white spread on top, and spend the extra time in reading or gardening. However, everyone to her taste. Without doubt, some people find a real pleasure in making tediously elaborate quilts.

Will not some of the Ingle Nook mothers reply to "Homemaker's" query about corporal punishment? While teaching, I came across two or three young hopefuls who did their best to convince me that a few specimens exist who can only be reached through the skin; but, of course, I am still open to conviction.

It is quite possible that vines, by retaining the moisture after rains, do tend to damage, somewhat, a frame house. To obviate this difficulty, some people build a light trellis about a foot from the wall, thus providing for a better circulation of air, and more speedy drying up of the boards.

OATMEAL CAKE.

Dear Dame Durden,—Having noticed in "The Farmer's Advocate" of February 15th, the letter from Lankshire Lass asking for the recipe of oatmeal cake, I thought I would send the recipe to you. Perhaps some other reader may like to

try it. It is certainly a delicious cake if made with nice, fine, granulated oatmeal, which is sometimes difficult to buy.

Oatmeal Cake.—Two large cups flour, 2 large cups granulated oatmeal, 1½ cups sugar, 1 cup butter, 1 teaspoon salt, 1 teaspoon soda. Mix thoroughly, and make a stiff batter with buttermilk. Put half batter in pan, then spread a pound of dates; add remainder of batter. Stone dates and spread out flat on batter. Bake half hour.

Thanking you for many useful hints and helps. **E. P.**
Elgin Co., Ont.

A NEW MEMBER.

Dear Dame Durden,—This is my first attempt at writing you and all the Nookers a letter. My, what dreadful stormy weather we have had. Yet how the time flies! It only seems but a few days, or perhaps weeks, since last year, when young spring first opened up her eyes to the busy world.

I suppose, with spring, comes house-cleaning, tidying up many things, that some how or other have got out of place, and destroying that which is useless. It often seems that our hearts and minds need also to be cleaned, and made pure and wholesome.

I read the letter in a recent paper written by Lankshire Lass. How she seems to be always trusting, happy and content.

We also love flowers, as does Lankshire Lass, but alas, Jack Frost touched mine with his icy fingers!

I hope I am not asking too much, if I say I wish you would publish a seven-gored skirt pattern in your valuable paper. I wish to make my work dresses off a seven-gore pattern.

With best wishes for all. **ONTARIO VIOLET.**
Middlesex Co., Ont.

A seven-gored skirt pattern appeared in our issue of February 29th. Probably our pattern company can supply a larger size if necessary. Owing to the popularity of the panel-back, most of the skirts shown now are six-gored.

LEAP-YEAR PARTY.

Dear Ingle Nook,—I have read with interest each week the helpful letters from the chatters, and have come at last, like so many, to get advice.

Could you give two or three games suitable for a Leap-Year party, besides card-playing, and also a new suggestion for the girls to find their partners to take to luncheon, besides matching numbers, and many of the other old ways? **GIpsy QUEEN.**

York Co., Ont.

How would you like a "Spinster Tea" for your party? On the invitations, make drawings of cats, parrots, and cups of steaming tea, and request all the girls to come attired as ancient spinsters, with side-curls, high combs, spectacles, etc., and carrying old-fashioned bags containing peppermint drops. About the room, pin heads of cats cut out of black paper, some cross-eyed, some staring, some winking. To get this effect, cut out the "eyes," paste white paper behind, and put in the pupils with ink.

Serve an old-fashioned luncheon—cookies, doughnuts, seed-cake, etc.

A guessing game might be a feature of the evening, the guests to write down the answers. You might have each word begin with "cat," thus:

- A cat with a cold.—(Catarrh.)
 - A subterranean cat.—(Catacomb.)
 - A horned cat.—(Cattle.)
- Go to the dictionary to fill out the list.

As the girls are supposed to take the initiative at a Leap-Year party, a spinster's tea creates plenty of fun.

For selection of partners, I know no way better than writing quotations or drawing pictures, each slip to be cut in two and put in separate baskets, the boys to draw from one, the girls from the other. For a Leap-Year party, rhymes about Leap Year might be used instead of quotations. Any bright set of girls could "make up" appropriate ones.

A CANADIAN SCHOOL FOR BOYS

RIDLEY COLLEGE

St. Catharines, Ontario

Three separate residences; new, specially built and equipped. 1. Lower School for Boys under fourteen. 2. Dean's House, for Boys of fourteen and fifteen. 3. Upper School, for advanced Pupils. Gymnasium and Swimming Baths just erected. Fine Hockey Rink. Athletic Fields and Playgrounds unsurpassed. Eighty acres. Mild climate. University Scholarship won in 1909 and 1910. Boys prepared for Agricultural College.

REV. J. O. MILLER, M.A., D.C.L., PRINCIPAL

ACETYLENE

Lightens Housework

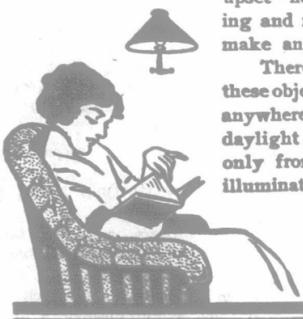
I guess you sometimes get pretty sick of those old oil lamps, don't you? Unevenly trimmed wicks—dirty chimneys—the oily smell that clings to your hands every time you touch a lamp—the constant danger that one will be

upset—not to mention the dirty job of cleaning, trimming and filling every day—these things are enough to make any woman long for a better lighting system.

There is a light which is free from every one of these objections—a light which may be had in any home, anywhere—a light which is whiter, softer, nearer to daylight than any other—a light which actually costs only from $\frac{1}{2}$ to $\frac{3}{4}$ as much as coal oil for the same illumination.

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Would you like to know how to install Acetylene, how to use it, and how much it costs? Then write us,—we'll be glad to tell you.



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After a wearing grinding day, you need more than food and an easy chair to make you ready for to-morrow's work.

Music smoothes away the trials of the day—brings the brain back to its normal rhythm—soothes, quiets and rests, because it appeals to the best that is in us.

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NEW SCALE WILLIAMS PLAYER PIANO

the one that contains the special features which appeal to everyone and makes it possible to produce the best in music.

We will be pleased to give you full particulars about the New Scale Williams Pianos and Player Pianos, and if there is no dealer in your locality we will arrange to supply you direct from the factory.

ASK ABOUT OUR EXTENDED PAYMENT PLAN.

The WILLIAMS PIANO COMPANY, Limited
OSHAWA, ONT.

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The Scrap Bag.

OLD POTATOES.

When boiling old potatoes, add just a little milk to the water. They will be whiter, and of better flavor.

TO SOFTEN THE HANDS.

Every time you wash your hands, rub on some corn-meal with the soap, and rub a little of the dry meal over them after drying to complete the process. Always use a good, mild soap, and before going to bed rub the hands with a little carbolated glycerine and rosewater.

A DARNING WRINKLE.

Try slipping the stocking on a wooden shoe-tree when darning it. You will be pleased with the experiment.

GRATING LEMON RINDS.

Wet the lemons before grating the rinds. The pulp formed will not give so much trouble by sticking to the grater.

CLEANING COAT COLLARS.

Black velvet coat collars may be nicely cleaned by rubbing them well with alcohol.

BAKING POTATOES.

Pour boiling water over the potatoes, says Delineator, and let them stand about five minutes, then wipe them dry, rub them all over with melted drippings or butter, and bake. They will take less time, and will be much nicer.

CHILDREN IN POOR HEALTH.

Some time ago, Dr. Gallivan, Boston, was appointed to make a study of and report on the subject of "Child Hygiene." In the course of the work, he examined 42,750 children, and reached the astounding result that only 35 per cent. of that number were absolutely normal. He attributed the deterioration to the strain under which the masses of the people are living to-day to maintain a standard of living for which their incomes are inadequate—a mad race to imitate and live up to, as nearly as possible, the standard set by the luxurious rich. He urges a return to sanity and simplicity.

USES OF VEGETABLES.

Beans contain so much protein that they have been called "the poor man's beef." Beets, parsnips and carrots, are all nourishing, and, to some extent, medicinal. Spinach is called by the French, "broom of the stomach." Lettuce and celery are particularly good for the nerves, tomatoes for the liver. Onions contain sulphur, and are among the most valuable of our vegetables for purifying the blood and preventing constipation; they are also given credit for curing sleeplessness. Salsify, or vegetable oyster, when cooked with milk, affords suppers at once delicious and full of nutriment for cold fall and winter evenings. Cabbage is not of itself particularly nutritious, but may be made into a dish that is so by combining it with milk and butter, as may also cauliflower; as a salad, or boiled with pork or corned beef, it provides a pleasing variety. Then, who would be without cucumbers, cool and crisp, on hot days; squash, excellent when baked in the shell, and served with butter; pumpkin, for either pies or marmalade. It may be well to think of all of these points when ordering the supply of seed for spring planting.

Seasonable Recipes.

Since maple syrup time is here, I cannot resist the temptation to slip in a few pancake recipes. There are pancakes and pancakes, you know, ranging all the way from tough, indigestible "flap-jacks" not fit to enter anyone's stomach, to the light, delicious article which is a most desirable addition to the table at any time, and when served with maple syrup, food fit for the Queen. The self-rising flour now sold on purpose for pancakes, makes very good ones, and with so little trouble. If one cannot get it conveniently, one might try some of the following recipes, which are said to be good:

French Pancakes.—Two eggs beaten, 2 ounces butter, a little sifted sugar, half pint of new milk, and flour to make a batter. A half teaspoon of soda.

Corn Pancakes.—Two cups corn meal, 2 cups buttermilk, 1 egg, 1 tablespoon Graham flour, 1 teaspoon soda dissolved in boiling water, a pinch salt.

Egg Pancakes.—Two eggs, 1/2 cup

pinch of salt and 1 cup flour. Stir in gradually enough milk to make a thin batter. Butter each and sprinkle with sugar and cinnamon, if liked.

Lemon Pancakes.—One cup milk, 2 eggs, juice of half a lemon and a little of the grated rind, a pinch soda, flour to make a thin batter, pinch of salt.

* * * *

Creamed Salmon.—Drain a can of salmon and chop fine. Grease a baking-dish and put in a layer of breadcrumbs, then a layer of fish, and so on until the dish is full. Pour over all a sauce made of 1 pint milk scalded, and thickened with 1 tablespoon flour mixed with 2 tablespoons butter, seasoning to taste. Bake until brown.

Omelet.—Mix together 1 cup cold boiled rice, 1 cup warm milk, 1 tablespoon melted butter, 1/2 teaspoon salt, dash of pepper. Add 3 beaten eggs. Put 1 tablespoon butter in a hot frying-pan, pour in the omelet and set in a hot oven. When done, fold, turn on a hot dish, and serve.

Bannocks.—Two cups oatmeal sifted with 2 teaspoons baking powder. Add to 2 beaten eggs mixed with 1 tablespoon sugar, 1 pint milk, 1/2 teaspoon salt. Mix all well, and bake on a griddle.

The Beaver Circle.

OUR SENIOR BEAVERS.

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

Spring Prophets.

(By S. M. B.)

A lone old crow sat up in a tree,
As lonely and sad as a crow could be;
Said he to himself, "I see not a thing
That looks to me like the coming of
spring."

He perked his head, and there on the
ground
Made bare of snow, by a moss-covered
mound,
A woodchuck sat at his open door,
The first of his kind the fields to explore.

A cheery note, and a flash of blue,—
"I've come," sang the spring-bird, "come
to see you."

A squirrel hopped out on a gnarled old
limb,—
"Caw, caw," said the crow, "I'm ac-
quainted with him."

A red-capped woodpecker hammered in
glee
On the trunk of an old hollow hemlock
tree;—
" 'Tis spring," said the crow, "as sure
as I'm born;
Now soon I'll be filling my basket with
corn."

Senior Beavers' Letter Box.

A LETTER FROM NEW ONTARIO.

It was Saturday afternoon, when my chum Gordon and I were shovelling the snow off the roof of the barn. Just as we were shovelling a large piece of hard snow off, a neighbor across the road called, "Here's a muskrat!" Before you could hardly turn around, we were down off the barn and over there.

But alas! when we got there the muskrat had gone down a hole. At once Gordon and I set to work to dig it up. We dug and dug, and thought we would never get to where the muskrat was. I was digging away at one of the holes when out sprang our victim. I scared it up between the barrel and the house, then Gordon threw a clothes-basket over it. It was a larger fellow than I thought it would be. Soon after we had it all caged up, and it is getting along fine.

Last fall as Gordon and I were playing on a lumber-pile near a fence, just as we looked around out sprang a large mouse out of the bush near by. Soon afterwards a dog came barking out of the barn. About two minutes later a train came out. Then we saw the man raise his rifle. "Bang!" and over tumbled Mr. Moose. It had a lovely head. Next day we tasted mouse-meat.

One summer afternoon as Gordon and I were playing on the sawdust road, out of the bush walked a bear on his hind legs. He was a monster, about as high as a man. A little while after my uncle went to hunt for it, but didn't find it. Two days after another man shot the bear. This all happened in the town of Englehart.

Hoping I will have the pleasure of writing again.

VICTOR WOOLLINGS
Englehart, Ont. (Age 11 years).

One Saturday when ma and pa went to town I went to one of our neighbor's and stayed. I always like to go there. Before I went I got my brother's dinner. When I got over there they were making maple sugar. Their son made a wooden spoon to eat his with as they used to years ago, and we had lots of fun. When it was done, they gave me a big dish of sugar, and it was lovely. After we had that eaten it was pretty nearly time for me to go home. When I went home, pa and ma were not home from town yet, so I read till they came. I told them I had some maple sugar, and how nice it was, and they wished they had been there to have some. I must close.

RUTH MAY BROWN
(Age 12, Class V.)

Frome, Ont.

Won't you try to say "mother" and "father" instead of "ma" and "pa," Ruthie? There are no words better or prettier.

Dear Puck and Beavers,—This is my first letter to the Beaver Circle. I go to school every day. There are between thirty and forty going to our school at present.

We live about two and a half miles east of Delaware village, on the Third concession. I have one sister, but no brother. My sister is six years old, and is going to start to school in the spring.

My father has taken "The Farmer's Advocate" for about 16 or 17 years, and enjoys it very much. I like reading the Beaver letters because they are so interesting. I wish Ethel Elvidge, of Springhill, would please correspond with me.

Wishing the Beaver Circle every success,
yours sincerely,

RUBY ELVIDGE
(Age 11, Class Sr. III.)
R. R. No. 1, Lambeth, Ont.

Dear Puck and Beavers,—This is the first I have written to your Circle, and I would like very much to become a member. I am a book-worm, like many of the Beavers. My favorite authors are Henty, Alger and Tracy. I have read quite a few of Henty's and Alger's books, and like them fine. I have also read "Anne of Green Gables," "Anne of Avonlea," and "Kilmeny of the Orchard." Anne was spelt with an "e," you know.

We have a literary society around here, which holds its meetings every two weeks.

Well, I will close, hoping this will escape the w.-p. b.

HUMPHREY CAMPBELL
(Age 14, have left school).
Cowal, Ont.

OUR JUNIOR BEAVERS.

[For all pupils from First Book to Junior Third, inclusive.]

Who Was It?

Once there was a maiden who wouldn't be polite;

Wouldn't say "Good morning" and wouldn't say "Good night";

Felt it too much trouble to think of saying "Please";

Slammed the door behind her as if she'd been a breeze;

Wouldn't ask her mother if she could take a run;

Ran away and lost herself, because it was "such fun."

Merry little maiden, isn't it too bad,

That with all her laughter sometimes she was sad!

But, you know, the reason isn't hard to find,

For this little maiden didn't like to mind;

Didn't like the things she knew she really ought to do.

Who was she? Oh, never mind, I hope it wasn't you.



"She Wouldn't Be Polite."

Junior Beavers' Letter Box.

Dear Beavers,—I have been reading your letters for a long time, and at last I was tempted to write.

As I write this we are having terrible weather; one road is blocked so you cannot get through, walking or riding. Last winter we used to go to a hill and sleigh-ride all noon, but this winter there is no sleigh-riding at all.

I will tell you some things I got for Christmas: Two books, string coral beads, blue hair-ribbon, pair bedroom slippers, kimona, two handkerchiefs, fifty cents in a little silk bag, game, candies, nuts and oranges. Hoping this will escape the w.-p. b.

BERTIE THACKER
(Age 11, Jr. III. Book).

R. R. No. 1, Ariss, Ont.

Dear Beavers,—This is the first time I have written to your Circle. I live on a farm a quarter of a mile from Balsam, our post office. It has a store and four or five houses. Father has taken "The Farmer's Advocate" for a number of years, and thinks it is fine. So do I, for I like to read the Beaver Circle.

I like going to school, and I am in the Third Book. I am eight years old. My brother and I have a black and white kitten which we play with, but we have no dogs. I think I had better close, wishing the Circle every success.

BURNETT JAMIESON.

Balsam, Ont.

Dear Puck,—As this is my first letter to you I will tell you of my pets. I have a cat. Sometimes when I go to bed he follows me up-stairs, and after I get in bed he comes and gets in with me, then I have to get up and put him down-stairs. I have a calf. Sometimes in the summer I get some straps and make him a harness, but he will not go very well. I have a cow. She came in last summer, and this is her calf. These are all my pets. Have a mile and a half to go to school. Our teacher is Miss Corman. She is the best teacher we ever had while I have been going to school. I am writing this with my little typewriter. Well, I must stop, as my letter is getting too long.

BURTON BINGLE (age 10).

Grimsby, Ont.

Dear Beavers,—This is my first letter to the Circle. I am in the Junior Third Class at school. I think I will try to write in competition "On Going to School in Winter."

We have had some very cold weather. It has been thirty and forty below zero this winter. We went to school when it was thirty-five below zero.

I go to school every day; we have two miles to walk. It is a bush road. Our school is a log one. My father and my brothers had to snow-plow the road out, because they could not drive us.

I have been going to school with two teachers. One stayed five years. The other one came last holidays. I like them fine.

I live at the head of Manitou Lake, a mile and a quarter from the Indian line.

Try the flour that holds the confidence of thousands of home-cooks

THE present huge demand for PURITY FLOUR shows the confidence in which it is held by thousands of home-cooks.

Those who have used PURITY FLOUR have come to believe in it. They look on PURITY as a friend. They feel they can trust it implicitly, because each and every lot of PURITY FLOUR has always been uniform—always up to the high standard of quality that has made it famous.

Wouldn't you, too, like to use a flour you could always rely on? Wouldn't you like to feel certain that your bread, cakes, and pies were going to turn out exactly right? That's just how you'll feel when you become a user of PURITY FLOUR—the confidence-creating flour.



PURITY FLOUR gives high-class results, because it consists exclusively of the high-grade portions of the best Western hard wheat.

On account of the extra strength of PURITY FLOUR please remember, when making pastry, to add more shortening than an ordinary flour requires.

PURITY FLOUR
"More bread and better bread"

And when making bread add more water, and PURITY FLOUR will expand into more loaves than the same weight of ordinary flour can produce, thus making "more bread and better bread."

Make your next flour order spell P-U-R-I-T-Y F-L-O-U-R. It costs slightly more, but it's worth the difference. Add PURITY FLOUR to grocery list right now.

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It Pays The Housewife

to use the best sugar—because poor sugar means poor cooking.

St. Lawrence Sugar

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No Darning! No Discomfort! Cuts Hosiery Expense Half! Write for List of Sizes, Colors, Grades and Prices. Absolutely Finest Hosiery Made. A Million Wearers. HOLEPROOF HOSE

ORDINARY HOSE



Don't buy any more hosiery until you get the \$1.50 Trial Box of Holeproof Hosiery containing six pairs of the finest, softest, best fitting hosiery made, and the Holeproof Guarantee Ticket which insures the wear of these six pairs for six months.

There's a coupon for each pair. If any or all pairs wear out in six months, return them with a coupon for each and get new hose free.

30,000 Pairs a Day

are made in our great factory to supply the demand. 95% of the 26,000,000 pairs that have been sold have outlasted the guarantee. We always replace without question the few pairs that do wear out. You are taking no chance whatever, so order right from this advertisement.

FAMOUS Holeproof Hosiery
FOR MEN WOMEN AND CHILDREN

"Holeproof" is made for men, women and children, so that no woman need do any darning, no matter how large her family. We pay the top market price for our yarns. No cotton hose can be made any better. We make the lightest weights if you want them, guaranteed just the same. Send your order.

Use a trial box of these excellent sox at \$1.50 (women's or children's trial box \$2.00). Don't spend the same money for hosiery that wears out as common hosiery does. Get the six months' guarantee on "Holeproof." Learn how stylish they are—how they fit and how they feel. You'll never wear anything else once you try them.

HOLEPROOF HOSIERY CO. OF CANADA, LIMITED
159 Bond Street, London, Canada

Trial Box Order Coupon

Holeproof Hosiery Co. of Canada, Ltd. 159 Bond Street, London, Canada
Gentlemen: I enclose \$1.50 (\$2.00 for women's or children's), for which send me one box of Holeproof Hose. Weight (medium or light?) Size (check the colors on list to your right). Any six in a box, but only one weight and one size.

Name _____
Street _____
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List of Colors

- For Men and Women**
Black
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Dark Tan
Pearl
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Navy Blue
Light Blue
- For Children**
Black, and tan, only; and medium weight only.



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Mark the Flavor
of Quaker Oats. That means rich grains—the choicest oats—prepared by an ideal process.

We get but ten pounds of Quaker Oats from a bushel of the choicest oats. That's because we select just the rich, plump grains—the finely flavored oats. The rest are all discarded. Yet Quaker Oats, despite all this selection, costs but one-half cent per dish. Don't you think that it pays, in this morning dish, to serve it at its best? Do you want to lose half the delight?

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Family size, with a piece of china beautifully decorated, 25c. } Except in Extreme West
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(235)

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From COAL OIL (Kerosene)

Recent tests by Prof. McKergow, McGill University, Montreal, on leading oil-burning lamps show the Aladdin Mantle Lamp gives over twice as much light as the Rayo and other lamps tested, and burns less than one-half as much oil. It is odorless, safe, clean, noiseless. Better light than gas or electric. Fully guaranteed. Our burners fit your old lamps. Ask for Catalog M, learn how to get **ONE LAMP or BURNER FREE**

AGENTS: Ball sold over 1000 on money back guarantee; not one returned. Bruner sold \$600 in 15 days. Ask for liberal agency proposition. Sample lamp furnished.

MANTLE LAMP CO. of Am., Inc., 167 Adelaide Bldg., Montreal, Que.

Island Seed Oats

The only really high-grade, absolutely safe seed oats in Canada this year. No danger frosted germs.

JOSEPH READ & CO'Y, LTD.
Summerside, P. E. Island

CHOICE SEED CORN Improved Leaming corn, selected for several years; prizewinner; per single bushel, \$1.25. For samples, write: W. A. BARNET, MGR. EXP. FARM, HARROW, ESSEX CO.

My father has taken "The Farmer's Advocate" since before I can remember. I will close for this time. Good-bye.

ELSIE F. NEWBY.

Rockville, Manitoulin Island.

Your letter was overlooked somehow, in the competition, Elsie, but it is so good that we have sent you an extra prize.

Dear Puck and Beavers,—This is my first letter to the Beaver Circle. My father has taken "The Farmer's Advocate" for a long time, and likes it fine. We have two horses and four colts. I have a colt on which I ride horse-back. She is two years old. We are going to break two colts this winter and two next winter. We have eight cows altogether.

GEORGE GIDNEY
(Age 10, Book Jr. III.)

Alford Junction, Ont.



7348 Semi-Princesse Dress for Misses and Small Women, 14, 16 and 18 years.

7298 Girl's Dress, 10 to 14 years

Dear Puck and Beavers,—I am going to tell you about my two pet cats. I have dresses and coats and bonnets for them, and dress them up like dolls. They seem to enjoy being dressed up, as they close their eyes and sleep in the little cradle which I place them in, and never offer to jump out.

I had my picture taken with my cats once when they were about half-grown. I live on a farm, and we have quite a number of cattle and horses and pigs, and I have a little calf, but I felt very sorry for it this morning, because it got one of its horns broken some way or other.

I go to school every day, but at present the weather has been so stormy that I have been at home for a couple of days. We have a lady teacher. There are seven in my class. I like playing on the ice when the weather is not too cold. I will close now.

EDNA GREGOR (Class III., age 9).
Kippen, Ont.



7287 Fancy Blouse for Misses and Small Women, 14, 16 and 18 years.

Dear Puck and Beavers,—I am nine years old. I was born in the States, and when I was eight years old I went to England visiting. I enjoyed my trip very much, and was not sick. When we had been in England a year, my mother and father and my little brother five years old, and also my little sister, nine weeks old, and myself, came to Canada. My little sister was not much larger than a doll, and she stood the voyage pretty well. She is a big, fine baby now. We had a kind of a rough passage. My brother and I were sea-sick. We were very pleased when we landed at Halifax. Then we got on the train and we scarcely had room to move. We were on the train three days, and got into London at 11 o'clock at night, and it was snowing like everything. I like Canada better than the States, and also like the schools better, and I think it is a very nice country. We are settled on a farm now, and my brother and I have lots of room to play, and that's what I like. Then the climate is so much better. My father began to take "The Farmer's Advocate" as soon as he came on the farm. I think I have told you all about my trip this time.

QUEEN E. JOHNSON
(Age 9, Part II. Class)

Forest, Ont.



7263 Fancy Blouse for Misses and Small Women, 14, 16 and 18 years.

"The Farmer's Advocate" Fashions



7311 Blouse with Over Waist for Misses and Small Women, 14, 16 and 18 years.



7266 Blouse Closing in Front, 34 to 42 bust.

Please order by number, giving age or measurement, as required, and allowing at least ten days to receive pattern. Address: Fashion Dept., "The Farmer's Advocate," London, Ont.

March! March! March! They will hurry
Forth at the wild, high sound,—
Blossoms and birds in a flurry,
Fluttering all over the ground.
Hang out your flags, birch and willow!
Shake out your red tassels, larch!
Flap blades of grass, from your pillow,
Hear how he's calling you, March!

More and Better Bread

will be the result of your baking if you use

White Swan Yeast Cakes

Your grocer keeps them in 5c. packages of six cakes. Send to-day for free sample.

WHITE SWAN SPIES & CEREALS
Limited
Toronto, Ontario

KITCHEN TINS
DISH-PANS
COLANDERS ETC
KEPT DAZZLING-
BRIGHT & CLEAN BY

Old Dutch Cleanser

Full directions and many uses on Large Sifter-Can, 10¢



Superfluous Hair

Moles, Warts, Red Veins, etc., always permanently removed by our reliable method of antiseptic electrolysis. Satisfaction assured. Avoid nostrums and travelling operators, and come at Easter for treatment.

Pimples, Blisters, Blackheads, Red Nose and other complexional troubles successfully treated by mail. Booklet "F" mailed on request.

Hiscott Dermatological Institute
61 College Street Toronto, Ont
Established 1892

16 in. Ostrich Plume
All Colors

Just the kind of Ostrich Plume you have to pay \$6.00 for at retail stores. Fully 16 inches long, extra wide, willow fines and large, heavy, drooping head. Best \$1.00 to-day; this opportunity for a limited time only. Also a large, handsome \$7.50 Plume at \$3.50. Money back if not entirely pleased.

