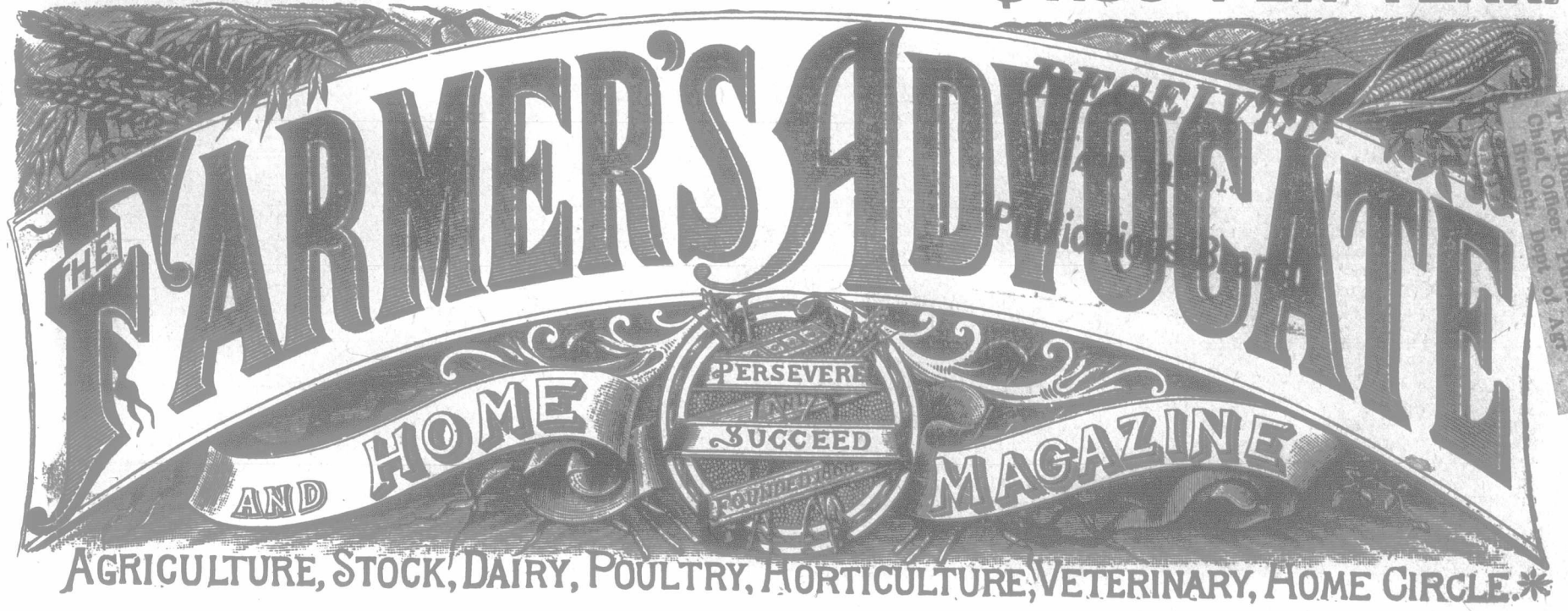


680
PUBLISHED EVERY WEEK. \$1.50 PER YEAR.



Vol. XLVIII.

LONDON, ONTARIO, APRIL 10, 1913.

No 1072

Every Woman Invited

WE invite every woman to try Purity Flour at our risk. Not just one trial, either. Give it as many tests as you like. Then if you don't think Purity Flour is the best flour you ever used your grocer will return the full purchase price to you. Could there be anything more fair?

Purity Flour will meet every test the most critical, the most expert cook can give it. The best wheat in the world is used for Purity Flour. It is milled by the best process, so why shouldn't it be the best flour? Why shouldn't it make the lightest, flakiest pastry, the finest cakes, the best bread? And why shouldn't you use it?—at our risk.

If your grocer hasn't Purity Flour in stock he can get it for you.

PURITY FLOUR

**"More Bread and Better Bread---And Better
Pastry Too"**

Government Standard SEEDS

Sold under the guarantee that if they do not entirely satisfy you on arrival you may ship them back at our expense. We buy most of our seeds directly from the farmers here in Haldimand County.

- ALFALFA or LUCERNE.—\$11 per bush.
- RED CLOVER.—\$15 per bush.
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- O. A. C., No. 21 BARLEY.—80c. per bush.
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We will pay freight in Ontario on three bushels of Clover Seed.

Bags extra, cotton 25c., jute 10c.
Cash with order. Ask for samples.

The Caledonia Milling Co.
Limited
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GRAND TRUNK RAILWAY SYSTEM

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To MANITOBA, SASKATCHEWAN AND ALBERTA

Each TUESDAY until Oct. 28th, inclusive.
Winnipeg and Return - - - \$35.00
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Proportionate low rates to other points.
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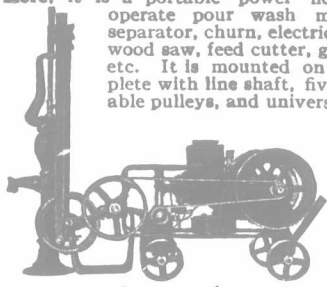
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Every TUESDAY until April 29th inclusive, from stations in Ontario, Port Hope, Peterboro, and West, at very low rates.
Through coaches and Pullman Tourist Sleeping cars are operated to WINNIPEG without change, leaving Toronto 11.00 p.m., via Chicago and St. Paul on above dates.
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With a "GOES LIKE SIXTY" Pumping Outfit.

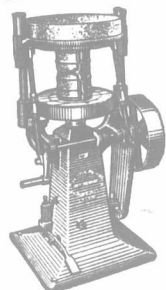
No more backaches. No more waiting for the wind. The Gilson 60 SPEED is the ideal pumping engine. It "GOES LIKE SIXTY". Furthermore, it is a portable power house, ready to operate pour wash machine, cream separator, churn, electric light dynamo, wood saw, feed cutter, grinder, pulper, etc. It is mounted on wheels, complete with line shaft, five interchangeable pulleys, and universal pump jack.



The only engine, fully equipped, ready to yield 100% service. A powerful, durable engine, built to last a lifetime. The simplest engine on the market. A child can operate it.

Write for full particulars and also catalogue of pumps, pump jacks, wood saws, etc.

GILSON MANUFACTURING CO.,
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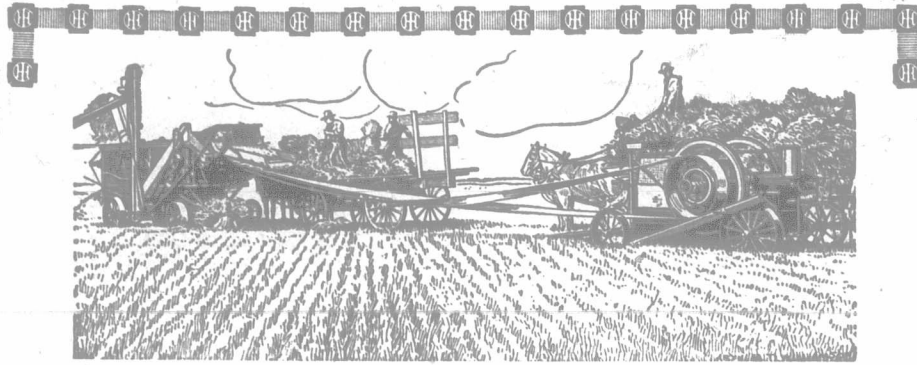
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Makes all sizes of tile from 3 to 16 inches. Cement Drain Tile are here to stay. Large profits in the business. If interested, send for catalogue.

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You Will Need Extra Power

WHEN you buy your engine, get it big enough to do more than your present work. If it's an IHC engine it will last a long time. Your farm work is bound to increase in volume. Very likely you can save yourself the price of another engine four or five years from now, by getting an engine a size larger than you need now.

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An IHC oil and gas engine will deliver 10 to 30 per cent above its rated horse power when occasion requires, but it gives the longest service when carrying a normal load. All parts are carefully, accurately ground and perfectly balanced. The best material obtainable is used. Combustion is perfect and the maximum power is secured.

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The IHC local agent will help you decide on the size of IHC engine you need. Get catalogues from him, or, write the nearest branch house.



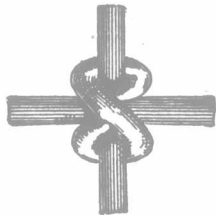
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See That Knot

ANTHONY WIRE FENCE is the **cheapest** on the market if you value **quality and workmanship**.

ANTHONY WIRE FENCE is made from all No. 9 hard steel wire thoroughly galvanized.

ANTHONY WIRE FENCE has the stay wires tied to the line wires with the **strongest, neatest and most compact lock** on any wire fence made.

ANTHONY WIRE FENCE is so constructed that it will **not bend down at the top nor roll up at the bottom**; but stands up straight when erected.

Buy it and try it, and be satisfied.

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you have seen our catalogue. It puts the fence situation fairly and squarely before you.

It also tells you how to save time and money when building fence. How to measure up just the amount you need and how to order to your best advantage.

It tells you why, AND PROVES WHY, it will pay you to buy Standard Fence Posts and Gates in preference to all others. Write for it now. Address

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Have opened up an

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TO arrange for Labor for you from the Old Country. We have an organization of over 2,000 Agencies, many in the Heart of the Agricultural Districts of England, Scotland and Wales.

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Drop the office a line, and if necessary we will gladly come and see you and arrange details.

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For literature descriptive of this great territory, and for information as to terms, homestead regulations, settlers' rates, etc., write to

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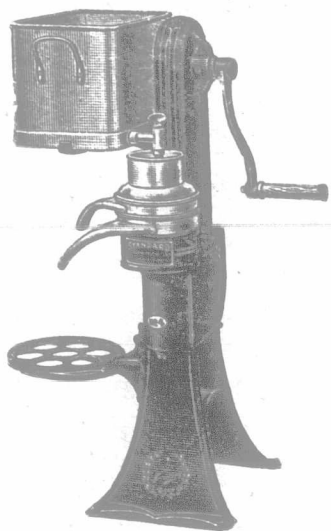
If you are troubled with stumps, give our "Patent Samson Stump Extractor" a trial. It has now been in use in Europe for the past three years with the greatest success. By its assistance, two men will do the work of three men and a horse. It can also be used for felling trees.

WRITE US FOR DETAILS.

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The STANDARD cream Separator has justly been named "The Record-Breaker" by creameries and Dairymen. It has certainly made some remarkable skimming records at Ontario Agricultural College, Guelph, at Dominion of Canada Experimental Farms, Ottawa, at Warton Creamery, at Stratford Creamery, and others. The report of the records made by the



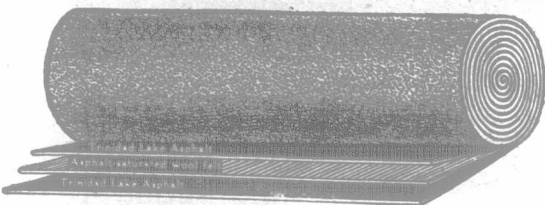
Standard

If you are not familiar with the skimming records established by the Standard cream Separator write us. We will gladly send you particulars. But the best record of all, will be the record the Standard will make for you in everyday use in your dairy. It will do the same for you as it has done at Experimental Farms. All Standard Separators, of the same capacity, are identically alike. One Standard is as good as another, no matter who owns it.

at the Eastern Dairy School at Kingston, and at the Kerwood Cheese and Butter Factory, were published a short time ago. They proved, conclusively, that the Standard Cream Separator was unequalled for close-skimming. They go to show that right here in Canada is made the "World's Greatest Separator,"—a fact we believe, all Canadian Dairymen will be proud of.

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Trinidad Lake asphalt makes roofing lastingly tight against rain, sun, wind, snow, heat and cold. This is the everlasting waterproofer of Nature. We use it to make

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Because it gives absolute protection Genasco is economical roofing—it costs less in the end. Ask your dealer for Genasco. Mineral or smooth surface. Look for the hemisphere trademark. The Kant-leak Kleet is in every roll of smooth surface Genasco. It water-proofs seams without cement and prevents nail-leaks.

The Barber Asphalt Paving Company Philadelphia
Largest producers of asphalt, and largest manufacturers of ready roofing in the world

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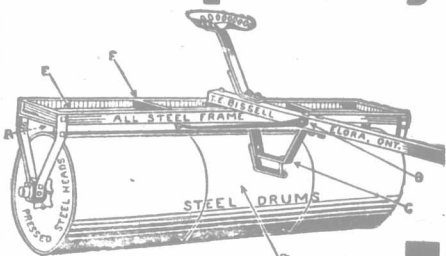
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The Canadian Asphalt Co., Ltd.
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"Bissell" rollers are a specialty

The "Bissell" Rollers are built by men who have made a life study of this work, and are SPECIALISTS IN THE BUSINESS. Search as you may, there are no such perfect Land Rollers on the Continent as the "Bissell." Make a note of



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The 18 cold rolled anti-friction Bearings 1/2 inch thick with lathe cut ends, held in the one piece Malleable Iron Cage, is a single point placing the "Bissell" Roller away ahead.

Look for the name "Bissell" on every Roller. No other is genuine. Ask Dept. W for free catalogue.

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ROGERS' CEMENT AND CRUSHED STONE

Buildings That Save Money For Farmers

The most economical building material is concrete made with Rogers Cement and crushed stone.

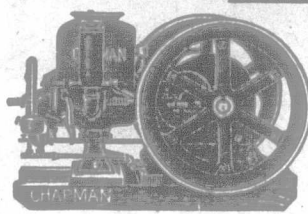
The modern farmer knows that cement houses, barns, silos, etc. are everlasting, fire-proof, warm, comfortable,—save money in every way.

Every live farmer should know what can be done with cement on his farm, and how it is used. We have spent thousands of dollars preparing a book to tell you how to mix and use cement.

A copy will be sent to you for 50c.: a fraction of its cost. You need this book—the supply is limited.

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Ontario Wind Engine & Pump Company's LINES ARE SUPREME



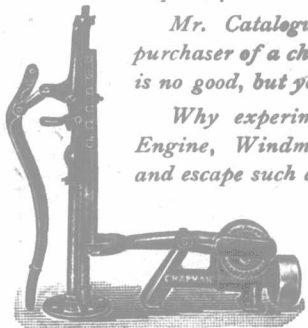
N4 Majesty of the Law

A notorious Texas judge, at an inquest of a dead stranger, found with \$40.00 in one pocket and a six-shooter in the other, said,

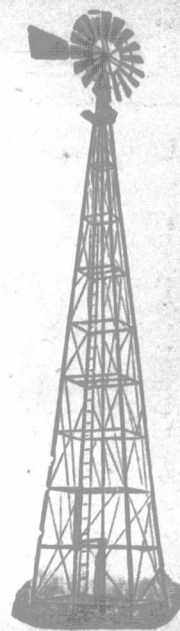
"As it is against the law to carry a gun, I fine the corpse \$40.00."

Mr. Catalogue House says to the unfortunate purchaser of a cheap machine, "I know your machine is no good, but you didn't pay much."

Why experiment? Buy the O.W.E. & P. Co.'s Engine, Windmill, Well Drill, Grinder or Pump, and escape such a Judge.



If your dealer does not handle our lines, write the Ontario Wind Engine & Pump Co., Limited, at Montreal, Toronto, Winnipeg, or Calgary.



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The New Kemp Manure Spreader

Made by oldest manufacturers of Manure Spreaders in the world.
 Draft one horse lighter than any other Spreader built.
 Strongest Spreader built.
 Only Spreader equipped with J. S. Kemp's Patented Reversible, Self-Sharpening, Graded, Flat Tooth.
 Handles all kinds of material found on the farm, even clear gum or rotted material.
 This is the only Spreader that will do it satisfactorily.
 Write to-day for catalogue and J. S. Kemp's article on Saving and Application of Manure.

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NATCO EVERLASTING SILOS

need no insurance—because they are permanent. They cannot burn; they will not blow over; last a lifetime.