NEW YORK OSTRICH FEATHER CO., Inc.
Dept. "CC" Fifth Avenue and 23d Street, New York

Seed Corn Berry Plants

Unsafe to plant any but tested seed corn this season. Send for samples, and prove our White Cap Yellow Dent and Long-fellow. Also send for our descriptive price list of Berry Plants.

M. E. MALLORY, Blenheim, Ont.

ANYONE having a good second-hand set of **Steel Rings** for building cement silos for sale, write **WALTER J. E. MASON, Roseneath, Ont.**

The Scarlet Pimpernel.

A STORY OF ADVENTURE.

By Baroness Orczy.

(Serial rights secured by "The Farmer's Advocate.")

By permission of G. P. Putnam's Sons.

(Continued from last week.)

CHAPTER XIII.

Either—Or?

The few words which Margaret Blakey had managed to read on the half-scorched piece of paper, seemed literally to be the words of Fate. "Start myself to-morrow. . . ." This she had read quite distinctly; then came a blur caused by the smoke of the candle, which obliterated the next few words; but, right at the bottom, there was another sentence, which was now standing clearly and distinctly, like letters of fire, before her mental vision. "If you wish to speak to me again, I shall be in the supper-room at one o'clock precisely." The whole was signed with the hastily-scribbled little device—a tiny star-shaped flower, which had become so familiar to her.

One o'clock precisely! It was now close upon eleven, the last minuet was being danced, with Sir Andrew Ffoulkes and beautiful Lady Blakeney leading the couples, through its delicate and intricate figures.

Close upon eleven! the hands of the handsome Louis XV. clock upon its ornolu bracket seemed to move along with maddening rapidity. Two hours more, and her fate and that of Armand would be sealed. In two hours she must make up her mind whether she will keep the knowledge so cunningly gained to herself, and leave her brother to his fate, or whether she will wilfully betray a brave man, whose life was devoted to his fellow-men, who was noble, generous, and above all, unsuspecting. It seemed a horrible thing to do. But then there was Armand! Armand, too, was noble and brave; Armand, too, was unsuspecting. And Armand loved her, would have willingly trusted his life in her hands, and now, when she could save him from death, she hesitated. Oh! it was monstrous; her brother's kind, gentle face, so full of love for her, seemed to be looking reproachfully at her. "You might have saved me, Margot!" he seemed to say to her, "and you chose the life of a stranger, a man you do not know, whom you have never seen, and preferred that he should be safe, whilst you sent me to the guillotine!"

All these conflicting thoughts raged through Marguerite's brain, while, with a smile upon her lips, she glided through the graceful mazes of the minuet. She noted—with that acute sense of hers—that she had succeeded in completely allaying Sir Andrew's fears. Her self-control had been absolutely perfect—she was a finer actress at this moment, and throughout the whole of this minuet, than she had ever been upon the boards of the Comedie Francaise; but then, a beloved brother's life had not depended upon her histrionic powers.

She was too clever to overdo her part, and made no further allusions to the supposed billet doux, which had caused Sir Andrew Ffoulkes such an agonizing five minutes. She watched his anxiety melting away under her sunny smile, and soon perceived that, whatever doubt may have crossed his mind at the moment, she had, by the time the last bars of the minuet had been played, succeeded in completely dispelling it; he never realized in what a fever of excitement she was, what effort it cost her to keep up a constant ripple of banal conversation.

When the minuet was over, she asked Sir Andrew to take her into the next room.

"I have promised to go down to supper with His Royal Highness," she said, "but before we part, tell me . . . am I forgiven?"

"Forgiven?"
"Yes! Confess, I gave you a fright just now. . . . But, remember, I am not an Englishwoman, and I do not look upon the exchanging of billet doux as a crime, and I vow I'll not tell my little Suzanne. But now, tell me, shall I



The Delights of a Diamond Dye Day

Diamond Dye days have come to be institutions in thousands upon thousands of homes throughout the land. But what IS a Diamond Dye day, some one may ask.

The answer is best given in the following letter from a clever Toronto woman:

"Every so often my daughters and I plan a Diamond Dye day—and it is always a delightful one.

"We go through our wardrobes and pick out the soiled and faded dresses of yesterday, and put them into the magic bath.

"Trimnings and laces, sweaters, stockings, all get the same treatment.

"And when the day is over, we have the satisfaction that practical, beautiful things bring.

"Our draperies and portieres, too, come into their share of being made like new, with Diamond Dyes.

It is an actual fact that new life, as well as new beauty is given to fabrics with Diamond Dyes.

Their users are so many as to be almost countless. The economies they afford are so great as to be almost unbelievable.

Considering this, the more Diamond Dye days there are in the home, the happier, more attractive that home is going to be.

Diamond Dyes

THERE are two classes of Diamond Dyes—one for Wool or Silk, the other for Cotton, Linen, or Mixed Goods. Diamond Dyes for Wool or Silk now come in BLUE envelopes. And, as heretofore, those for Cotton, Linen, or Mixed Goods, are in WHITE envelopes.

Here's the Truth About Dyes for Home Use

Our experience of over thirty years has proven that no one dye will successfully color every fabric.

There are two classes of fabrics—animal fibre fabrics and vegetable fibre fabrics:

Wool and Silk are animal fibre fabrics. Cotton and Linen are vegetable fibre fabrics. "Union" or "Mixed" goods are 60 per cent. to 80 per cent. Cotton—so must be treated as vegetable fibre fabrics.

Vegetable fibres require one class of dye, and animal fibres another and radically different class of dye. As proof—we call attention to the fact that manufacturers of woollen goods use one class of dye, while manufacturers of cotton goods use an entirely different class of dye.

Do Not Be Deceived!

For these reasons we manufacture one class of Diamond Dyes for coloring Cotton, Linen, or Mixed Goods, and another class of Diamond Dyes for coloring Wool or Silk, so that you may obtain the very best results on EVERY fabric.

REMEMBER: To get the BEST POSSIBLE results in coloring Cotton, Linen, or Mixed Goods, use the Diamond Dyes manufactured ESPECIALLY for Cotton, Linen, or Mixed Goods.

AND REMEMBER: To get the BEST POSSIBLE results in coloring Wool or Silk use the Diamond Dyes manufactured ESPECIALLY for Wool or Silk.

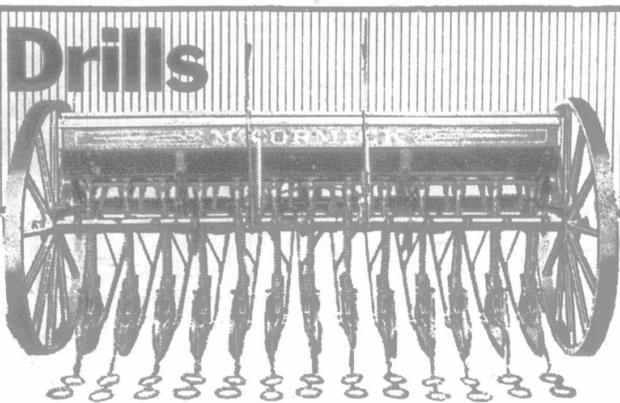
Diamond Dyes are sold at the uniform price of 10 cents per package.

VALUABLE BOOKS AND SAMPLES FREE—Send us your dealer's name and address—tell us whether or not he sells Diamond Dyes. We will then send you that famous book of helps, the Diamond Dye Annual, a copy of the Direction Book, and 36 samples of Dyed Cloth—Free.

THE WELLS & RICHARDSON COMPANY, LTD.
200 Mountain Street, MONTREAL, QUEBEC

McCormick Drills

Sow at Correct Depth
and Are Easy on Horses



WITH this light draft McCormick Drill you can plant peas, beans, corn or any other large seed, and wheat, oats, barley, and other small grains, with equal facility—without cracking or breaking any of the seed—because of the construction of the double-run force feed.

McCormick Drills have disk bearings as near dust-proof as disk bearings can be made. Here's why; The oil runs from the inside towards the outside, and the constant supply tends to force out grit or dirt. The oil cups are large and convenient.

Let the McCormick agent in your town tell you all the facts, or, write to nearest branch house below for any special information you desire.

Eastern Branch Houses

International Harvester Company of America

(Incorporated)

Hamilton, Ont.; London, Ont.; Montreal, Que.; Quebec, Que.; Ottawa, Ont.; St. John, N. B.

Not How Cheap-- But How Good?

That's what will concern you after your Fence is on your posts. Mere economy in price without satisfactory service is no economy at all. For example, compare a shoddy suit with a good, well-made tweed. We could easily produce a cheaper kind of fence, but we believe it pays better to give people extra good value in the fence itself. The very Quality of Frost Fence means economy. Comparison of the value it contains is what makes it sell so readily in competition with other fences. The value is there in the quality of our wire and the service-giving way the Fence is woven. Frost Fence is not woven as fast as possible, but is woven as good as it is possible to produce a ready-woven Fence. If we could take you through our factory, we could show you with what care Frost Fence is made on looms of a special type, that make every wire absolutely the same length and tension, and with the same long, deep, spring-wave that prevents the Fence from ever getting slack. Mere newspaper claims are worth nothing if the fence doesn't prove them in service. Examine for yourself a good stretch of Frost Fence and talk the question over with our local agent or write us for our Catalogue which describes the quality of Frost Wire and how Frost Fence is woven to give satisfactory service all the time. Don't place your order until you have examined into the superior value Frost Fence offers you.

FROST WIRE FENCE COMPANY, LIMITED
Hamilton Ontario. Branch: Winnipeg, Manitoba

We Make Our Own Wire.
It Is All Hard Steel
It Is Full Gauge and Heavily
Galvanized.

"Frost" Fence

HARAB POULTRY FOODS MAKE POULTRY PAY

Our foods are made on our own plant from the very best materials, meat scrap, bones, fresh blood, etc., put through special processes, so that while all waste is extracted, the food values still remain in a highly-concentrated form. We have eight special lines:

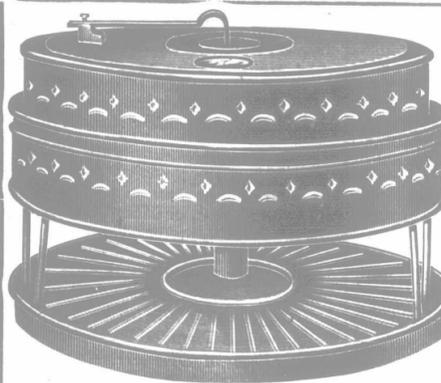
Beef Scrap	Poultry Bone
Chick Scrap	Poultry Bone Meal
Beef Meal	Blood Flour
Red Blood and Bone Tonic	
Bone Meal and Oyster Shell Feed	

We also carry a full stock of Oyster Shell, Crystal Grit, Poultry Charcoal, etc., and can give you immediate deliveries of any quantities.

If your dealer does not carry a stock, write us direct.
HARRIS ABATTOIR COMPANY, LTD.
Toronto, Canada

Holstein bull calves for quick sale. Registered. Also grade Holstein heifer calves of superior breeding; dams 12,000 lbs.; sire imported; \$25 to \$50, according to age.

MOUNT DAIRY, Box 53, Milton, Ont.



IMPROVED MODEL CYCLE HATCHER

A Twentieth Century Wonder hatches every hatchable egg. Easily operated. Fire-proof. Glass window, so that thermometer can be seen at all times. Weight, securely boxed, 20 lbs. Price, \$7.00. We carry in stock all sizes of Incubators (hot air and hot water), Poultry Supplies and Poultry Foods.

The Model Incubator Co., Ltd.
196 River St., TORONTO

CAPACITY 50 EGGS

Profitable Poultry To make a success of poultry-raising, you should have pure-bred stock, then poultry-raising would be profitable. We can supply you with hatching eggs from the very best breeds; express prepaid to your nearest express office. Send for catalogue containing prices.

J. H. RUTHERFORD, Box 62, Caledon East, Ont.

welcome you at my water-party on Wednesday?"

"I am not sure, Lady Blakeney," he replied, evasively. "I may have to leave London to-morrow."

"I would not do that, if I were you," she said earnestly; then seeing the anxious look once more reappearing in his eyes, she added gaily; "No one can throw a ball better than you can, Sir Andrew, we should so miss you on the bowling-green."

He had led her across the room, to one beyond, where already His Royal Highness was waiting for the beautiful Lady Blakeney.

"Madame, supper awaits us," said the Prince, offering his arm to Marguerite, "and I am full of hope. The goddess Fortune has frowned so persistently on me at hazard, that I look with confidence for the smiles of the goddess of Beauty."

"Your Highness has been unfortunate at the card tables?" asked Marguerite, as she took the Prince's arm.

"Aye! most unfortunate. Blakeney, not content with being the richest among my father's subjects, has also the most outrageous luck. By the way, where is that inimitable wit? I vow, Madam, that this life would be but a dreary desert without your smiles and his sallies."

(To be continued.)

News of the Week.

A deputation of 500 residents of North Bay (Ont.), district, interviewed the Government to urge the advisability of canal construction along the French River to Lake Nipissing. By this, transportation from the mineral districts of Northern Ontario, via North Bay, would be facilitated.

The Government has been requested to provide funds for sending flour to the starving millions of China. The C. P. R. has promised to carry out the damaged wheat on the Western prairies at lowest cost, and the Ogilvie and Lake of the Woods Milling Companies have agreed to grind it at cost price, in order that as much as possible may be sent to the East.

A general coal strike is likely to be declared in the United States about April 1st.

Severe fighting took place about Tripoli last week, with heavy losses in both Italian and Arabian ranks.

The Government's efforts to secure a settlement of the gigantic coal strike in Great Britain have failed, and legislative action will now be invoked to secure a minimum wage for all underground coal-workers. Over 2,000,000 are idle in Britain, in addition to the miners, because of the strike.

Three hundred and fifty thousand miners in the Westphalian coal mines, Germany, ceased work on March 11th. The strike is spreading.

An all-world agitation to secure an eight-hour day for American and British working-people was mentioned at a meeting of the General Strike Committee at Lawrence, Mass.

Sixteen of the window-smashing suffragettes in London have been sentenced to from four to six months imprisonment for having caused damage exceeding \$25. Mrs. Pankhurst has been put into solitary confinement for refusing to conform to prison discipline.

Captain Amundsen states that alcohol in any form was absolutely barred while sledging on the way to the South Pole. The Fram, on which he made his famous journey, is only 113 feet long, but is especially well fitted for navigation in icy seas. She made her maiden voyage with Captain Nansen to the North in 1893-4, and carried him there again in 1907.

Yuan Shih Kai was inaugurated as President of the Provisional Government of the Republic of China at the Foreign Office in London on March 10. He has appointed Wang Shao-ye as Premier, and Wang Shao-ye as Minister of Justice.

Feed The Land— AND It Will Feed You

Many farmers would get higher interest on their money if deposited IN THE SHAPE OF FERTILIZERS IN THE SOIL, than if they placed the money in bank—the interest being paid in increased crops.

When the Canadian farmer becomes sufficiently interested in fertilizers to make his own mixtures at home, it will be a good thing for the farmer and for the country at large.

Fertilize scientifically—study the "VANCO" Book—and reap the benefits in bigger crops.

Make your own Fertilizers, to suit each soil and crop—buy "Vanco" guaranteed chemicals, prepared right here in Toronto, and thus save the heavy duty which must be paid on ready-mixed fertilizers

MURIATE OF POTASH

—guaranteed 50% actual Potash.

SULPHATE OF POTASH

—guaranteed 48% actual Potash.

NITRATE OF SODA

guaranteed 15% Nitrogen, equal to 18.84% Ammonia.

ACID PHOSPHATE

guaranteed 14% to 16% available Phosphoric Acid.

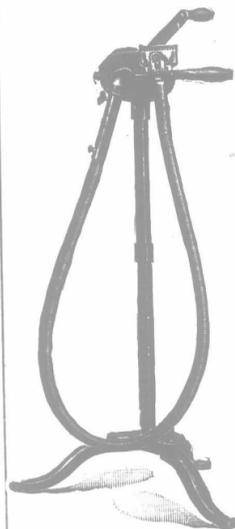
Write for our prices—and also copy of the "Vanco" Book—you'll find it a big help in mixing Fertilizers. 45

CHEMICAL LABORATORIES,
148-158 Van Horne Street, - TORONTO.

Clip Your Horse in 30 Minutes

No matter how thick or scraggly the hair, the

"BURMAN" HORSE CLIPPER



will clip it in 30 minutes. Always ready for use, easy to manipulate, always dependable and clips cleanly, evenly and as close as you wish. If you have one horse or twenty, this clipper will save your time and money—there is a low first cost, and no repair expense. Comes packed ready for use—clipping plates and shaft-hook for holding clipping-head supplied. Ask your dealer, or write direct.

B. S. S. H. THOMPSON COMPANY Ltd.
Montreal

Best Varieties of Strawberry Plants for sale—Yield last season from 234 acres, 31,500 boxes.
W. WALKER, Port Burwell.

MENTION "FARMER'S ADVOCATE."

GOSSIP.

The auction sale at Park Hill, Ont., February 28th, of Shorthorn bulls, advertised in "The Farmer's Advocate" was a gratifying success. The six yearling bulls from the Nicholson herd made the handsome average of \$154, while two calves six months old averaged \$60. The stock bull, Royal Lad, went down to the bid of W. H. Taylor & Sons for \$170. Considered as a stock bull he was a bargain. The highest price of the sale was obtained for the 13-months bull, Count Avene 5th, which, considered as a show bull, was about half his value. He fell to the bid of Wm. Waldie, Stratford, Ont. The consignment of yearlings of H. K. Fairbairn made a good average, but not being in condition, and a little rough in their hair, fell a little short of the Nicholson consignment. Mr. Nicholson writes: "Allow me to say that out of the 17 head sold, 12 of the purchasers saw the advertisement in "The Farmer's Advocate," and they were the buyers of the best." Captain T. E. Robson, the genial auctioneer, was in his best form, and the success of the sale was largely due to his tact, courtesy and general ability. A good part of the crowd had never heard him before, and he won them and held them to the last.

DOMINION FAIR IN OTTAWA, 1912.

The decision of the Federal Government to hold the Dominion Fair in Ottawa this year, at once turned the attention of stock breeders, manufacturers and exhibitors in general, all over Canada, to the coming Central Canada Exhibition. The special grant of \$50,000 from the Government has already brought extra amounts from the regular sources of maintenance. Every department of the Fair will be improved from 100 to 200 per cent. Live stock and other premiums are to be at least doubled, and a similar policy will be followed in securing attractions.

On learning of the Dominion grant, the Fair managers set to work enthusiastically. The first thing was to extend the dates, taking an extra Saturday into the Exhibition period. The Fair will open on Thursday, September 5th. The first two days will be for preparation, and Saturday, September 7th, will see the event in full swing. It will continue till Monday, September 16th, inclusive.

The management has started off with completing arrangements for the erection of a \$90,000 machinery hall. The building will be 144 x 384 feet, made of brick, fire-proof, and of architectural design to conform with the other handsome edifices on the grounds. This means that the large number of manufacturers of farm implements and other machinery who have deferred coming to Ottawa will be on hand at the 1912 Fair, and add much to its educational value. It is too soon to speculate on the special attractions, but it is known that the directors are negotiating through Col. Lowther, of the Governor-General's staff, to secure the famous band of the Scots Guards for open-air concerts.

The broad scale on which the Dominion Fair is to be conducted has necessitated beginning the work of preparation months before the usual time. The enlargement of the prize lists means a lot of careful revision, and several important changes will be announced later. Inquiries are pouring in already from all parts since the special nature of the Fair became known. As far as amusements and exhibits are concerned, it will simply be a matter of selecting the best from a great host.

TRADE TOPIC.

"How to Build for Less Money" is the title of a booklet that every reader of this publication should see. It is written by Mr. Wilbur D. Nesbit, and gives valuable information to every owner of a home, barn or chickens. The price of this booklet is 10c. a copy, but the General Roofing Company, East St. Louis, Ill., has printed a limited edition which they will supply to our readers free of all cost. Send a postal today. Address Dept. BF, General Roofing Company, East St. Louis, Ill.

The Heaviest Storm Brings no Fear to the owner of a Certain-teed Roof

The farmer who does not use Ready Roofing is wasting money—

Certain-teed Roofing

—the big money saver

When buying roofing you should consider carefully these two points—quality and price. **Certain-teed Roofing** means quality certified and durability guaranteed—a better roofing for less money, fully guaranteed for fifteen years.

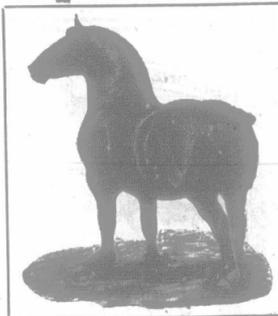
Millions of rolls in use on farm buildings today

You do not need to take our word as to the quality and durability of **Certain-teed Roofing**—there are millions of rolls of it in use today throughout the provinces of Canada and our sales are increasing at a tremendous rate. One trial will convince you. It is made in rubber shingles as well as rolls—on each roll or bundle we paste a **Certain-teed** label for your protection. You can get **Certain-teed Roofing** from your local dealer—at least give it a trial. Send today for this valuable free book BF-1.

Free Book

GENERAL ROOFING MFG. CO., Winnipeg, Manitoba

PERCHERON STALLIONS



Prizewinners. We still have a few Percheron stallions to offer, among them being the first-prize three-year-old at the Toronto Exhibition last September, and the first-two-year-old at the Dominion Exposition, Regina, last August.

We don't sell all our best horses first, and can show intending buyers ten horses of the finest quality, both blacks and greys, and right in every way.

We are not looking for fancy prices, and these horses will be all sold worth the money.

Guarantee and terms the best obtainable. Phone, write or wire.

HODGKINSON & TISDALE
Simcoe Lodge, Beaverton, Ont.

Standard Wire Fence

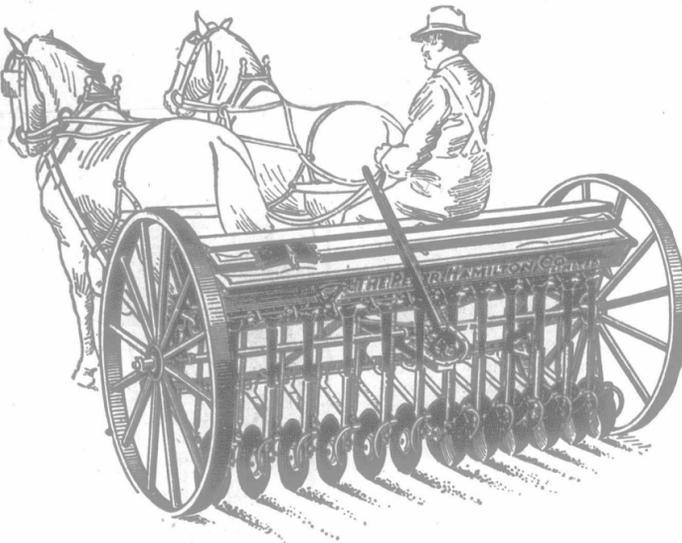
Here's the Fence That is all Steel—
Steel wires, steel locks, steel posts. Standard Woven Wire Fence is all No. 9 hard steel wire, well galvanized. "The Tie That Binds" is hard, smooth steel that holds uprights and running wires absolutely secure without injury. Standard Patent Posts are 12 gauge steel, bent at right angles, and so constructed that wires are held without staples. Let us tell you a lot of other things about the Standard Wire Fence and our Metal Gates of Galvanized Tubing. Our books are full of fence facts. Write for free copies and sample lock.

THE STANDARD WIRE FENCE CO. OF WOODSTOCK, LIMITED, Woodstock, Ont. and Brandon, Man. 18

THE "LEADER" SEEDER

An examination of the "Leader" Seeder will show that it is no common drill. A trial in your field will prove it. A "Leader" always does the best possible work under the most difficult conditions; makes a perfect seed-bed and deposits the seed evenly at a uniform depth. The frame is strong, and reinforced to prevent the slightest springing or racking. The wheels are large, and have long, strong bearing hubs. The DISCS or HOES cannot clog. The gear is positive. The feed is absolute and exact. Be sure and see our agent before you buy.

**The Peter Hamilton
Company, Limited**
Peterborough, Ont.



GOSSIP.

Mac Campbell & Sons, Northwood, Ont., breeders of Duroc-Jersey swine and Embden geese, whose advertisement runs in this paper, write: Sales have been good, never better, having sold out of sows; only a few good boars left. We are going to increase our dairy herd, and are prepared to buy heifer calves of any dairy breed, either pure-bred or grades.

George Amos & Sons, Moffat, Ont., write "The Farmer's Advocate": "We have been receiving more inquiries for stock through your columns this season than ever before. We are now offering for sale eggs for hatching, from grand laying varieties, White Wyandottes and S.-C. White Leghorns. We have special matings, both varieties headed by prize-winning cock birds, with several prize-winning hens and pullets. Write us for particulars, and order early."

G. M. Forsyth, North Claremont, Ont., breeder of Shorthorns and Clydesdales, having used the imported bull, Dorothy's King—55009—, until many of his daughters are of breeding age, offers him for sale. He is described as in nice breeding condition, sure and active, a big, smooth bull, straight in his lines, beautiful head and horns, and his disposition unequalled. No man, writes Mr. Forsyth, can make a mistake in buying this bull, as I know no fault with him. Have also two young bulls left, one sixteen months old, and the other twelve months old. These are nice, straight calves, good buying for anybody; also a few two-year-old heifers, bred to Lord Gordon (imp.).

Shipments of Clydesdales from Glasgow for Canada the first week in March were remarkable for the number of new importers, most of the buyers being in the trade for the first time. One steamer, the Saturnia, alone carried 125 Clydesdales, principally for the Western Provinces, as well as a number of Shetland ponies. Consignments were for one of the farms of the Government of British Columbia, R. K. Reay, Duck Lake, Sask.; Vanstone & Rogers, Wawanessa, Man.; Jas. Graham, Lyleton, Man.; Trotter & Trotter, Brandon, Man.; John King, Netherhill, Sask.; R. S. Ramage, Greenway, Man.; Anderson & Forsyth, Flagstaff, Alta.; G. A. Brodie, Newmarket, Ont.; R. P. Hetherington, Headlands, Sask.; J. & A. Kennedy, Lyleton, Man.; J. C. Cossar, Lower Gagetown, N. S.; W. M. Marshall, Namaka, Alta.; Melvin Gordon, Crowfoot, Alta.; Wm. Miller, Kindersley, Sask.; J. McConechy, Livingston, Alta.; Charles Watson, Hall's Harbour, N. S., and John A. Watt, Sintulata, Sask.

NELLES & WOODLEY'S HOLSTEIN SALE.

Owing to M. C. R. trains being from one to two hours late, not as many outside buyers were present at the sale at Boston, Ont., March 6th, as might have otherwise been expected, still the sale proved a fair success, amounting to nearly \$3,100. Some of the cows sold unreasonably cheap, while a number of others ranged from \$160 to \$295. The fifteen cows averaged \$138.50. Six yearling heifers brought from \$70 to \$130; average, \$92 each; four yearling bulls, from \$36 to \$90; average, \$46.50; spring heifer calves, from three days to three weeks old, averaged \$52 each. Houwtje Pontiac sold at \$295; her yearling bull at \$90; Tidy Abbekerk Maid and her ten-month-old heifer calf, at \$350, are claimed by Nelles & Woodley to be the two highest-priced Holstein cows raised and sold by any one firm in Norfolk County. Among the principal buyers were Munro & Lawless, of Thorold, who took a carload; W. P. Clark, of Parry Sound; Anderson Bros., of York; Arthur Young, of Hamilton; Sager & Nixon, of Troy; Mr. Tonger, of St. George; F. L. Culver, of Waterford, and Messrs. Barron, Roberts and Chapin, of Newport.