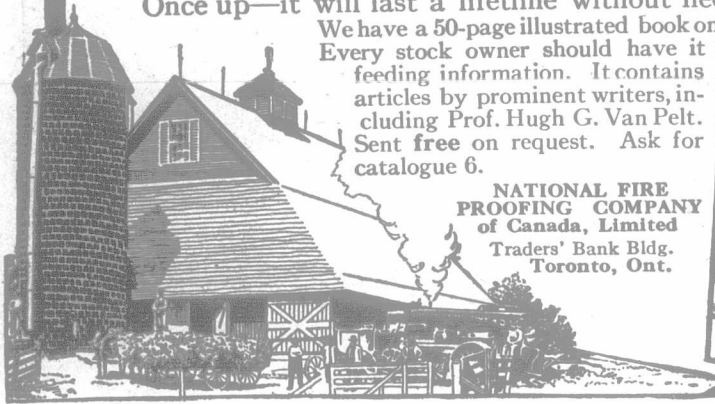
Built of Hollow Vitrified Clay Blocks

The most lasting material known. Blocks are air-tight and moisture-proof. They are glazed and keep silage sweet and palatable. No hoops to tighten; no staves to paint. Never swells or shrinks. Attractive in appearance—a silo that will improve the looks of your farm.

Any Mason Can Build a Natco Everlasting Silo

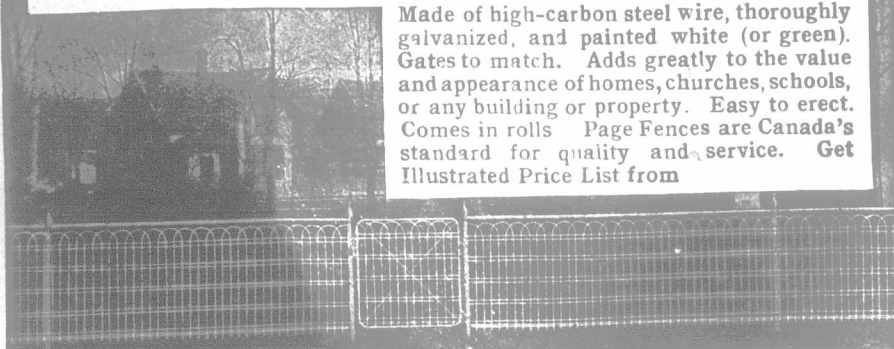
Once up—it will last a lifetime without needing repairs.

We have a 50-page illustrated book on silos and silage. Every stock owner should have it for its valuable feeding information. It contains articles by prominent writers, including Prof. Hugh G. Van Pelt. Sent free on request. Ask for catalogue 6.



NATIONAL FIRE PROOFING COMPANY of Canada, Limited
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 Toronto, Ont.

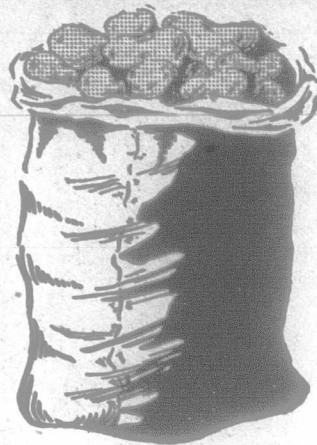
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MONEY IN POTATOES



Every Bag a DOLLAR

Got them all

THE farmer with a big crop of potatoes has a gold mine at his back door.

Every bag is a dollar.

Every bag left in the ground is a dollar lost.

Every bagful chopped by the plow is a dollar lost.

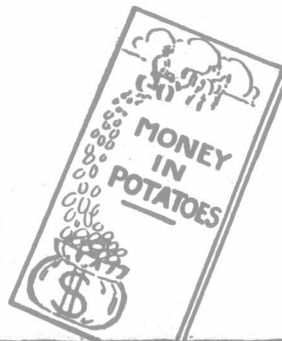
If it costs \$5.00 too much an acre to harvest them it is \$5.00 per acre lost.

To handle the whole crop and handle it cheaply is going to make a big difference in the profits.

We can help you there. Our book "Money in Potatoes" has ideas that will help you to mine that crop of potatoes to the last dollar.

Dollars saved in the potato field are as good as extra bushels to the acre.

The "big crop" coupon will entitle you to a free copy of the book "Money in Potatoes." Send it in to-day. There is money in it for you.



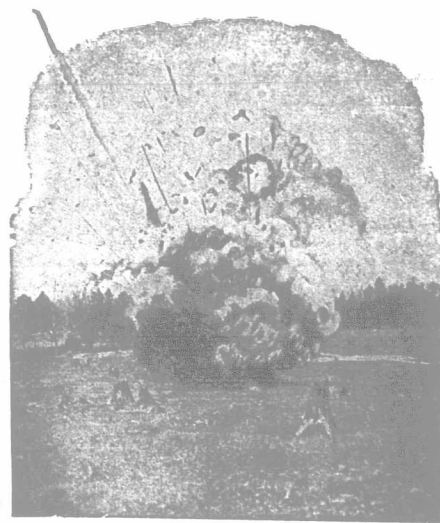
BIG CROP COUPON

The Canadian Potato Machinery Co. Limited, Galt, Ontario

As a Potato Grower I would like to have a free copy of this book.

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Stumps Minimize Your Profits

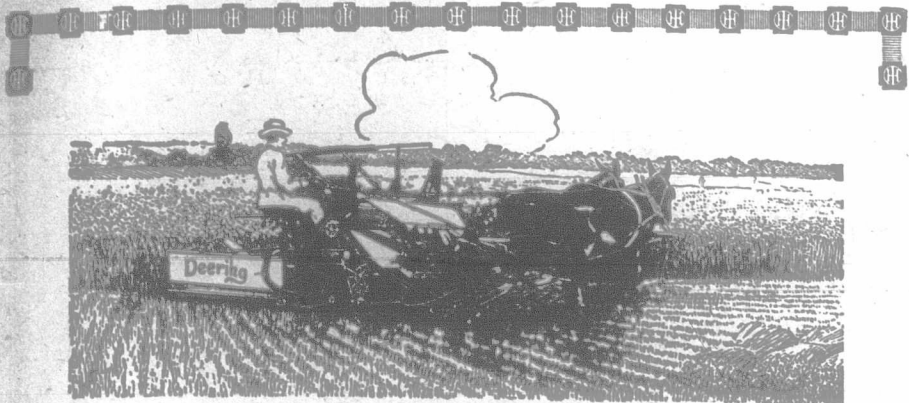
How much of your fertile land is occupied and wasted by stumps and boulders. Why not blast them with

C X L STUMPING POWDER

The cheapest, quickest, best method known to-day for clearing land. Write at once for our Free Booklet.

Canadian Explosives, Limited
 Montreal, Que. Victoria, B. C.

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Cut and Bind All Your Grain with a Deering New Ideal Binder

SPECIAL features make the Deering New Ideal binder particularly effective in Eastern Canadian grain fields. The manufacturers study all the conditions that farmers in the eastern provinces have to meet and they have provided for them in ways that make the Deering binder an ideal machine for your work.

The main frame is made of high carbon steel bars, hot-riveted together, forming a unit which the hardest usage cannot twist out of shape. Ball and roller bearings make the machine light running. The reel is strongly braced and can always be held parallel with the cutter bar whether working high or low. The reel is easily adjustable to the right height for handling different stands of grain. A special T-shaped cutter bar, almost level with bottom of platform, allows the machine to be tilted down for picking up tangled and down grain without collecting trash in front of the knife. The three packers and three discharge arms help greatly in doing efficient work. Either smooth section or the usual serrated knives fit the cutter bar. The Deering knotter never fails.

Your harvest troubles cease when you use a Deering binder. Look one over at the I H C local agent's place of business. Get catalogues from him, or, write the nearest branch house.

International Harvester Company of Canada, Ltd

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 At Hamilton, Ont. London, Ont. Montreal, P. Q.
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These machines are built at Hamilton, Ont.



Join the "don't worry" club!
 Buy your Ford to-day.
 Thousands were disappointed last year. Don't take a chance this time. And remember that the more we make the better we make them. Insist on an immediate delivery.

There are more than 220,000 Fords on the world's highways—the best possible testimony to their unexcelled worth. Prices—runabout \$675—touring car \$750—town car \$1,000—with all equipment, f.o.b. Walkerville, Ont. Get particulars from Ford Motor Company of Canada, Limited, Walkerville, Ontario, Can.

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A Necessity for the Dairy Farmer

For Particulars, Write Us

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Where Is It Made?

THE demand for gasoline engines is increasing by leaps and bounds. Progressive farmers all over Canada and the United States are now fully awake to the efficiency and economy of gasoline power. The leading engine factories are very busy indeed keeping pace with the demand.

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If it is made in a large, well-equipped factory by makers of long experience, you are pretty safe in buying it. It will be a good, reliable engine. Such an engine is the **BARRIE**. It is the product of one of Canada's foremost engine manufacturers.

If we could take you through the great plant wherein the **BARRIE ENGINE** is built, and show you how materials are tested for quality and strength; how accurately each part is machined and how beautifully polished and finished; how rigidly the parts are inspected and how completely the finished engine is tested; then you would be quite sure that the **BARRIE ENGINE** was one engine that was made right from start to finish.

After you went home and tried a **BARRIE ENGINE** for a week or two you would know then the satisfaction there is in

owning an engine that is acknowledged to be one of the best built and efficient engines produced in Canada or the United States.

Don't you want to try a **BARRIE ENGINE** right away?

Of course you do. Then write us.

The **BARRIE ENGINE** is made in sizes from 2 to 400 h.-p., stationary and portable. For gasoline, distillate, natural gas and producer gas. Write for booklet giving complete description.

The Canada Producer & Gas Engine Co., Ltd.

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 CONTAINS A MUCH HIGHER PERCENTAGE OF REAL VALUE THAN OTHERS
 SOLD BY LEADING MERCHANTS, OR DIRECT FROM W. RENNIE CO. LIMITED
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 —the vegetables and flowers and field crops that spring from Ewing's Reliable Seeds!
 They are lusty and vigorous, true to name and strong in the qualities that make each particular variety popular.
 The new 1913 Catalogue of

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offers a selection that cannot be beaten—the good old favorites, and all the new and improved varieties that have made good.
 Write for this Catalogue—it will certainly help you to choose the right seeds for bumper crops next year.
 Then, if your dealer cannot supply you with the Ewing's Seeds you want, order from us direct.

WM. EWING & CO.,
 Seedmen
 86 GILL ST.,
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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.

PRESIDENT SUSPENDER
 NONE SO EASY

FARMERS!
 Why Not Buy an Acme Drain Tile Machine and Make Your Own Tile?
 The easiest running and most practical hand-power tile machine made. A boy can operate it as well as a man can. No pallets or paper jackets required. The greatest money maker on the market. For catalogue and price list, write **WILLIAM G. JOY,** Dept. C. Napanee, Ont.

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 in your old separator
 on account of a new
DE LAVAL

An up-to-date De Laval Separator will, on an average save its cost every year over any other separator.
 In addition to the actual saving in more and better cream there is also the saving in time of separation and cleaning, in easier running, greater durability and fewer repairs.
 Because of these savings more than 40,000 users of inferior and worn-out separators of various makes last year took advantage of the De Laval exchange allowance and traded in their machines on account of De Laval's.
USERS OF OLD DE LAVALS, on account of the many improvements in the modern De Laval, over machines sold 10 to 25 years ago, including closer skimming, easier running, better oiling, etc., will also find it to their advantage to exchange their old De Laval for an up-to-date De Laval.
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., Ltd.
 MONTREAL PETEBORO WINNIPEG VANCOUVER

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THEY are the clearest-talking and loudest ringing bridging telephones on the market. They are guaranteed to be superior in design, material and workmanship. They have several exclusive features that add to their efficiency. Made in wall phones, as illustrated, and desk or table styles. If you are operating a telephone line and not using our telephones and equipment, write for our Free Trial Offer. If there is no telephone line in your locality, write us and we will tell you how to organize an independent municipal or local company. Our No. 3 Bulletin --- containing the latest information about building telephone lines--- is free on request.

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 BUILT TO LAST A LIFE TIME.

QUALITY AND EFFICIENCY ARE MAIN ESSENTIALS IN A PIANO YOU GET THESE IN A BELL PIANO

We take the time and pains to build them right.
 There are many good features in the BELL never found in other makes.
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The Farmer's Advocate

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1866

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Vol. XLVIII.

LONDON, ONTARIO, APRIL 10, 1913.

No. 1072

EDITORIAL.

When making improvements make good ones. This thought, applies especially just now, to fencing, a job at which many farmers will shortly be engaged.

If there happens to be a tile drain or two across your new-seeded alfalfa, clover or fall wheat, take a walk over it now and observe the effect it has had in protecting the roots from heaving.

Nothing bespeaks prosperity on the average farm more than a number of horses, cattle, sheep and pigs, all having wintered in good condition, and ready to go out to grass and continue making money for their owners.

The scarcity of good seed grain as well as of clover and alfalfa, should be a lesson to many to practice seed selection on their own farms during the coming year. Plan to grow a seed plot of the various grains, and if possible produce the clover seed at home.

Be sure and sow enough seed this year to ensure a crop. This should be followed with regard to cereals and clovers alike. Last year was a very hard season to cure seeds, and the percentage germination is likely to be smaller than usual. The only really safe way is to test the seed.

In operating a farm it is well to look ahead, plan to conserve fertility, and work things out to ultimate system and success. But expediency warns against going too far in this direction, sacrificing immediate returns for problematical advantages that may never mature. Here, as in other things, judgment is golden.

Many fences were levelled by recent gales in Ontario. Weigh the matter carefully before replacing all of these. Most farms support too many fences. A needless fence is a bill of expense, and a fertile breeding ground for plant diseases and noxious weeds. Look into the possibilities of a portable fence before erecting some of the inside fences.

The foot of your horse is more or less in the hands of the smith who shoes him. The ideas of a practical horse-shoer in another column should be of value to all owners of horses which are kept shod. In all shoeing give the shoer a chance. Keep the colt's feet right, and keep the shoes on the working horses changed frequently and at regular intervals.

In guarding a tile outlet with crossed wires or some other means calculated to exclude small animals, see that it is not done in such a way as to obstruct the flow of water. Stubble and other litter sometimes finds its way to a new-laid tile through an orifice into which surface water pours. The litter being carried down may be caught by the guard at the mouth of the tile, and may block the passage to such an extent as to cause the water to force through back of the outlet, displacing one or more tile, and cutting a bad ditch.

Chores and Seeding.

The necessary chores are one of the burdens to be borne during the spring seeding. At no other time in the entire year do chores seem to be such a "drag" as in spring. With the increasing scarcity of labor, it is necessary nowadays, on most farms, that the men working teams attend to the chores as well. Chore boys are not as plentiful as they once were. If a man works ten hours a day in the field and also has one hour each morning and night and a half hour at noon to put in feeding stock and doing chores other than the tending of his team, it makes the days rather long and strenuous. Seeding must be done as fast as possible as soon as the land is ready to work, consequently as much must be accomplished as possible each day, and the chores are always imperative. Slightly longer days are necessary at this season than at most others, but a real good eight-hour day in the field will accomplish considerable. This means that the teams be kept going fairly steadily, and at a good brisk walk. This length of day permits of more time to do chores. Where this latter work is abundant, teams should stop at five o'clock if the drivers have more chores to do than they can get done in an hour besides attending to their teams. Of course where an extra man is available to care for the stock, teams should put in ten hours in the field, as this would permit of giving the horses a little more time, it not being so necessary to "push" them. Where the teamster must do the chores, working at a slightly increased pace eight or nine hours in the field and doing the greater portion of the chores in the remaining hour or two will generally be found more satisfactory than extremely long days. As most of the seeding and tillage implements are fitted with spring seats the increased pace makes no difference to the teamster, but he should be careful not to overdo his horses at the beginning of seeding or on exceptionally hot and muggy days.

The Barnyard.

There is no better time in the year to demonstrate the advisability of keeping a comparatively clean barnyard than spring. Spring is always accompanied by more or less rain, and the melting snow coupled with this ensures a few weeks of slush around the buildings, and the barnyard very often presents a sorry spectacle. What a difference there is between the yard situated on a dry knoll and the one placed in a veritable lake. This difference is all, of course, due to location, but there are other differences due wholly to management during the winter months. In one yard you will see the manure neatly piled at one side or one end a good distance from the stable doors, and not spread promiscuously all over the yard. In another yard the manure is dumped almost as soon as it is outside the stable door, no particular effort being made to keep the pile compact or tidy, and in others the litter and manure are spread out a few feet deep over the entire yard, and the cattle and other stock are permitted to trample through it and "churn" it up into a mire.