Messrs. Nelles & Woodley add to the above report the following testimonial: "We thank 'The Farmer's Advocate' very much for the benefit we have received from your paper and the advertising."



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CALF MEAL

No other food except fresh milk itself contains so much nutriment for calves and young pigs as this meal. The Government test shows a much higher percentage of real (fat) value than others. Not a "drug," but an extremely wholesome food. Made in England by an honorable firm—the largest manufacturers of Oil Meal in the world.

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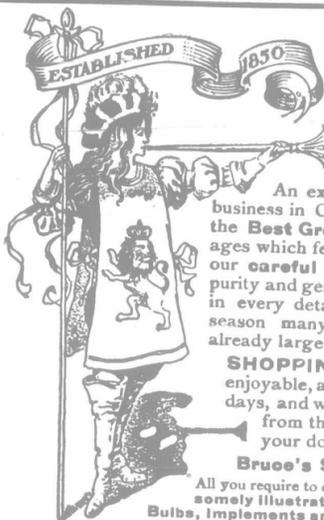
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Our stock has been selected from all over Ontario. They all test about 37 lbs. to the bushel, and are free from noxious weed seeds, being especially free from Wild Oats. Below find some of the varieties we have with prices for 5 bushel lots or over, ex warehouse here, good for 10 days from date of issue of this paper. Bags free. Scotch-grown Regenerated Banner and Abundance test 42, at \$1.30; Daubeny Oats test 36 lbs., registered seed, at \$1.25; Abundance, test 38, at 85c; Banner test 38, at 85c; Siberian test 37 1/2, at 85c; Bumper King test 37 1/2, at 90c; White Cluster test 37, at 85c; Lincoln test 40 1/2, at 85c. We also offer good, clean Banner Oats that test 38 lbs. to the bushel, but contain a sprinkling of barley, at 75c. per bushel. Bags free.

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Bags free.
O.A.C. No. 21, our best lot, test 49 1/2 lbs., at \$1.35
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Red Clover—Gov't Standard —per bush.	Price
"Sun" brand, No. 1	\$15.50
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Muriate of Potash	\$48.00 per ton
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Our Catalogue tells how to mix for the different crops.
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Stand in a class by themselves, the name guarantees sterling excellence.

Carter's Pedigree Mangels—Yellow Intermediate, Windsor Yellow Globe, Mammoth Long Red, etc. 40c. per lb. F.o.b. Toronto.

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Price Lists, Booklet on Lawns, etc., on request. Address the distributors for Canada:
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GOSSIP.

LONDON HACKNEY SHOW.

The 28th annual show of Hackneys, under the auspices of the Hackney Horse Show of Great Britain, was held at Islington, London, the first week in March. Owing to the miners' strike affecting railway arrangements the attendance was smaller than usual, but the display of horses was a very creditable one. In the aged stallion class for horses over 15.2 hands, five years and upwards, the first award went to the eight-year-old Hopwood Viceroy, by Royal Danegelt, shown by Martinez de Hoz, after a very popular display, second being the five-year-old Antonious, by Polonius, shown by Sir Walter Gilbey. Four-year-old stallions were also judged in two classes. In the section for horses over 15.2, John MacKeague's Proctor, by Mathias, was first, and Mrs. Fletcher & Sons' Angram Fashion, by St. Thomas, was second. In three-year-old horses over 15.1 hands, Mr. Surfleet's Beckingham Viceroy, by Hopwood Viceroy, was first, and Geo. Wilson's Cedar Buckrose, by Rosador, second. In the smaller section, not over 15.1 hands, Messrs. Rowell & Wreghitt were first with Emlyn Model, by Middleton Relish, and Mr. Colby, second, with Thornthorpe Gay Boy, by Rosador. In the two-year-old class, first was I. H. Welbourne's Chief Inspector, by King of the East, and Dr. Bowie's Al's Douglas, by Mathias A1, was second. The championship award for the best stallion in the four first classes went to Mr. Surfleet's Beckingham Viceroy, the first reserve being Emlyn Model. The champion in the class for best stallion four years and upwards was King's Proctor, with Hopwood Viceroy as reserve. The champion mare was Mr. Henrichson's chestnut, Lady Beckingham, by Beckingham Squire.

IMPORTANT CLYDESDALE IMPORTATION.

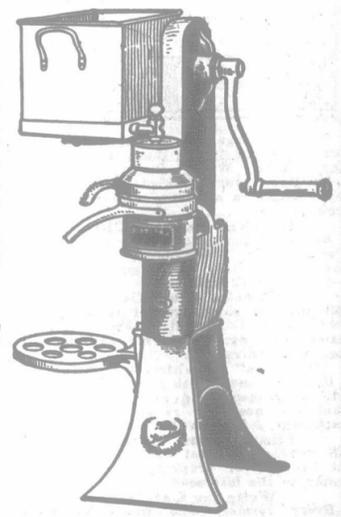
The first week in the present month, says the Scottish Farmer, witnessed the shipping from Glasgow of three of the best Clydesdale mares in Scotland, in a bunch of four fine mares purchased by Malcolm Stewart, Jr., for Colony Farm, Coquitlam, B. C., an institution supported by the Government of British Columbia, and having attached to it a large farm. Mr. Stewart is a son of Malcolm Stewart, who will be remembered by the older generation of breeders as the leader of Darnley (222), and the young man is easily the smartest judge of a Clydesdale who has come to buy for Canada. The mares he has purchased are the champions Nerissa (30940) and Peggy Pride (21641) from J. Ernest Kerr, of Harviestoun; the grand, big mare Blossom of Newhouse (19164), own sister to Peggy Pride, from Stephen Mitchell, of Boquhan; and the two-year-old filly Boquhan Queen (30939), by Apukwa (14567), from Robert Jackson, Mains of Boquhan. These are a remarkable quartette, and this generation has seen no such shipment made to any country overseas. Nerissa was bred by Mr. Kerr, and was got by Baron's Pride (9122), out of the celebrated prize mare Nellie of Harviestoun (18782). Nellie was got by Royal Favorite (10630), out of a mare by the great Flashwood (3604), which was sold as a yearling for £900. Nerissa has had an extraordinary show career. She was second at Glasgow, and first at the H. & A. S. at Edinburgh in 1907 as a yearling; first at Edinburgh, the H. & A. S. at Aberdeen, and the Royal at Newcastle, as well as winner of the Cawdor Cup in 1908; second at Ayr, first at Glasgow, Edinburgh, the Royal, Gloucester, and the H. & A. S. at Stirling, as well as champion at Edinburgh, the Royal, and the Highland in 1909; and second at the H. & A. S., Dumfries, in 1910. Blossom of Newhouse (19164) and Peggy Pride (21641) are full sisters, and were both bred by Wm. Muir, Newhouse, Kirkliston. They are a pair of magnificent mares, and Peggy Pride is at present looking her very best, better even than she did last year, when she was first and champion as a brood mare at the Royal, Norwich. Both mares were got by Baron's Pride (9122), out of Maggie L. of Newhouse (18077), by the well-known weighty Prince of Wales premium horse Prince Romeo (8144).

Lifting a Pail of Milk 3 Times as High as the Rocky Mountains

Consider the importance of the LOW supply can of the Standard Cream Separator. Over a foot lower than supply cans of ordinary separators. Assuming that your wife skims 20 pails a day, it means that in 20 years the Standard will save her a difference equal to lifting a pail of milk 3 times as high as the loftiest peak in the Rocky Mountains. It will save her the same difference again in lowering the empty pail.

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O.A.C. 21 Barley	1.10
GOLDEN VINE Peas	1.40
ALFALFA (Home Grown)	12.00
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Bags are extra, Cotton 25c., Jute 8c. Oats go 3 bush. to bag, heavy and clean. The O.A.C. Barley from Caledonia took First Prize at Guelph Winter Fair this year. We guarantee these seeds to satisfy you on arrival or ship them back at our expense. Cash with order. Reference any Bank.

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GOSSIP.

In the advertisement of D. Robertson, Mount Dairy, Milton, Ont., breeder of Holsteins, 1,200 lbs. cows should have read 12,000 lbs. cows. Grade Holstein heifer calves are also for sale.

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Defy Bad Roads

These Wide-Tire Steel Wheels are built especially to overcome the troubles of travelling over rocky, sandy or muddy roads. They carry 25 to 50 per cent. heavier loads without causing any heavier draft on the horses.



Get a T-A Handy Farm Wagon—it's just the kind you need on your farm. This sturdy little wagon will get over the ground quicker and with less strain on your horses than any other wagon that's made.

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Things you need—implements and tools that should be on every truck garden and farm. Our way of making these specialties assures adaptability, strength and service at the minimum price for the best goods of their kind on the market.



"TRUE" Wagon Box and Rack
Without wings and ladder, it is a perfect wagon box. With them, it is the best Hay, Stock, Wood, Poultry, Corn or Fruit Rack ever invented. Adjusted to any position in a minute without wrench, hook or rope.

"Eureka" Sanitary Churn
Barrel of finest stoneware—top of clear pressed glass. Churns by hand lever. The only sanitary churn made. 8 sizes—4, 10 and 12 gallons.

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Will slice or shred from 1 to 3 bushels per minute. Fastest machine made—easiest running. Tapering cylinder—10 best steel knives.

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Best iron anvil, with vice, pipe vice and drill attachment, and saw clamps. Just what you need for repairing tools and machinery. Weighs 60 pounds.

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Will handle the most delicate seed without bruising or breaking, and will sow evenly to the last seed.

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COWAN'S PERFECTION COCOA

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Can't Burn nor Rot
For little money, get a roof that is weatherproof, won't burn, and is safe even from lightning—Guarantee bond insures it. No repairs, no painting. Get roof facts from
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NO HENS

should be kept in your flock. It is worse than money wasted, it is inhumane. Infected chickens can only lose you money. Why not keep your hen house clean, sanitary? Make it conducive to health, vigor—egg production. Avenarius Carbolineum will do it. Easily applied, permanent, cheap. Write today for free Bulletin on "How To Keep Vermin Away."
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Seed Grain Wanted

Spring Rye, Early Brittany Peas,
Silver Hull Buckwheat.
Send sample.

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BARRED ROCK EGGS FOR HATCHING—Bred to lay. Eggs the year round. Two dollars per fifteen. Mrs. J. R. Henry, Waterdown, Ontario.

BARRED ROCKS—Parks & Bradley Bros. famous layers. Fertile eggs: 15, \$1.50; 30, \$2.50; 55, \$3.50; 110, \$6.00. R. J. Gibb, Galt, Ontario.

BUFF ORPINGTON EGGS that will hatch; 9 chicks guaranteed with every setting. Three splendid pens, \$1.00 per setting. Special prices on incubator lots and fancy stock. Hugh A. Scott, Caledonia, Ontario.

BEST Royal Blood Barred Rocks. Cockerels, two dollars; pullets and hens, one fifty. Eggs, one twenty per fifteen; five dollars per hundred. A. C. Donaghy, Colborne, Ont.

BARRED ROCKS—Eggs from winners at Toronto, Guelph, Galt, Hamilton. Both cockerel and pullet mating; \$2.00 per setting. Some nice cockerels for sale, at \$2.00 and \$3.00. G. Morton, Box 130, Carleton Place, Ontario.

BUFF ORPINGTONS—Pure-bred. Ten splendid broad, deep, thick cockerels, \$3 each. Satisfaction guaranteed. Hugh A. Scott, Caledonia, Ontario.

BUY BABY CHICKS—Save money, time, worry. Thorough-bred laying strains. They live, they grow, they pay. Safe delivery guaranteed. Circulars. Brant Poultry Yards, Brantford, Ontario.

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CHOICE SINGLE-COMB BROWN LEGHORNS—Famous Becker & Gurney strains. Eggs, \$1.50 per 15. David A. Ashworth, Maple Grove, Ontario.

CHOICE S.-C. Rhode Island Reds and Black Minorcas, cockerels at two dollars. W. F. Carpenter, Ivy, Simcoe Co., Ontario.

DON'T BUY EGGS OR CHICKS until you read my two circulars on the most profitable fowls on earth. Post card gets circular. Write to-day. Edmund Apps, Box 224, Vice-President International Anaconda Club, Brantford, Ontario.

EGGS—Rose-comb Rhode Island Reds; prize-winners. Owen and Shoemakers' strains; 15 for \$2.00; 50 for \$4.50; 100 for \$8.00. H. I. Smith, Comber, Ontario.

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MONEYMAKERS—Bred to lay; S.-C. Buff Leghorns; utility and beauty combined. Eggs for hatching, \$1.50 per setting; \$5 per 50. H. H. Bazett, Springfield Farm, Duncan, V.I., B.C.

PARTRIDGE ROCKS are becoming more popular every day on account of their utility qualities and magnificent plumage. Eggs from six pens of prize-winners at one to five dollars per fifteen. Send for mating list. F. T. Hall, Drumbo, Ontario.

PURE-BRED WHITE ORPINGTONS—Eggs, \$2.00 for thirteen. H. Ferns, 715 William St., London, Ontario.

PURE-BRED EXHIBITION BARRED ROCKS—Eggs for hatching from first winners at Elmira, Hanover, Owen Sound and Listowel. Eggs, \$1.00 and \$3.00 per 15. Write for mating list. Jas. E. Metcalfe, Hanover, Ont.

ROSE-COMB REDS—Prize stock. Eggs for hatching from number one pen, two dollars; number two pen, one dollar. Cockerels for sale. Fred Colwell, Cooksville.

REGAL WHITE WYANDOTTES—Splendid cockerels, \$2. Eggs, \$1 per 15. Edith Clapp, Tecumseh, Ontario.

RARE BARGAIN—Barred Rock cockerels, a great big, strong birds, two and three dollars each. James Coker, Jerseyville, Ont.

S. C. RHODE ISLAND RED PULLETS for sale. Good layers. Eggs for hatching, one dollar per fifteen. J. H. Stevenson, Cope-town, Ontario.

SEND for my circular of twenty-five varieties of poultry. Robert Houser, Canboro, Ontario.

STOCK AND EGGS—From prize-winning Golden and Silver Sebright and Black Rose-comb Bantams, Indian Cornish Game and Light Brahmas. M. B. Cosby, Smithville, Ontario.

T. R. ROY POULTRY FARM breeds R. I. Reds, Rose and Single, noted for size, shape, color and egg production. Silver Pencilled Rocks the coming breed. Utility W. Leghorns, S.-C. and Barred Rocks and Babay Chix. Mating list ready, free. R. R. Ruppel, Box 98, Elmira, Ontario.

U. R. FISHEL strain of White Plymouth Rocks. Eggs, \$2.00 per 15; best pen, \$2.50. Ed. N. Holwig, Neustadt, Ontario.

WHITE WYANDOTTES—Eggs for hatching, \$1.00 per 15. W. Readhead, Lowville, Ontario.

WANTED—Practical poultryman, who understands incubators, raising and dressing poultry for private family. Must be Protestant, temperate and married, wish small or no family. Apply to W. H. Furber, Box 436, Cobourg, Ontario.

\$6.41 PER HEN—Write for our beautiful fully illustrated catalogue. Photos from life. B. P. Rocks, White Wyandottes, R. C. R. I. Reds, S. C. White Leghorns. Eggs: \$1.50 per 15; \$2.75 per 30; \$7.00 per 100. L. R. Guild, Box 16, Rockwood, Ont.

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Barred Rock Cockerels**
While they last, \$7 cockerels at \$5 each; \$5 cockerels at \$3.50 each; 200 yearling hens and pullets, \$3 each. Orders filled as received. Satisfaction guaranteed or money refunded.
JNO. PRINGLE, London, Ont.

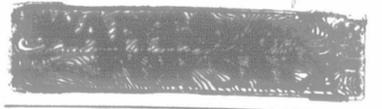
125 Egg Incubator and Brooder \$10
If ordered together.
Freight paid east of Rockies. Hot water, copper tanks, double walls, double glass doors. Free catalog describes them. Send for it today.
Wisconsin Incubator Co., Racine, Wis., Box 173

**EGGS EGGS EGGS
PLEASANT VALLEY FARMS**

For hatching: White Wyandottes, \$5 per 100; special mating, several prize-winners, \$3 per 15; S.-C. White Leghorns, \$4 per 10; special mating, \$1.75 per 15 eggs. Grand laying strains, both varieties.
GEO. AMOS & SONS, Moffat, Ont.
Private phone Milton.

HER TRUE BENT.

"Professor," said Miss Skylight, "I want you to suggest a course in life for me. I have thought of journalism."
"What are your own inclinations?"
"Oh, my soul yearns and throbs and pulsates with an ambition to give the world a life-work that shall be marvellous in its scope, and weirdly entrancing in the vastness of its structural beauty."
"Woman, you're born to be a milliner."



A FEW MORE FERRETS LEFT, at three dollars each. Wanted, Penfold and foxes. Jno. Downham, Strathroy, Ontario.

EXPERIENCED single man, age 25, desires position on good farm; good with all stock. Address with full particulars and highest wages in first letter to Box C, "Farmer's Advocate," London.

FOR SALE—One nearly new 14-ft. Toronto windmill, with 52 ft. mast and shafting complete. Price, \$90.00. Box W, "Farmer's Advocate," London, Ontario.

FOR SALE—59 acres; Lot 1, Con. 2, Westminster Township. Well tiled; 5 acres hard wood; good barn, 82 by 40, on brick wall; brick pigpen; good well. About half mile to church and post office. School on place. Apply on place, or address: Sarah M. Bendle, Derwent, Ontario.

FARM HANDS AND HOUSEKEEPERS awaiting situations. To avoid delay, enclose fares to be advanced for help required. 139 Front St. W., Toronto.

FOR SALE—Dairy farm in New Ontario; 160 acres choice land (90 under cultivation). Near rapidly-growing town. Selling daily 150 quarts milk at ten cents; can easily be doubled. Farm is well fenced, water plentiful, and buildings good. Farm, stock and dairy business a bargain at \$10,000 for immediate sale. Apply: B. D., "Farmer's Advocate," London, Ont.

SON of English gentleman desires position as with farmer of the same description. A hard worker, with five years' Canadian experience. Apply: P. W., "Farmer's Advocate," London.

WANTED—All-round man to work on farm eight months. Reasonable wages. Write John O'Mara, Pt. Lambton.

WANTED—Herdsmen, single man, yearly engagement. Apply: Oak Park Stock Farm Co., Brantford.

WANTED—Cash paid for Military Land Grants in Northern Ontario. Please state price and location. Box 88, Brantford.

WANTED—At once, experienced, sober, capable farm hands, single or married. Must be able to handle 3 or 4 outfits, and machinery. Would prefer men who can milk when required, as it is pure-bred, modern, dairy stock farm. Would like wife of one married couple to keep boarding house. Must be good cook and economical. Work year round, and fare out refunded for certain period. Wages, \$30.00 to \$40.00 per month and board, according to season of year, etc. Give full particulars in first letter. W. D. Brockton, Edmonton, Alta.

WANTED AT ONCE—Competent butter-maker to take charge of all inside work in creamery. Good wages. All year round job. Cottage available. Apply, with references, to Box A. D., "Farmer's Advocate," London.

YOUNG MEN FOR ONTARIO FARMS

Arriving April, May. Write for application form and terms to:

**R. A. MACFARLANE, Boys' Farmer League
Drawer 126, Winona, Ont.**

THE SANITARY DAIRYMAN.
Very early in the morning,
Tuttle sought the spotted cow,
And with gloves his hands adorning
Took the night cap from her brow.

Roused her from her well-bred slumber,
Bathed her features with a sponge,
To the bathtub made her lumber
For her early morning plunge.

Manicured each horn and hooflet,
Sprayed her breast with listerine,
Scrubbed her stall from floor to rooflet,
Till each inch of it was clean.

Then while her attention centered
On her predigested bran,
Reverently Tuttle entered
With a silver-plated can.

Into which, by gauze protected
From bacilli and their ilk,
Tuttle skillfully projected
Little streams of purest milk.

With a microscope he viewed it
To the city, and in short—
To ensure that Tuttle sold it
At least ten cents per quart.

Then in bottles small he hauled it
To the city, and in short—
To ensure that Tuttle sold it
At least ten cents per quart.
—Led Lodge (Monty) Pickett.

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.

WESTERN SEED.

Will you kindly inform me whether oats grown in Saskatchewan, which I know to be perfectly clean, would answer for seed in Oxford County, or would there be any objection?
 W. A.

Ans.—Well-matured, plump, heavy seed, free from all foul seeds, should do well in any part of Ontario, even if produced in Saskatchewan. The greatest difficulty with Western seed is that it often contains foul weeds. If you are sure none are contained in these oats, do not hesitate to sow them if they are otherwise desirable seed.

ITCHY LEGS.

I have a mare whose legs are very itchy, especially her hind ones. Do not appear to be ordinary scratches. She keeps biting them. They swell and sweat much the same as if a blister had been applied. Does the biting cause the sweating? Her legs get very feverish at times. What is the best remedy to remove the trouble?
 R. L.

Ans.—Some horses with beefy legs and coarse feathering are predisposed to itchininess of the legs, and skin trouble. From the symptoms, the trouble is developing into "grease." See answer to P. R. D., on page 525 of this issue.

BOG SPAVIN.

Have a Hackney colt eight months old. He has been out several hours each day all winter. One morning he came in, and there appeared to be a bog, quite large, on his hock. Some say to blister, others to leave it alone. What would you advise for treatment?
 I. S.

Ans.—Blister with 1½ drams each of biniodide of mercury and cantharides, mixed with two ounces of vaseline. Clip the hair off the parts. Tie so he cannot bite them. Rub well with blister once daily for two days, on the third day apply sweet oil. Turn loose in a box stall now and oil daily. As soon as the scale comes off blister again, and after this blister once monthly until time to turn on grass, or until the enlargement disappears.

Veterinary.

DIARRHEA.

Old horse takes diarrhea after he stands a few days idle in the stable.
 P.

Ans.—This is probably due to inability to properly masticate his food. Get your veterinarian to dress his teeth. If the trouble occurs after this, add to his drinking water one-quarter of its bulk of lime water. If this does not check it, give him 2 drams powdered opium and one ounce each of catechu and prepared chalk. This dose can be given every five or six hours until diarrhea ceases, but it is probable that one dose will be sufficient for each attack.
 V.

TRADE TOPIC.

BARN EQUIPMENT.—This is a day when time means money on the farm as well as elsewhere. Labor is very scarce, and to facilitate operations nothing is more urgently needed than up-to-date barn and stable equipment, and few things repay for the cost and trouble of installation in satisfaction and actual time and labor saving more quickly than hay-carriers, hay-forks, hay-slings, door-hangers, feed- and litter-carriers, steel cow stalls and stanchions, etc. All these, and other devices, as stake-holders, wire-strainers, hay-rack clamps, lead binders, silo-tree hoists, field stackers, etc., are manufactured by the Louden Machinery Co., Guelph, Ont.; St. Paul, Minn.; Albany, N. Y., and Ft. Wayne, Ind. See this advertisement in another column, and write for illustrated book, describing each of the aforementioned articles.

BEATS ALL PRICES FREE SAMPLE
DYER THE FENCE MAN GUARANTEES HIS GOODS RUST PROOF
 HE PAYS FREIGHT

Another Week of DYER'S Special Low Fence Prices

THE response to my ad. last week, with special fence-war prices, was so big that I have decided to extend them for one week more, as I realize the value of having my fence represented all over Canada. Just look at my prices! Less than you pay for plain wire. How can Dyer sell so low? Simply because I sell direct to you at factory prices and save you all middlemen's profits. Then, again, I realize my fence is my only salesman. Other farmers will come around and see how strong and well built Dyer fence is, and my future sales will be enormous. I know my fence is a big bargain, and every day you delay your order may mean the loss of good hard dollars that might just as well be in your bank. Act now.

You Lose by Delay

I PAY freight to North Bay or anywhere south in Ontario. For \$5 deposit I will loan you a perfect stretcher, freight FR&E to you, and return you \$5 when you return the stretcher. You pay the return freight ONLY. This is a BIG OFFER. Remember, fencing like Dyer's used to cost you 45c. a rod and UP. My price, only 22c. during this fence-war. ORDER RIGHT NOW. Telegraph, Remit by draft, express or P.O. order, or registered letter. If you wish, send one-fourth cash with order, balance on delivery. You pay collection charges.

What Dyer Does

SUPPLIES every style of iron and wire fence direct to users at factory price. Coiled wire. Barbed wire. Staples. Hay wire. Fence hooks. Gates. Tools. You buy direct from Dyer everything you need to make a hog-tight, horse-high, bull-strong farm fence.

Dyer is square. He sells good goods. He has saved thousands of fence-buyers thousands of dollars. In this trade fight he has certainly cut prices to the bone.

More than 21,000 Canadian farmers know that Dyer goods are highest grade, A No. 1 hard steel wire, highest galvanized and rust-proof. I want you to have my fencing and save money, too. You can if you send me your order NOW. I ship PROMPTLY. Write:

DYER, THE FENCE MAN, Department C, Toronto

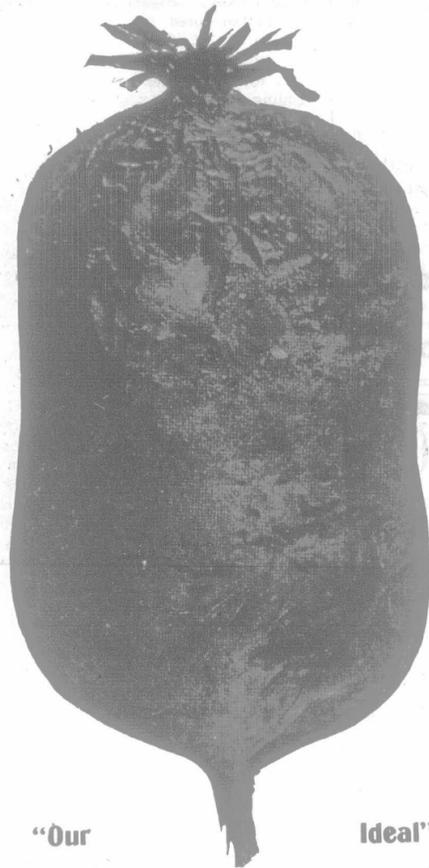
Dyer's Special Prices

THESE prices rule for a few days only. You RISK money by delay. Send NOW for what you want in Dyer fence. Wire, best No. 9 Yclept hard steel, galvanized right. No better wire obtainable. Telegraph your order. Prices are per 16½ feet.

7-48-0, 7 lateral strands, 48 in. high, 9 verticals to the rod, 22½c. per rod NOW.

8-48-0, same as above, but 8 strands, 48-in. high, 9 verticals, 26c. per rod TO-DAY.

9-48-0, same as above, but 9 strands, 48-in. high, 9 verticals, 26½c. per rod TO-DAY.



"Our Ideal"

FARMERS! Buy always the Best

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

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

Yellow Mangel "Our Ideal"

The New Mangel with the greatest future. Easy harvester and keeper of highest feeding value. The largest cropper of all varieties, with a yield of 1,020 bushels per acre. Order to-day, only a limited quantity on hand.

50 cents per pound. Give them a trial.

Ontario Seed Co., Successors WATERLOO, ONTARIO

Our Hurst Sprayers are the best. Ask for Catalogue.

The Best Built Roller

Is the "Bissell," with DRUMS of heavy steel plate, hard in temper, riveted up close, having pressed steel heads.

With AXLES of 2 inch solid steel revolving on cold rolled Roller Bearings.

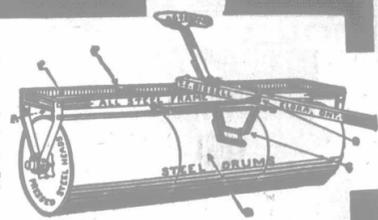
With the MALLEABLE CAGE in one piece, holding the Roller Bearings in line on the axle.

With DRAW BRACKET under the Pole, making the draught down low.

With the FRAME all of steel and the improved steel plate bottom.

You may be told that other Rollers are like the Bissell—but there is only one original Bissell

Roller and to save our customers disappointment, we put our name on every Roller we build. Look for the name "Bissell" and ask Dept W for catalogue describing the "Best Built Roller."



Several styles and a variety of widths to choose from, 6 ft. up to 12 ft. Grass Seeder Attachment also furnished if required. 6c

T. E. BISSELL CO., LTD., ELORA, ONT.

YOU CAN GROW Bigger Crops and Better Crops

on your land if you set about to do this in an intelligent manner. There are three points to which you must give careful and particular attention: Proper Cultivation, Crop Rotation, and the Proper Use of the Right Kind of Fertilizers. To secure best results you must attend to all three of these. No matter how well your land is cultivated, or your crops regulated, unless you use in the proper way the right kind of fertilizers, you cannot secure the best results.

HARAB FERTILIZERS

are the right kind of fertilizers. Made from animal products, they return to the land the plant food which has been taken from it. They are organic fertilizers and for this reason act much more naturally than inorganic or chemical fertilizers. This difference in action can be very well compared to the difference between the action of a food and a stimulant on a human being.

Harab Fertilizers are Foods and will have no injurious after effects. They will not sour your land.

If you have tried other brands and are dissatisfied you will do well to give our goods a trial. They bring results. If you have never tried fertilizers you will be very wise to start now by trying Harab Fertilizers. Write us for full particulars. Our goods are put up as a finely ground powder in 125-lb. sacks. Can be handled without any trouble in an ordinary seed drill or can be scattered by hand. We guarantee our goods to contain the plant foods represented, not only with you, but with the Government.

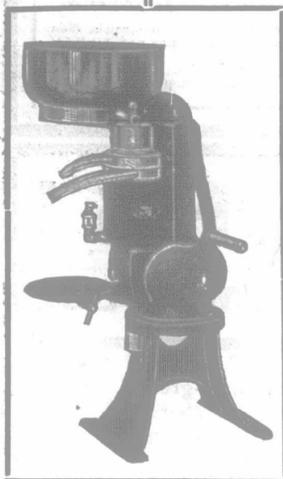
If we have no agent near you we want one. Write us for terms, prices, commission, etc.

"HARAB FERTILIZERS"

are MADE IN CANADA by

THE HARRIS ABATTOIR CO., LIMITED
Toronto, Ontario

Save Time and Energy by Purchasing the Improved



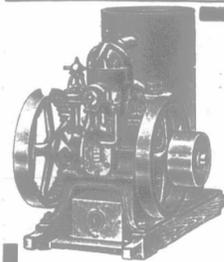
SIMPLEX CREAM SEPARATOR

Twentieth Century methods adopted in construction, large capacity, light running, perfect skimming, under a wide range of conditions.

For catalogue No. 5, apply to:

THE D. DERBYSHIRE CO.
Brockville, Ont.

Or **G. A. GILLESPIE**, Peterborough, Ont.



This Engine Runs on Coal Oil

Every farmer can afford an Ellis Coal Oil Engine. They give far more power from coal oil than other engines do from gasoline. They are safe, as well as cheap; no danger of explosion or fire.

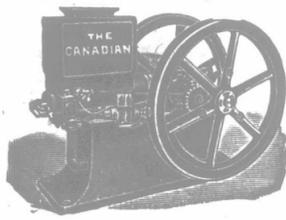
The strongest and simplest farm engine made; only three moving parts: nothing to get out of repair. Anyone can run it without experience. Thousands of satisfied customers use these engines to grind feed, fill silos, saw wood, pump, thresh, run cream separators, and do dozens of other jobs. Cheaper than horses or hired men. Fill up the tanks and start it running, and no further attention is necessary; it will run till you stop it.

FREE TRIAL FOR 30 DAYS. You don't have to take our word for it. We'll send an engine anywhere in Canada on Thirty Days' Free Trial. We furnish full instructions for testing on your work. If it does not suit you send it back at our expense. We pay freight and duty to get it to you and we'll pay to get it back if you don't want it.

Absolutely guaranteed for 10 years. Write for free catalog and opinions of satisfied users. Special offer in new territory.

3 to 15 horse-power
We Pay Duty and Freight

Ellis Engine Co., 94 Mullett Street
DETROIT, MICH.



THE BEST

For every purpose is the CANADIAN ENGINE. Most simple, durable and economical. Sizes, 1 1/2 h.-p. to 35 h.-p.

The Canadian-American Gas & Gasoline Engine Co., Ltd.
Dunnville, Ontario

HOPPER COOLED ENGINE

FROST & WOOD CO., LTD., Smith's Falls, Ont.
Exclusive selling agents for Eastern Ontario, Quebec and Maritime Provinces.

GOSSIP.

In J. A. Caskey's consignment to the Belleville District Holstein-breeders' second annual sale, April 3rd and 4th, will be included a number of richly-bred, high-producing cows and heifers, all bred to the grandly-bred stock bull, Francy 3rd's Admiral Ormsby, whose dam has a seven-day R. O. M. test of 29.16 lbs. butter. See the new advertisement in this issue.

THE BELLEVILLE HOLSTEIN SALE.

The attention of dairymen and farmers in general is directed to the advertisement in this issue of the important auction sale, on April 3rd and 4th, of 175 high-class registered Holsteins, mostly females, contributed by members of the Belleville District Holstein-breeders' Club. This is the second annual sale under the auspices of the above-named organization, and their offering of last year, which was excellent, is likely to be eclipsed by the consignments to the coming sale. If interested, write for the catalogue, and mention that you saw the advertisement in "The Farmer's Advocate."

Wm. Smith, Columbus, Ont., writes: Through our advertisement in "The Farmer's Advocate" we have made the following recent sales of Shorthorn bulls: To John King, of Bluevale, Royal Hero =84499-, by Royal Clare =66772-, dam Daviat Beauty (imp.); Strathbar =61011-, by Royal Clare, and from the good old Strathallan family, went to John Puckrin, Audley; Falkland =81010-, by Royal Clare, was purchased by Thos. T. Sayles, Paris; a white Wedding Gift bull was bought by F. W. Hodgson; another Wedding Gift, Glenallan =81009-, by Royal Clare, goes to Robert M. Allen, of Marlbank; Strathavon =84498-, a Strathallan-bred bull, by Royal Clare, goes to J. W. Hall, Bensfort. I have still on hand Falkirk =81008-, a light roan, by Lord Lavender =70558-, out of Wedding Gift 22nd =52904-. This bull has an excellent pedigree, and is a fine individual, being thick, and evenly covered. He should make a good sire for somebody, and he will be disposed of below his real value. Also, I have three choice September calves, which will be sold now at very reasonable prices, as I would rather not hold them over. In heifers, we have a number to choose from, some of them in calf, and a number of younger ones. Write us for more information regarding these.

THE SHIRE HORSE SHOW.

In last week's issue a few of the awards of the recent London Shire Show were given. Fuller reports have since been received, and we quote from the Irish Farming World: "The best yearling colt was found in Leek Challenger (Sir Arthur Nicholson), the second prize going to Peak Romancer, owned by F. E. Muntz, and the third to Sir Berkeley Sheffield's Bamford King Maker. There were 91 entries in the two-year-old stallion class. Lord Rothschild's Blacklands King Maker, by Blytheland King Maker, was the winner, and the second place was allotted to Mr. Forshaw's Tandridge Coming King, by King of Tandridge. For three-year-old stallions, the first prize went to Monnow Drayman, by Monnow Conqueror, a splendid animal exhibited by John Ferney Hough, of Hereford; Mr. Forshaw's Leonardo, by Leo II., being second. In the four-year-old stallion class, twenty-three very good specimens appeared. The awards were as follows: The Duke of Devonshire's Warton Draughtsman first, the Duke of Westminster's Eaton Nonsuch second. The championships were awarded as follows: Cup for the best yearling, two-year-old, or three-year-old stallion—Lord Rothschild's two-year-old Blacklands King Maker. Cup for the best yearling, two-year-old, or three-year-old filly—J. Bradley's three-year-old Halstead Royal Duchess. Cup for the best adult mare—Sir Walpole Greenwell's four-year-old Dunsmore Chessie. Fifty guinea Challenge Cup for the best mare in the show—Sir Walpole Greenwell's Dunsmore Chessie. Cup for the best adult stallion—The Duke of Devonshire's Warton Draughtsman. Champion Calf, value 100 guineas, for the best stallion in the show—The Duke of Devonshire's Warton Draughtsman."

You Need This Light 'Most Every Night

Indoors—outdoors—in the stables and driving shed—hundreds of times—in dozens of places—you need the

"NINE LIVES" ELECTRIC FLASHLIGHT

with its bright but economical little Tungsten incandescent lamp. Compact, handy, and safe! Easily carried in your pocket or under your arm. Simply press the button and you have instantaneous flash. Can't set fire to anything.

We'll send you "Nine Lives" Electric Flashlight, fully prepaid, Pocket type for \$1.50, Tubular type for \$2.00. It's too convenient to be without—write to-day.

CANADIAN CARBON CO., Limited
96 King St. West Toronto
AGENTS AND DEALERS WANTED

SETTLERS' TRAINS

—TO—
MANITOBA, ALBERTA SASKATCHEWAN

The only through line
LOW COLONIST RATES

For settlers traveling with livestock and effects
Special Trains
Will leave Toronto
Each **TUESDAY**
MARCH and APRIL
10.20 P.M.

Settlers and families without livestock should use
Regular Trains
Leaving Toronto
10.20 P.M. Daily
Through Colonist and Tourist Sleeper

Colonist Cars on all Trains
No charge for berths
Through Trains Toronto to
Winnipeg and West

Ask any C.P.R. Agent for copy of "Settlers' Guide"

Litter Carriers

Hay Carriers
Stanchions, etc.

The two most important questions are **QUALITY** and **PRICE.**

R. DILLON & SON
South Oshawa, Ontario

MOVE TO CHILLIWACK

BRITISH COLUMBIA

On the Sunny Pacific slope, where the winter lasts one month, and where the farmer receives larger returns on his investment than anywhere else in Canada. Write for free illustrated booklet.

Sec'y Board of Trade, Chilliwack, B. C.

25,000 Rods Wire Fencing for Sale

at 25% to 40% cheaper than elsewhere, new, all No. 9 galvanized steel wire, list and prices free. Also belting, piping, etc.

THE IMPERIAL METAL CO'Y
Queen Street, MONTREAL

Elija's Antiseptic Healing Salve

is the best healing agent known for man or beast. Will positively heal old running and new sores, and all skin diseases, piles, etc. For sale mail. Price 35c.; 3 boxes for \$1.00.

J. PROUES, Sandwich, Ont.

CREAM WANTED

at the Guelph Creamery. Business run on the cooperative plan. Write for prices and particulars. It will pay you well.

W. G. Taylor, Guelph.

For the Land's Sake use Bowker's Fertilizers

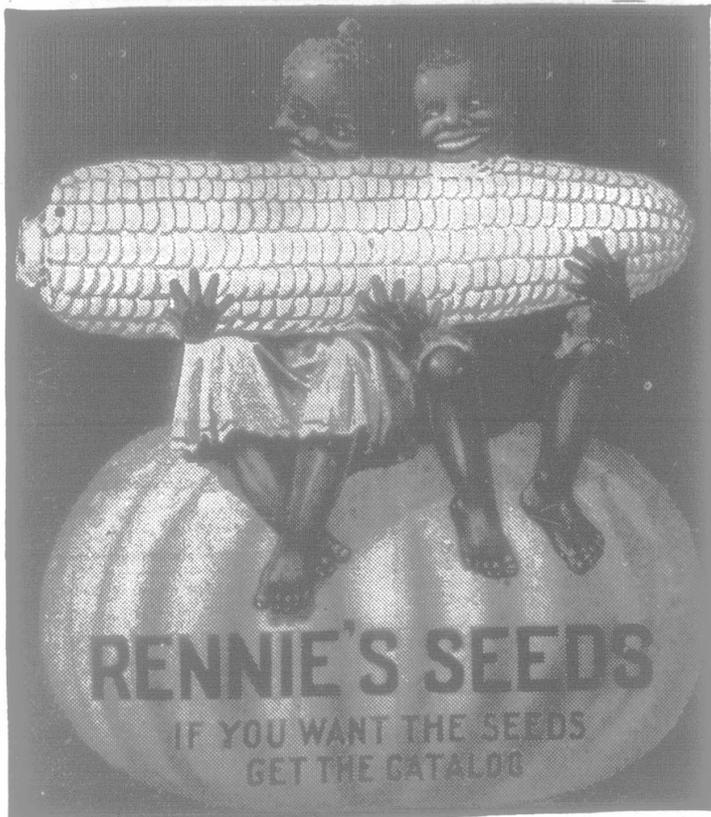
They enrich the earth and those who till it. By the use of a good fertilizer, any farmer can add greatly to his profit through raising bigger crops. He can make each of his acres produce more, or he can cultivate fewer acres, and still produce as much as he is getting now, but with less labor and expense. This is a big item, if hired help is scarce.

We have a fertilizer to fit every crop and every pocketbook. Each one is ready to use, and easy to apply. Our catalogue gives full information and directions. Many years of experience in both Canada and the United States, the best facilities, and prompt service are behind every bag we ship.

If we have no agent near your farm, we want one. It pays to sell as well as use our fertilizers.

Write today for our catalogue and calendar. Both will be sent promptly and without cost. If interested, ask for agency proposition, but write anyway for the catalogue.

BOWKER Fertilizer Company,
77 Lyman St., Buffalo, N. Y.
Original and largest manufacturers of special fertilizers.



**RENNIE'S SEEDS HAVE GOT TO GROW IF YOU GIVE THEM BUT A SHOW
THE FINEST IN THE LAND
WM. RENNIE CO. LIMITED, TORONTO, MONTREAL, WINNIPEG, VANCOUVER**

POLES OF STERLING QUALITY

Michigan White Cedar Telephone Poles
W. C. STERLING & SON COMPANY

Oldest Cedar Pole Firm in Business
Producers for 32 Years
MONROE, MICHIGAN

1880

1912

QUESTIONS AND ANSWERS. Miscellaneous.

TRESPASS BY DITCHING.

A owns a farm backing on B's, and the water lies on A's farm. A dug a ditch and undermined the line fence between A and B, and ran the water on to B, and there is no regular watercourse or outlet of B's farm. The water remains there, making it useless. Can A do this, and what steps should B take to prevent A running the water on to B's land?
Ontario.

Ans.—A has probably rendered himself liable to an action for damages for trespass, and if B cannot arrange the matter with him amicably, he might take such action. But the case is certainly one calling for negotiations rather than litigation, which is, of course, to be avoided, if at all reasonably possible, and especially so when it is a matter between neighbors.

HOTBED.

Would you kindly inform me, through your valuable paper, how to make a small hotbed, without much expense, to start vegetables for a large family?
CONSTANT READER.

Ans.—The hotbed would only be used to start the plants, and a few old window-sashes could be profitably utilized. The usual size of such is six feet by three feet, but this could be altered to suit conditions. In making a hotbed, the material usually used to furnish heat is horse manure which has been piled in a heap until fermentation takes place. Turn the heap once or twice to insure the whole pile becoming thoroughly heated. It may then be placed under the frames in which the plants are to be grown. The manure should be placed about two feet deep, and should extend one foot beyond the sides of the frames. This insures uniform heat in all parts of the bed. Pack the manure well, and place on it six or seven inches of good garden soil. Seeds should not be sown until the temperature begins to fall. After the bed has been made up, a thermometer should be used inside the frame to note the temperatures. Care must be taken to regulate the temperature. If the sun beats directly upon the glass in addition to the manure heat, the plants may be injured. To regulate temperature, raise or lower the sash to give ventilation. Water must be given to avoid drying out in the heat. See articles on pages 374a, of our issue of February 29, 1912, and 423, in the issue of March 7, 1912.

BUILDING A DRIVE-HOUSE.

Kindly give me some points on a drive-house. Have timber at sawmill to be sawed. The building is to be 20 feet by 30 feet, with tool-room in one end. How should doors be made, and give the most feasible roof, with shingles at \$2.50 per thousand, and any other hints available.
J. A. M.

Ans.—This building may be built with 8 x 8 in. sills, 2 x 6 in. studs set on 2-ft. centers, and plates of two thicknesses of 2 x 6 in. scantling, laid with the joints well broken. The joists will be 2 x 8 in., spiked to the studs at a height of 9 feet above the sills, and as the studs may be 10 feet long, this will give quite a lot of room for the storage of lumber, storm sash, etc., in this loft. I would advise the covering of the roof with corrugated iron, laid over 1 x 6 in. strips, on about 24-in. centers. The sides and ends will be best sheathed horizontally, with novelty siding, 5 inches wide, well nailed with at least two nails to each bearing, the ends of the side boarding to run out flush with the outside of the corner stud, and the end boarding to be put on the same. This forms a right angle into which a 1/2-in. quarter-round fits nicely, and finishes the corner in a neat manner. Have the doors continuous across the front, except where a support comes, one of which will be sufficient, and it will be best if the doors are hung so one will slide past the other, so either can be used without opening the other. This is arranged by hanging the rollers of one door close in on the wall, and those of the other out on a scantling to clear the first. The roof will be best with about 9-in. rise to each foot of run.

A. G. G.

FARMERS, FRUIT, AND VEGETABLE GROWERS

WHY ARE YOU IMPORTING PHOSPHATE AND AMMONIA WHICH IS A BY-PRODUCT OF YOUR FARMS OF WHICH YOU ARE EXPORTING MANY THOUSAND TONS ANNUALLY. BONES AND WHICH CONTAIN LARGE QUANTITIES OF PHOSPHORIC ACID AND AMMONIA

KINDLY ANSWER THE ABOVE

PURE BONE MEAL IS THE CHEAPEST FERTILIZER.

THIS PLANT FOOD IS ALL FROM OUR CANADIAN SOILS AND SHOULD ALL GO BACK

SEND FOR PRICES, ETC.

THE W.A. FREEMAN CO. LIMITED
HAMILTON, CANADA

You Need This FREE BOOK

Poultry Experts say it is the most practical, helpful book on poultry raising published.

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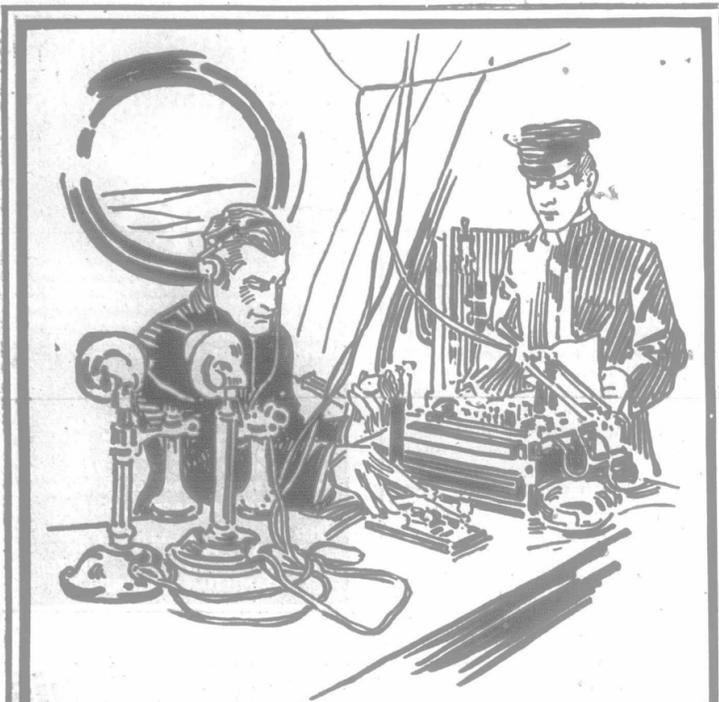
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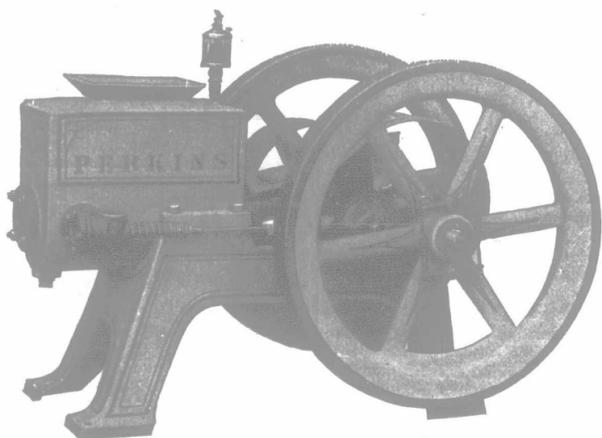
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QUESTIONS AND ANSWERS. Miscellaneous.

ROOFING BARN WITH CONCRETE.

Can you inform me how I can renew the roof on my barn with cement concrete? Could it be done and make a good and lasting roof? Has it been tried by anyone? The barn is a large one, with a half-pitch hip roof. Will be glad to receive any information on the subject.

W. H. L.

Anyone who has had experience that would be suggestive or helpful in this direction is requested to favor the public through our paper.

CROSS-BREEDING — BOILED OATS—PLANTING CORN.

1. Can a person expect to get a good carriage horse from a good Percheron mare and a Standard-bred horse?

2. Is a little boiled grain (oats) good for a mare in foal when not working?

3. Which is the better way to get the most corn to the acre, by planting or drilling, and how far apart should rows be, and how much should be sown or planted to the acre?

J. H. S.

Ans.—1. It is seldom, if ever, desirable to cross heavy and light breeds of horses. It would pay better to breed the mare to a good sire of her own breed.

2. Fed in moderation, they should prove beneficial.

3. Planting in hills will generally give the largest yield of ears, and taken altogether, will generally yield more fodder, ears considered. It also has the advantage of being handier to work planted in rows both ways. Forty to forty-two inches is a good distance apart for the rows. Planted in hills at this distance, and four to five kernels to a hill, requires between a gallon and a peck per acre. A trifle over a gallon will usually do, but where the germination is rather low, more kernels are required in each hill, and so to plant an acre would require more seed. Sown in drills, in order to get an even distribution, nearly one-half bushel per acre is required.

BEAN, CORN AND POTATO QUERIES.

1. What is the best variety of beans to grow for the winter market?

2. What is the average yield per acre?

3. What has been the average price per bushel for this last three or four years?

4. What is the best variety of Flint corn?

5. Mention the earliest and best yielding potato.

R. S.

Ans.—1. There are several good yielding varieties of field beans. Eight varieties have been tested at the Ontario Agricultural College for twelve years, and stand, as regards average yield per acre, in the following order: Pearce's Improved Tree, Schofield Pea, White Wonder, Medium or Navy, Burlingame Medium, Marrowfat, Small White Field, Large White Haricots. Three other varieties, the Red Kidney, New Prizewinner, and Yellow-eyed Marrowfat, have been included in the test of the past four years, yielding in order named, but not so high as Pearce's Improved Tree, Marrowfat, and Schofield Pea varieties.

2. Field beans yield from 15 to 45 bushels per acre. Thirty bushels is considered a good average.

3. The average price per bushel from our own Toronto market quotations has been a trifle over \$2 per bushel for the second week in March during the past four years. Hand-picked are now selling in Toronto at \$2.50 per bushel, and primes at \$2.35 to \$2.40. First-class beans are said to be worth \$2 at the farm at present.

4. It is difficult to state just which will do the best on your soil. Early California Flint has given highest yields at Guelph, and Longfellow, Genesee Valley, Compton's Early, and several others give large yields.

5. Early Eureka, Early Puritan, and Early Fortune, are among the best of the early varieties, while Burpee's Wonder, Early and Rose of the North, are good medium varieties. The most extensive grown potatoes in Ontario are the New Yorker No. 2 and Empire State, while Davies' Warriner, remains, Wonder, Delaware, and a number of several other varieties are also good heavy yielders, but, of course, later.



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A colored man died without medical attendance, and the coroner went to investigate.

"Did Samuel Williams live here?" he asked the weeping woman who opened the door.

"Yassuh," she replied between sobs.

"I want to see the remains."

"I is de remains," she answered proudly.

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QUESTIONS AND ANSWERS.
Miscellaneous.

ONION MAGGOT.

1. What is the best method of combating the onion maggot?
2. What does Mr. Rush use lime and salt for in connection with onion culture, and how does he use it? J. J. T.

Ans.—1. Avoid planting on soil previously infested with the maggot. The maggots prefer carrots to onions, and some plant a little carrot seed with the onions as a decoy, the maggots attacking the carrots and leaving the onions. The late Dr. Fletcher, of Ottawa, recommended the application of carbolic acid emulsion made by dissolving 1 lb. of soap in 1 gallon of boiling water and adding 1 pint of crude carbolic acid. Churn thoroughly with a pump until a creamy emulsion is obtained. Dilute 1 part of the emulsion with 30 of water, and apply around the plants. The first two applications should be four or five days apart, and then once a week for a month. A mixture of carbolic acid and lime is also recommended. Slake the lime, three pints to a gallon of water, and add a tablespoonful of crude carbolic acid. Apply every week with a sprinkling can or sprayer.

2. It is sown about May 24th, as a mixture about six bushels lime to a sack of salt per acre, sown along the rows. Mr. Rush believes that this aids in keeping the fly away.

UNTHRIFTY STEER—GRASS SEEDING.

1. Have a three-year-old steer which we are fattening; has not been doing very well lately, and is only about half fat. He has bleeding piles and two enlargements, one on each of his hock joints; they are quite soft; just where a bog spavin comes on a horse. Have been feeding him corn silage and cut straw mixed with a little chop. What will cure the piles? What are these enlargements, and give a cure?

2. Have a ten-acre field in fall wheat; has been well manured; hay crop on one half last year; millet pasture on the other. Hay crop was first seeding. Field very bad with perennial sow thistle. Want to seed down and take off one crop of hay, and then break up, as we find this is the best method for killing sow thistle. What would you advise seeding to? What is the best method to follow in sowing the grass seed, and at what time? Land black loam, very well underdrained, except one little hollow, which takes a little longer to dry.