Manure is one of the most important assets of any farm, and represents no small share of the profits of live-stock husbandry, hence is too valuable to be wasted. There is a great loss from many yards at this season from run-off, due to the excessive amount of moisture precipitated or already in the manure from the recently melted

show. Some loss is also due to leaching. It stands to reason that where the manure is spread out over a large area the run-off loss is much greater than where it is kept in a tidy pile several feet deep. A larger exposed surface means the incorporation of more water, which soaks through to the already saturated soil and runs away as surface water. Besides, where manure is kept piled in neat solid piles, the losses due to the work of organisms are not so great, and plant food is not decomposed and distributed through the air to such an extent as where the manure is spread over a large yard only a foot or two in depth.

Aside from the actual plant food loss there is considerable satisfaction in having a dry yard, at least, as dry as it can possibly be made at this season, and a yard through which one can walk without sinking to his knees in water-logged stable manure. A dry barnyard bottom, kept bedded with a little straw or scraped clean, the manure being piled neatly, should be the aim of all.

Apple Grower and Buyer.

There is seldom much wisdom or justice in holding a second party responsible for the unsatisfactory state of one's own condition of business or living. To a greater extent than we realize we are the arbiters of our own fortunes. Rivals, competitors, sharp-witted dealers and others merely represent or personify the obstacles before which our own irresolution, incapacity, lack of business gumption or lack of principle falls down. We really fail, when we do fail, not because of what the other fellow does but because of certain more or less fundamental deficiencies in ourselves. There are minor and temporary exceptions to this rule but it holds pretty true in the main.

These thoughts are immediately suggested by the prevalent disposition of fruit-growers to blame the buyers for the unsatisfactory condition of the apple-marketing situation which, after two or three seasons of comparatively ready sale, developed acutely again last year. As a matter of fact it is not the apple-buyer but the grower who is responsible. To be sure, buyers are not angels. On the average they have no more principle than any other class of the community, but we are not sure that they have less. It is significant that there is scarcely an apple-operator in the country who has got rich out of the business. Many have gone to the wall. The trouble is that the conditions under which Canadian apple-buyers are forced to operate are wasteful and unsatisfactory in the extreme. If growers wish to improve matters they must see to it themselves, first of all by giving good clean fruit, then by picking it promptly and carefully, packing it well, marking it honestly with a studious regard for commercial principle and marketing as near to the consumer as practicable, under their own individual or co-operative brands, for which a reliable reputation must be built up by years of rigorous high-principled work. An implied guarantee of quality and honesty must go with every single box or barrel bearing one's brand. One lapse from the standard may undo the reputation built up by a whole season's work. Unfailing care and principle is demanded, with the same standard of grade maintained each and every year. Scarcely any of our Eastern fruit-growers have learned what commercial principle

The Farmer's Advocate AND HOME MAGAZINE.

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IN THE DOMINION.

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JOHN WELD, MANAGER.

Agents for "The Farmer's Advocate and Home Journal,"
Winnipeg, Man.

1. THE FARMER'S ADVOCATE AND HOME MAGAZINE is published every Thursday. It is impartial and independent of all cliques and parties, handsomely illustrated with original engravings, and furnishes the most practical, reliable and profitable information for farmers, dairymen, gardeners, stockmen and home-makers of any publication in Canada.
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LONDON, CANADA.

really means as understood by the enterprising Pacific-coast shippers. Until we do learn it we shall fall short of deriving maximum returns from our orchards. Even last year when apples were so low that many farmers refused to pick their fruit, Peter McArthur sold his in Edmonton—a first venture at that—for prices which netted him two or three dollars a barrel. It is the old story he did the thing up right.

Somewhat along this line let us quote from a letter received at the office lately as private correspondence. It was written by a widely-travelled Ontario grower and shipper:

"I do not consider the buyers the responsible parties, they should not have the control of the situation.

"There is no doubt much of the harm to our apple market has been done by the buyers and as a class there have been many gamblers and dishonest men amongst them. What I wish to impress on the growers is the fact, that apples perfectly grown, honestly and scientifically put up will put the business on a safe basis and cut out all chances of the buyers ruining the trade. I advocate the farmers growing and putting up only perfect fruit. This done, there need be little to fear from the buyers, as they can only then be the medium through which the apples may be put on the market. Where the buyers do the harm is when the farmers sell their apples by the lump or in the orchard and the buyers go in and put up all sorts of rubbish to get all the apples they can for their money. This should be cut out entirely. But we must go back of that to the growing of the fruit; if only good perfect fruit is grown, as it may be by weeding out all inferior varieties and proper care and cultivation being given to the best varieties, then the buyers would not have the chance to put this rubbish on the market.

"Thousands upon thousands of acres of orchard are being planted every year in the West. I put in ten acres there myself three years ago, and in that one valley there has been over a thousand acres put into fancy varieties of apples since I planted. There are lots of other villages doing the same. These plantings are all of choice varieties—such as Delicious, Jonathan, Spitzenburg and similar fancy varieties and which will be scientifically cared for. The time is fast coming when inferior varieties will not be worth

growing, as only the choicest fancy fruit will pay to spend the care on.

"I therefore claim the future of our apple industry is almost entirely in the hands of the growers."

Seed Early.

Early seeding has a distinct advantage in the conserving of soil moisture, very important in most seasons. Not only does early tillage form a mulch on the land, preventing, to some extent, rapid evaporation but the crop germinating, and commencing to grow requires considerable moisture, and this moisture is often used by the growing crop, thus preventing evaporation which would surely take place if no crop were growing to use the water in the soil. The crop may also save some water from being lost by percolation, and in so doing may cut off a loss of plant food which might be washed out with the water lost in this way. Early seeding, provided the land is dry enough to cultivate well, and warm enough to ensure a strong germination of the seed, is always advisable. Days are valuable in seeding, and mean much towards full granaries in the fall.

Fresh Air.

By Peter McArthur.

This week an incident occurred which reminded me of an amusing story about the late Sir John MacDonald. A general election was expected and as Sir John was billed to speak at a farmer's picnic it was naturally supposed that he would make some important political announcements. The Globe, Empire, Mail, Montreal Star and other important papers each sent a full corps of shorthand reporters to the picnic for the purpose of reporting the Prime Minister's speech word for word. The world was waiting and the papers were ready to give the news. At last the great man got up to speak and the reporters fell to their work with well-sharpened pencils. But, as often before, Sir John proved himself a humorist as well as a statesman. He did not make a single reference to politics in his whole speech. He talked to his friends the farmers about the new Holstein cattle that were being introduced into the country. Considering them from a meat-producing point of view, he strongly advised against breeding them for he had noticed that when you try to fatten Holstein steers "the more you feed them the more bone they grow." I do not know that the scientists of to-day would endorse Sir John's opinion, but his little joke was popular among newspaper men for many a year. And as I said above I was reminded of it this week by a little experience of my own. You know, with all that is going on in politics at present, we who write for the papers have to keep our ears pretty close to the ground so that we shall not be caught napping too often. Among the correspondents who occasionally favor me with a line of light and leading on the course of public events is one well-known man of affairs, who has a touch of Sir John's humor. I had been hearing from him pretty regularly and the time was about ripe for him to tell something definite, so, when I got a letter addressed in his hand-writing I opened it with considerable eagerness. But instead of the information I expected I received a very wise little lecture which I am going to pass along, not because of the joke but because of its sound sense.

As your letters are read by hundreds of thousands you have great responsibility and can exercise much influence by conveying facts. When the human mind is stored with facts it will develop its own reason and reach conclusions firm and strong, if the facts are firm and strong.

Much has been written about the ravages of consumption in human beings and domestic animals. In the early days in Ontario before the woods were cleared, animals had shelter both from the woods and the abundance of fodder stacked in the barnyard, and it was not necessary to have animals in small space to keep them warm, to save fodder. Every straw counts now, and so the dumb brutes are crowded together, and there is no shelter in the yard when they are let out. Is it any wonder, with bad air cattle when crowded inside in the winter-time and with no shelter in the yards, forty per cent of them, cows particularly, contract or suffer from consumption?

Somewhat similar is the condition that has arisen amongst the masses of the people both on

the farms and in the towns and cities. In the early days in Ontario the big stove or fire-place in the large living-room heated the whole house, but now, both in country and town, the stove is shoved into a small room at the back, and in the majority of houses in the rural parts and towns, no heat ever gets near the bed-rooms. Through fear of the outer air no ventilation is allowed, and cold, damp, foul atmosphere prevails for eight months in the year in the majority of sleeping quarters in the Province of Ontario. Bad ventilation and cold damp rooms combined breed disease very swiftly.

Please get your readers to think this over and they will come to a proper conclusion. It applies equally to townships, villages, towns and cities.

* * * *

In all seriousness I think that the point he urged me to lay before the public is of infinitely more importance than anything he might have told me about the next move in the naval debate or the possibilities of a general election. Fresh air is about the most plentiful and excellent thing in all the world, and yet many of us avoid it as if it were a poison. If we were careful about having plenty of fresh air at all times the world would not be so full of people who are looking pathetically to Dr. Friedman to prove the value of his cure for tuberculosis. Fresh air is an almost absolute preventive of this dreadful scourge, and so far, it is the best cure for it that has yet been found. There was a world of wisdom in Dooley's humorous remark:

"If the doctors would open more windows and fewer people the world would be much better off."

Now that the summer is coming on, people should accustom themselves to sleeping with open windows and to ventilating their houses thoroughly. Then, when the winter months come, when so many people make their houses air-tight and disease-breeding they could become accustomed to good ventilation. People who live in well-ventilated houses and sleep in airy rooms can stand the cold better than those who do not, and they enjoy better health in every respect. Good air and sunshine are deadly to almost all disease germs, and they are not nearly so unpleasant to take as most medicines. The importance of this matter lies in the fact that at the present time about thirty per cent of the deaths are caused by consumption, a preventable though not always curable disease, and the surest preventive is fresh air.

Some years ago, when calling on Duncan Campbell Scott, the poet, at his office in the Indian Department, Ottawa, he told me of an experience the Government had in dealing with the Indians of the North and Northwest. Mr. Scott is the secretary of the Indian Department. At one time it was decided to try to get the Indians to adopt civilized methods of living. They were induced to give up their teepees and live in houses like the white men. The result was as they did not know anything about ventilating their houses, they began to die off like flies from consumption. And the ravages of the disease were not checked until they were allowed to return to their teepees through which the wind was constantly whistling and giving them the ventilation necessary to their health. As the Indians had always lived in the fresh air they could not exist without it.

On another occasion, Bliss Carman, who is above all things a poet of the open-air and sunshine, read me a lecture on the civilized passion for living within four walls. He contended that people should never use houses except for shelter from storms and for the storage of necessities. He believes that we should live in the open air every minute possible. And he lives up to his beliefs. He has a bungalow on a hillside in Connecticut, where he sleeps, and he is an enthusiastic canoeist and walker. So with the poets and politicians, as well as all the doctors in favor of fresh air, I do not see how we are to escape following all the good advice we are getting. As for myself, I sleep in a tent every summer and would sleep in it in the winter too if it were not for having to dress with the temperature below zero. After I have been sleeping in a tent for a few weeks I find it almost impossible to get a really refreshing sleep in a bedroom. Nature not only seems to adapt us to the open air but we need it, and the evidence is all in its favor. Now, to get down to brass tacks, how much fresh air do you allow in your room at night? If you sleep with every chink closed just try how it feels to sleep with your window open. After you have tried it a few nights you will find that you no longer waken with "a dark, brown taste" in your mouth and besides you will have the satisfaction of knowing that you are doing all in your power to ward off consumption, the most terrible disease that afflicts humanity. My correspondent advises you to think about it, but you should not think too long before you act. From now until bedtime is quite long enough to think about it, and then you can throw open your window.

Nature's Diary.

By A. B. Klugh, M. A.



Twig of soft maple coated with ice.

A large part of Ontario has recently passed through the worst ice-storm which it has ever experienced, a storm which will leave its marks for many years. The district from Belleville east to Cornwall was particularly hard hit. All through the night of March 26th rain fell and froze as it fell. The coating of ice thus formed was extremely thick, as may be seen from the drawing of a twig of soft maple. This twig, with its coating of ice, weighed twenty-one grammes, and after the ice had melted and the surface of the twig dried it weighed one gramme. A little branch twenty-seven inches long when coated with ice weighed two hundred and eighty-three grammes, and after the ice had melted weighed but fourteen grammes. Thus it will be seen that the coating of ice increased the weight of both the twig and the branch over twenty times. This gives us some idea of the tremendous weight which was thrown upon the branches of the trees. The effect of this strain was not long in manifesting itself, as all through the night and during the morning of March 27th huge limbs and branches were crashing down. In Kingston we experienced the full effect of this ice-storm. Many trees were split in two, others were completely stripped of limbs and are now mere stubs, and very few trees escaped without some injury. The streets were blocked with fallen limbs, and these in falling brought down the electric light and telephone wires, which, in places, lay in tangled heaps on the streets.

The effect of this greatly increased load upon different species of trees was very marked. The soft maples suffered most, the elms next, the basswoods next, the birches very little and the conifers (pines, spruces, firs and cedars) not at all. This difference is well shown by our two illustrations, one of an elm in the city park completely split in two; the other of a group of white spruces on the grounds of Queen's University with their branches all bent down but uninjured. This difference is due to the different angle at which the branches of the deciduous trees (maples, elms, poplars, etc.) and the branches of the conifers leave the trunk. The branches of the former come off at an acute angle and under increased strain break off, the branches of the latter are at right angles with the trunk and simply bend under the load. Soft maple branches make a very acute angle and the wood is brittle, hence the damage to these trees.

I should be glad to hear from readers of "Nature's Diary" as to how the various species of trees in their localities stood the strain of this ice-storm.

This storm has done a terrible amount of damage to shade and fruit trees, and many are beyond help. But all those not entirely ruined should be treated at once, by sawing off the broken limbs and painting the cut surface with a thick coat of paint.

This winter's migration of the Canada jay was evidently widespread. Having seen the request for notes on this species in a recent "Nature's Diary", two readers of "The Farmer's Advocate" have written me on the subject.

M. W. Shepherd, B. A., of Prescott County, Ontario, says: "The Canada jay first came under my observation this winter on December 16th. During January, February and March they have frequently been in the orchard and about the door. I have often thrown pieces of bread a few feet from me and without fear the bird would softly sail to where the bread had fallen, then picking it up would fly to a nearby apple tree. Then after eating a portion of it would fly away to the woods, carrying along the uneaten portion in its bill."

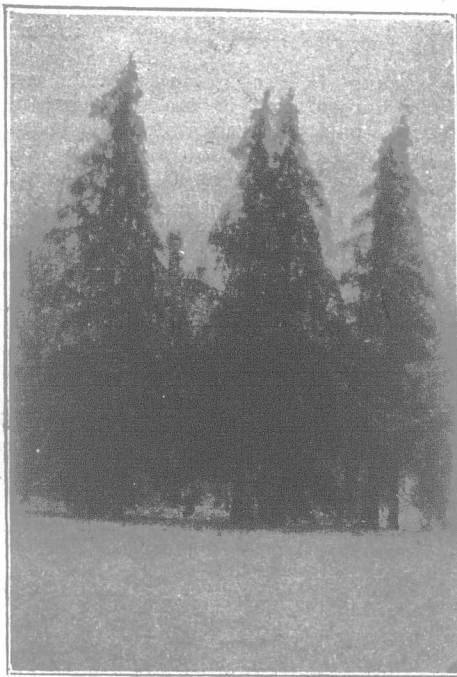
H. L. Copeland, of Peel County, says: "I saw the Canada jay in our orchard about February 20th. They stayed only three days. I think they took shelter in our row of spruce trees. I saw only one pair. They did not seem to keep very near each other, but always kept up a 'ca-ca-ca' call from one to the other."

Mr. Sheppard also reports pine siskens and American crossbills as having been observed by him this winter, thus adding two more species of northern birds to our "open-winter" list.

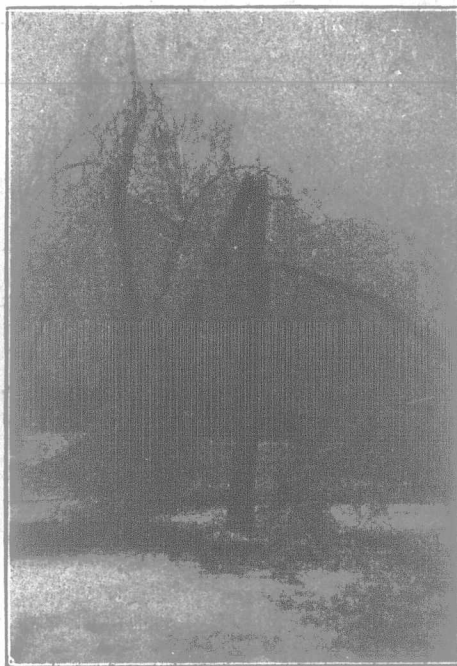
Valuable for All Classes.