T. F. H.

Ans.—1. Piles are not very common in cattle. They are a dilatation of the hemorrhoidal veins, which causes small tumors. They are usually caused by some disorder like constipation, or by very high feeding. Feed the steer moderately on laxative, easily-digested food, and tone up his system by giving a little nux vomica, about two drams at a dose. Scarcify the protrusions, and gently squeeze out the blood. Bathe them with tepid solutions of opium, and astringents as sugar of lead, alum, tannin, or benzoated oxide-of-zinc ointment. Check the bleeding by use of a solution of iron sulphate. Feed him a few roots if you have them. A hot bran mash twice a week might also help to regulate his system. The enlargements on the hocks are likely due to injury from lying down on a hard floor. If this is the cause, they should not harm him much, and should yield to treatment with an absorbent liniment. As the steer is not doing well, there is just a possibility that he may be tubercular. If so, the enlargements might possibly be tubercles. Have him tested if treatment does not prove successful.

2. If you are only leaving the field seeded one year, few better mixtures than red clover and timothy, with perhaps a little alsike, could be used. Sow a large proportion of red clover, and give it a thick seeding to insure an even stand to check the sow thistle. Would not advise sowing less than 8 lbs. of red clover per acre, and more would be better, from 3 to 4 lbs. timothy, and 1½ to 2 lbs. of alsike. Mix the seed, and sow it by hand or with a hand machine, just as the snow is going off in the spring. This will insure its being covered by the soil, which it works its way into during the freezing and thawing and rains of spring.

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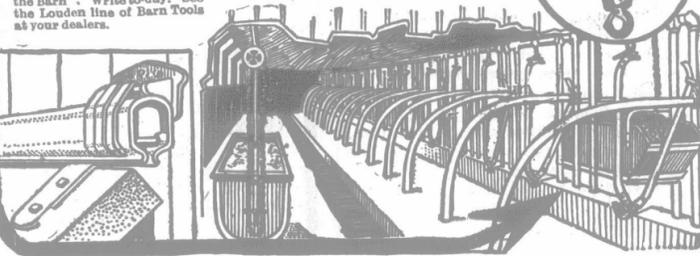
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QUESTIONS AND ANSWERS. Miscellaneous.

ARBOR VITAE KILLED BY CUTTING.

Will an old arbor vitae hedge sprout up from the bottom and do well if it were cut off close to the ground, or would such treatment kill it? What time of year would be best to cut it off?
T. S.

Ans.—Evergreens do not produce dormant or latent buds as deciduous trees do, consequently they will not throw out new shoots when cut back to wood bare of new growth. Cutting back a hedge as you suggest would finish it. This is one of the difficulties in connection with evergreen hedges. Their beauty is destroyed if they have lost their lower branches, and it is impossible to repair them.

STONE POSTS—MEAT SHRINKAGE.

1. I wish to build some stone gate-posts, from each of which two lines of heavy wire fences will run at right angles. I thought to dig a hole about three feet square and five feet deep, and fill to near the top with a weak mixture, 1 to 8, of cement and rough stone, then lay on dressed stone, bound with strong mortar. Would I need heavy wires in the lower half? Would that size post look well? Would these heavy posts need braces? How could wire be attached? Any information will be appreciated.

2. In cooking 100 lbs. of beef or ham, what per cent. shrinkage is there?
R. G.

Ans.—1. If properly set before the fence is tightened, such posts would likely stand, if well built, without braces. However, would advise the use of heavy wire to bind them in construction, and to make a thorough job, bracing would also be advisable. They should look very well the size mentioned. Iron pins, or staples, could be built into the posts to fasten the wire on.

2. This depends to some extent upon the meat, how, and for what length of time cooked, and many other factors. Try an experiment, weigh out ten pounds, cook it, and weigh it again.

THIN-SHELLED EGGS—PROPORTION MALES TO FEMALES, ETC.

Hens are fed mixed grain in the morning buried in a deep litter, at noon they are given cooked peelings and a raw cabbage. At night are fed mixed grain as much as they can eat just before going to roost. They have oyster-shell and grit before them always, and are given a piece of meat scrap every other day. They have a well-lighted, well-ventilated house, with plenty of coal ashes to dust in. The last two weeks they have laid thin-shelled eggs, and every day one or two are broken in nest.

1. How can they be made to lay harder shells?

2. What would cause them to go lame for about a day and then be all right?

3. How much would a portable colony-house, 10 x 12 feet, cost?

4. How many hens should be with every rooster in breeding season?
R. W.

Ans.—1. We wish we could tell you. We would like to know the answer ourselves. We have been having the same trouble lately under very similar conditions. The only explanation we can offer is that the long, hard winter, has limited exercise, and at the same time deprived the fowl of certain elements they are accustomed to find in foraging. One might suppose the oyster-shell would supply the lack, but we find the egg shells are brash even when moderately thick. We have commenced feeding plenty of green cut bone in the hope of improving matters. Skim milk might also help.

2. Possibly slight attacks of rheumatism.

3. Ours, 8 x 12, cost \$50 apiece, counting labor. Less neatly finished ones, 10 x 12, could be built for the same money, or less. Be careful, though, or your houses will not be portable. One 8 x 12 is heavy enough for a good team to move on dry ground.

4. In confinement, about 12 of the Mediterranean breeds, and 8 or 9 Rocks outside, 20 to 25, and 15 to 20.



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To B. D. H. B. Second Annual Consignment Sale, April 3rd and 4th, 1912, will be Clintonia Hartog De Kol 3rd, whose dam has an A. R. O. record of 42 lbs. of butter in 7 days, and 130 lbs. in 30 days. She herself has a 2-year-old record of over 17 lbs. of butter. Due to freshen after sale. Dolly Inka De Kol, butter, R. O. M. 7.4, 30 days, 30 lbs. 3/8. Dam of Dolly Echo De Kol, butter, 25 7/8. Sister of daughters. Their consignment and reservations. All of the above bred to Francys 3rd's Admiral Ormsby, whose dam has a record of 25 lbs. of butter in 7 days.

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QUESTIONS AND ANSWERS.
Miscellaneous.

FEEDING BRAN.

What is the most profitable method of feeding bran? We have used it by scalding and mixing with water. We have also mixed it with cold water only, and would like to know whether it would be as well fed dry as either of the above-mentioned methods, and what would the difference as to value be in the three methods?

J. C.

Ans.—The question does not state to what class of stock the bran is being fed. Ordinarily, fed to horses or cattle, it can be used in the dry form, most profitably mixed with other chopped or whole grains. For pigs, moistening or soaking might be profitable, but bran is little used for pig-feeding on account of its somewhat coarse, fibrous nature. When given to horses once or twice a week as a mash with scalding water, bran acts as a mild laxative, and if fed for this purpose, scalding should be practiced. As a regular feed, however, there is nothing to gain by scalding or wetting for horses or cattle.

CEMENT MILK-COOLING TANK.

I am intending making a cement tank for cooling our milk (with ice). Talking over the matter with a neighbor, he advised me not to make a cement tank, but a wooden one, as, he says, the cement wastes the ice. I don't understand how this can be, and shall be obliged if you can give me any information on the subject.

K.

Ans.—Cement concrete is a good conductor of heat, which is to say a poor non-conductor. The heat of the air surrounding the tank quickly passes through the tank wall and warms the water inside, which in turn melts the ice. We are not sure, however, that a tank constructed of two-inch plank would be much more effective than one made of concrete six inches thick, and well-constructed concrete has certainly a great advantage in point of durability and freedom from leakage. If thought necessary to reduce waste of ice, the cement tank might be surrounded with a jacket of wooden sheathing, or it might be constructed with an air space by the use of a collapsible or wedge-shaped removable core.

ROUP—DOES SCREECH OWL
EAT EGGS?

1. I have seventy hens in a good, fresh-air henhouse, divided into two apartments. I have kept the house perfectly clean, and it is dry. The hens have been in the best of health, and have all been laying with the exception of half a dozen. A short time ago I procured a cockerel, putting him with the hens in one of the apartments. He immediately showed symptoms of a disease which I think is roup. I removed him, and in a short time a dozen of the hens in the one apartment showed the same symptoms. I also removed them. Water runs from the eyes and mouth, the eyes and throat swell, and some rattle in the throat. I am doctoring for roup. Is it roup? What is best to do for the sick, and also to prevent the others from taking it? If fowls do recover from roup, is it advisable to breed from them and use the cockerel?

2. When a screech owl spends its time in the barn, does it claim eggs for its food, as well as mice?

A SUBSCRIBER.

Ans.—The trouble is roup. It will certainly spread among a flock. Keep diseased from healthy fowls. Very likely it will be best to kill and burn all affected ones. Some call the disease swelled head or eyes. It comes, in all probability, from a cold. If you wish to treat the sick birds, each bird should be given a teaspoonful of dry salts. Experts advise following with a pill morning and night, containing 2 grains of quinine. Bathe the heads of the birds with a weak solution of any of the commercial roup cures, or a five-per-cent. solution of potassium permanganate, or a Seiler's tablet dissolved in a cup of water. For the well fowls, add to the drinking water a little Stockholm tar, or a dessertspoonful of Epsom salts to a gallon of water. Disinfect all the roasts, nests, and houses, using white-wash freely, to which has been added five per cent. of carbolic acid, or some other disinfectant. Even if cured the birds should not be used for breeding.

Does any reader know?

"Here is my Letter to You. It is Worth One Thousand Dollars"

DEAR FRIEND:

If you're going to buy a horse, you look at his feet. But if you buy a building, you look at the ROOF last. A horse isn't worth more than his feet, and a building isn't better than its roof.

I want you to roof right. I want you to get the right stuff from me at the right price. I want to make your roof a good deal better than your building, because then you'll get everything out of the building that it can give in shelter, protection and proper storage. The right roof does more than anything else for any building.

My Oshawa Shingles have taken 50 years of my thought and time and invention. It was hard work. I tried to make a perfect shingling. I worked for years to get just the right kind of metal to last longest. I worked to get the easiest and best lockjoint that ice couldn't pry open. I worked and estimated hard to get a roof neither too heavy nor too light. I worked for a time-proof shingling. I have got it for you. It will last 100 years.

When you use this Oshawa Shingle of mine what do you get? First, you get a shingle so good to-day, that it gives perfect service. It suits any building. It meets every kind of need for a roof at low cost and with long service. Second, you pay a moderate price. This is because many buyers unite on using my Oshawa Steel Shingle. The Canadian Government Bernier Arctic Expedition used my shingle against Arctic ice and blizzards. The North-



West Mounted Police use it, another Government proposition, against Arctic snow on permanent construction. The West Indies uses it against terrific heat and rain. You find it in Japan because it stands earthquakes. My Oshawa roofing is on the farms of South Africa. Here is ONE roof that is perfect in every climate in the world from Arctics to Tropics. World sales are my reward for high quality. Third, you have a roof that is easy to lay and lay right. You can lay it and lock it yourself. It will not leak nor burn. It is lightning-proof.

But I want you to pry into every detail of my proposition first. I want you to know it is right. I will send you this book of mine, "ROOFING RIGHT," if you send me a post-card. I have sent thousands of them out, for they have useful hints on planning barns and houses. The book is worth money to you, and if it leads you to use my Oshawa Shingles, the roof will be protecting your barn one hundred years from now.

Send for this book of mine now, to my nearest address below. If you are about to build a barn, it may have a hint or new idea worth \$1,000 easily to you, even if you do not buy a roof. If you do get a Pedlar Roof from me, you get double or triple service from the building. I will be looking for your enquiry.

Yours truly,
(Sgd.)

G. A. Pedlar

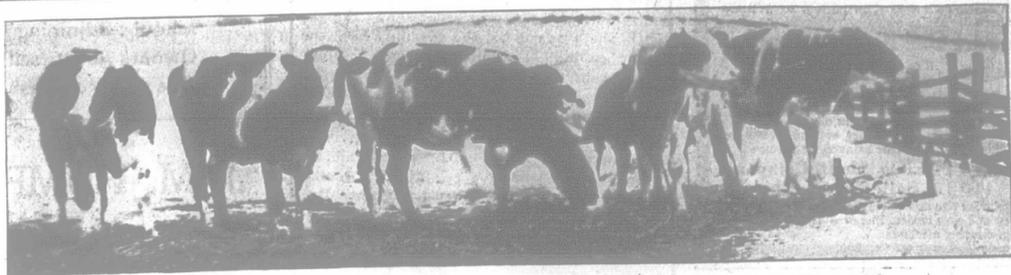
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Mix two cups of granulated sugar with one cup of warm water, and stir for 2 minutes. Put 2½ ounces of Pinex (fifty cents' worth) in a 16-ounce bottle; then add the Sugar Syrup. It has a pleasant taste, and lasts a family a long time. Take a teaspoonful every one, two or three hours.

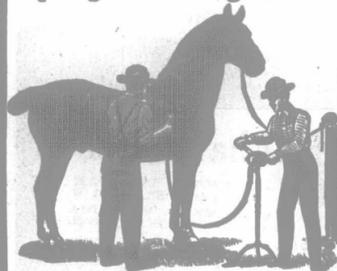
You can feel this take hold of a cough in a way that means business. Has a good tonic effect, braces up the appetite, and is slightly laxative, too, which is helpful. A handy remedy for hoarseness, croup, bronchitis, asthma, and all throat and lung troubles.

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No way to do it so easy, so quick or so well has ever been devised as with a

Stewart Ball Bearing Clipping Machine The price of this splendid \$9.75 machine is only

at your dealers direct. It is used in every civilized country, has all file hard cut steel gears, enclosed, protected and running in oil.

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Clydesdale Stallion for Sale—Prince Charles (12573), foaled June 12, 1910; dark bay and stripe; weight, 1,250 lbs. An all-round good horse, full of life and quality. Will be sold worth the money. Write, or come and see.

JOS. W. HOLMAN, Columbus, Ont.
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For Sale: Imp. Clydesdale Stallion (4785) (12697) S. S. B., Prince Cairnbrogie, Show horse. Good stock getter. Sired by Prince Thoma*. Can be seen at **Allan Baker's Greensville P. O., Ont.** Dundas sta., G. T. R., 1 mile.

QUESTIONS AND ANSWERS.

Miscellaneous.

POTATO SPRAYING—TWIG BLIGHT.

1. Which is the best way to spray potatoes for the blight? Have the sprayer rigged so as it will spray direct down and on both sides of the row, or would one nozzle spraying direct down on the tops do as well?

2. Our apple trees have some sort of a disease which attacks them along about the first of June, and continues till September. It works mostly on the fruit spurs and water sprouts, the leaves turn brown, and then the wood dies. It seems to cut the sap off all the way around the limb. Could you tell me what this is, and a cure for it?

J. M.

Ans.—1. It makes little difference as long as the entire top is covered with the spray material. The method you are following is more likely to make a complete job.

2. The trouble is twig blight, fire blight, or pear blight. Young shoots and water sprouts are most susceptible to attack. The disease is a bacterial one, the spores entering the shoots through injuries from pruning, shot-hole borers, aphids, etc. All diseased shoots should be cut out and burned. The instrument used in cutting should always be disinfected with a strong solution of corrosive sublimate or copper sulphate. Always cut back at least one foot below the apparently affected area. Where infection is very bad, even the entire tree should be exterminated. Plant resistant varieties, prune, and fertilize carefully, as too much of either increases the tendency to the trouble.

PIG, SHEEP, POULTRY AND FENCING QUERIES.

1. Sow last fall had six live pigs and five dead ones, which were full size. Could you suggest any course or treatment?

2. What is the cause of wool coming out of sheep in winter? Sheep have been fed on hay; no grain.

3. Hens began to lay first of February, and got up to 20 eggs a day; now they have stopped. The feed and care is the same. What is the cause? Have been feeding wheat most, with sometimes buckwheat mornings and corn at night, with rolled oats and bran at noon, sometimes dry and sometimes wet with warm water and some pepper. Am giving oyster-shell, and carrots or apples for green feed.

4. What is best to dust sitting hens with?

5. Will a fence-post stand any longer with the top end in the ground than the other end? Is there any way to prevent them from heaving up in spring?

H. A. K.

Ans.—1. Overfeeding, or not feeding enough, and lack of exercise, may have had something to do with the trouble, or it may have been due to injury of some kind. Sows should be fed fairly liberally, should not be allowed to become over-fat, should have some green feed or roots in their diet, and should get an abundance of exercise.

2. Some skin disease may cause the wool to loosen, or it may be due to the sheep being infested with ticks or lice. Would suggest that in future you dip your sheep before placing them in winter quarters, and a little grain and a few roots might be profitably added to the hay ration.

3. It is not possible for us to state what has caused the hens to stop laying now. The time is at hand when most hens lay well. Give the hens sour milk to drink, and see that their pen is free from drafts and dampness. Give as much range as possible during the warm days of spring.

4. Try one of the proprietary insect powders.

5. We don't think so. Correspondents have cited cases where posts have been planted either way, and one lasted as well as the other. Plant below the frost. In wet places, it is often advisable to insert a piece of scantling about three feet long in a notch near the bottom of the post and set it firmly. This will, to some extent, prevent heaving.

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Tin makes a good roof if you paint it.

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Even paper makes a good roof if you paint it.

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On a painted roof, the paint is what gives the real protection. The rest of it has no function except to provide a smooth unbroken surface with no seams or cracks, to which the paint can be applied. Anything which has strength enough to keep the wind from blowing it away or the rain from beating it in, will be waterproof if you use paint enough.

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PLEASE MENTION THE ADVOCATE.

QUESTIONS AND ANSWERS. Miscellaneous.

STABLING CATTLE.

A leases a farm from B. A is not allowed to move any straw off premises. There is not sufficient room in stables for A to house his young cattle. Can A turn his young cattle in on barn floor and feed them there? There is nothing mentioned in the lease to the contrary.

W. S. F.

Ans.—Yes; so long as they are not liable to do serious injury to the proprietor's property.

PROTECTION FROM WIFE'S DEBTS.

1. To what extent does a man advertise his wife that he may not be responsible for any debt she may contract?

2. Also, if she were advertised in one locality and the family were to move to another locality, would she have to be advertised there also?

Ontario. ENQUIRER. Ans.—1. There is no hard-and-fast rule governing it. But it must, of course, be reasonable.

ONIONS AND POTATOES IN SWAMP.

Will onions and potatoes grow in the swamp? All the brush has been cleared off, and the ground is strewn with rotten or dead wood. Would it be necessary to clear off this dead wood before planting the seeds?

Ans.—I would say that I see no reason why onions and potatoes could not be grown on this swamp if it is at all well drained. Of course, drainage is a thing which must be carefully attended to. As regards the dead or rotten wood, I would say that if there is much of it, it would be better removed.

A. H. MacLENNAN.

HAVING A REVOLVER.

I understand there is a law governing the sale and use of firearms (I mean revolvers). I also understand that a permit must be obtained to buy or carry or use these firearms. As I must obtain one for the safeguarding of my home, I applied to the Chief of Police, also to the Magistrate of our County, but neither seems to be able to find any clause governing that law. Could you kindly inform me of the law on this matter; also the book and page it is written in?

Ontario. Ans.—The matter is governed by the Criminal Code (Revised Statutes of Canada, 1906, C. 146, S. 118—Vol. 4, p. 2450). If you keep the revolver in your dwelling-house or shop, merely, you do not require a "permit"—that is to say, a certificate of exemption from the operation of the section.

PERMANENT PASTURE IN NEW BRUNSWICK.

Have a piece of clay ground not in very good heart, and owing to location cannot fertilize and crop as part of farm. Was thinking of using commercial fertilizer and seeding with Bromo grass to make permanent pasture. Clover does not do well on this ground on account of freezing out during winter. Will Bromo alone be all right, or should other grasses be used also? If so, what kinds, and what quantity per acre?

F. H. M.

Ans. On piece of land in question, would not consider it advisable to use Bromo grass, since Bromo grass is better suited for dry rather than heavy, wet land. Would advise getting field in good condition by growing hoed crop of some description before seeding down. Then seed down with nurse crop of oats sown at rate of about two bushels per acre with following mixture: Timothy, 6 lbs.; red top, 10 lbs.; orchard grass, 3 lbs.; Dutch clover, 2 lbs.; alsike 4 lbs., and red clover, 2 lbs. per acre. When seeding down, apply land plaster at rate of 200 lbs. per acre, to be harrowed in at the same time as harrowing in grain, or if seeder is used, then apply land plaster before seeding. This mixture will make a most satisfactory pasture, satisfactory as to quality and quantity, provided the land has been got into good heart before being seeded down. The land plaster will help the grass to get a start, and the application of a small amount of mixed fertilizer rather high in nitrogen, in say three years, might help the pasture to retain its freshness. J. H. G.

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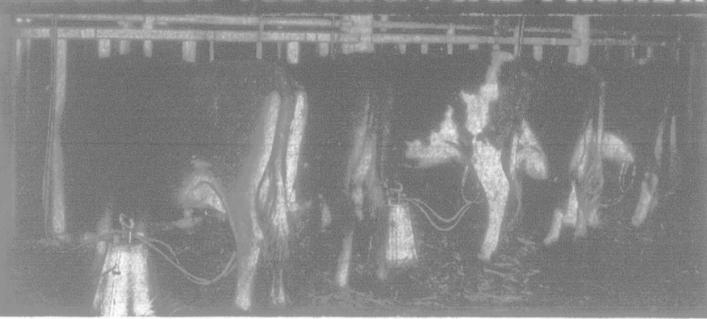
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GOSSIP.

ANOTHER BIG SEASON'S TRADE IN CLYDESDALES.

Smith & Richardson, of Columbus, Ont., have, as usual, had a remarkably good year's business in Clydesdales. The high standard of excellence characteristic of the horses and fillies imported by this firm is well known, hence the splendid connection they have attained from one end of the country to the other. They have still a limited number on hand of both stallions and fillies, among which are some of the best of last year's importation. Look them up before placing your order.

THE S. MACKLIN HOLSTEIN SALE.

Following are a few of the many high-class cows to be sold at the big dispersion sale of the famous Elmdale Holstein herd of S. Macklin, of Weston, Ont., on Tuesday, March 26th. Delta Gem, seven-day butter record 20.44 lbs., milk 433.5 lbs.; Mol De Kol, 20 lbs. butter, 554 lbs. milk. This cow is a Toronto winner, and her dam has the phenomenal milk record of 104 lbs. a day. Van-friesland Lady Inka, two-year-old record 14 lbs. She is a granddaughter of Pietertje Hengerveld Count De Kol, who has over 100 daughters in the A. R. O., eight of them with records that average over 30 lbs. each, and three grand-daughters with records that average over 28 lbs. Aaggie Grace Ameke, 14 lbs. at three years, and her dam 14 lbs. as a two-year-old. Manor De Kol Cora Grace, record at three years 15.75 lbs., dam's record 17.68 lbs. She is a daughter of Aaggie Grace Sir De Kol, who has 31 A. R. O. daughters, and has 36 A. R. O. sisters, and his dam's record for seven days is 23.51 lbs. Two daughters of this cow will be in the sale, got by the present stock bull. Beauty De Kol's Clothilde, as a two-year-old, five months after calving, made in seven days, 10 lbs. She is a Toronto winner, and her dam, Emery Beauty, won the dairy test at Toronto, Ganouque and Ottawa, beating such renowned cows as Helena Burke and Korndyke Queen. Others to be sold are Toronto winners of first prizes and championships, many of them in the official records. A number of two-year-old heifers due to freshen before the sale will be officially tested. All the cows will be in calf to the present stock bull, and his daughters to a bull whose seven nearest dams have records averaging over 27 lbs. in seven days. Individually, the herd is up to a high standard, the peculiar wedge shape so characteristic of the great producers in dairy cows is well exemplified throughout the herd, they are big, strong constitutioned, and in the best possible condition, and will surely please visitors from a distance. Remember the date, Tuesday, March 26th, the day following the big sale at Bronte.

QUESTIONS AND ANSWERS.
Miscellaneous.

MUNICIPAL PERQUISITE—WARD APPROPRIATIONS.

1. Is it legal for a Municipal Council to pay for a copy of the Municipal World for each member of Council; also for Clerk and Treasurer, seven copies in all, out of the township funds?
 2. If not legal, what proceedings would be necessary to take to have it refunded, and by whom?
 3. Our Council early in the year pass a resolution that each Councilman may spend, say, \$1,000 or \$1,200 (as the case may be) in his division, where and as he likes; then, at Council meetings, you pass my account and I will yours, seems to be the order. Is this the proper proceeding (or what is) for a Council to take in granting monies? Ontario. RATEPAYER.
- Ans.—1. We think not.
2. An action might be brought by a ratepayer of the municipality, suing on behalf of himself and all the other rate-payers.
3. The practice is common, and does not appear to be illegal. In a particular instance it may work out unsatisfactorily, but we cannot say that it is illegal in principle.

Stallions! Stallions! Stallions!



THE first chance and the last chance this season for you, Mr. Percheron Stallion Buyer, to get the goods at the lowest price on record, considering quality; and as I am cleaning out to make room for new importation, I am offering your choice of six perfect horses at **unheard prices.** Providing you come here and take a look. It will pay you to come 2,000 miles to see me on this offer. Remember, I stand on past performances, and I have a record not to be ashamed of. **I have the goods, don't forget that,** and if you are thinking of buying a horse, don't overlook me. Here is an offer: Come here, take a look, if you don't buy I will pay your way one way, if you do buy I will pay your way both ways. If you have money or credit you can take home the best horse in Canada for the money. Remember, I have the big horses.

JOHN HAWTHORNE, Simcoe, Ontario

SAVE-THE-HORSE

OUR LATEST Save-The-Horse Book—Is our 16 Years' Experience and DISCOVERIES—Treating 87 Horses for Ringbone—Thoropin—SPAVIN— and ALL Shoulder, Knee, Ankle, Hoof and Tendons Trouble—It is a Mind Settler—Tells How to Test for Spavin—What To Do for a Lame Horse.

IT COVERS 58 FORMS OF LAMENESS—ILLUSTRATED
NOTE THE WORK THIS HORSE DOES IN FIVE DAYS.
Mr. R. H. Williams, of Sykesville, Md., Jan. 13, 1912, writes: "Troy Chemical Co., Binghamton, N. Y.—Have used Save-The-Horse five days; it is wonderful. The horse was unable to put heel to the ground, when walked she would barely touch toe and then jump with other foot. I gave first treatment Sunday. I put her in team Thursday and went for load of wood; got in place where they had to do their best or stay there. She lifted as hard as ever I saw her. Expected to see her lame next morning, but she was not. How long shall I continue to treat her?"

WE Originated the Plan of—Treating Horses by Mail—Under Signed Contract to Return Money if Kennedy Fails. Our Charges Are Moderate. But first write describing your case, and we will send our—BOOK—Sample Contract, and Advice—ALL FREE to (Horse Owners and Managers—Only)—PUT HORSE TO WORK AND CURE HIM NOW. Write! AND STOP THE LOSS.

Address—TROY CHEMICAL CO., 148 Van Horn St., Toronto, Ont., and Binghamton, N. Y.

Druggists everywhere sell Save-The-Horse with contract or sent by us Exp. prepaid.

Toppers in Clydesdales at Markham, Ont.



I have sold more Clydesdales in the last four months than I ever did before in the same time. Why, because I can show more good horses than any other man in Canada. I have some crackers left. Come quick if you want the best the breed produces. No man can undersell me.

T. H. HASSARD, Markham, Ont.
Markham, G. T. R. Locust Hill, C. P. R.

For Sale ONE EXTRA FINE Clydesdale Stallion
Four years old, by Benedict. He is a beauty and sure foal getter. AND TWO TWO-YEAR-OLD STALLIONS. VERY CHEAP.
Willowdale Stock Farm, Lennoxville, Quebec

Clydesdale Stallions and Fillies



Our past record for many years in the leading show-rings of Canada and in the yearly increase in volume of business is our best recommendation. This has been our best year. We have still some of the best of last year's importation in both stallions and fillies. We solicit your trade and confidence.

SMITH & RICHARDSON, Columbus P.O., Ont.
Brooklin G. T. R. Myrtle C. P. R. Ottawa C. N. R.

Clydesdales, Stallions and Fillies, Percheron Stallions
My 1911 importation have arrived—20 Clyde stallions, 18 Clyde fillies, 6 Percheron stallions. I have many winners at Old Country shows. Big, choice, quality stallions and mares, bred from the champions, and the best Percherons in Canada. Prices right.
Long-distance 'phone. T. D. ELLIOTT, Bolton, Ont.

Mount Victoria Stock Farm, Hudson Heights, P. O.
We have for service this season the Champion Imp. Clydesdale stallions Netherlea, by Prince of Blacoe, dan by Sir Everard; also Lord Aberdeen, by Netherlea, and the Champion Hackney stallion Terrington Lucifer, by Copper King. For terms and rates apply to the manager. T. B. MACAULAY, Prop. ED. WATSON, Manager.

IMPORTED CLYDESDALES
I have for sale mares and fillies, from foals up to 5 years of age; richly bred and big in size; a number of them in foal; matched pairs, the kind to make you money. They will be sold at prices that defy competition.
L.-D. 'phone. ALEX. F. McNIVEN, St. Thomas, Ont.

16 Clydesdale Stallions and Fillies
5 years and under. Some winning in Scotland and Canada. Bred from such noted sires as Hiawatha, Everlasting, Prince of Carruthan and Baden Powell—horses that will make a ton, with quality. Prices right. W. B. ANNETT, ALVINSTON, ONTARIO
Watford station, G. T. R., 30 miles west of London.

BIG QUALITY CLYDESDALES
We have them on hand imported this year, Stallions and Fillies, and of them winners, the best blood of the breed, with size, character and quality. There are none better and no firm can sell cheaper.
R. NESS & SON, Hawke, Que.

Imp. Clydesdale Stallions of Size and Quality
Our latest importation of Clyde stallions include some of the best 1st prizewinners in Scotland. We have them from one year old up to 5 years of age; big, flashy quality fellows, full of draft character. Our prices are the lowest for the quality. Terms the best.
L.-D. 'phone. CRAWFORD & McLACHLAN, Toronto, P. O. and Sta.

A Few Choice Clyde Fillies
I am offering several of the best, particularly well bred sires and dams. Also one stallion colt of 1911, imp. sire and dam. They will make the money.
HARRY SMITH, Hay P.O., Ont. Exp. 'phone. L.-D. 'Phone.

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No other engine so easy to "manage"—no other does so many kinds of work with so little bother.

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The Barrel

Every Shot a Kill

of a shotgun has more to do with results than the owner's aim. Unless it's bored exactly right, and unless the steel is of the finest quality, there's sure to come a time when it simply "pours" out the load, instead of concentrating the shot in the compact mass that spreads out evenly and makes a kill a certainty.

But it's not only the barrel that makes the

Tobin Simplex Gun

the choice of those who know. The trigger action firm, and yet so quick that there's never the suggestion of a "drag"; the perfect balance, that makes sighting a matter of instinct instead of effort; the hand-carved stock, modelled just right for grip and shoulder, and the Tobin dulled sight-rib that does away with the aim-disturbing glare from polished metal. These are Tobin features that count. We guarantee satisfaction.

Priced from \$20 to \$210. At your dealer's, or send for our new catalogue. It has news for sportsmen.

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Woodstock, Ont.



COLD IN HEAD CATARRH INSTANTLY RELIEVED BY THE OLD DR. MARSHALL'S CATARRH SNUFF

25¢ AT ALL DRUG STORES OR SENT PREPAID BY C. H. KEITH, CLEVELAND OHIO

Balmedie Aberdeen-Angus I am offering for sale young bulls and heifers of the highest types of the breed. Show stock in show condition a specialty. Bred on the most popular lines. **Thos. B. Broadfoot, Fergus Sta., Wellington Co., Ont.**

Angus Bulls for sale—If you want a nice young Angus bull at a reasonable price enquire of **J. W. BURT & SONS** Aberdeen Farm Coningsby, P. O., Ont.

Aberdeen = Angus

Now is the time to buy a bull; eleven for sale; also females any age or price. **WALTER HALL, Drumbo station, Washington, Ont.**

Calves Raise them without milk. Booklet free. **CLOUGH & CO., Leestonville, Que.**

GOSSIP.

A NICE OFFERING OF CLYDESDALES

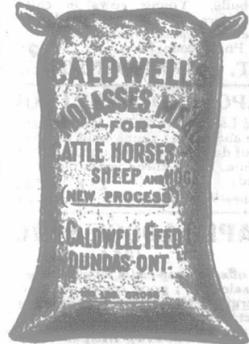
For the first time, Harry Smith, Hay, Ont., is offering for sale some choice Clydesdale fillies and one stallion foal, the produce of his splendid pair of brood mares, Imp. Black Pride, by Imp. The Rejected, dam by Prince of Kyle, tracing to Darnley and Prince of Wales; Imp. Maggie 4th of Boreland, by Sir Edward. Out of the first-mentioned dam is a black filly, rising two years, by the noted sire, Imp. Prince Romeo, by Prince of Wales. This is an extra good filly, big and smooth, with an exceptionally choice set of underpinning. She will make a show mare. Another, out of the same dam, is her last year's foal, a right nice filly, by the champion Canadian sire, Imp. King Thomas. Springhurst Princess 25220 is a brown, rising three years, a daughter of Imp. Maggie 4th of Springhurst, and sired by Imp. King Thomas. She is a topper filly, has size, character, conformation and quality, and has five numbered dams. Out of this same dam is a stallion colt, rising one year, sired by Imp. King Thomas. This is a big, toppy, rangy colt, on grand legs, ankles and feet. He will make someone a big, choice stallion. Dollie Wolseley 25541 is a brown, rising four, sired by Imp. Lord Wolseley, dam by Imp. Joe Anderson. She is a mare with lots of character and strength of bone, compact in build, but not too big; a right useful mare, that should breed well. Mr. Smith is overstocked, and will sell these worth the money, and they will surely be money-makers for their future owners. The farm is only about one and a half miles from Exeter Station, G. T. R., north of London.

COWS TO BE SOLD AT THE GREAT OSLER SALE.

Among the many high-class cows to be sold at the big Holstein and Clydesdale sale of E. F. Osler, at Bronte, Ont., on Monday, March 25th, are such well-bred ones as Rose Rattler, with a seven-day record of 24.19 lbs., and a thirty-day record of 99.59 lbs. One of this cow's daughters has a two-year-old record of 15.48 lbs. butter, and in one year gave 14,401 lbs. of milk, and at her next freshening made a record of 17.58 lbs. The dam of Rose Rattler has a record of 22.23 lbs. Winnie R. Calamity Posch, record 21.12 lbs., R. O. P. yearly record 14,324 lbs. milk and 589 lbs. butter, dam's record 17.55 lbs., sire's dam 51.1 lbs. This cow is a granddaughter of the famous cow, Calamity Jane. Dirkje Pel Burke, record 19.98 lbs., dam's record 22.41 lbs., sire's dam's record 25.45 lbs. This cow is a granddaughter of De Kol 2nd's Butter Boy 3rd, with 102 A. R. O. daughters, and 51 A. R. O. sons. Almeda Leucke De Kol Artis, two-year-old record 12.65 lbs., dam's record 21.70 lbs., grandam's record 19.81 lbs. Her grandsire has 56 A. R. O. daughters, three of them with records over 31 lbs. Dione Korndyke, record 16.51 lbs. as a four-year-old with three teats, dam's record 22.22 lbs., sire's dam 24.41 lbs. Her sire has 50 A. R. O. daughters, one with over 31 lbs., and two over 29 lbs. The grandam of this cow on her dam's side has a record of 21.73 lbs. De Kol Mantell 3rd, two-year record 16.08 lbs., dam's record 21.73 lbs., sire's dam's record 20.18 lbs., and her dam 22.83 lbs. Beauty Hark 2nd, two-year-old record 12.30 lbs., dam's record 20.07 lbs., grandam's record 16.89 lbs., and great-grandam's record 16.84 lbs. The dam of this cow is a granddaughter of Paul Beets De Kol, with 99 A. R. O. daughters and 27 A. R. O. sons. These mentioned are illustrative of the high-class breeding characteristic of the entire lot, many of the others having records up to 20 lbs. and over. The cattle will all be in fine condition, and if there is any known fault with any of them, it will be announced when the animal comes in the ring. Conveyances will meet morning trains at Bronte G. T. R. station, and will meet the radial cars from Hamilton every hour at the Bronte stop.

7 Gallons of Molasses to Make 100 Pounds

It requires seven gallons of pure cane molasses to make 100 lbs. of CALDWELL'S MOLASSES MEAL. In other words, the meal consists of 80 to 84 per cent. pure cane molasses. Yet the manufactured meal costs you less than you would pay for raw molasses at the grocer's. That's proof positive of its high quality and great economy.



Caldwell's Molasses Meal

is the most convenient and most efficient form in which molasses can be fed to your horses, cattle, sheep and hogs. Leaders in the live stock industry are buying it by the wholesale. You can do the same, and save largely. Fill in, clip and mail the coupon, and full information will be sent to you promptly. The feeding booklet you'll receive will alone amply repay you for sending the coupon to-day.

CALDWELL FEED COMPANY, LIMITED
Dundas, Ontario

CUT ALONG HERE

Please send me your booklet and full particulars about buying Molasses Meal at wholesale, as advertised in FARMER'S ADVOCATE.

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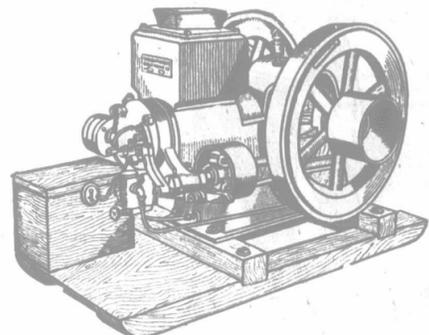
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Stationary and Portables, 3 to 100 horsepower for gasoline, distillate, natural gas and producer gas. Either make and break or jump spark ignition. Reliable, economical, guaranteed to give entire satisfaction.

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ORCHARD GROVE HEREFORDS

Champions of 1911 shows, winning both senior and junior herds at Winnipeg, Brandon, Regina, Edmonton, Toronto and London; also fifteen championships. Young stock, both sexes, for sale at reasonable prices. Long-distance 'Phone **L. O. CLIFFORD** Oshawa, Ont.

Shire Stallions and Mares, Shorthorn Cattle (both sexes); also Hampshire Swine. Prices reasonable.

Porter Bros., Appleby, Ont., Burlington Sta. 'Phone.

MENTION THE FARMER'S ADVOCATE WHEN WRITING ADVERTISERS.

WILLOW BANK STOCK FARM Shorthorns and Leicesters



Herd established 1855, flock 1848, have a special good lot of Shorthorns of either sex of various ages; also a grand lot of Leicester sheep of either sex—a few imported ones to offer.

JAMES DOUGLAS
Caledonia, Ontario.

"The Manor" Scotch Shorthorns

Present offering: Three choice yearling bulls. Young cows in calf. Yearling heifers: Clippers, Minas, Wimples, Julias, etc. Inspection solicited. Prices moderate. Phone connection.

J. T. GIBSON, DENFIELD, ONTARIO

IMPORTED SHORTHORN BULL

Lord Lieutenant, 50350, for sale or exchange, quite sure and active; young bulls and heifers by him and out of dams direct from imported stock; also pacing stallion, rising three years old, sound, stylish and speedy.

L. K. WEBER,
County Waterloo, Hawkesville Ont.

MAPLE LODGE STOCK FARM 1854—1911

Am offering a splendid lot of young Shorthorn bulls for sale now; good colors and choice individuals; several of them from high-class milkers. A few select Leicesters for sale yet.

A. W. SMITH, Maple Lodge, Ontario
Lucas Crossing, G. T. Ry., one mile.

SPRING VALLEY SHORTHORNS

Herd headed by the two imported bulls, Newton Kingmaker, #73783, and Scottish Pride, #35106. The females are of the best Scotch families. Young stock of both sexes for sale at reasonable prices. Telephone connection.

KYLE BROS. - - - Ayr, Ontario

Woodholme Shorthorns

I have for sale a number of choicely-bred Scotch Shorthorn heifers and several young bulls, all of high-class quality and sired by Imp. Dorothy's King #35009, a Lady Dorothea. I am also offering this bull for sale.

G. M. FORSYTH, North Claremont P.O. & Sta

Shorthorns and Swine—Am now offering a very choice lot of cows and heifers, safe in calf, and some choice young bulls for the fall trade; also Berkshire and Yorkshire pigs; showyard material.

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PLEASE MENTION THE ADVOCATE.

INTERNATIONAL FEEDS FOR ONE CENT

We Positively Guarantee
That a 25-Pound Pail of
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Will Save You \$7.00
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Because it promotes digestion and assimilation, and enables you to cut down the grain ration 15% to 25% and still get better results. This saving of grain represents a saving of good hard cash to you.

WE WANT YOU TO FEED 100 LBS. AT OUR RISK

It will not cost you a cent if you are not satisfied.

See our dealer in your town or write us for particulars. Mention this paper and the stock you own and we will send you a litho, size 16x22, of our three champion stallions.

International Stock Food Co. Limited, Toronto

10 SHORTHORN BULLS 10

If you are looking for a young bull to head a purebred herd, or one to cross on grade cows to raise first-class steers, I have them to suit all customers at very reasonable prices. They are reds and roans, and one extra good white show calf; ages from 9 to 14 months, nearly all sired by imported bulls and from the best Scotch families of cows. Will be pleased to furnish breeding and prices.

Claremont Sta., C.P.R., 3 miles.
Pickering Sta., G.T.R., 7 miles.

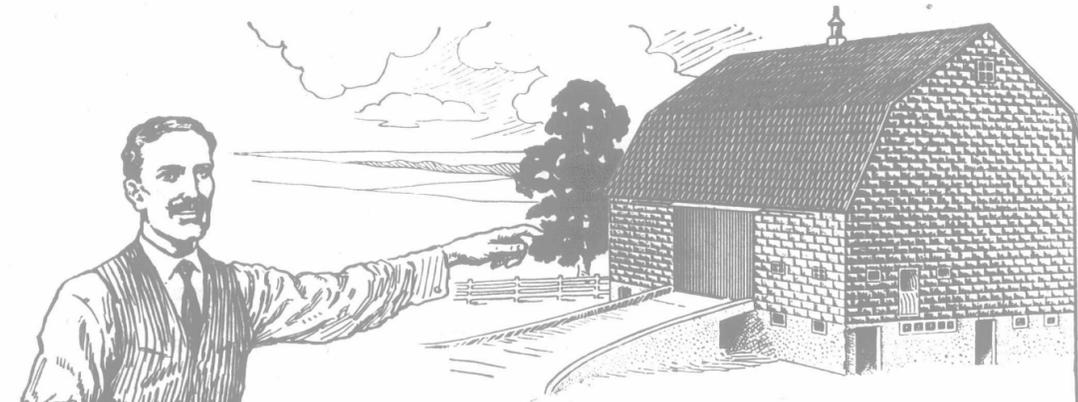
JOHN MILLER, Brougham P.O., Ont.

Shorthorn Bulls—12 to 16 months, reds and roans, Strathallans. A very choice lot of five, considering breeding and extra quality. We offer them at a bargain. The best bunch ever bred at Fairview.

J. & D. J. CAMPBELL, Fairview Farm, WOODVILLE, ONT.

Scotch Shorthorns FOR SALE—One of our imported herd bulls and eight heavy-boned, deep-bodied, low-down bull calves, 12 to 16 months old. Also twenty-five heifers and young cows bred to imported bulls.

Farm ¼ mile from Burlington Jct. Station. MITCHELL BROS., Burlington, Ont.



Get the Help of This Book in Planning Your New Barn

DON'T be satisfied this time with a barn that is not thoroughly modern in every detail. Build the model barn of your locality. Show your progressiveness by making it the most roomy, convenient and up-to-date of all barns—one that your neighbors will want to pattern after.

This book, which was especially written by experts, will tell you how to do this at a cost that will be well within the amount you are willing to spend. It contains numerous plans and complete specifications for all kinds of barns—horse barns, dairy barns, stock or general purpose barns.

"HOW TO BUILD A BARN."

will also guide you in the selection of the best materials. It mentions especially Galt Steel Shingles and Sidings. It explains how these materials are superior to wooden shingles and sidings, and shows plainly that they will cost you less.

For instance, wood shingle roofs are a constant source of trouble. They leak, rot, invite fire, and gather dirt and

weight with rain or snow. A Galt Steel Shingle Roof is lighter, stronger, weather-proof and fireproof. It requires less bracing and enables you to build with equal security at less cost.

The same thing applies to Galt Steel Siding. Each has been especially designed for its peculiar purpose. You should look carefully into the many special patented features of Galt products.

The Galt Art Metal Co., Limited, 150 Stone Road, Galt, Ont

BRANCHES—General Contractors Supply Co., Halifax, N.S.; Estey & Co., St. John, N.B.; R. Chestnut & Sons, Fredericton, N.B.; J. L. Lachance, Ltd., 253 St. Paul St., Quebec, Que.; Wm. Gray Sons—Campbell, Ltd., 583 St. Paul St., Montreal, Que.; Montague Sash and Door Factory, Montague, P.E.I.; Fife Hardware Co., Fort William, Ont.; Galt Art Metal Co., Ltd., 839 Henry Ave., Winnipeg, Man.; Gorman, Clancey & Grindley, Ltd., Calgary, Alta.; Gorman, Clancey & Grindley, Ltd., Edmonton, Alta.; D. R. Morrison, 714 Richard Street, Vancouver, B.C.

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Barns.

F.A.

GOSSIP.

CLYDESDALES ARE SELLING.

T. H. Hassard, of Markham, Ont., reports a record year in Clydesdale sales. Of the ninety-odd head on hand at the beginning of the season, there are only about twenty left, among them being such high-class ones as the three-year-old, Scottish Yeoman (imp.) [12614], by the H. & A. S. first-prize £1,000, horse, Montrave Mac, and dam by the Cawdor Cup champion, Marcellus, grandam by Macgregor, by Darnley, great-grandam by Prince of Wales. The Studbook does not contain better breeding, and no better three-year-old has ever come to this country, and with it all he has five numbered dams, but the powers that were, relegated him to second place at the Guelph Show. Airdie Dix [12611] is a black, rising three, by Baron Albion, dam by Gay Montrave, grandam by Garibaldi. This is one of the toppy, stylish kind, with all the quality possible to get. Craigie Yeoman [12616] is a bay, rising three, by the H. & A. S. champion, Perfect Motion, dam by Montrave Mac above mentioned, grandam by Scottish Prince. This is a horse of superb quality and form, with lots of size and character. Sunstar [12626] is a chestnut, rising three, by the renowned Cawdor Cup champion, Oyama, dam by the Kilmarnock champion, Royal Edward, grandam by Charmer. This is one of the smooth, thick, cart-horse kind, low down, with character all over. He should be a great stock horse. These are representative of the entire lot on hand, both in the matter of breeding and high-class individuality. Mr. Hassard has also left for sale, two Shire and two Percheron stallions, the whole making a selection from which any man can get something to suit him, no matter what his ideal.

ABBOTT'S BIG HOLSTEIN SALE.

The big sale of seventy head of high-class Holstein cattle, at Harrietsville, Ont., on Thursday, March 28th, will present a most attractive offering of cows and heifers, among which are some strictly high-class show animals. One of the best is the two-year-old heifer, Lady Boutsje De Kol, who will be fresh and tested before the sale. She is a granddaughter of the famous Ontario Agricultural College cow, Boutsje Q. Pietertje De Kol. Her dam's record at three years is 443.7 lbs. milk, and butter 16.02 lbs. in seven days, and her sire's dam has a record of 479 lbs. milk, and 22 of butter. She is a show heifer all over, and one of the best in the country. Another to be sold is her dam, Axie De Kol of Riverside; record 16.02 lbs. at three years. She is a half-sister to Lady Auggie De Kol, the Guelph champion in 1908 and 1909, seven-day record 27 lbs. 4 ounces, also to Netherland Auggie De Kol, R. C. P. test 21,666 lbs. milk, and 880 lbs. butter. Colantha Johanna Queen is another two-year-old daughter. Her sire's dam's record is 28.44 lbs. She is a daughter of the great Tidy Abbecker. Cornelia 2nd's Boutsje has a three-year-old record of 16.41 lbs., her dam's record 17.79, her grandam 17.10 lbs., her sire's dam was the college cow above mentioned. Bell Dewdrop 3rd's Beauty, two-year-old record 18.70 lbs., dam's record 22.30, grandam's record 25.18, sire's dam and grandam's records average 23.14 lbs. Axie Posch Daisy, record at two years 13.86 lbs.; Miss Phoebe De Kol, two-year-old record 13.87 lbs.; Maysie's Pietertje, record at one year and eleven months 12.99 lbs.; Molly Shane, record 16.38 lbs.; Neptune B Linda, 18.27 lbs.; Cornelia, 17.10 lbs.; Cornelia 2nd, 17.79 lbs.; Lady Fairmont, 17.25 lbs., etc. The above will show the high-class producing qualities of the females to be sold. Many of the others, and particularly a number of two-year-olds, will be in milk and officially tested before the sale. In last week's issue was a short resume of the breeding of several of the bulls in use on the herd, including the richly-bred present stock bull, the whole making an offering of superior quality and breeding. It is a dispersion sale, and all will be sold. There will be seven yearling heifers, twelve rising two years of age, and a number of heifer calves.

WAS TROUBLED WITH HEART DISEASE AND NERVOUSNESS

SEVERAL DOCTORS COULD DO HER NO GOOD. THREE BOXES OF MILBURN'S HEART AND NERVE PILLS COMPLETELY CURED HER.

Miss Mary Lebeau, Edison, Sask., writes:—"I was troubled with heart disease and nervousness for over two years, and was so bad at times I had to sit up at night being unable to breathe, and every little noise would make me shake and shiver. I tried several doctors, but they were unable to do me any good. A neighbor then advised me to try a box of Milburn's Heart and Nerve Pills. As soon as I began to take them I began to feel much better, and by the time I had used the third box I was completely cured. I would advise anybody suffering from heart disease and nervousness to try these pills. They will save quite a bill in doctor's fees."

Milburn's Heart and Nerve Pills cure all heart and nerve troubles by their restorative influence on every organ and tissue of the body.

Price 50 cents per box, or 3 boxes for \$1.25 at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

Six Shorthorn Bulls must be sold.

Different colors, and their breeding is good enough for any herd. Write me for prices before purchasing.

WM. SMITH, COLUMBUS, ONTARIO

OAKLAND SHORTHORNS!

We have another lot of young bulls ready for winter and spring trade, out of good breeding dual-purpose cows, and sired by our herd header, Scotch Grey 72692; a fine roan; one of the best bulls in Ontario. Good stock and no big prices. Will also sell cows and heifers; about 50 to select from.

JOHN FLDER & SON, HENSALL, ONTARIO

Shorthorns of Show Calibre

Only one bull for sale now, but 13 grand heifers by Mildred's Royal must be sold, as we have no bull to breed them to. Come and see them, or write.

GEORGE GIER & SON, Grand Valley, Ont

IMPORTED BULL FOR SALE

Our Green Grove herd of Shorthorns is headed by the two imported bulls Imp. Spectator = 5094 = and Imp. Roy = 55038 =. Present offering: Stock bull Imp. Spectator and two choice young bulls, herd headers, fit for service; also good females.

Geo. D. Fletcher Binkham Ont., Erin Sta. C.P.R.

Shorthorns, Shropshires and Berkshires

and heifers, bred for milk production. High-class flock-headers, winners, and covered to the ground. Berkshires, both sexes of breeding age, show stock.

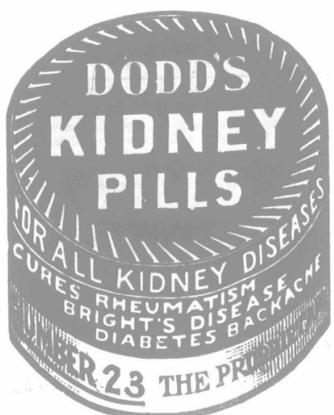
W. Wilson, Brickley P.O., Hastings Sta., G.T.R.

CONDUCTING A COLLECTION.

The Reverend Allen Fort, pastor of the Baptist Tabernacle in Chattanooga, asked J. B. Capeheart, a railroad conductor, to take up the collection one day. It was Mr. Capeheart's first experience as a taker of collections in church.

He started down the center aisle. There were several children in the first pew and each put in a penny. The people in the next pew also contributed something each. A big, glum fellow sat alone in the third pew. Capeheart passed him the plate. The man shook his head and stuck his hands deep in his pocket.

Capeheart stopped, put up his hand as if to jerk the bell-cord and said: "Well, you'll have to get off."



GOSSIP.

At the annual sales of Shorthorns and Aberdeen-Angus recently held in Scotland, the following averages were realized: 1,125 Aberdeen-Angus, £26.13.5; 856 Shorthorns, £33.13.6. Gross average for 1,981 head, £29.14.11. Approximately, \$145.

THE GUELPH STOCK SALE.

At the annual auction sale of registered stock, under the auspices of the Guelph Fat-stock Club, March 6th, 25 Shorthorns were entered, 21 of which sold for an average of \$94. The highest price obtained was \$152.50 each, for the two young bulls, Matchless Prince, contributed by W. G. Gerrie, Belwood, sired by Vice Chancellor = 68607 =, and Springfield Victor, contributed by A. F. & G. Auld, Eden Mills, Ont., sired by Victor E. = 73878 =. Eight bulls sold for an average of \$124.65.

HOLSTEINS AT MEADOWBROOK.

On visiting the great Meadowbrook herd of Holstein-Friesian cattle, the property of Dr. A. A. Farewell, of Oshawa, Ont., a few days ago, a representative of this paper was certainly a little surprised to find what is doubtless the richest-bred and highest-priced herd in Canada, that is the highest-priced foundation, selected from the leading herds of the United States, a large number of them costing their present owner an even \$1,000 each. Six of them are daughters of the world-renowned Pontiac Korndyke, with over 70 daughters in the A. R. O. Three others are daughters of the great King Segis, whose superiority as a sire is too well known to need comment.