I am sure we could not get along without "The Farmer's Advocate"—even the youngsters look regularly for it, and if we happen to miss a week, as sometimes we do, they are all asking daddy where is "The Farmer's Advocate." Now I am not a farmer but a contractor, but I get

much valuable information about my line of business in your paper. I think it is a valuable paper for all classes as well as the farmers. Dufferin Co., Ont. Wm. Hy. STEWART.



The only effect upon the spruces was to bend down their branches.



Effect of load of ice upon an elm tree in City Park, Kingston.

HORSES.

New York city is gradually replacing horse-drawn fire apparatus with motor apparatus, and no more horses will be purchased for the department.

Recent market reports in some papers have stated that the price of horses was lower this year than in recent years. Try to buy the right kind and see how much lower you can get them. The good things still range very high in price.

A brood mare raising a colt each year is one of the best investments on a farm. Just now, when buyers are plentiful, many will be tempted to part with their mares at the offer of what appear to be large prices. Before selling, value the colt, and see if it, provided it lives, will not pay pretty big interest on the sale price. It generally will.

To Prevent Calking in Stable.

In our issue of March 26th, page 445, a question was answered re horse injuring foot. This horse calked herself standing in stable. Another correspondent, Wm. Louttit, of Wellington Co., Ont., writes that he has a mare which did the same thing. To prevent the injury he had her shod behind with shoes with a toe calk placed on the inside of each shoe at the heel. This was placed about one-half inch from the heel of the shoe and the rear corner was rounded off dull, the remainder of the calk being sharpened. This mare is shod in this fashion summer and winter, and gives no trouble now.

Horse-Shoeing — Good and Bad.

Every horse owner is, or should be directly interested in horse-shoeing. Owing to the economic conditions of the present day, shoeing is essential if the horse has any work to do on the road or street. Nature never intended that a horse should wear a metal shoe, even though she did make such possible by giving the foot a wall to which such shoes might be nailed with little apparent injury to the parts. The horse on the soft, dewy pastures requires no protection to the hoof, but the one on the hard stone road or the city pavement must have such protection. Shoeing is necessary, and because the shoer is dealing with one of the most important parts of the horse's anatomy, and because the shoeing practice is more or less in opposition to natural conditions, it is imperative for the welfare of the horse that shoeing be done by a competent man.

All horse-shoers are not first-class mechanics, but every man who shoes a horse should be given a fair chance to do good work. The owner of the animal has it within his power to aid the blacksmith in his work, or to make it much more difficult for him to do good work. Shoes should not be left on until they drop off or wear off, and much can be done while the colt is young. Neglect then means, in many cases, defects and unsoundness later on. Keep the colt's feet trimmed. If they show a tendency to grow more on one side than on the other, trim that side down, level up the foot and keep it level. This will give the smith a better chance when the colt is old enough to be shod.

Several correspondents have recently expressed opinions through "The Farmer's Advocate" upon the shoeing question. In this issue there is a very good letter from a blacksmith upon the subject of shoeing. The topic is always a live one, and to carry the discussion further we interviewed a prominent local (London) horse-shoer, and obtained some very valuable hints which should be beneficial to all readers who have anything whatever to do with horse-shoeing.

This shoer likes a foot of medium size, neither too steep nor too flat, one whose angle approaches as nearly as possible 45 to 55 degrees. This he calls an ideal foot to which to fasten a shoe. Asked what are the different forms of defective hoofs and how can each be remedied by shoeing, he replied: "This question contains all the horse-shoeing art from A to Z, and embodies conditions inherited or produced by disease."

WHEN SHOULD A HORSE BE SHOD.

No doubt many horses need shoeing much oftener than it is done. This smith recommends that city horses should be shod about once a month, while farm horses (kept shod) should have their shoes reset every six weeks or two months. Many city horses will not carry shoes longer than two weeks until they are completely worn out and must be changed. In such cases endeavor to use old holes as much as possible. City horses' feet do not require as much paring as farm horses' feet do, as the concussion on hard pavements and the wear from gravel or broken stone roads seem to prevent the growth of wall and sole, and while the farm horse, in almost every case, has an abundance of hoof material some of which must be pared away, at all times the shoer should endeavor to leave rather much than too little hoof. Care should be taken not to pare away the hoof too much, as is sometimes done.

SHOEING TO REMEDY DEFECTIVE ACTION.

In attempting to remedy such faults in action as interfering, forging, stumbling, etc., the first thing for the smith to do is to endeavor to get the foot as near as possible to what might be termed a "model" foot, viz., superfluous hoof must be dressed away, making the foot as near the proper angle as possible. Each side of the foot must be made of, as nearly as possible, equal width, thus levelling the foot up properly, causing it, when leaving the ground, to be directed straight to the next place of resting. If the foot leaves the ground perfectly straight and level, it will, in most cases, do what is required, although the muscular contraction or muscular action may divert the course of the foot in a different direction entirely to what we might expect. The shoer, in most cases, will be greatly assisted by seeing the animal driven before attempting to correct any of these imperfections. There is no hard and fast rule by which any of these can be obviated. The side- and also the toe-weighted shoe assists greatly on fast horses as do also the heel- or toe-spurred shoe, as the case requires, although the weights or spurs merely assist, in compelling the horse to travel much nearer straight and level than the common shoe could do.

CLINCHING NAILS.

Most people are very particular that the shoer clinch the nails well. Where horses are working

in mud this is necessary, but, according to the very successful smith interviewed, clinching nails is not absolutely necessary. As pointed out by him the clinch always works up, not down into the hoof. He believes that the dove-tail of the hoof is all that is required to hold the shoe fast and solid, and for the good of the foot it is better to lose a shoe than to tear away a great portion of the wall. Of course, the nails must be rasped down smooth to prevent injury from interfering. Clinching is necessary where horses work in deep mud or on soft fields, and where it is done the nails should be well bent over and filed down.

SHOEING FOR CORNS AND OTHER TROUBLES.

Always remove the cause by overcoming pressure on the parts. Horse owners should make an effort to keep their horses' feet as soft as possible, by the use of damp, clay floors. Water is much to be preferred to grease or any of our so-called hoof ointments, although some of these may be used when a damp stall by day cannot be secured.

In cases of acute laminitis (founder) shoeing has little effect, although the dressing of the feet, where there is an excessive growth of hoof, especially the sole, is to be recommended. The clay floor can be used with much satisfaction to the shoer, and to the relief of the animal. If the animal is shod the shoes should be made large and wide for the foot, so that the nails are not in any way likely to compress the inflamed laminae or the shoe to press the sole. The best thing to do is to pull off the shoes and lay the horse off work, preferably allowing a run on grass.

Blistering for navicular disease is sometimes helpful during the earlier stages, and like acute laminitis shoeing does not help much, the better plan being to pull off the shoes and turn the horse out to pasture. Where a horse with navicular disease is shod, the shoe should be made a little lower at the toe than at the heel.

THE BAR SHOE.

The bar shoe costs about twice as much as the common shoe, but is an advantage in the shoeing of horses having weak or low heels, and also horses suffering from corns by preventing the shoe from springing and bending, it remaining flat at all times. It may also be given some frog pressure, the frog being nature's cushion to prevent concussion, naturally should come to the ground. The bar shoe is not of much service with horses having excessively strong walls and deep-cup feet, the common shoe without calks being equally as valuable in such cases.

MISTAKES IN HORSE-SHOEING.

Every man, no matter what business he is engaged in, makes mistakes, and shoeing-smiths are no exception to the rule. Mistakes in shoeing are common, and as our local smith informed us "hoof butchering" or working at the hoof as if it were a piece of wood or metal, the smith not fully understanding the structures of the foot or uses of the same, is the most common of all errors. Many shoers make the mistake of shoeing all horses alike, regardless of the conformation of the feet or class of work to be done by the animal. Many pare the frog away, but the knife should not be used on this portion of the foot if it can be avoided. Pull away all rags (loose ends) or clip with nippers. Forty-five per cent. of the frog is water, and the shoer should aim to retain this and do nothing to allow its escape.

HOT VS. COLD FITTING.

People are frequently heard to say, "Never burn a horse's foot," "Never rasp above the nails," "Never pare the frog." These are more or less "notions." "There is no set rule whereby the shoer must do this or that." The shoer must use good judgment, and treat the horse as conditions warrant. The shoer questioned favors the fitting of the shoes hot if proper care is taken, although the practice of cold-fitting shoes, when carefully levelled, both shoe and foot, appeals to common sense as the best method. The hot method should be so slight as to merely indicate the high spots on the hoof to the shoer, and these should then be removed to make the foot perfectly level and the shoe a perfect fit. This shoer pointed out that the material of which the hoof is composed (keratin or horny matter) is much the same as that composing the hair on our heads. We get the barber to singe our hair to prevent its falling out, owing to dryness. For the same reason singeing applied to the hoof is good, because the singeing closes the cells preventing the escape of moisture, while pairing opens the cells permitting the hoof to dry out. Always have the shoe fitted to the foot after it is properly shaped and prepared, and never under any circumstances fit the foot to the shoe. The horse-nails supplied at the present day are excellent, containing strength where

needed at the shoe and slimness and stiffness where they penetrate the hoof.

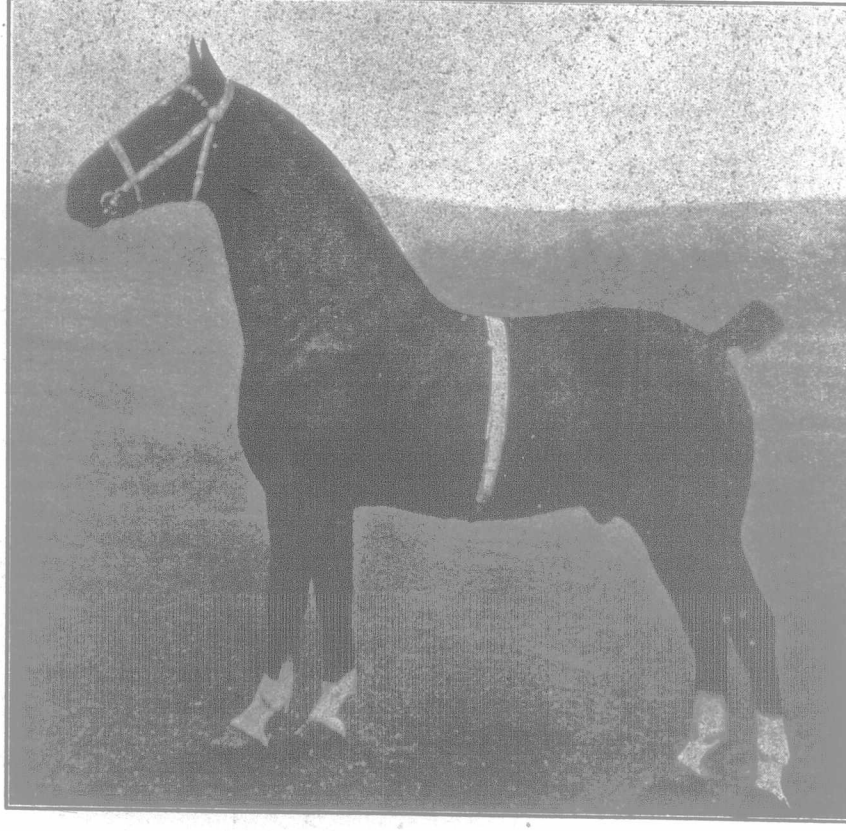
OVERCOMING OTHER FAULTS.

If the horse is flat-footed or inclined to be weak-heeled, shorten away the hoof at the toe and shoe with moderately high heels and very low toe. In some cases a bar shoe is an advantage.

Knee-sprung is a common trouble especially in driving horses, and is due to a weakness of the flexor or back tendons which may be assisted by the low-toed shoe. Do not have the heel lowered as some advise, as this only aggravates the trouble.

In cases of quarter-crack the pressure should be removed from the weak quarter by bar shoes, side-calks or other means, and above all, the foot should be kept soft and pliable. This is of greatest importance.

The greatest cause of all these unsoundnesses is the changed conditions, hard roads, pavements and plank or cement floors in place of soft, dewy, pasture grass and moist ground. Conditions under which horses are kept tend to cause dry, brittle hoofs, producing the many bad effects so often noticed. Keep the animal's feet as nearly



Hopwood Viceroy.

Champion at the Hackney Show, London, England.

under natural conditions as it is possible to do. Common sense and careful observation are important requisites of any shoeing smith.

Just as long as iron is used on animal tissue, bad results are sure to follow. Iron oxidizes and rots the foot tissue. Pick up a clipping of hoof in the smithy and look around the nail hole in it, and very often a good illustration of this fact may be seen in dead or injured tissue which has surrounded the nail. We cannot have natural conditions and shoes on horses. Horses must be shod, so the best that can be done is to stick as closely as possible to what nature intended for the hoof. Commence to care for the hoof while the colt is young, and where the horse is kept shod have it done regularly, systematically and by a man who understands his business if such is available, even though it does cost a little extra.

Thinks Inspection Unnecessary.

Editor "The Farmer's Advocate.":

I read an article in "The Farmer's Advocate" of February 20th, 1913, entitled "Inspect the Stallion." I would like to tell you what I think of stallion inspection. I am certainly not in favor of it. Why should a first-class stallion be charged \$5.00 for inspection, and \$2.00 for enrolment before he can be bred to any mares? Why should the government dictate to the farmer about the stallion to which he should breed? Farmers will use their own judgment with regard to the horse to which to breed their mares. To prove this a grade stallion, in this section of the country, bred only twelve mares in 1912 at \$8.00 each. This was the only horse inspected in our village last fall. My horse, not inspected, bred 214 mares at \$15 to insure. He took first prize at the spring show in 1912. A colt sired by him took first prize at the fall show in the heavy-draft class.

I don't need any government inspection for this horse.

My experience of twenty years in the horse business is: give the people the goods and they'll pay the price. Are the people who are asking for compulsory inspection the owners of registered culls? If the government desires to do something in the interests of horse breeding, let them help the stallioner to purchase a first-class stallion instead of compelling him to pay high fees before he can use him. I believe that ninety per cent. of the horsemen in Ontario are opposed to the Stallion Inspection Act. Why not give the people in Ontario a chance to vote on this?

Simcoe Co., Ont.

JOSEPH CHAPPEL.

Prompter Shoeing Needed.

Editor "The Farmer's Advocate.":

I have taken "The Farmer's Advocate" for a number of years and like the paper, it is most helpful and interesting, anyone who reads it carefully can learn a great deal. I am not a farmer, but a blacksmith, and have reference to the letter, "Better Shoeing Needed." I don't hesitate

in saying there are more horses feet destroyed by farmers leaving the shoes on too long than there are by bad blacksmiths. A farmer will bring a four or five-year-old colt to the shop that has never been handled at all, not even taught to stand over, and expect a blacksmith to do a good job for the same price as for any other horse, and thereby run a risk of being used up for a week or possibly for life.

I have only met a very few farmers who are even good drivers, let alone teaching their horses to hold up their feet.

As I have worked at the trade for eighteen years I know by experience that blacksmithing is a trade that requires much skill and hard work, and any person must be very ignorant who thinks a man can conduct a blacksmith business with a little experience he learned from an unskilled workman.

"THE VILLAGE BLACKSMITH."

LIVE STOCK.

Marking Sheep.

On the range, conditions are such as to make a permanent brand a necessity, and even in settled districts like Ontario, Quebec or other eastern provinces it is often necessary and generally advisable to mark the sheep.

It is necessary that the brand of paint be of such material that it will scour readily. Every drop of paint placed upon wool must be removed before the wool can be manufactured into cloth. If the brand will not scour out by the usual methods, then hand labor must be employed to go over every fleece and clip off the brands. This not only means the loss of the wool clipped off, but it means a considerable amount of money expended for labor all of which eventually comes out of the pocket of the wool-grower.

In the big woollen mills the manufacturer of cloth takes no chances with paint brands. The fleeces are worked over by hand labor and the brands clipped off. Brands that will scour and brands that will not are treated alike. This is an exceedingly costly operation and is necessitated only by the too liberal use of undesirable paints. If all wool-growers would use a scourable paint the labor would be eliminated and the saving could be added to the price of wool.