Another three are daughters of Hengerveld De Kol, with 120 A. R. O. daughters. Among this grand lot of cows are Fairview Pontiac Pet, who, at one year and ten months of age, made the great record of 16 lbs. butter, and a butter-fat test of 4 per cent. She is a daughter of the world's champion cow, Pontiac Pet, whose record is 37.67 lbs., and butter-fat test 5 per cent. She is also a granddaughter of Pontiac Rag Apple, whose record is 31.62 lbs., and butter-fat test 4.8 per cent., and sold for \$8,000. This great heifer is again about due to freshen to the present stock bull described below. Another is Fairview Queen Korndyke, with a junior four-year-old record of 20.23 lbs. She is a daughter of Queen Korndyke, record 31.1 lbs., and butter-fat test 4.61 per cent. Still another is Meadowbrook Queen Korndyke, a two-year-old daughter of Fairview Queen Korndyke, and sired by Pontiac Korndyke, and thus has five 30-lb. sisters. At her first freshening last year, in spite of a serious sickness, she made a seven-day record of 12 lbs., and will certainly go over 20 in her test at the next freshening. Out of this heifer is a yearling bull, sired by a grandson of Hengerveld De Kol. Three of his nearest dams have records averaging over 30 lbs. Pietertje Matilda Korndyke is a daughter of Pontiac Korndyke. Her junior two-year-old record is 18.36 lbs., and better-fat test 3.95 per cent. Urna Gelsche Segis has not been tested, as conditions were not favorable when she came in. She is a daughter of Urna Gelsche 2nd A, record 31.24 lbs., fat test 6.04 per cent., record of grandam 30.12 lbs., fat test 4.61, great-grandam's record at thirteen years 25.20 lbs., fat test 4.42 per cent. This heifer was sired by King Segis. The above is sufficient to show the phenomenal breeding of this great herd on the female side. Chief stock bull in service is the remarkably-bred King Segis Walker, a grandson of King Segis. His seven nearest dams have records that average 28.36 lbs. butter in seven days, 542.44 lbs. milk, and average butter-fat test 4.24 per cent. Among the young bulls for sale is Sir Colantha Gladi Rag Apple Korndyke. He is a grandson of Colantha 4th's Johanna, whose record is 35.22 lbs., butter-fat test 4.32 per cent. His dam is a daughter of Rag Apple Korndyke, a son of Pontiac Rag Apple, record 31.61 lbs. His dam, grandam, and sire's dam, have records that average 32.61 lbs., and with this wonderful breeding this five-months-old bull is put up on show lines from the ground up. Write Dr. A. A. Farewell to Oshawa P. O., or call up on long-distance phone.

FERTILIZER REQUIREMENTS OF CORN

Extract from "Fertilizing Fodder Crops," by T. Walter Shipley

"Corn is a gross feeder, and must have an abundant supply of readily-available 'plant food' material. Where corn is grown on any but a clover-sod or meadow, a dressing of 12 to 15 tons of barnyard manure should be applied and thoroughly worked into the soil. While this dressing of manure would supply the necessary humus and part of the nitrogen required, it must be supplemented by the addition of phosphoric acid and potash if a maximum crop is to be grown. The addition of, say 400 lbs. Acid Phosphate and 150 lbs. Muriate of Potash per acre, would supply these necessary ingredients and, except where the land is in a very high state of cultivation, 120 to 150 lbs. Nitrate of Soda, applied as a top dressing, would be required to supply the amount of nitrogen to produce a maximum crop."

FREE copies of this and other bulletins may be obtained on application to:

THE GERMAN POTASH SYNDICATE
1106 Temple Bldg. TORONTO, ONT.

DAVIES'

Slaughter-house by-products, Bone, Blood, Tankage, etc., are thoroughly sterilized, practically deodorized, then utilized in the preparation of

HIGH GRADE ANIMAL FERTILIZERS

Brands specially suited for Potatoes, Tobacco, Corn, Beans, Orchards, Grains, Vegetables, Greenhouse crops, Grass Lands, Lawns, etc., are being manufactured at our Toronto factory. There is no doubt as to their superiority over mixtures of purely chemical compositions. Professors Harcourt, Blair, Cumming and Goble highly commend them in their opinions expressed in our booklet. Samples of the raw materials may be seen on the FARMING SPECIAL now being run by the Ontario Government. (We will supply you with these raw materials if you prefer to do your own mixing—the economy is doubtful, however.) We pay freight on all orders of 200 lbs. or more, in the Provinces of Ontario and Quebec—all other quotations f.o.b. factory. Payments in the fall. Don't be satisfied with any brand your dealer happens to handle—demand Davies', and if he isn't "up-to-date in the fertilizer line," order direct from us. It will cost you no more. Don't waste your money paying 10% duty on imported brands—we give you that in extra plant food. Increase your yields, profits and happiness for years to come by writing us for our assistance.

The WM. DAVIES COMPANY, Ltd., 521 Front St. East, Toronto, Canada
ESTABLISHED 1854

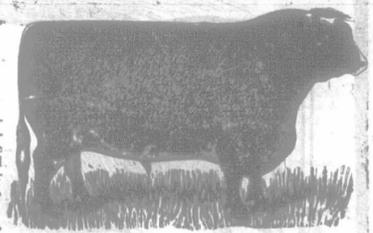
ARTHUR J. HOWDEN & CO.

ARE OFFERING

15 High-class Scotch Shorthorn Heifers

At moderate prices, including Cruickshank Nonpareils, Cruickshank Villages, Marr Emmas, Cruickshank Duches of Glosters, Bridesmaids, Bruce Fames, Kinellars, Claret, Crimson Flowers, and other equally desirable Scotch families, together with a number of the grand old milking Atha tribe, which have also been famous in the showing.

Arthur J. Howden & Co., Columbus, Ont.



Shorthorn Bulls and Clydesdale Mares

If you are in the market for a young bull, write us for particulars, or, better still, come and see them. We have 13 young bulls, from 8 to 14 months old, of good breeding and quality. We also have four imported Clydesdale mares, safe in foal.

W. G. PETTIT & SONS, Freeman, Ontario

Bell phone. Burlington Jct. Sta., G. T. R., 1/2 mile from farm

SHORTHORNS

Have now a choice lot of young bulls to offer; also with something nice in heifers. Catalogue of herd and list of young animals on application.

H. CARGILL & SON, Proprietors, Cargill, Ont., Bruce Co. JOHN CLANCY, Manager



THIS IS A GOOD TIME, AND I HAVE A GOOD PLACE, TO GET A HIGH-CLASS SCOTCH SHORTHORN BULL CALF by my great Whitehall Sultan sire, or a young cow in calf to him, to start a herd that will be gilt-edged. SHROPSHIRE RAMS AND EWES, too, at low prices. CHILDREN'S PONIES. A CLYDESDALE FILLY, such as I can send you, is one of the best things any man can buy. Just write me and say as nearly as possible what you want, and I will surprise you with prices on goods that are genuine. ROBERT MILLER, STOUFFVILLE, ONTARIO

Shorthorns and Clydesdales—We are offering 10 choice young bulls, serviceable age, or exchange. In Clydes our present offering are two stallions rising 3 and 4 years old; big quality horses, from imported sires and dams; also cows and heifers, mares and fillies. Write us, or come and see them. A. B. & T. W. DOUGLAS, Strathroy, Ont. Farm one mile north of town.

Scotch Shorthorn Females for Sale I am offering at very reasonable prices, females from one year to five years of age. The youngsters are by my grand old stock bull, Scottish Hero (imp.) = 55042 = (90065), and the older ones have calves at foot by him, or are well gone in calf to him. Their breeding is unexcelled, and there are show animals amongst them. A. EDWARD MEYER, Box 378, GUELPH, ONT.

Pleasant Valley Farms Shorthorns For Sale: Scottish Signet, best son of imp. Old Lancaster, and several good young bulls of the best Scotch breeding, at prices to suit everyone. Write us for exactly what you want, or visit us. Farm 11 miles east of Guelph, C.P.R. Half mile from station. Geo. Amos & Sons, Moffat, Ont.

DISPERSION SALE OF HIGH-CLASS AND SHOW HOLSTEINS

Having sold his farm, MR. S. MACKLIN will, on

Tuesday, March 26th, 1912

At his farm, near WESTON, ONT., sell by auction his entire herd of **40 head** of richly-bred, high-record and prizewinning Holsteins.

This herd has produced many Toronto first prizewinners and champions. Many of the cows with records up to 20 lbs. and over; 2-year-old heifers up to 14 lbs.; 3-year-old, 15 lbs. and over. The richly-bred stock bull will also be sold. Several Toronto prizewinners and champions among them. Big, deep wedge-shaped cattle, highly bred and high producers.

On day of sale conveyances will meet the electric cars from Toronto at the Central Hotel, Weston, every half hour.

TERMS—Cash, or 7 months' on bankable paper, with 5 per cent. interest.

Sale will commence at 1 p.m. sharp.

J. K. McEWEN, Weston, Ontario
AUCTIONEER

CATALOGUES ON APPLICATION TO:

S. MACKLIN, - Weston, Ontario

High-Record Holsteins and Imported Clydesdales

BY AUCTION

—ON—

Monday, March 25, 1912

in the Big Pavilion at "Lakeview Farm," BRONTE, ONT., Mr. E. F. Osler will sell 35 head of high-class, high-record, and richly-bred Holstein Friesian Cattle and 5 imported Clydesdale Mares, an offering of 14 bulls and 21 females, with more official backing than was ever offered before by auction in Canada.



Cows with records up to 24.19 lbs.; 2-year old heifers with records up to 15 lbs. and in calf to the two famous bred bulls, Count Hengerveld Fayne De Kol and Dutchland Colantha Sir Mona; young bulls by those two great sires, and all of them out of official record dams with high official backing.

The Clydesdale mares are all imported, big, high-class mares.

TERMS—Cash, or 9 months with 6 per cent. interest.

Conveyances will meet all morning trains. G.T.R.; also the Radial cars every hour from Hamilton, at Bronte.

COL. D. L. PERRY, Columbus, Ohio
GEO. ANDREWS, Milton, Ontario } Auctioneers

CATALOGUES ON APPLICATION TO:

E. F. OSLER, - BRONTE, ONTARIO



The Feed That Makes The Cream

Livingston's Oil Cake is the cheapest feed for cows—cheaper than corn, shorts or even hay. Because it actually increases the richness of cream—and also increases the amount of butter that you get out of the milk.

Test your cows before and after feeding Livingston's Oil Cake for a month—and your "butter money" will show its economy.

Fine Ground, Coarse Ground, Pea Size and Nuted Grindings. If your dealer cannot supply you write us for prices and samples.

DOMINION LINSEED OIL CO'Y, LIMITED
Manufacturers J. & J. Livingston
Brand Oil Cake
BADEN, ONTARIO

SALEM SHORTHORNS Headed by (Imp.) Gainford Marquis, undefeated in Britain as a calf and yearling, and winner of junior championship honors at Toronto, 1911. Have on hand two yearlings and a number of bulls under a year for sale at reasonable prices.
J. A. WATT, Salem, Ont. Elora Sta, G. T. R. and C. P. R.

Evergreen Stock Farm—High-class Registered Holsteins. Herd headed by Prince Abbekerk Mercena, whose ten nearest dams average over 25 lbs. butter in seven days. For sale: One extra good bull, ready for service, and one bull calf, whose dam won second prize in milk test at Guelph Winter Fair, testing 4.2% butterfat. Could also spare a few yearling heifers in calf.
A. E. HULET, Norwich, Ont.

Silver Creek Holsteins We are now offering about a dozen yearling heifers and 3 young bulls. They are all of superior type, and officially backed on both sides. King Payne Segis Clothilde, whose 7 nearest dams have 7-day records that average 27 lbs., is at head of herd. **A. H. TEEPLE, CURRIES P. O., Ont., Woodstock Station.** Phone connection.

MENTION THE FARMER'S ADVOCATE WHEN WRITING ADVERTISERS.

QUESTIONS AND ANSWERS. Miscellaneous.

PASTURE IN NORTHERN QUEBEC.

Will you tell me a suitable grass-seed mixture for a lumber camp farm in Northern Quebec, to seed down with oats to have hay crop for working horses for one or two years, and then leave as permanent pasture for horses? Soil is sandy loam, and in places low-lying and cold.
N. S. R.

Ans.—On such land as described, and in district mentioned, that is, Northern Quebec, the probabilities are that not a much better mixture than the following could be found: Blue grass, 10 lbs.; timothy, 10 lbs.; White Dutch clover, 2 lbs.; alsike, 2 lbs.; red clover, 6 lbs., and if it were desired to seed according to the peculiarities of each particular part of the field, then adding about 3 lbs. per acre of orchard grass to low-lying or shaded parts of the field, and increasing the red clover by two or three pounds per acre for the higher and more exposed parts of the field, and further, if the field is not in very good heart, increasing the whole seeding by about 20 per cent. would improve matters. However, it should be borne in mind that a field not properly prepared by previous cultivation or previous cropping or seeding down is not likely to give as satisfactory results either in the catch or in subsequent crops of hay or pasture. It would, therefore, emphasize the importance of having this field in good condition before seeding down.
J. H. G.

Dr. D. McEachran, Ormstown, Que., breeder and importer of Clydesdales writes: "My intention is to dispose my brood mares by a few sales, and will arrive in May. The bulk of the importation will be large, but I have good-colored young ones, which will be sold at lowest possible prices. This will be a rare opportunity for breeders to secure extra good stock."

Holsteins of Quality

Write us to-day for our proposition, telling you how any good dairyman may own a registered Holstein bull from a Record-of-Performance cow without investing a cent for him. **Monro & Lawless, "Elmdale Farm," Thorold, Ont.**

MAPLE SOIL STOCK FARM

I have at present some young cows from three to five years old got by Sir Hengerveld John De Kol and bred to Idalin's Paul Veeman; also a few heifers and young bulls from eight to ten months old, sired by Idalin's Paul Veeman; also booking orders for spring stock.
Belmont Sta., C.P.R.

H. C. Holtby, Belmont, P.O., Ont.

Purebred Registered
Holstein Cattle
The most profitable dairy breed, greatest in size, milk, butter-fat and in vitality. Send for FREE illustrated descriptive booklets.
HOLSTEIN-FRIESIAN ASSO.
F. L. Houghton, Sec'y, Box 127, Brattleboro, Vt.

A GREAT COMBINATION

Only one left, eleven months old, mostly white. This bull combines blood of Pont, Korndyke, and Hengerveld De Kol, who now have eleven thirty-pound daughters.

A. A. Farewell, Oshawa, Ontario

The Maples Record of Holstein Herd

A few choice bulls ready for service, sired by King Posch De Kol; also a few young bull calves, sired by Prince Aaggie Mechthilde, whose dam won first at Toronto, 1911, and sire's dam first in dairy test at Guelph, 1908 and 1909; his three nearest dams average over 25 lbs. butter in 7 days.
WALBURN RIVERS, FOLDEN'S, ONTARIO

Evergreen Stock Farm offers a choice lot of bulls ready for service, from high-testing, deep-milking Record of Merit ancestors. Also a few females for sale. Herd headed by Prince Sir Admiral; dam's record 26.71, by Sir Admiral Ormsby. Write for prices.
F. E. PETTIT, Burgessville, Ont.

Holstein bull calves for quick sale—Registered, big, heavy fellows of superior breeding; sire imported; \$25 to \$50, according to quality.
WALBURN RIVERS, FOLDEN'S, ONTARIO

GOSSIP.

THE MANOR SHORTHORNS.

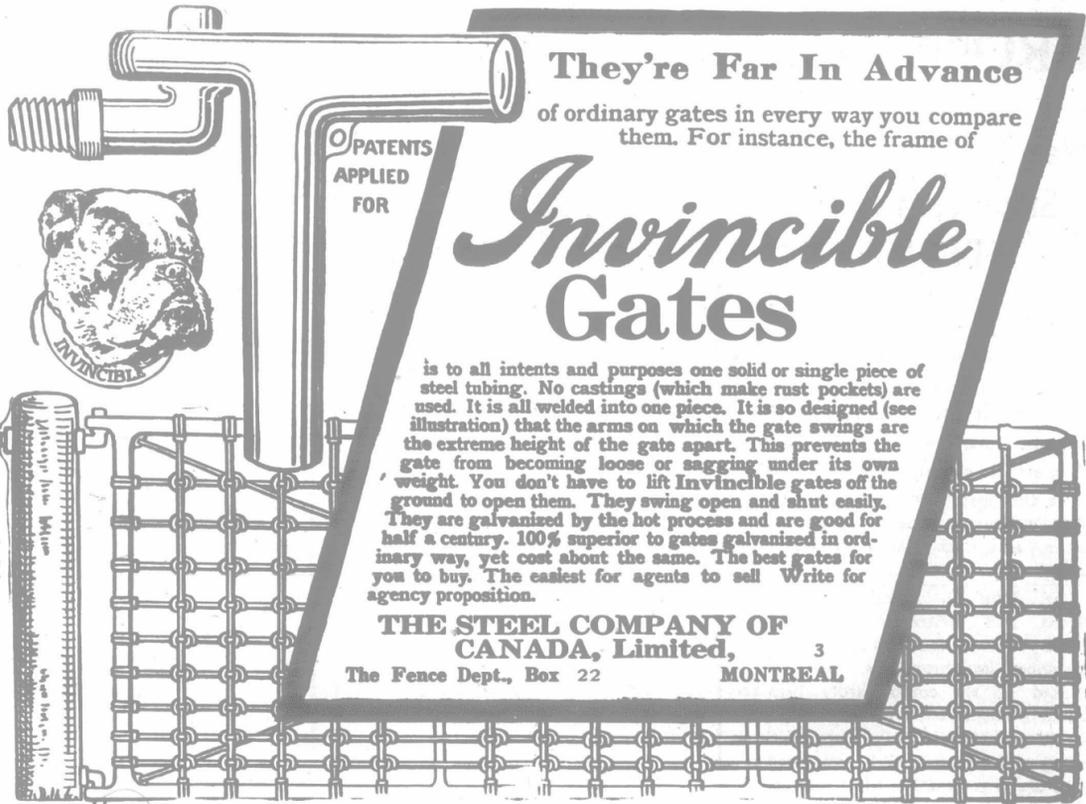
The Manor herd of Scotch Shorthorns, the property of John T. Gibson, of Denfield, Ont., are coming through the winter in extra nice condition. Year by year shows a steady and substantial improvement in the general excellence of this well-known herd. The present stock bull has proven the wisdom of Mr. Gibson when he selected him as head of the herd. Never before in our many years' acquaintance with the herd did we see so much quality and general excellence among the young things as this year, this, in spite of the many famous bulls that have been in service on the herd, Imp. Prime Minister, Imp. Governor-General, Imp. Proud Gift; the Bruce Mayflower bull, Star Prince =53900=, a son of Imp. Lavender Star, and out of Imp. Sunny Princess, by Prince of Archers; then, the present stock bull, Baron's Pride =72491=, a son of the great Missie's champion, dam Pine Grove Clipper 5th (a Cruickshank Clipper), by British Knight, grandam by Knight of Lancaster, and great-grandam by William of Orange. This list of bulls represents the sires of practically all the herd, excepting the foundation, some of which are still doing duty. They were Martha 9th =63339=, by Imp. Nonpareil Archer; Imp. Juno =48631= (a Cruickshank Jealousy), by Cornelius; Royal Wimple =75274=, by the renowned show and breeding bull, Mildred's Royal; Mina Lass 8th =67901=, by Imp. Prime Minister; Imp. Clipper 2nd =34217=, by Christmas Cup; Imp. Rosemary 137th, by Cypress; Nonpareil Undine, by Imp. Nonpareil Duke. This cow is out of Imp. Lady Fanny, by Baron Buttercup. Out of her, for sale, is a red ten-months-old bull, by the present stock bull. Mr. Gibson is offering for sale several exceptionally choice heifers, sired by Star Prince and Baron's Pride. Among this lot are much show material, fit for any company if properly fitted, a low-down, thick, soggy lot, that will not disappoint intending purchasers. In young bulls Mr. Gibson is particularly strong. One is a red yearling Rosemary, got by the present stock bull, a low, thick-fleshed, mellow bull of a type and quality not often seen. Another is a red yearling, by the stock bull, and out of Imp. Juno. This is a right good one that would please the most exacting buyer. Another is a red October bull calf, by the stock bull, and out of a Cruickshank Jealousy - bred daughter of Imp. Proud Gift. This is one of the best bull calves in the country. Anyone looking for a show calf for next fall's senior calf class at Toronto, should look after this youngster. If properly shoved along he will be hard to beat. Mr. Gibson is overstocked, and will sell at bargain prices.

TRADE TOPIC.

The Stewart Ball-Bearing Clipping Machine advertised on another page has a world-wide reputation for excellence. It is used in all countries, and deserves a place in every stable. Horses are the most valuable of farm animals, and should have a clipping. It can be done easily and quickly with a Stewart machine.

A SCARY HORSE.

A man in upper New York State, who was desirous of purchasing a horse for the use of his wife, recently entered into negotiations with a veteran horse-dealer. "Now, I'm not so particular about speed," said the prospective purchaser, "but I must have a gentle horse." "Here is one that I'll warrant to be perfectly safe," said the dealer, indicating a sad-looking steed nearby. "Are you sure he is not afraid of anything?" insisted the man. The dealer assumed an air of deep reflection. "Well," he said, "there's one thing he has always appeared to be afraid of ever since I got him. It seems as if he's scared to death for fear someone might say 'whoa!' and he not hear it."



They're Far In Advance
of ordinary gates in every way you compare them. For instance, the frame of

Invincible Gates

is to all intents and purposes one solid or single piece of steel tubing. No castings (which make rust pockets) are used. It is all welded into one piece. It is so designed (see illustration) that the arms on which the gate swings are the extreme height of the gate apart. This prevents the gate from becoming loose or sagging under its own weight. You don't have to lift Invincible gates off the ground to open them. They swing open and shut easily. They are galvanized by the hot process and are good for half a century. 100% superior to gates galvanized in ordinary way, yet cost about the same. The best gates for you to buy. The easiest for agents to sell. Write for agency proposition.

THE STEEL COMPANY OF CANADA, Limited,
The Fence Dept., Box 22 MONTREAL



CALVES WITHOUT MILK
Write for Free Booklet
"How to Raise Calves Cheaply and Successfully Without Milk"

Blatchford's Calf Meal—The Perfect Milk Substitute
Three or four calves can be raised on it at the cost of one where milk is fed. No mill feed. The only calf meal manufactured in an exclusive Calf Meal Factory. Established at Leicester, England, in 1890.

STEELE, BRIGGS SEED CO., LTD.
WINNIPEG, MAN. HAMILTON, ONT. TORONTO, ONT.

Fairview Farms Herd Is there where you can secure a son of Pontiac Korn-dyke, admitted by all breeders to be the greatest Holstein sire that ever lived. Look what his daughters are doing. Two of them with records over 37 lbs. each. Then, look at the work his sons are doing. **HE IS THE GREATEST PRODUCING SIRE OF THE BREED, THROUGH HIS SONS.** Every son of Pontiac Korn-dyke that has daughters old enough to milk is a sire of good ones. We can offer you several young ones that will give you great daughters.

E. H. DOLLAR,
HUEVELTON, N. Y.

SUMMER HILL HOLSTEIN CATTLE and YORKSHIRE HOGS

Our senior herd bull, Sir Admiral Ormsby, is the sire of the world's record 2-year-old for yearly butter production. Also sire of the three highest record four-year-olds in Canada. The dam of our junior herd bull made 34.60 lbs. butter in 7 days, and gave 141 lbs. milk per day. Come and make your selections from over 70 head.

In Improved English Yorkshires we have won 95 per cent. of all first prizes at Toronto Exhibition for ten years. We are still breeding them bigger and better than ever.

Buy Summer Hill Yorkshires, the big, quick-maturing kind, and double your profits.

D. C. FLATT & SON, R. F. D. No. 2 Hamilton, Ontario, 2471. Hamilton. Bell phone:

Centre and Hillview Holsteins—We are offering young bulls from Sir Lady Cornucopia Clothilde, the average of his dam sire dam and grand dams is 662.8 lbs. milk and 30.38 butter, 7 days, and 3,750.80 milk and 114.5 butter in 30 days; also Brookbank Butter Baron, who is a proven sire. He is sire of champion 3-year-old 30-day, 2-year-old 7-day and 2-year-old 30-day. Long-distance phone. P. D. EDE Oxford Centre P.O. Woodstock Sta.

Brampton Jerseys Bulls fit for service are getting scarce. Just a few left. Yearling heifers in calf are in great demand; 6 for sale; 6 now being bred. Brampton Stockwell the sire. A few good cows and some calves for sale.

B. H. BULL & SON, BRAMPTON ONT.,
Production and quality.

HIGH-CLASS AYRSHIRES High Grove Jerseys & Yorkshires

If you are wanting a richly-bred young bull out of a 50-lb. a day and over cow, imported or Canadian-bred dam and sire, write me. Females all ages. Prices are easy. D. A. Macfarlane, Kelse, Que. Arthur H. Tufts, P. O. Box 111, Tweed, Ont.

GLENHURST AYRSHIRES

Established over 50 years ago, and ever since kept up to a high standard. We can supply females of all ages and young bulls, the result of a lifetime's intelligent breeding: 45 head to select from. Let me know your wants.

JAMES BENNING, Williamstown P.O. Summerstown Sta., Gleggarry

Ayrshires and Yorkshires—We have still some good young bulls. Now is the time to buy for the coming season, before the best go. We have females any age, and can fill orders for carlots of Ayrshires. Figs of either sex on hand.

ALEX. HUME & CO., Melbie, Ont.

Ayrshires Bull calves, from 4 months to 9 months, from imported sire and Record of Performance dams. Records 50 to 63 pounds per day.

N. Dymont, R. R. No. 2, Hamilton, Ont.

HILLCREST AYRSHIRES—Bred for production and large teats. Record of Performance work a specialty. Fifty head to select from. Prices right.

FRANK HARRIS, Mount Elgin, Ont.

STONEHOUSE AYRSHIRES

Are coming to the front wherever shown. Look out for this at the leading exhibitions. Some choice young bulls for sale, as well as cows and heifers.

HECTOR GORDON, Howick, Quebec.

WELCOME STOCK FARM HOLSTEINS—We have direct descendants of these unequalled performers, Peiterje Hengerveld Count De Kol, sire of three daughters above 32 lbs.; Pontiac Kornlyke, two daughters above 37 lbs.; Hengerveld De Kol, with the longest list of A. R. O. sons and daughters; Blanch Lyons, dam of two daughters above 33 lbs.; Colantha 4th Johannes, whose yearly production of butter and milk stands unequalled. Present offering: Some good young cows and heifers; also a few extra choice bull calves.

C. BOLLERT & J. LEBUSZLER,
R. R. No. 6 Tavistock, Ont.

Yorkshires and Holsteins

RICHARD HONEY & SONS, Minister Farm, Brickley, Ont., offers bargains in choice young boars and sows fit to mate, sired by Monk and Rooster 4th and from prize-winning sows. Orders taken for this spring's bull calves from Lakeview, Burke Fayne and large producing sows.

Elmwood Holsteins Choice bred, registered Cows, Heifers, Calves, Spring Crop 1912. March, April and May delivery; Sired by imported Y Roma Sir Posch and Elmwood Sarcastic. Grandson of Sarcastic Lad. Best breeding, right prices. Express pre.aid. Safe delivery guaranteed.

E. D. GEORGE & SONS, Putman, Ont.

HOLSTEIN BULL If you want one of the richest bred bulls, and a grand individual, to head your herd with, write me. Will exchange for young females.

H. BOLLERT, Tavistock, R. R. No. 5, Ont.

For Sale—Holsteins and Yorkshires. Six choice grade Holstein heifers, 2 years old, due to calves in March; choice bull calves from tested dams, \$25 each. Reg. Yorkshire pigs, \$11 a pair.

W. A. BRYANT, Cairnform, Ont.

CHERRYBANK AYRSHIRES!

Imported and Canadian bred, with R. O. P. official records, headed by the renowned champion, Imp. Netherhall Milkman. Richly-bred females and young bulls for sale.