It is the duty of the wool-grower to use as little paint as possible, placed where it will be the least injurious to the fleece. When the sheepmen appreciate the decreased price of wool due to extravagant use of paint, they will exercise more care in the selection and application of their brands.

Two characteristics are essential to a perfect branding fluid according to C. J. Oviatt, the author of a Wyoming Station Bulletin from which the foregoing paragraph was taken. (1) It

must be composed of

Tests the coming-out showed and fine no effect paint man with these, al

Spring special experience outdoor the differ sow for commenc tide the an attac valent in period.

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One o farmer to letin, is the cattl periment days. G nearly and exce manure s feeding t vent unne

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"Out All s grass, bu cattle ar and tend acreage y ed or cor "turning to be co

must be permanent (lasting one year.) (2) Its composition must be such that it can be completely removed by ordinary scouring solutions.

Tests made at the Wyoming station to ascertain the comparative efficiency, durability, and scouring-out qualities of various sheep-branding paints showed that the paints remained longer on downs and fine wools, but the fineness of the wool had no effect upon the scouring-out qualities. Certain of the market paints gave good results, but paint made of Venetian red or lampblack mixed with linseed oil thinned to the right consistency with turpentine was much more durable than these, although it did not scour out well.

Care of the Litter.

Spring litters are now coming, and as with all young stock, the newly farrowed pigs need some special attention. True, less trouble is usually experienced with spring litters than with fall litters, the warmer weather permitting of more outdoor exercise and ensuring fewer chills making the difference. No feed should be supplied the sow for a day or two after farrowing, and then commence by giving a light laxative ration to tide the sow over the critical period and prevent an attack of indigestion, a trouble quite prevalent in sows which are fed heavily at this period.

As soon as the sow has recovered from farrowing increase her feed so that she will supply an abundance of milk for the youngsters. When the pigs are between three and four weeks of age arrange a small trough so that they have access to it, and from which the sow is debarred, and commence feeding. Be very careful at first not to overdo it. Never give more than they clean up at a feed, and keep the trough clean. Give feed in small quantities regularly. The best feed of course is skim milk. The feeder should be careful to feed it of uniform temperature and quality. It is not wise to feed it cold at one feed and warm at the next, neither is it good practice to feed sweet skim milk at one feed and follow this by sour milk. When accustomed to it, cold milk is just as good as warm, and sour milk just as valuable for the litter as sweet. The important factors in feeding young pigs are: regularity in feeding, feeding at frequent intervals and supplying feed of uniform quality, and in uniform quantity. This is even more important after the pigs are weaned than while they are on the sow. Weaning should be done when the litters are from six to eight weeks of age, according to conditions. If possible, feed the recently-weaned pigs on skim milk and shorts. Where skim milk is not available Prof. Grisdale, Director of experimental farms for the Dominion, recommends twenty pounds of shorts, twenty pounds of red dog flour, ten pounds of screened oats, five pounds of oil-cake meal, and five pounds of tankage or blood meal as a good mixture. Such a feed he says is easy to digest and supplies the necessary elements to produce rapid growth so essential in profitable pork-production. Digestive tankage, he believes, will almost take the place of skim milk. The main object is to keep the pigs healthy and growing. Give plenty of feed, but not more than they will clean up from one feed to another. Keep the pens well bedded and dry, and as the weather gets warmer let them out in a grass plot for exercise. Young pigs with a good paddock to run in invariably do better than those kept in close confinement.

One of the most important factors for the farmer to consider, says a South Carolina bulletin, is the value of the manure obtained from the cattle. Sixty head used in a Carolina experiment produced 172 tons of manure in 102 days. The fertilizing value of this manure was nearly three-fourths that of the feed consumed, and exceeded \$3 per ton. The high value of this manure shows the necessity and advantages of feeding the cattle under conditions that will prevent unnecessary loss.

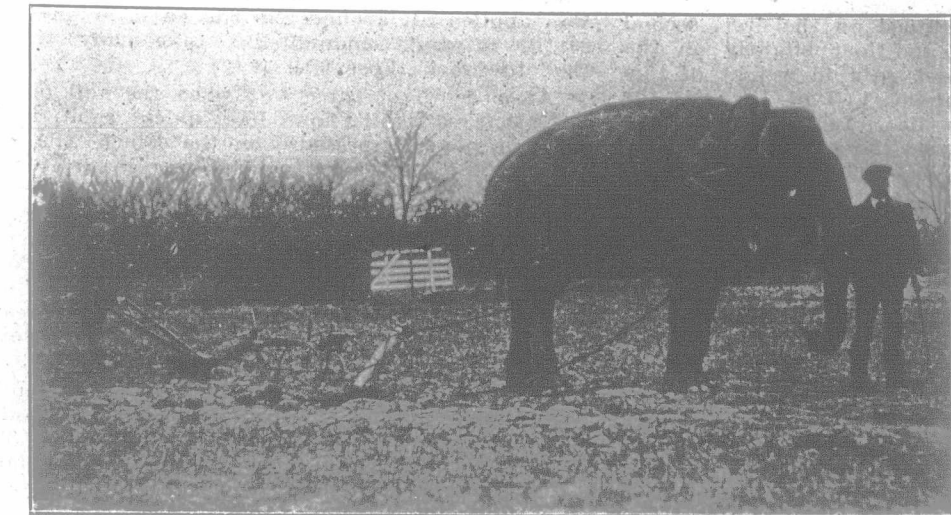
It has generally been held, says a United States bulletin, that silage-fed cattle lose very materially in live weight when shipped long distances. In 1906-07 the Virginia Experiment Station found that cattle fed corn and cottonseed meal with silage as the principle form of roughage lost 41.2 pounds per head in being shipped to Jersey City and it is stated that practical shippers in Virginia figure the average shrinkage to Jersey City at from 60 to 70 pounds per head. This would seem to show the silage-fed cattle compare very favorably in this respect with those fed on other feed.

"Out in the meadow the young grass springs." All stockmen welcome the springing of the grass, but care should always be taken that the cattle are not turned on it while it is too young and tender, and more cattle than the pasture acreage will feed properly should never be allowed or compelled to feed off it. The practice of "turning two steers on one blade of grass" is to be condemned.

Another Pig-Feeder's Methods.

Editor "The Farmer's Advocate":
As I have noticed several articles in your valuable paper respecting the feeding and gains of hogs, I will give my experience.
I prefer giving three feeds per day. The first one consists of all the water they will drink (if in winter warm water) and then dry chop put in trough and wet with water, not sloppy. At noon the chop is prepared in the same manner with a few whole mangels. The evening feed is the same as the morning. Last fall I had five hogs which weighed 1,130 pounds at five months and five days old, which speaks well for this

method of feeding. Two weeks before they were sold I got one hundredweight of barley and buckwheat chop, two parts of barley to one of buckwheat. They were fed on this until finished, and made remarkable gains.
We have had pigs weigh 250 pounds before they were six months old. We do not keep pigs over six months of age, except the brood sows.
Huron Co., Ont. E. G. JAMIESON.

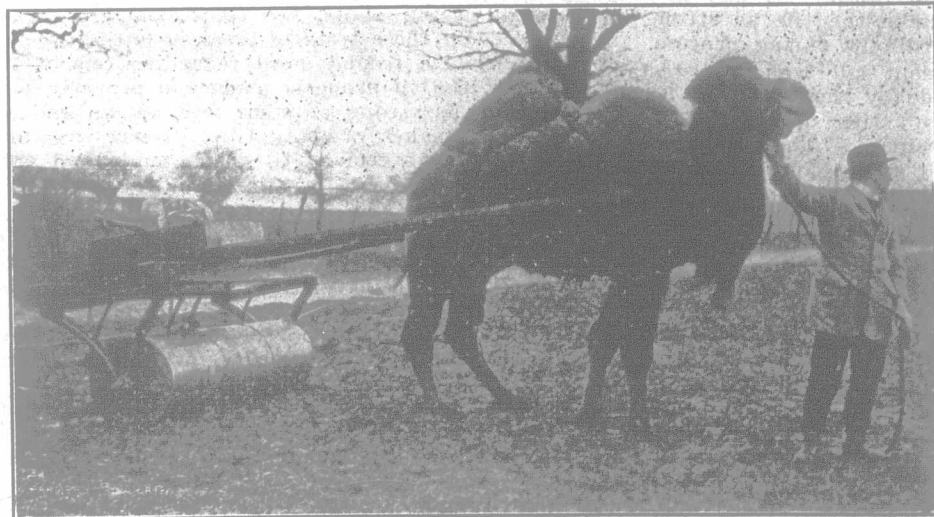


Back to the Land.

It costs something to feed a circus elephant. To help pay for this, the elephants during the circus' off season, are made to draw plows. This illustration, and that of the camel, reproduced from photographs taken in England, where the circus spent the winter.

Results of experiments in cattle feeding have shown that it is not a judicious practice to use costly commercial feeds to replace corn silage and corn stover, which can be produced on every farm.

dred and forty-three days, being taken out, dried and weighed from time to time during the test so that the loss or gain could be determined. Some of these same samples were placed in well water for a period of forty-seven days. We found the result quite irregular in both distilled and well water. Some samples lost continuously, some would loose for a while and then gain, and in those that lost continuously, sometimes there would be a loss that was inexplicably large. From the irregularities we came to the conclusion that some factor not being measured, possibly a change in temperature or possibly the frequent drying out to constant weight, was exerting an influence.



A Factor in Production.

During the winter months the circus business is at a standstill, so the camel is used to roll the pastures.

At the same time that these pieces of cement were being tested, a piece of clay tile of about average quality was placed in distilled water for forty-eight days and in well water for forty-seven days, in both cases the sample lost in weight. In the distilled water it dissolved more rapidly than any piece of cement tile tested, and in well water at about the same rate as some of the pieces of cement.

If the rates of solution in distilled water were to continue uniform, that piece of clay tile would have completely dissolved in four years, and in well water it would have dissolved in 58.3 years, but the rate of solution dropped in both the distilled water and the well water, and besides we know from long experience that clay tile in the ground will not dissolve in fifty-eight years.

With the pieces of cement there was also a drop in the rate of solubility the longer the pieces remained in the water, and so from the irregularity of the solution and from the check pieces of clay tile which were used, we came to the conclusion that the conditions under which these tests were made were so far from the actual soil conditions in which the tile would be placed that it was dangerous to draw from them conclusions as to the durability of cement tile.

Our next step was to take three cement tile made on the two-piece machine (since taken off the market) and place them in running well water. The first sample was made by the dry process, the second sample also by the dry process, but considerably wetter than the first, and the third sample was made so wet that the tile stuck to the moulds, and would not retain its

THE FARM.

Investigations re Cement Tile.

Text of an address by Prof. Wm. H. Day, O. A. C., Guelph, before the Ontario Corn-growers' Convention, 1913.

When cement tile first began to be talked of, a few years ago, I personally had no doubt as to their proving durable, however, it was only a short time until I received some literature upon the subject which claimed that cement was soluble in water, and that, therefore, the cement tile, when subjected to water passing through them continually, would soon become so weak, owing to the cement dissolving, that they would crumble and thus become useless. This attack on cement was made by Messrs. Wheat Bros., clay tile makers of Emmetsburg, Ia. Coming from this source the attack was open to the suspicion that it might be biased, although their conclusions were based upon what at first

proper shape when removed from them. These samples were left in running water for almost two years, twenty-one and a half months to be exact. They were weighed at the end of seven and a half months, and then three months later, then eight months later still, also again in one and a half months, and lastly at the end of two and a half months more. The first sample gained weight on each of the four weighings, and lost on the last weighing, but the loss was only small compared with the previous gains. The net gain in weight was about 1/3 of 1% on the original weight of the tile. In the last twelve months the gain was 1/36 of 1% on the original weight, and in the last four months the gains equalled the losses.

The second sample gained on the first, second and fourth weighings, and lost slightly on the third and fifth. The net gain in weight of this sample amounted to about 1/5 of 1% on the original weight of the tile. In the last twelve months the losses exceeded the gains, the net loss being about 1/130 of 1% of the original weight. In the last four months the sample gained slightly, the gain amounting to about 1/500 of 1%.

The third sample lost weight on the first, second, third and fifth weighings, and gained slightly on the fourth. The total loss amounted to about 1/4 of 1%. In the last twelve months the loss was 1/10 of 1%, and in the last four months 1/25 of 1%.

It is worthy of note that with number one and number two, which were made dry, and were therefore more porous, there was a net gain in weight, and that with the more compact tile used in test three there was a loss. Most people, I believe, would have expected that if there was any difference, there would be more loss in the porous tile than in the compact.

From the behaviour of these three samples we have been driven to the conclusion that in ordinary soil water there is no danger of good cement tile dissolving and crumbling, and consequently that cement tile properly made and properly cured must prove durable for drainage purposes, if strong enough to withstand the pressure in the earth. The strength of cement tile will be dealt with later. By properly made we mean of a strength not weaker than four to one of good cement, thoroughly mixed, made as wet as the machine will work and firmly packed. By properly cured we mean not allowed to dry out rapidly during "initial set", kept moist for a week and then subjected to weather conditions until the tile are strong enough to handle without serious breakage. This method of curing, of course, refers to cases where a steam curing plant has not been installed. Steam curing is much more effective and rapid. A day or two of steam curing will make the tile as strong as several weeks of the ordinary curing process.

The strength of cement tile was next tested. In July, 1912, we made by hand 5,000 3-inch and 1,000 4-inch cement tile on the machine, which is a "hand machine." These were made as carefully and as well as we could make them. They were shaded from sun and sheltered from wind during the first twenty-four hours, so that the "initial set" was as good as possible. They were watered a week after being made, and then stacked outside and allowed to cure during the remainder of the year. In January, 1913, forty tile of each size were broken in a crushing machine especially designed for the purpose. It was found that the average breaking stress of the 4-inch cement tile was 837 pounds. In making this test the tile were laid on one plank, another plank was placed on top of them and the pressure applied to this top plank by means of a lever, so that you will see the pressure did not act all around the tile, but simply on the highest and lowest lines of the tile. In this position it took, as already noted, nearly half a ton to break the 4-inch tile. The lowest breaking stress for any tile was 561 pounds, and the highest 1,435. The average thickness of these tile was 21/32 of an inch, their length 12.4 inches, and their weight 7 pounds 14 ounces.

By way of comparison forty 4-inch clay tile made at Port Dover were also tested. The average breaking stress was 1,178 pounds, or 333 pounds more than the average of the cement tile. The lowest breaking stress on the clay tile was 663 pounds and the highest 1,597. The average thickness was 20/32 of an inch, being 1/32 less than the cement tile, the average length 12.67 inches and the average weight 7 pounds 5 ounces.

The Port Dover tile being considerably thicker than some other makes of clay tile, it was decided to test some thinner ones, known to be giving good satisfaction; consequently thinner samples were procured from Essex County. The average thickness of this tile was 15/32 of an inch, or exactly 1/4 the thickness of the Port Dover samples, and the average breaking stress was 827 pounds.

The length of these tile was 11.9 inches, and the weight 5 pounds 3 ounces. The lowest

breaking stress was 663 pounds, and the highest 950 pounds.

The average breaking stress of the cement tile was 10 pounds more than that of the thin clay tile. It will also be observed that the lowest breaking stress in any cement tile was 102 pounds less than the lowest breaking stress of a Port Dover or Kingsville clay tile. Now, just what the minimum stress allowable is we are not able to say, but one thing is certain, namely, that any of the clay or cement tile tested were strong enough to stand up against the earth pressure to which they would be subjected if placed in the ground. The lowest breaking stress applied along the top line of the tile was somewhat over 560 pounds, but if the pressure was applied all around the tile as it is in the earth, it would undoubtedly take many times that to break those tile.

At a depth of three feet when the soil is so wet that it will flow like quick sand, the greatest possible pressure on the 4-inch tile is about 200 pounds on the whole upper surface of the tile, while the weakest tile tested required nearly three times this amount applied along one line to crush it. As a result of these tests of 4-inch tile we have come to the conclusion that the weakest of them were many times as strong as necessary to withstand the greatest pressure to which they would be subjected in soil conditions.

We next tested the breaking stress of some power-made cement tile manufactured at Woodstock, the average thickness of which was 18/32 of an inch, they were thus a little thicker than the Kingsville clay tile, but thinner than those from Port Dover, and also thinner than those made on the — Cement Tile Machine. The Woodstock tile were made of crushed stone and cement in the proportion of 3 to 1 on December 4th. They were given forty-eight hours steam curing, and afterwards piled outside until January 16th, when they were shipped to us. From then until February 24th, when they were tested, they were piled inside, thus they were about two and a half months old, but during half the time they had been kept dry inside, during which little curing took place. Their average strength was 791 pounds. The weakest tile requiring 543 pounds pressure, and the strongest 956. However, only half of these tiles were broken on February 24th, the remainder were put in a trough of water where they were left for three weeks, at the end of which the average strength was 904 pounds, showing an increase in strength of 113 pounds. The weakest tile now required a pressure of 663 pounds to break it, and the strongest 1,079.

Other sizes of both clay and cement were tested, giving about the same comparative results. By these tests of breaking stress we have established a second point regarding cement tile, namely, that if properly made and properly cured they are as strong as some well known and satisfactory makes of clay tile. Hence we must conclude that cement tile thus made and cured are strong enough for tile drainage purposes.

The question is often asked, whether cement or clay tile are the more porous. In this form the question really has no definite meaning, because the porosity of clay tile varies a great deal, so also does that of cement tile; for instance, the average porosity of the Port Dover tile tested was 35.7 per cent., while the porosity of the Kingsville tile was 23.5 per cent. A similar variation is seen among cement tile, for instance, the 4-inch tile, made on the — Cement Tile Machine, had a porosity of 27.8 per cent., while the Woodstock 4-inch cement tile had a porosity of 22.5 per cent. Power-made cement tile manufactured at Marden, (the proportion of cement in the mixture not reported to us) had a porosity of 27.7, practically the same as the hand-made cement tile.

So far as the efficiency of drains is concerned, however, porosity is not a factor in underdrainage, because the water does not enter the tile through the pores, but through joints between the tile. In order to have some definite figures upon this point we selected 3-inch, 4-inch, 5-inch and 6-inch tile of both clay and cement, using two clay tile of each size and two cement tile of each size. Having our tile ready we sealed one end of each with pitch and then set each tile, sealed end downwards, in a crotch of water and measured the amount of water that would pass into the tile through the pores. The experiment was repeated twice. The first test was run for one week, and the second test was run for three weeks. In all cases we found that the water passed into the clay tile very slowly. The amount in the 4-inch Port Dover at the end of each test was just sufficient to nicely cover the bottom of the tile. This amount was measured accurately, and it was found that if the water continued to go in through the pores at the same rate, it would take the first Port Dover tile 233 days to fill with water, and the second one 420 days. The first 4-inch Kingsville tile

would have twenty days to fill, and the second would have taken forty-two days. When we remember that the Kingsville tile have a much smaller porosity than the Port Dover, we should have expected that the Kingsville tile would have taken much longer than the Port Dover to fill, whereas they just took about 1/10 as long in each case, so we see that the rate at which water will pass through the wall of a tile does not depend entirely upon the porosity. Cement tile were much more variable, for instance, one 4-inch tile made on the — Cement Tile Machine had practically no water in it at the end of the test, while the other 4-inch made on the same machine filled in about fifteen minutes. A similar variation was found in the power-made cement tile. The first 4-inch Woodstock tile would have taken 233 days to fill, while the second filled in two hours.

In examining the cement tile we observed that those which were practically or nearly water-tight, had been made just wet enough that the packer produced a sort of water-lime surface on the inside of the tile. The other sizes of tile behaved much in the same way as the 4-inch. From these percolation tests we may conclude that it would take a very very long time for clay or cement tile to drain a field if we had to wait for the water to go in through the pores, hence we may conclude that porosity of tile is not a factor in the efficiency of underdrainage. The only bearing of porosity is that it gives some idea of the strength of the tile, providing thickness, length and material are the same.

The rate of making cement tile by hand did not prove from our tests to be as rapid as is frequently stated. Two men working faithfully could not exceed a speed of about 400 tile per day. There is a power attachment for the hand machine by means of which a little gasoline engine can be used to turn it. We did not make any tile with the power attachment, but we have seen them made and noted the speed for a short time from which it would appear that two men using a power attachment would probably make from three to four times as many tile as by hand.

The material required for 1,000 3-inch cement tile made of a strength of four to one is about three and a half barrels of cement and two yards of sand. For 1,000 4-inch it will require four barrels of cement and 2 1/3 yards of sand. Knowing the price of cement and sand in one's own locality he can arrive at the price of the material necessary for making 1,000 cement tile. And knowing the approximate rate at which they can be made, and the price of labor in his locality he can calculate the entire cost, or if he can make the cement tile in his spare time, he can calculate just about what wages he would be saving by making his own tile.

White Grubs and Wire-worms.

Editor "The Farmer's Advocate.":

With the advent of spring farming operations will soon be in full swing again, hence a few suggestions relative to the preparation of the ground, previous to planting, may be useful.

From observations gained last summer in Western Ontario, indications point to as serious an injury, even if not more serious, than was occasioned last year to the cereal, grass and root crops, by the white grub and wire-worm.

Usually a patch of sod, a quarter of an acre or less, in different parts of the field, killed out entirely by the white grub, is not considered at all serious by the ordinary farmer, yet, if the sum total of the destroyed area were ascertained it would amount to hundreds of acres. No two insect pests are so heavily taxing the farmer every year as these two.

Normally feeding on the roots of grass, the insidious nature of the work of these insects, usually passes unnoticed, except when a pasture or hay field is plowed up, and the land planted to some other crop. Their food supply diminished, they concentrate their attack on the freshly-planted field, at a time when the young crop is least able to withstand the drain. Wire-worms, of course, will attack the newly-planted seed, and in some instances, last year, it was necessary to re-seed the whole field, and even then a very poor stand was obtained. With the white grub, the seed must first germinate, but as this particular pest can live for several weeks on soil alone, a few days make little or no difference, other than to create an extra good appetite. As the greater part of their life is spent under the soil, it is impossible to apply any of the usual insecticidal treatments. The solution of the difficulty therefore, rests in crop rotation and thorough cultivation. Fall plowing of sod land, is perhaps the best known remedy at the present time, and indeed this would apply to all land, whenever possible. Not only are large numbers of hibernating insects destroyed by exposure to the rigors of the winter, but the heavy frosts

have a wonderful ameliorating effect on the soil, making it much more friable, and the land is usually ready much earlier in the spring for cultivation. Sod-land that is to be plowed this spring should receive as much cultivation as possible, previous to seeding. After plowing, the land should be disced as deeply and as frequently as possible. The more the ground is worked, the less liability of insect attack. It is doubtful if land can be too finely prepared for spring sowing.

Crop rotation, of course, is another very important factor of control. Usually land that is not allowed to be in hay or pasture for more than three years, is seldom seriously injured. Unfortunately many farmers do not care to plow up a pasture or hay crop, as long as it looks like producing a crop. Herein lies one of the biggest mistakes. White grubs and wire-worms are always more abundant in grass pasture, particularly an old timothy sod. Not only that, but the longer an old timothy sod is allowed to stand the more impoverished the soil becomes. Continuous growing of timothy is very hard on the soil, and is one of the most potent factors of soil depletion on a large number of farms to-day. If farmers would grow more clover and less timothy, they would not be seriously troubled with the white grub, wire-worm, and the cut-worm, and the soil fertility would be very largely increased, instead of depleted.

H. F. HUDSON, Div. of Entomology, Ottawa.

Making Rock-Phosphate Available.

Editor "The Farmer's Advocate."

Wide-spread publication has been given, during recent months, to certain results of experiments (conducted by the Rhode Island Experiment Station) which tend to discourage the use by farmers of fine-ground raw rock phosphate. This material is a natural fertilizer in which the element phosphorus can be purchased for about one-fourth of its cost in manufactured acid phosphate, and for about one-tenth of its cost in the more common and more highly manufactured so-called "complete" fertilizers.

All of the long-continued field experiments agree in showing that raw phosphate is by far the most profitable and economical form of phosphorus to use in rational systems of general farming, but they also show that the most satisfactory results are secured when conditions are provided under which the phosphorus is made available, and the best condition under which to use the raw phosphate is to apply it in intimate connection with decaying organic manures, such as farm manure, clover, or other green manures. (See Illinois Experiment Station circulars 127 and 165.)

The experiments referred to consisted in mixing raw phosphate with fresh cow dung, and allowing the mixture to stand in closed bottles or loosely covered pans in a dark cellar for about nine months. At the end of this time it was found that the availability of the phosphorus was not markedly greater than when first mixed with the dung, and this fact has been spread abroad by fertilizer interests in a way to discredit the use of raw phosphate, whereas the actual culture experiments conducted with these materials at the Rhode Island Station showed that the raw phosphate increased by 30 per cent. the effect of the "pan" dung as compared with the increase in yields when dung alone was used. The "bottle" dung gave poorer results than that which had been exposed to the action of air in the pans, but in both cases the average results show distinctly increased yields due to the raw phosphate, as will be seen from the summary on page 174 of Rhode Island Bulletin No. 151.

The fact is that the early fermentation of manures is alkaline in reaction, while, during the later stages of decomposition, acidity develops, and it is the acidity which aids in the solution of raw phosphate; but under the conditions of the Rhode Island experiment no acidity had developed at the end of the nine months.

More extensive investigations by the Wisconsin Experiment Station support the results of other investigators in showing an appreciable decrease in the solubility of phosphorus during the early stages of fermentation, both of manure alone and of manure and phosphate mixtures, not only with raw phosphate but also with acid phosphate, owing to temporary use of phosphorus as food for bacteria; but the Wisconsin investigators (Tottingham and Hoffman) also show that the decrease reaches a minimum, after which increase in solubility occurs, although the maximum increase has not yet been determined. The conclusion is drawn by them that "so far as pot experiments indicate conditions in field practice, the final results from mixing rock phosphate with fermenting manure appear to be advantageous."

But for the most positive and conclusive in-

formation, we must turn to those valuable field experiments of the Ohio Experiment Station, conducted by Director Charles E. Thorne during the past sixteen years. As an average of all crops harvested the yields have been practically the same whether the phosphorus was applied in raw phosphate or in acid phosphate costing twice as much money, although supplying only half as much phosphorus.

A recent Ohio bulletin (No. 246), by Ames and Gaither, reports that the plowed soil of an acre of two-million pounds weight contains as an average 6 pounds of available phosphorus (soluble in weak nitric acid) where the land has been unfertilized, 5.8 pounds where "complete fertilizers" have been used, 8.9 pounds where manure alone has been applied, 11.7 pounds where manure and acid phosphate have been added, and 36.1 pounds where the fine-ground raw rock phosphate has been applied in connection with manure. These results plainly reveal both the availability and the cumulative effect of raw phosphate used in rational systems and in larger amounts than are required for the crops removed.

The data from the analysis of the soils after many years of farming under these different systems strongly support a suggestion made on page 257 of "Soil Fertility and Permanent Agriculture," namely, "that nitrogen must limit the crop yields" in these Ohio experiments, and that the plots receiving the raw phosphate (and containing more phosphorus, now in available form) would probably out-yield the plots receiving acid phosphate, "if more clover were plowed under or if more manure were returned so as to remove the nitrogen limit."

While the raw rock phosphate used in these long-continued field experiments has already paid back \$7.20 for every dollar invested (a considerably higher return than from acid phosphate, on the money invested), the returns would be still greater if manure were applied to the phosphate plots in proportion to the crops produced instead of continuing the past practice of applying only the same amount as where manure alone is used, and where the crop yields are much smaller.

When we consider that the air above each acre of land contains 70 million pounds of nitrogen, and that normal corn-belt soil contains as an average about 1,200 pounds of phosphorus and 35,000 pounds of potassium in the plowed soil of an acre of two million pounds weight, then we should expect substantial increase from the system of farming practiced by the Ohio Station, in which clover is used to secure nitrogen from the air, and organic manures are plowed under to liberate both potassium from the soil and phosphorus from the raw phosphate applied with the manure. This, with the addition of limestone as needed, provides a truly permanent and profitable system of soil improvement, and the results secured, as noted above, are in striking contrast to those reported in a recent valuable bulletin (No. 155) of the Indiana Experiment Station, showing that as an average of seventy-three different tests in many counties the value of the increase in crops of corn, oats, wheat, hay, and potatoes was only \$1.13 for every dollar invested in "complete" commercial fertilizers when applied to common loam and clay soils of that state.

In the interest of general prosperity and of increased food supplies, farmers should be encouraged to use their limited means for the purchase of liberal amounts of those materials that must be purchased if truly permanent systems of agriculture are to be adopted in the corn belt.

University of Illinois. CYRIL G. HOPKINS.

Ear-Testing Seed Corn.

To secure a perfect stand of vigorous hills of corn it is imperative that the seed be tested by the ear, and poor ears rejected. This is easily done by placing six kernels from each ear in a shallow box filled with sand or sawdust to the height of the longitudinal and transverse strings or wires which divide it into squares, the kernels from each ear being in a square of its own, commencing at one corner of the box and working towards the opposite one. Each square is thus numbered automatically by the order in which it comes. The ears themselves are laid away on a table or on shelves, and on the butt of each is stuck with a pin or pasted with mucilage a small piece of paper or cardboard bearing its number. The kernels under test are covered with a sheet or sack, and sand placed on top of this, the sand being kept moist. In a week's time the boxes may be uncovered and the kernels examined for germination. Where all six kernels are found sprouting evenly and strongly the ear from which they came may be counted a good one to shell for planting. When one or more kernels of the six show slow germination or no sign of it at all the ear will be discarded or at least laid away for use only in case of shortage. It is somewhat slow but very interesting work making these tests and gives one quite an education of judging seed-corn. But he need never expect to become educated past the necessity of testing, for among corn kernels as among animals there are disappointments and blanks.

To illustrate: We procured our corn last year for "Weldwood" from a first-class grower, and the Longfellow in particular was a very fine grade. But a test of this variety showed the following result: Out of some two hundred and twenty ears, twelve had two or more kernels out of six that failed to germinate while seventeen other ears had one poor kernel out of six. Of the Bailey corn we had not time to test very much, but a few ears put into the boxes showed to our surprise very much poorer than the Longfellow and much slower in starting than the kernels representing a bag of White Cap corn obtained from Pelee Island. Unusual pressure of work, resulting from building and fencing is our only excuse for not having tested all the corn as we shall endeavor to do this year.

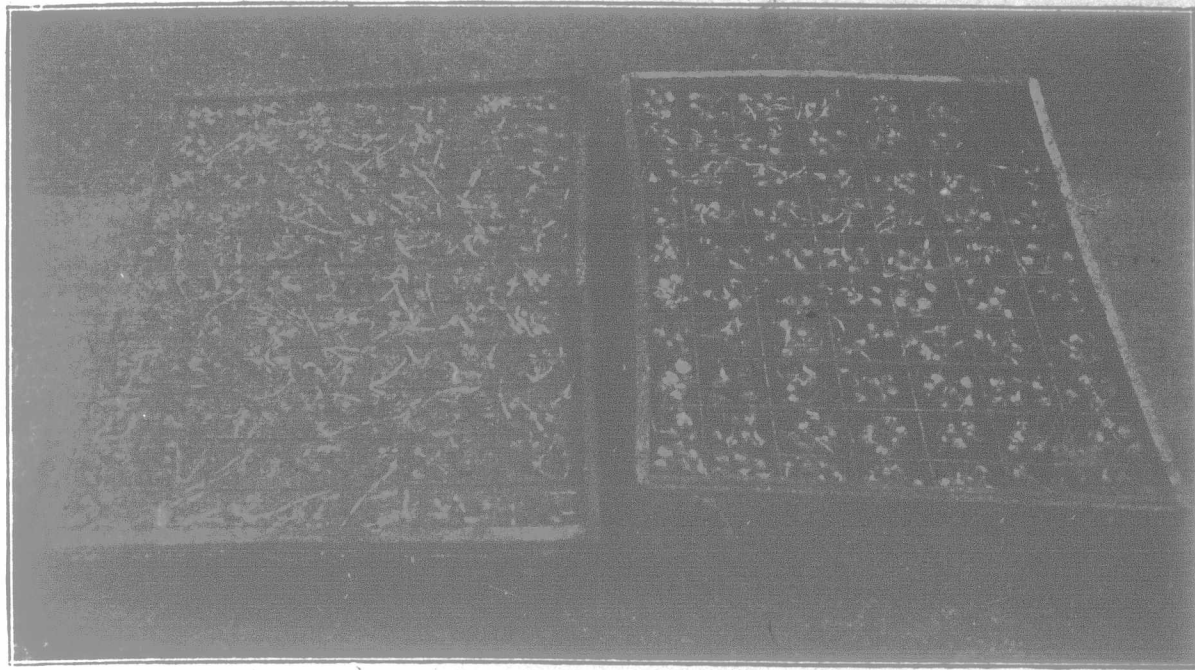
Ear-testing is particularly important where corn is grown for husking and a full uniform stand of about three kernels per hill is desired. It is, however, also important when growing for ensilage purposes, for here, too, one desires a full even stand. It does not altogether serve the purpose to plant an extra quantity when the corn shows poor germination for this cannot be depended upon to give a stand of uniform thickness. More important still, it will be found that corn which tests low is likely to have many kernels of low vitality even among those that sprout. To get a good vigorous crop one needs corn which will all start strongly and to this end ear-testing is essential. The work is interesting, can be done at odd times or rainy days and will usually be well repaid.