P. D. McArthur, North Georgetown, Ont.

AYRSHIRES FOR SALE

Seven bulls and a few heifers of different ages, bred by Woodroffe Comrade, whose first heifer in milk, gave 11,392 lbs. milk, 480 lbs. butterfat in one year. Prices right. H. C. HAMILL, BOX GROVE P. O. ONT. Markham, G. T. R.; Locust Hill, C. P. R. Bell phone connection from Markham.

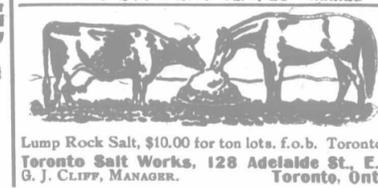
Stockwood Ayrshires are coming to the front wherever shown. This herd is now headed by White Hill Free Trader (Imp.) No. 33273, championship bull at Sherbrooke; also headed the 1st-prize aged herd. Stock of all ages for sale. Satisfaction guaranteed. D. M. WATT, St. Louis Station, Que. Telephone in house.

Dungannon Ayrshires and Yorkshires—For immediate sale are: Three choice young bulls and a few heifers; also young sows of breeding age, quality and breeding combined.

W. H. FURBER, Cobourg, Ont. L.-D. Phone.

City View Ayrshires—One very choice bull, 1911 bulls, all grand individuals, and from R. O. P. ancestors; could spare two or three more cows. Write or phone.

JAS. FERG. R. R. No. 1, St. Thomas



Lump Rock Salt, \$10.00 for ton lots, f.o.b. Toronto
Toronto Salt Works, 128 Adelaide St. E., Toronto, Ont.
G. J. CLIFF, MANAGER.

BRONCHITIS

Was So Choked Up She Could Hardly Breathe.

Bronchitis is an acute inflammation of the mucus membrane lining the air tubes of the lungs, and should never be neglected, for if it is very often the disease becomes chronic, and then it is only a short step to consumption.

On the first sign of bronchitis Dr. Wood's Norway Pine Syrup should be taken, and thus prevent it becoming chronic.

Mr. John D. MacDonald, College Grant, N.S., writes:—"My little girl, seven years old, caught a bad cold which developed into bronchitis. She was so choked up she could hardly breathe. Reading about your wonderful medicine, Dr. Wood's Norway Pine Syrup, I decided to try a bottle, and with such good results that I got another which completely cured her. I cannot say too much in its praise, and would not be without it in the house."

Dr. Wood's Norway Pine Syrup is put up in a yellow wrapper; three pine trees the trade mark; price, 25 cents.

Manufactured only by The T. Millburn Co. Limited, Toronto, Ont.



The "STAY THERE" Aluminum Ear Markers
are the best. Being made of aluminum they are brighter, lighter, stronger and more durable than any other. Fit any part of the ear. Nothing to catch on feed trough or other obstacle. Your name, address and any series of numbers on each tag. Sample tag, catalogue and prices mailed free. Ask for them. Address: WILCOX & HARVEY MFG. CO., Dept. D, 442 S. Dearborn St., Chicago, Ill.

DECIDEDLY FRUITY.
"That girl is a peach," enthusiastically remarked the spectator.
"Yes," said another, "and she is the apple of her father's eye."
"She and young Binks would make a fine pair," suggested a third.
"But," objected another in the group, "a fellow like Binks would fine her something of a lemon in the garden of love."
The cynical bystander who had been listening, butted in at this point.
"I don't know the young lady," he said dryly, "but she seems to be very fruitful in her resources."

ALONG THE LINE OF C. N. O. RAILWAY

Dodd's Kidney Pills Work Wonderful Cure.

Mrs. Ed. Lloyd, Weak and Worn and Wracked with Pain, Found Relief and Cure in Dodd's Kidney Pills.

Ardbeg, Ont., March 18.—(Special).—"Dodd's Kidney Pills have done wonders for me," so says Mrs. Ed. Lloyd, wife of a well-known farmer living on the line of the C. N. O. Railway near here.

"I was so weak I could hardly walk around," Mrs. Lloyd continues, "I suffered from female weakness and kidney trouble. My heart troubled me so that at times I would almost pant with the palpitations. I was treated by the doctor, but he could give me no relief.

"I was sick all over when I started to use Dodd's Kidney Pills, Rheumatism, Lumbago and Neuralgia adding to my sufferings. But Dodd's Kidney Pills helped me almost at once. After taking eight boxes I was completely cured."

Naturally, Mrs. Lloyd wants other suffering women to know how she found a cure, and Dodd's Kidney Pills will do for other sufferers just what they did for Mrs. Lloyd, make new women of them.

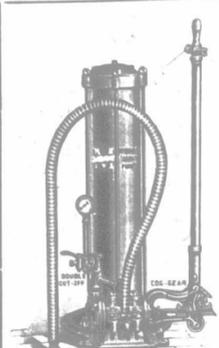
GOSSIP.

THE MORGAN SHEEP SALE.

The high-class quality of the Hampshire and Southdown sheep to be sold at the dispersion sale of L. E. Morgan, of Milliken, Ont., on Tuesday, March 26th, cannot be given justice in these columns. Of the Hampshires, eight of the breeding ewes are part of an importation made by Mr. Morgan some four years ago, the balance of them are the produce of that importation. Ten of them are bred from imported stock on both sides, 18 are yearlings, all but the yearlings will be in lamb or have lambs at foot, a part of them were bred to an imported ram, and the others to a Canadian-bred ram from imported sire and dam. All are strictly high-class in breed type, quality, and condition. Many Canadian prizewinners were bred in this flock. The Shropshires are up to an equally high standard. Of these there are the stock ram, breeding ewes, and yearlings. In both the breeds are a number of exceptionally choice show animals that will certainly make good when given a chance. This sale will present an opportunity to Canadian farmers that should not be overlooked, as the day is fast approaching when the demand for registered sheep will be greater than the supply, and prices must go up. There will also be sold two imported Berkshire sows and a number of their progeny.

WOODBINE HOLSTEINS.

A. Kennedy, of Ayr, Ont., owner of the splendid Woodbine herd of Holstein-Friesian cattle, is a Holstein man from the ground up. His herd is a large one, and one of the oldest established in Ontario. His foundation stock was carefully selected, and a word as to the royal breeding of the several stock bulls in use in latter years will show that his herd of to-day carries the blood of the most notable of the breed, and they show it, too, in their typical wedge-shape and big, rounded, well-balanced udders. For some time in service was Sir Mechthilde Posch, a son of the great cow, Anthony's Jewell Mechthilde, with a seven-day record of 27 lbs.; his sire, Sir Abbecker Posch, was a son of the renowned Altje Posch, who made the record Canadian two-day test at Guelph of 8.6 lbs. butter. He is thus a brother to the two great cows, Alta Posch, record 27 lbs., and Mercena 2nd, record 27 lbs. Following him was Sir Creamelle, a son of the renowned Duchess Ormsby Hengerveld De Kol, he again by Duchess Ormsby Prince. On his sire's side Sir Creamelle is intensely bred in the great Ormsby blood, noted as one of the richest butter-fat tribes the breed has ever known, as well as for their high seven-day records. The dam of Sir Creamelle was Creamelle Hengerveld, seven-day record nearly 22 lbs. as a two-year-old, and his sire was a grandson of De Kol 2nd, with a record of 26½ lbs. Following him again was King Segis Pontiac Lad, a son of the great show bull, King Segis Pontiac, with seven A. R. O. daughters, and a son of the world's champion for yearly production. Her seven-day record for butter production is 37.21 lbs., and one-year record 1,271.60 lbs. She is a full sister to Pontiac Rag Apple, 31.62 lbs., and a ½-sister to Pontiac Pet, 37.68 lbs. She is also a daughter of Pontiac Korndyke, with four 30-lb. daughters, two of them better than 37 lbs. The dam of King Segis Pontiac Lad is a daughter of the great King of the Pontiacs, among whose many high-record daughters is the world's champion three-year-old, whose record of 31.74 lbs. is still unbeaten; two other of his three-year-old daughters have beaten 30 lbs.; 24 have beaten 20 lbs. as two- and three-year-olds, and seven have yearly records over 730 lbs. butter. He is a son of Pontiac Korndyke, and a grandson of Hengerveld De Kol, who has 115 daughters in the list, 20 of them over 25 lbs. and 6 over 30 lbs. The present stock bull is Duke Beauty Pieterje, whose seven nearest dams have records averaging 27 lbs. in seven days. Carrying such blood as this, for sale are two bulls eight months of age, sired by Sir Creamelle, and several younger ones sired by King Segis Pontiac Lad, out of dams by Sir Mechthilde Posch and Sir Creamelle. Write Mr. Kennedy to Ayr, Ont., or call him up on long-distance phone from Ayr.



The High Pressure Line SPRAYERS

Our Hand-Power Sprayers are efficient, and High Pressure is easily maintained. Our Free Catalogue explains why.

Power Sprayers Sprayer Supplies

Send for Catalogue and Prices. As low as the ordinary kind sell at.

NATIONAL MACHINE CO., Brighton, Ont.

Hampshire and Southdown Sheep, also Berkshires BY AUCTION

On Tuesday, March 26

At his farm, 10 minutes' walk from MILLIKEN STATION, on the Toronto-Lindsay branch of the G. T. R., MR. L. E. MORGAN, Milliken P. O., will sell by auction his entire flocks of Hampshire and Southdown sheep; also two imported Berkshire sows and their progeny. Many of the sheep are imported. Many are by imported sires and dams. Many of the sires are high quality; all are in fine condition. This is the opportunity of a lifetime of getting registered sheep of the world's best mutton breeds at auction prices.

TERMS—Cash, or eight months on bankable paper.

J. H. PRENTICE, Auctioneer. **L. E. MORGAN, Prop., Milliken, Ont.**

Imported Sheep

I am leaving for England about the middle of April to personally select my sheep. Anyone wanting imported sheep will do well to write me. Will import any breed. On account of my connections in England, I can import cheaper than any other importer. Write me at once for all information.

C. HODGSON, Box 92, Brantford, Ont.

Cattle and Sheep Labels

Metal ear labels with owner's name, address and any numbers required. They are inexpensive, simple and practical. The greatest thing for stock. Do not neglect to send for free circular and sample. Send your name and address to-day.

G. JAMES, Bowmanville, Ont.

Southdown Ewes

A few good shearlings, and two-shear ewes in lamb to my Toronto champion ram.

Angus Cattle

Buy an Angus bull to produce steers that feed easily and top the market. **Robt McEwen, BYRON, Ont.**

BLAIRGOWRIE STILL TO THE FRONT

Present offering: Shropshire and Cotswold ewes bred to high-class rams; also ewe lambs. In Clydesdales I have choice young mares and filly foals. In Shorthorns are several young bulls of serviceable age. Herd headers of quality.

Myrtle, C. P. R. Stn. L.-D. Phone. **J. H. MILLER, JR., Ashburn, P. O.**

Large White Yorkshires

Have a choice lot of sows in pig Boars ready for service and young pigs of both sexes supplied not akin, at reasonable prices. All breeding stock imported, or from imported stock, from the best British herds. Write or call on:

H. J. Davis, Woodstock, Ont.
C. P. R. and G. T. R. Long-distance phone

Maple Grove Yorkshires

ARE EQUAL TO THE BEST.

Present offering: Twenty-five sows bred to farrow from Aug. to Oct. All first-class, bred to No. 1 quality boars. All pig, roomy, growing stock, and ranging from six months to two years old. Eight young boars fit for use; choice long fellows of excellent breeding, and younger pigs of various ages. Pairs not related. Our prices will suit the average farmer, but are consistent with the best quality. Stock shipped C. O. D. and on approval. Correspondence and personal inspection invited. Long-distance phone via St. Thomas.

H. S. McDIARMID, FINGAL, ONTARIO.
Shedden Station, P. M. and M. C. R.

Hilton Stock Farm

Present offering: 6 yearling heifers and several younger ones. All very practical. Of Tamworths, pigs of all ages and both sexes; pairs not akin.

R. O. MORROW & SON, HILTON, Ont.
Brighton Tel. & Stn.

Newcastle Tamworths and Clydesdales

Present offering: 15 boars, 1 on 2 mos. to 1 year. Sows same age some bred, others ready to breed. Several yearling sows that have raised one litter each. A 1 by imp. bar. dam b. Colwill's Choice, Canada's champion boar, 1901, 2, 3 an S. Also one or two choice Clydesdale sows for sale. L.-D. Phone.

A. A. COLWILL, F.W.C. ST. P. ONTARIO

HAMPSHIRE SWINE

Both sexes and all ages, from imported stock. Prices reasonable.

C. A. POWELL, Arva, Ont. rto
Four miles north of Lo. don.

Mac Campbell & Sons, Northwood, Ont.

A choice lot of boars fit for service. WANTED—Twenty dairy calves, seven to twenty days old, grades or pure bred, state price F.O.B.

The Tamworths in Canada

I have a particularly nice lot of young Tamworths just now of both sexes, from youngsters up to breeding age. If you want the best types of the breed, write me. **HERBERT GERMAN, St. George, Ont.** Long-distance phone.

Tamworths and Poultry

We can supply both sexes and any age, bred from the champions of Canada; show stock a specialty. Also Toulouse Geese, Pekin Ducks and S. C. White Leghorns.

D. DOUGLAS & SONS, Mitchell, Ontario.

Maple Villa Yorkshires and Oxford Downs.

We offer 30 splendid service boars; 50 strictly choice sows, bred and ready to breed; also ewes of quality bred to imp. rams.

J. A. CERSWELL, Bond Head, Ont.

Morrison Tamworths

Bred from the prize winning herds of England; choice stock for sale; also Shorthorns of the deep milking strain.

CHAS. CURRIE, Morrison, Ontario

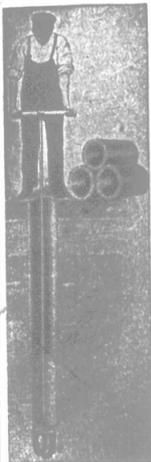
Hampshire Hogs

We have the highest-scoring and greatest prizewinning herd of Hampshire swine in Canada, bred from the best strains of the breed. Stock of both sexes and all ages. **HASTINGS BROS., Crosshill P. O. Liawood Sta., C. P. R.; Newton Sta. G.T.R.**

ELMHURST LARGE ENGLISH BERKSHIRES

Present offering: Select sows bred for spring farrow. Choice boars ready for service, also younger stock the get of Duke of Somerset imp., and out of imported dams. Satisfaction and safe delivery guaranteed. **H. M. VANDERLIP, Breeder and Importer CAINSVILLE, P. O., Langford station, Brantford and Hamilton Radial.**

You can dig 40-foot Wells quickly through any Soil with our Out-fit at \$12.00 delivered



Write us to-day, and learn how you can start a profitable business digging wells for others on an investment of but \$12.00.

Works faster and simpler than any other method.

WRITE TO-DAY

Canadian Logging Tool Co., Ltd.
Sault Ste Marie, Ontario.



SYNOPSIS OF CANADIAN NORTHWEST LAND REGULATIONS.

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

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

In certain districts a homesteader in good standing may pre-empt a quarter-section alongside his homestead. Price, \$3.00 per acre.

Duties—Must reside upon the homestead or pre-emption six months in each of six years from date of homestead entry (including the time required to earn homestead patent) and cultivate fifty acres extra.

A homesteader who has exhausted his homestead right and cannot obtain a pre-emption may enter for a purchased homestead in certain districts. Price, \$3.00 per acre. Duties.—Must reside six months in each of three years, cultivate fifty acres and erect a house worth \$300.00.

W. W. CORY,
Deputy of the Minister of the Interior.

N.B.—Unauthorized publication of this advertisement will not be paid for.



Canada's Double Track Line

Low Rates to Pacific Coast
MARCH 1st to APRIL 15th

Spokane, Wash. Seattle, Wash.
Vancouver, B.C. Victoria, B.C.
Portland, Ore. Nelson, B.C.
San Francisco, Cal. Los Angeles, Cal.
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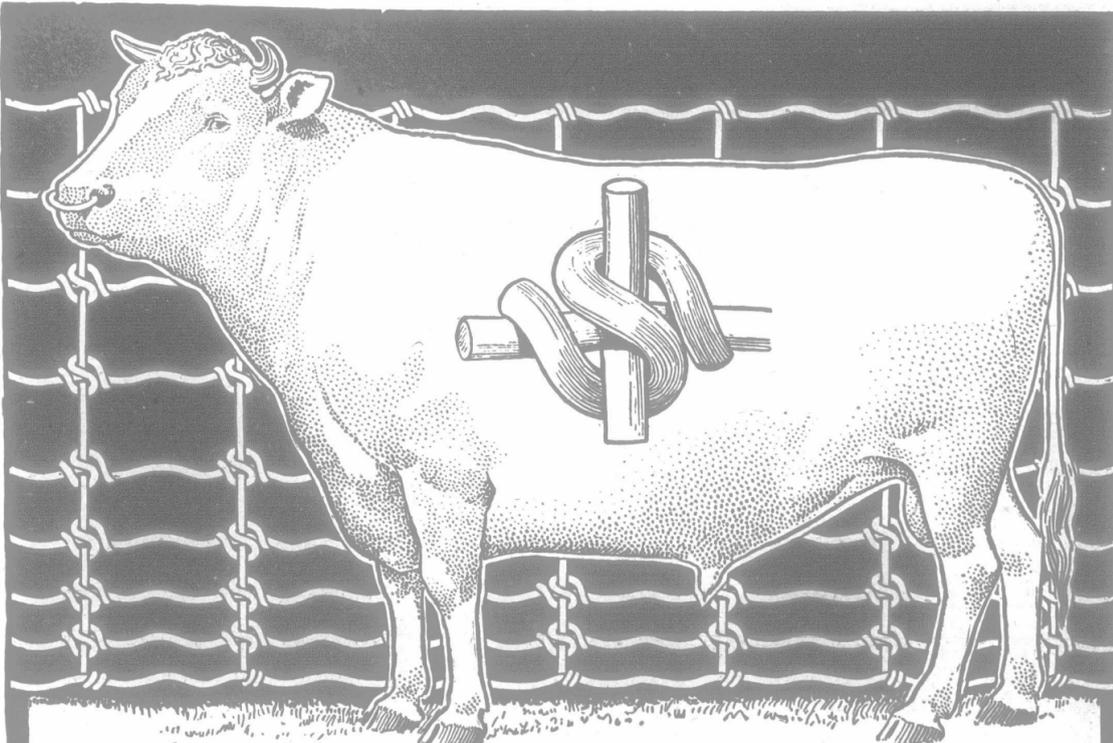
Proportionate rates from other points in Ontario.

THE POPULAR ROUTE TO WESTERN CANADA VIA CHICAGO

The Grand Trunk Pacific Railway, shortest line, fastest time, finest service between Winnipeg, Saskatoon and Edmonton.

For full particulars and tickets call on Grand Trunk Agents.

INVENTIONS Thoroughly protected in all countries. EGERTON E. CASE, Registered Patent Attorney, DEPT. E, TEMPLE BUILDING, TORONTO. Booklet of Patents and Drawing Sheet on request.



Is Anything On Your Farm Stronger Than A Bull ?

YES! If your fences are "IDEAL" Woven Wire, made of large gauge No. 9 HARD STEEL wire, heavily galvanized and with the verticals and horizontals clamped together with the Ideal Lock—that CANNOT SLIP. Bull-strong; hog-tight; horse high—a REAL fence.

NO! If you have wire fences of the ordinary kind—fairly good for a few years, but with no reserve strength to stand hard usage—because poorer wire makes them, and stretching them taut takes the utmost of their little strength to start with.

All Large Gauge Number 9 Hard Steel Galvanized Wire

From top to bottom Ideal Fence is all the same—large gauge No. 9 hard steel wire, heavily galvanized and therefore rust-proof. Note lock and its uniform smooth curve—no sharp turns to weaken the strength of the lock and yet a most positive grip—in FIVE different places. This is the fence that has ample springiness, immense strength, and the ONE LOCK THAT'S GOOD. Drop us a card and get our catalog telling all about the many styles and merits of IDEAL FENCE. Sample lock comes with it. Write us today.

McGREGOR BANWELL FENCE COMPANY, LIMITED, WALKERVILLE, ONTARIO

Planet Jr

means on a farm or garden tool the world over that it is the latest-improved, lightest, strongest, most useful and economical tool of its kind. With Planet Jrs come

Less work—bigger crops—more money

They make you independent of slipshod help and give you time for rest and enjoyment besides. 55 Tools; guaranteed. Designed by a practical farmer; used throughout the world.

No. 25 Planet Jr Combined Hill and Drill Seeder, Double Wheel Hoe, Cultivator and Plow has automatic feed-stopping device, valuable seeder index and complete set of cultivator attachments. Indestructible steel frame.

No. 8 Planet Jr Horse Hoe and Cultivator is a wonder of scientific tool-making. Does more different kinds of work, better than any other cultivator. Plows to and from row, hills, furrows, etc.



FREE! A 64-page illustrated farm and garden book!

Keep up to date! Learn the latest and most valuable farm and garden information by sending for this Planet Jr book. It describes also 55 tools for all uses. Write postal for it today!

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Box 1108F Philadelphia Pa



WRITE FOR THE NAME OF OUR NEAREST AGENCY.

Red Cross Chemical Closets

No Water Required or expensive plumbing.
Easily Installed anywhere in your home.
Inexpensive to Operate and Positively Guaranteed.
Odorless and Sanitary.
Write for catalogue E.



Red Cross Sanitary Appliance Company
(Inventors and Sole Manufacturers), GRIMSBY, ONT.

NO LEAK-NO RUST

STEEL TANKS V. WOODEN

The steel tank for water storage is as much superior to wooden tanks as modern steel farming implements are to the crooked sticks of our ancestors in early ages. Wooden tanks are unsanitary and liable to leak. Our steel tanks are all steel of the finest quality—self supporting—surrounded by an iron angle framework with braces added according to size of tank. The angle iron framework ensures absolute rigidity, and the braces added give the tank strength four times in excess of any strain that may be applied.

Guaranteed for ten years but will last a lifetime.
STEEL TANK CO., TWEED, ONT.
AGENTS WANTED EVERYWHERE

Buchanan's Swivel Carrier

For unloading Hay and all kinds of Grain.

For wood track, steel track, rod and cable track. Made entirely of malleable iron; no springs. Fitted with our patent deadlock. 25,000 of our Haying Machines in use, is the best guarantee that we build them right.

Write for catalogue of Carriers, Slings, Stackers etc.—and name of dealer near you who handles Buchanan's, M. T. Buchanan & Co., Ingersoll, Ont.

LEARN TO RUN AND REPAIR AUTOMOBILES

Course endorsed by Benj. Briscoe, Pres. United States Motor Co. We teach in 12 simple lessons the WHOLE subject. Course on Salesmanship FREE. Best and most practical system. Small payment starts you. FREE HUBS TO EACH STUDENT. Big demand for chauffeurs and salesmen. We assist you to get a position. WRITE FOR FREE BOOK. It explains how to enter this new industry. Practical Auto School, 867 Beaver St., New York (We supply owners with competent men.)

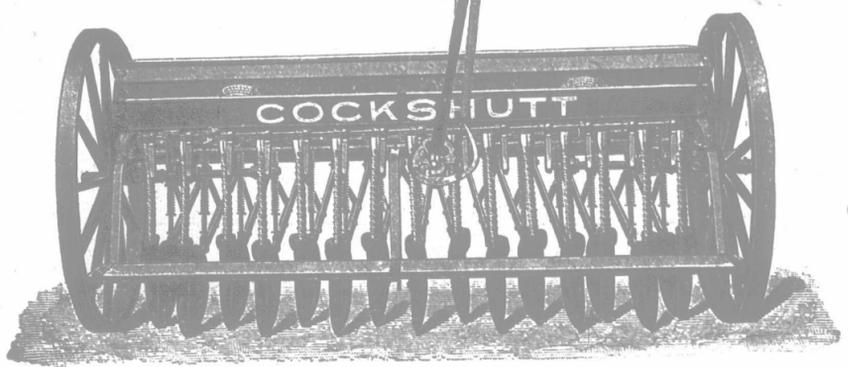
COCKSHUTT

Get the Seed Bed Right, then Sow Right

GOOD farming needs good tools. Every dollar put into tools that care for the seed bed and the sowing, should be spent in quality implements—the kind that can really do the work. Remember always that “Cockshutt” and “Frost & Wood” stand for skill, experience, care and excellent design in such tools.

Cockshutt Disc
Lightest Draft Drill Made

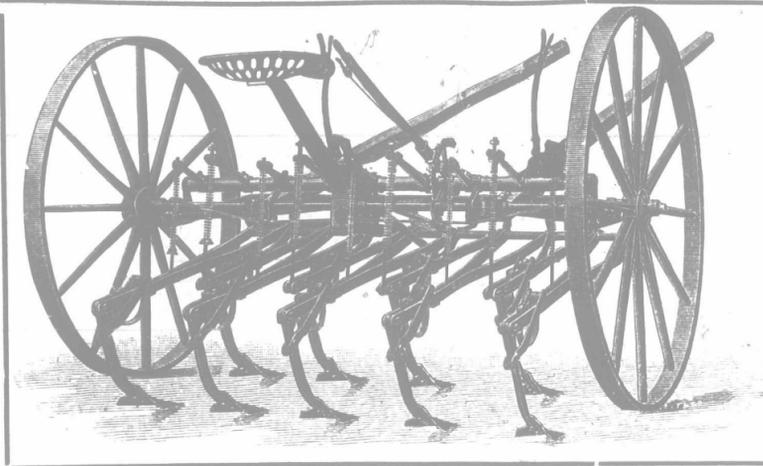
Drills
13 to 15 Discs



THE great feature of this Cockshutt Disc Drill is its very light draft and even seeding at even depth. The light draft is obtained from self-oiling dust-proof disc bearings and perfect fitting parts. The even seeding is maintained by a protected feed device, not subject to jarring from the wheel action. Seeding at even depth is attained by a steel I-beam frame, which holds up both the discs and grain-box, no matter how rough the usage or wear given the drill.

Drills are six inches apart, avoiding all drought trouble, and getting more growth per acre. GET OUR BOOKLETS.

F. & W. “Climax” Cultivators



THIS famous “Climax” Cultivator is one of the best land cleaners on the market. The “Climax” will cultivate to six inches deep, or will just skim the surface, giving every range of work one can desire.

Every part in the “Climax” is riveted. Braces and Drag Bars are best steel. The frame is so heavy and rigid you will never have trouble from warping or binding of parts.

There are narrow, medium and wide points to use for the various methods of spring, summer fallow and autumn cultivating, by which weeds are cut below the surface, are ripped out entirely, or are started growing in fall to be winter-killed.

These various points are held at the exact cutting angle for proper work. A relief spring is so arranged that any point may “give” on meeting a rock, pass over it, and then when raised by operator will spring back into position, cutting again as before. Weeds

cost you a great deal of money, and the “Climax” is effective on the farm as a positive and dependable land cleaner, with minimum draft on the horses for doing the work thoroughly and frequently. We want you to investigate the stiff-tooth “Climax” Cultivator, and have a finely-illustrated book on “Frost & Wood Implements,” which shows every detail. Sent FREE to you for a post card.

ASK for information about any kind of farm implement you need. We can help you.

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FROST & WOOD CO., Limited, Smith's Falls, Montreal, St. John, N. B.