THE DAIRY.

Parturient Troubles in Cows.

INJURIES TO THE TEATS

The chief injuries of the teats consist of fissures or cracks, frequently noticed a few days after parturition. Though apparently unimportant they may become troublesome and serious if



An Individual Ear Test.

neglected, and may cause acute mammitis, or even blood-poisoning. They are sometimes caused by powerful traction of the calf on the teat while sucking when the milk is scanty and the teat empty. Even in cases where the milk is abundant these cracks may appear, especially when the skin of the teat is quite fine and thin. This is especially the case in cold weather, the alternate operations of heat produced by the calf when nursing, and cold acting upon the parts immediately afterwards have a tendency to cause the trouble. The trouble may also be caused by careless or rough handling of the teats by the milker, and it sometimes occurs without appreciable cause.

Symptoms—When the teats are empty probably nothing abnormal can be noticed, but when full, more or less deep cracks will be noticed in a transverse direction, at the bottom of which pus will be noticed. The surrounding tissue will be inflamed, red and tender, and the animal refuses to be milked, or nursed by the calf.

Treatment—Preventive treatment consists in observing care and cleanliness in milking; and if nursing the calf the cow should be excluded from cold. Curative treatment consists in not allowing the calf to nurse, but drawing the milk carefully with a teat syphon, which should be thoroughly disinfected by boiling in water and then oiled with sweet oil each time before commencing the milking operation. The fissures should be kept clean, and a dressing of one part carbolic acid and thirty parts of sweet oil applied three times daily until healed.

Fistula of the teat—Fistula results from wounds inflicted by barbed wire, or something else penetrating through the teat substance into the milk duct. The milk then escapes more or less, constantly through the wound which gradually heals until only a small opening remains through which the milk continues to escape. These are hard cases to treat successfully. If treatment be adopted when the wound is fresh, a self-retaining teat syphon should be introduced and left there, and the wound kept clean, and dressed three times daily with an antiseptic, as a four per cent solution of carbolic acid, until healed, then the syphon is removed and a cure has been effected. If treatment be not given until the fistula has formed it will be necessary to scarify the edges of the external opening all around until they are raw, then put in a stitch or suture of carbolized silk and insert into the teat a self-retaining syphon and dress the wound as above. This treatment appears simple and will be successful if the syphon remains in, in which case the milk escapes from it as it reaches the teat and the wound heals, but there is great difficulty in keeping the syphon in. It is called a "self-retaining syphon" but we find that it is very liable to get out, when the milk will again escape through the fistula, working its way through the stitching opening preventing healing. If this occurs a few times there is liable to be inflammatory action set up which may be serious and the opening of the fistula becomes hardened and refuses to heal unless it be re-scarified and re-stitched. In the majority of cases it is wise to do the best that can be done until the cow goes dry, then scarify and stitch the opening and treat as stated. Under these conditions a complete closure occurs and the teat will be all right after next calving.

Closure of the milk duct—In rare cases the milk-duct becomes gradually closed by a thickening of the mucous membrane for which practically nothing can be done. Also in rare cases the skin is continuous over the opening and this will not be suspected until the milking period commences when, although the quarter be full and the milk can be felt in the teat and holding its point upward a bulging can be noticed where the opening should be. This can be rectified by pressing and holding the teat as stated and with a sharp lance making a small, crucial incision through the skin and then with shears clipping off the four corners of the skin. To prevent closure of the duct during the healing process it is well to try a self-retaining syphon or a gutta-percha plug. If these will not remain in, the frequent introduction of a syphon (which of course must be thoroughly disinfected each time) will give the desired results.

The most common form of obstruction in the milk-duct is a small tumor. This tumor usually grows during the period that the cow is dry. After calving it is discovered that no milk can be drawn from one or more teats. Careful manipulation reveals the presence of a little hard lump, sometimes a cord of considerable length in the duct. This obstruction may be in any portion of the teat from the point up to its junction to the udder. The probability of successful treatment depends greatly upon the situation and shape of the tumor. If circumscribed, and not more than two-thirds the length of the teat from its point, it can, in most cases, be treated successfully, but treatment must be given by a person skilled in the use of instruments for the

purpose. The passing of knitting needles, syphons, quills, etc., which is often practiced is unsuccessful and often causes serious complications. There are many instruments especially designed for the purpose. Some of these remove a portion, others simply slit it, but either provides free passage for the milk, and if the operation be performed without wounding healthy tissue it is successful, but if healthy tissue be wounded there is danger of inflammation and consequent complications, more or less serious. If the tumor be near the udder, a successful operation can seldom be performed, and it is wise to force a teat syphon through it to draw off the milk occasionally and allow the quarter to become inactive. In many cases a cow that has one teat affected one year will have another the next. There appears to be a well-marked congenital predisposition to the trouble and if the heifers of an affected cow be bred it is often noticed that a large percentage of them suffer from the same trouble, which teaches us that the predisposition is of hereditary transmission. Hence it is usually wise to fit for the butcher all cows affected.

WHIP.

GARDEN & ORCHARD.

Freight Rates on Fruit West of Winnipeg.

P. W. Hodgetts, secretary of the Fruit Growers' Association, of Ontario, informs "The Farmer's Advocate" that Donald Johnson, the well-known fruit-grower of Forest speaking for the Ontario fruit-growers before the Agricultural Committee of the House of Commons at Ottawa, complained of the discrimination in the rates to which the fruit-growers of this Province were subjected by the railway companies in connection with our western shipments and the matter has received a great deal of prominence in the press of the country, and the western freight agents have published statements of rates, disputing the claims of eastern growers that there is any discrimination. Ontario fruit growers have had G. E. McIntosh, their transportation agent, look into the matter, and his statement which follows will be of interest to all fruit growers.

Mr. McIntosh reports that "evidence given by Donald Johnson before the Agricultural Committee at Ottawa, was to the effect that the Ontario shipper is called upon to pay a much higher rate to cover that territory lying west of Winnipeg to Calgary and Edmonton than the American or British Columbia shipper over the same trackage, and the following rates and mileage comparisons issued by Mr. Lanigan are but proof of this assertion.

From	TO	Miles	Route	Rate per 100 lbs.
St. Catharines	Winnipeg	1383	.....lake and rail	46c
			.....all rail	53c
Kelowna, B.C.	Winnipeg	1228	.....all rail	75c
Yakima, Wash.	Winnipeg	1387	.....all rail	75c
Wenatchee	Winnipeg	1325	.....all rail	75c
St. Catharines	Regina	1740	.....lake and rail	76c
St. Catharines	Regina	1740	.....all rail	83c
Yakima	Regina	958	.....all rail	75c
Wenatchee	Regina	958	.....all rail	\$1.05
St. Catharines	Calgary	2223	.....lake and rail	97c
			.....all rail	\$1.04
Kelowna, B.C.	Calgary	890	.....all rail	58c
Yakima, Wash.	Calgary	595	.....all rail	95c

"Even from the standpoint of total mileage from point of shipment in Ontario to destination in the West and from point of shipment in Washington or B.C. to the prairie markets, as given above, I fail to see the great preference our Ontario shippers are said to enjoy, if we but consider conditions as they exist.

"In this particular case it is fair, however, to draw a comparison solely on a mileage basis? Must we not rightly give some consideration to the conditions which help to make these rates? Take for instance the haul from Yakima or from Okanagan to Calgary; compare the costly nature of construction of that piece of railway with that from Toronto to Winnipeg; consider also the heavy expense over that mountain haul of keeping up auxiliary power, the enormous expenditure on snow sheds and other preventives from slides, and finally consider the fact that the 180 per cent type engine which would haul, say 411 tons over that road-bed from Okanagan to Calgary, at a rate of 58c. per 100lbs. would haul from Toronto to Winnipeg at 53c. per 100 lbs., thus handling the Ontario shipments from say St. Catharines to Winnipeg at a greater profit than the American or B.C. shipments to Calgary.

"No complaint is made of the rate from Ontario points to Winnipeg, nor do we think the British Columbia shipper is charged an excessive rate to Calgary because conditions demand it.

Taking the above points into consideration, the rates are probably fair to both, with certainly no advantage or preference, as intimated, to the Ontario shipper.

"With Winnipeg, then, as an entrance to this market for the Ontario apple shipper, and Calgary an entrance point for the Western States or British Columbia shipper, all on a fair-rate basis. We find the territory lying between these points as follows:

"The Okanagan pays on a through rate 60c. to Calgary, and 75c. to Winnipeg, while the Ontario shipper pays 53c. to Winnipeg and \$1.04 to Calgary.

"The Okanagan shipper pays 15c. per 100 lbs. for the haul of 837 miles between Calgary and Winnipeg, while the St. Catharines shipper pays 51c. per 100 lbs. over the same rails.

"The C. P. R. makes a charge of 8c. per cwt. for the haul of 657 miles between Medicine Hat and Winnipeg to the B. C. shipper and for the same haul charge the Ontario shipper 48c. per 100 lbs.

From Spence's Bridge to Medicine Hat a rate is given of 79c. and to Winnipeg 85c., 657 miles for 6c. per cwt., but the Ontario shipper pays 48c. for the same 657 miles.

From Athol, Bonner's Ferry and other Idaho points the rates to Winnipeg, Brandon, Regina or Medicine Hat is 75c. per 100 lbs. Ontario shippers pay between Winnipeg and Medicine Hat 48c.; between Winnipeg and Regina 34c. and between Winnipeg and Brandon 19c. per 100 lbs.

"Another advantage these shippers enjoy over the Ontario shippers is the privilege of collecting carloads at concentration points within a radius of 60 miles at a rate of 10c. per 100 lbs.

"Mr. Johnson's assertions regarding the territory here referred to therefore appear to be well founded. If the rates are to be based solely upon a mileage basis we might refer to the following:

	Miles	Rate
Yakima to Fort William	1809	85c
Oshawa, Ont., to Regina	1632	87c
Hood River to Port Arthur	1906	90c
Brampton, Ont., to Medicine Hat	1827	96c
Yakima to Montreal	3154	\$1.00
St. Catharines to Calgary	2223	\$1.04
Hood River to Montreal	3254	\$1.00
Forest, Ont., to Lethbridge	2178	\$1.00

"It is, therefore, obvious that the freight rates even on a mileage basis give no advantage whatever to the Ontario producer. Advantages or a preference over other shippers are not sought for. The Ontario producer realizes, however, that with 70 per cent of the crop marketed last season going into the western market, that to retain such and meet the future competition when the large orchard acreage of the Western States and British Columbia comes into bearing,

they must or should have an equal chance to reach that market west of Winnipeg by an equalization of freight rates for that particular territory.

"Exception should also be taken to the statement of Chas. Dewey, freight agent of the C. P. R., in which he claims Ontario apples are generally shipped lake and rail. Only a very small percentage is given the lake and rail routing, scarcely any that are billed west of Port Arthur, so that all-rail rates must be considered.

"In regard to the supply of refrigerator cars, Mr. Dewey says: 'the statement of Donald Johnson that the refrigerator cars in the service of the Company are fewer this year than last is not true. This statement of Mr. Johnson's was in reference to the supply of refrigerator cars in service on the G. T. R., for the year ending June 30th, 1912, and if we are to believe the sworn statements of the officials of that Company submitted to the Minister of Railways and Canals, Mr. Johnson's assertion is correct. The figures as therein reported for the G. T. R. for five years past are as follows:

For year ending June 30th, 1908,	955 ref. cars.
For year ending June 30th, 1909,	949 ref. cars.
For year ending June 30th, 1910,	947 ref. cars.
For year ending June 30th, 1911,	944 ref. cars.
For year ending June 30th, 1912,	941 ref. cars.

"If a mistake has been made in the compila-

tion of done on however can get thetic figures.

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tion of this report a gross injustice has been done the Grand Trunk Railway Company. It, however, is the only means whereby the public can get this information and is accepted as authentic until discredited by those compiling the figures.

"The Ontario grower is not endeavoring to raise a howl against the railroads. He realizes that some railway companies are endeavoring to keep up with increased demands on their equipment, but he also realizes that he has given too much attention to production and not enough to transportation and marketing. Improvements in packing, is one of the important matters too long neglected, but this will no doubt be greatly improved the coming season and a change made from barrel to box package. The conditions for marketing west of Winnipeg is another. It appears to the average Ontario shipper just as Mr. Johnson stated before the Agricultural Committee, and as above figures would imply viz., that the Ontario producer pays too high a rate west of Winnipeg compared with his competitors."

How to Plant an Orchard.

There are many different ways of doing most kinds of farm work, and it is not always possible to say absolutely what is the best. Often it happens that what is best for one set of conditions is not the best for another. It frequently becomes necessary, therefore, to describe a number of various practices, and sometimes in the multiplicity of methods advised there is confusion for the amateur. In this article, on orchard planting, we shall attempt to avoid confusion by describing one method only. It is, we believe, the best known, and was for that reason adopted in planting our own orchard, the plan of which appeared in "The Farmer's Advocate" of March 20th. This method obviates the necessity of staking, except for the purpose of stretching a base-line, and marking the course of the longitudinal rows of trees. First of all, square up the field to be planted. Starting, say, at a line-fence along the west side, run a base-line out at right angles to it across either end of the field, whichever may be the more convenient to work from. Running one line out at right angles to another in this way is called "erecting a perpendicular," and the practical method of doing it is as follows:

HOW TO ERECT A PERPENDICULAR.

Take a hundred-foot tape, stake one end at the point from which the perpendicular is to start, have a helper walk out with the line till he comes to the forty-foot mark, pick the other end up yourself and carry it thirty feet along the base-line to a stake previously set, and grasp it at the ninety-foot mark. The assistant, still holding the tape at the forty-foot mark, stretches it taut, and plants a stake at the angle thus made. The triangle is now 30 feet by 40 feet by 50 feet, which is according to the 6:8:10 rule. It is well to check the result by working in both directions along the original line thus constructing two triangles, the perpendiculars of which will be identical if the work has been accurately performed.

Sighting through, now, from the first stake to the stake set by the assistant, you have a perpendicular which can be extended across the field. Stretch a cord or wire along this base-line, and plant a stake for each row. Plant these stakes all on the same side of the cord or wire and close to it, bringing them thus exactly in line with each other. Upon the accuracy of this detail will depend very largely the true cross-rowing of the planted orchard.

Now go to the line-fence at the other end of the orchard and erect another perpendicular. Measure along this and set a stake for each row, corresponding to the stakes on the base-line. This second row of stakes need not be so precisely in line, but must be correctly spaced, — forty feet, thirty-five feet or whatever distance apart the rows are to be. The object of erecting a perpendicular across this end too, is to make sure that measurements for the stakes are made at right angles from the line fence. If one followed a head-land fence which happened to run a little on the bias, he would have his rows of trees a few inches closer together at this end than at the other, thus throwing the whole orchard out of square. The orchard is now staked and ready for planting.

A MARKED WIRE TO LINE THE TREES BY.

To keep the trees in line and get them spaced the proper distance apart in the rows, a marked twisted-wire cable is used. This cable can be purchased at a reasonable price. This particular kind of wire is called for because it is soft, does not coil readily, does not stretch perceptibly, and with a very little care, can easily be kept from kinking. Also the strands may be separated with a sharp awl, so as to insert a small bit of fine wire every so many feet to mark where each tree is to be planted in the row. This was the plan we followed, though

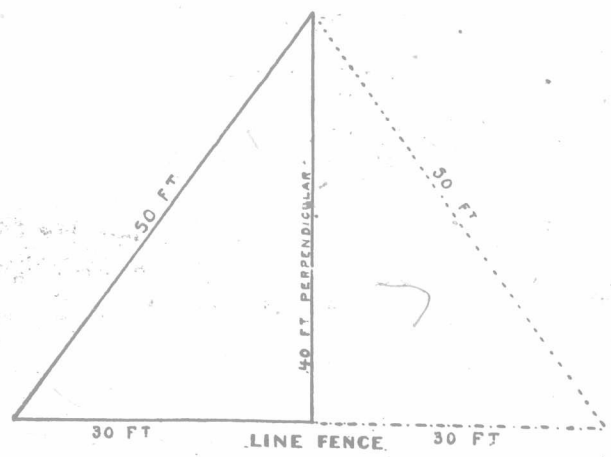
we believe the orchardist from whom we learned of the method has found hot solder marks an improvement. These may be broken off when desired.

HOW TO USE THE WIRE CABLE.

Attach one end of the cable securely to a stout stake, drive the stake at the base-line where the smaller stake has been set marking the first row of trees, stretch the cable to another stout stake at the other end of the orchard, tightening it with a double pulley or a wire stretcher. Now mark the wire in one of the ways indicated above, or in any better manner that the planter's ingenuity may devise.

SETTING THE TREES.

You are now ready for planting. Set every tree on the side of the wire towards the line-fence, so that the latter may be shifted without hindrance to the next row. If the stake at the



To Erect a Perpendicular.

base-line is carefully driven each time, the wire kept free from kinks and always about equally stretched and the trees are placed with care, the result is bound to be a perfectly-rowed orchard. Our own, though planted by a number of men, some of them very ordinary day laborers, is nicely lined, lengthwise, crosswise and diagonally. The method is simple, speedy and independent of wind at planting time, as there are no tall stakes to keep erect. It is better adapted to square planting than to other systems, but could be adapted to others by having two or more base-lines to work from, or by having two distinct sets of marks on the wire. The base-line, by the way, should be a good half space from the first cross row of trees.

CARE OF THE TREES.

As for the trees, we presume that they have been ordered in good season, and when received have been heeled in by digging a trench, laying the trees in an inclined position with roots in the trench, (each variety by itself) and covering roots well with earth. When ready to plant have a rough chart prepared on a card-board, showing the number, kind and position of trees in each row. A small or large gang may work to advantage. Three can do nicely, one to hold the tree and two to fill in the dirt, which should be carefully filled in around and among the roots, a certain amount of surface mold being first selected for this purpose. The holes may have been dug a few rows in advance, their position being approximately gauged by sighting, after the first two or three rows have been planted. The trees should be brought out a few at a time, and kept in a bunch with loose sacking around and over the roots. If conditions are such that they dry out excessively, they may be moistened occasionally and a little water put into the hole before the last few inches of earth are filled in. Before setting a tree, prune off with a sharp knife the ends of the larger roots, leaving fresh, smooth surfaces from which rootlets may be sent out. Press the soil firmly about and work it well among the roots, but leave the top two or three inches loose to form a mulch. See that the roots are spread out in a natural position, and the tree planted an inch or so deeper than it grew in the nursery. Out of some 350 trees which we planted in this way last year all lived but two, which were practically dead before being planted, and were only set in mid spaces to give them a chance to grow if they would. Practically, we might say, every tree lived. The season, of course, was favorable. Promptly after planting, the trees were headed, care being taken to encourage a growth toward the west, by choosing for the most part branches pointing this way and trimming them back to terminal buds directed outwards, whereas the arms on the east and south-east sides were usually trimmed back to terminals showing an upward tendency. We might add that the trees had been set, inclining uniformly toward the west. The wind soon forces them back.

THE FARM BULLETIN.

A Bank Commission Advocated.

The Canadian House of Commons Committee on Banking and Commerce, which is considering the bill introduced into Parliament by Hon. W. T. White, Minister of Finance, along with various amendments thereto which have been proposed, recently invited some fifteen witnesses to appear before it and state their views. The hearings commenced last week, the first and most important witness called being H. C. McLeod, Ex-General Manager of the Bank of Nova Scotia, who has for twenty years been urging a compulsory system of governmental inspection or external audit of affairs as shown at the head offices of the banks in addition to the present system of internal inspection, by means of which the banks keep check upon the operations of their branches. Other witnesses invited as representing the rural, or, more broadly, the public interest, were Gordon Waldron, Editorial writer of the Weekly Sun, Mr. Chipman, Editor of the Grain Growers' Guide, and the Editor of "The Farmer's Advocate." We requested the privilege of nominating as a substitute Peter McArthur, who has studied the question broadly in its large public aspects, and whose articles in "The Farmer's Advocate" have done a great deal to form public opinion. The editor accompanied Mr. McArthur to Ottawa, being subsequently invited by resolution as an extra witness to substantiate Mr. McArthur's testimony that the regular display advertising of the banks had been dropped from "The Farmer's Advocate" upon the expiry of then-existing contracts, although other advertising had rapidly increased. Mr. McArthur also writes for a syndicate which supplies his articles to a chain of fifteen or more daily and weekly Canadian newspapers. In a recent letter he dealt with the banking question. The letter was complimented by the editor of the syndicate and duly forwarded, but not a line of it appeared in any of the chain of publications. It was the first and only article rejected. Mr. McArthur also dealt in his evidence with the tendency of a centralized banking system towards centralized industry, and united with the editor of this paper in urging the establishment of a banking commission similar in function to the railway commission, and justifiable on similar grounds of public interest. Mr. Waldron had also favored government inspection, but had not elaborated his idea.

The hearings of the committee were very informal, unbiased by party affiliations, and conducted in a sympathetic manner. The chairman, Herbert B. Ames, and Hon. Mr. White attended throughout, giving respectful attention to all evidence, and directing questions from time to time designed to draw out the views of the various witnesses. A synopsis of the evidence will be presented later.

The Belleville Holstein Sale.

The Belleville consignment sale of Holsteins drew a large crowd to that city on April 1st. Bidding was brisk and competition for the good things very keen. Most of the cattle were taken by Ontario buyers, although some of the good ones went to Quebec. Thirty cows in milk made the good average of \$278 each. May Echo Verelle consigned by F. R. Mallory, Frankford, a daughter of May Echo, which sold some time ago for \$1,400, made the highest price of the sale going to the Allison Stock Farm, Chesterville, Ont., at \$1,500. This firm also secured a daughter of this cow, Lawncrest May Echo Posh at \$700. Ten head sold for over \$300 each. Heifers not in milk averaged \$190 each, and fifteen young bulls averaged \$85. Seven head consigned by G. A. Brethen, Norwood, averaged \$148.57; seven consigned by F. R. Mallory, Frankford, averaged \$442.14; eighteen head consigned by W. G. Huffman, Gilead, averaged \$191; thirteen consigned by Archibald Parks, Napanee, averaged \$125.76; four consigned by Wesley Dawson, Napanee, averaged \$176.22; four consigned by C. H. Saylor and P. Cave, Bloomfield, averaged \$177.50; five consigned by G. A. Kingston, Campbellford, averaged \$250; two consigned by B. R. Leaven, Bloomfield, averaged \$162.50; three consigned by Wm. H. Gough, Bloomfield, averaged \$181.69; eight consigned by Bertram Hoskin, The Gully, averaged \$123.75; four consigned by B. E. Hagerman, Minto, averaged \$250; three head consigned by S. J. Foster, Bloomfield, averaged \$523.33; and one consigned by W. A. Hubbs, Bloomfield, sold for \$115. These prices show that the sale was an unqualified success.

Those hideous looking eye-protectors, motor goggles, really have some value. A Quebec correspondent, Alfred Chaplin, writes that in his orchards they have been a great help in protecting the eyes from the solution while spraying fruit trees.

England's Spring Horse Show Season.

Our English correspondent.

The English spring horse-show season—it lasts three long weary weeks—is now over, and it is my intention to give your readers a few impressions thereon. The Shire Horse Society Show came first, and here we saw the costly stallion, Champion's Goalkeeper, whose record sale I have already written about in these columns, given the red, white and blue rosette as the male champion of the exhibition, for his new owner Sir Walpole Greenwell. This gentleman also won the mare championship with the chestnut mare, Dunsmore Chessie, who has never looked back at the London shows since she came out as a two-year-old. She is a mare of immense size and substance, perhaps the mare of greatest scale the Shire horse has ever known. So far as the other classes went, they ended in a complete triumph for the stock sired by Childwick Champion, who sired Champion's Goalkeeper. Seventeen awards fell to the stock of Childwick Champion, and he rose to pride of place in the list of successful sires at the show. Then came Redlynch Forest King with seven wins to his youngster's credit, while Norbury Menestrel had six, so had Dunsmore Raider and Hendre Hydrometer. The children of Tatton Dray King won five awards, and those of Lockinge Forest King, Birdsall Menestrel, and King of Tandridge, four each. Thus we get the old giving way to the new in the way of successful stallions, but the stock of Lockinge Forest King and Birdsall Menestrel, which are still left us will keep these two names green. By the way, the English Shire Horse Society will give gold medals at Toronto, Winnipeg, Calgary and Brandon this year.

Of the Hackney Show, it must be said that English breeders are sacrificing the breed for ultra quality. We are getting too much refinement—too much actual prettiness. The breed is being spoiled for the lack of shoulders. Superfine quality is all very well to look upon, but it is making a toy and plaything of what should be the best heavy-harness horse in the world. The champion stallion of this show—and no fault could be found with him—was Hopwood Viceroy, owned by an Argentine lover of the breed, M. Martinez de Hoz, and a chestnut son of Royal Danegelt, he has also earned prizes in the Argentine where he stood and served for three seasons. The champion mare was Harry Gilding's Beckingham Lady Grace, for whom 900 guineas were paid at the late F. I. Batchelor's sale. The champion stallion at the show was once more Robt. Whitmore's Polonius, whose stock secured twenty-seven prizes between them. Polonius also sired two of the winning group. Mr. Scott's Mathias winning the harness-group prize.

Then came the Thoroughbred Hunter and Polo Pony Shows, all crowded into one short week. Their majesties the King and Queen and Queen Alexandra visited these shows, the King, out of courtesy to the Board of Agriculture, which yearly gives £9,858 away in prize monies for Thoroughbred stallions thought suitable to get light horses suitable for hunters, remount and other army purposes. There were 114 old racing stallions forthcoming, and the championship, which carried with it the King's gold cup, worth £200, and meant that the winning horse took £305 as well, fell to the two Yorkshire cousins and partners, Messrs. T. L. Weekham, Boynton, and H. A. Cholmondeley, from Burton Agnes, Driffild, who have now secured the trophy three years running. They won it once with Berrill, the old Cambridgeshire winner and King's Courtship, their present stallion, has now secured the honor twice in successive years. The chief award in "made" hunters fell to J. Drage's heavy-weight Alarm, the runner-up being Edward Hodgson's light-weight M. P. At the Polo Pony Show—where polo-bred ponies are now excellent—Dunbar Kelly with Surefoot, and Stephen Mumford with Spanish Hero won the championship sex medals. Best of the riding ponies was J. D. Gouldsmith's Re-Echo, bred by Sir John Barker, Bt., who, as usual, took the lion's share of the awards in the breeding classes.

In Welsh ponies H. Meuric Lloyd won the stallion championship with Dyoll Starlight, and Mrs. H. D. Greene took the mare medal. R. W. R. Mackenzie won the championship in Shetland ponies.

Except the Hackney—which is losing its once undoubted strength of constitution—there is naught amiss with our British breeds of horses. The Shire is in greater demand than it ever was,

and strangely enough there is plenty of good money for the harness horse. The Government seems keen on helping the breeding of all light horses—even down to the mountain and moorland ponies, of which we have so many varieties.

It is not too late to save the Hackney from its own undoing, and there are distinct signs of proof within its ranks that the modern tendency which has been on wrong lines will change. This alteration must come soon, and we shall see re-established all the old-time hard-wearing qualities of the horse that could trot seventeen miles in the hour with a heavy man or two behind it.

DAIRY SHORTHORNS SELL WELL.

At Lord Rothschild's sale of dairy Shorthorns, at Tring, on March 25th, a record was established when sixty-seven head sold for an average of 455 dollars each, or an aggregate of 30,740 dollars. Highest price was given for the bull Drusus, who had several 1,000-gallon crosses on each side of his pedigree, and Captain Wills secured in him one of the best-bred dairy bulls in the kingdom.

The highest price for cows was 1,000 dollars paid by Sir Gilbert Greenell for Darkey, and by Mr. Hignett for Fragrance, both calved in 1911.

A Canadian buyer, Mr. Cockshutt, took several lots away with him, picking out his bargains well. He paid 625 dollars for Fairy Duchess 34th, a roan calved March 7th, 1909, at Tring, and by a bull Conjuror, whose grand-dam gave 10,310 lbs. of milk in 1897, and 13,920 lbs. in 1899. This cow comes from a long line of deep-milking cows.

Then Mr. Cockshutt also paid 475 dollars for Mimosa, 400 dollars for Sandford Empress 6th., 275 dollars for Rosebud 12th., and 425 dollars for the bull Director, a yearling going back to Dorothy, who had her first calf on October 30th., 1903, and since that date to September 30th., 1912, gave 89,582 lbs. of milk, averaging 9,953 lbs. for nine years. From September 5th., 1910, to September 30th., 1911, she gave 12,851 lbs., and from October 1st., to 28th., 1912, she gave 2,241 lbs. of milk or over one ton in a month. Mr. Cockshutt should have just the right type of bull to breed cows of the milking strain.

There are some wonderful cows at Tring, their records make your mouth water. Lord Rothschild has only once had to go outside his own herd for a bull. Three of those now in service in the herd are sons of that wonderful cow Darlington Crawford 5th., who has given over 100,000 lbs. of milk in ten years, while others are from that equally noted cow Dorothy, already spoken of. Fancy a ton of milk in four weeks.

Everyone is glad in England that Canada is coming over for the right kind of dairy Shorthorns. She is getting it at such sales as these.

London, Eng.

G. T. BURROWS.

To prove the possibilities of an acre of land and further interest young men in agriculture, the Ontario Department of Agriculture is carrying out a new competition through its District Representatives. It is to be known as an Acre Profit Competition. The prizes will be awarded in every county to the young man who produces the greatest profit from an acre of land. The competition in each county will, of course, be confined to the same crop, so that in this respect chances will be equal. It will be open, generally speaking, to the young men who have taken the Course in Agriculture with the District Representatives or who have won prizes in rural school fairs. It will be necessary to keep as close count as possible of the expenses incurred, and the returns will be figured in the fall on the basis of current prices for the crop produced. The prize for the winners is to be free transportation and living expenses for the two weeks' short course in live-stock and seed judging at the Ontario Agricultural College. Already considerable interest has been developed, and there is no doubt that there will be keen competition in many counties. In some counties they have decided to carry on the competition in potatoes, in others in oats, others in barley, etc.

During a recent visit to the West, John Bright, Dominion Live-stock Commissioner, disclosed the general nature of a plan under consideration by his branch to supply pure-bred sires at various points where needed, beginning in the Western provinces. The stock would be bought, owned and placed by the government, with no charge to the communities served except insurance in the case of stallions. The stock is to be bought, we understand, in Eastern Canada.

It is stated that the removal of all tariff from raw wool has been agreed upon by President Wilson of the United States and the members of his committee on ways and means.

Record and Platform of the Grange.

Editor "The Farmer's Advocate":

At the last annual meeting of the Dominion Grange voluntary contributions amounting to some \$150 were made by delegates to assist in the work of the organization, and it was decided to issue an invitation to the public generally to contribute towards this work.

The Grange is the only independent farmers' organization in Eastern Canada, and is affiliated with the Grain Growers' Association of Manitoba and Saskatchewan, and with the United Farmers of Alberta, forming with these three, the Canadian Council of Agriculture.

The work of the Grange is mainly educational and social, with commercial co-operation as a side line. During the last few years the Grange took the lead in co-operation with the Canadian Manufacturers' Association, Toronto Board of Trade and other bodies in pressing for the establishment of the Railway Commission. It was mainly through its efforts that legislation was secured under which railways are made responsible for loss caused by the destruction of cattle due to defective cattle guards. It was with the aid of the same organization that friends in parliament were enabled to secure a fair law governing the drainage of farm property across railway lines. The Grange has fought, too, for equalization of taxation between farm and corporation property; it has opposed the granting of public money to railway and other corporations, has constantly pressed for the abolition of our protective tariff and for an increase in the British preference, and has urged such reorganization of our educational system as will help to fit our country boys and girls for effective country life.

At the present time, apart from questions of local interest which are best dealt with by subordinate Granges, the Dominion Grange has in view several definite objects:

- 1.—The establishment of a parcels-post system
 - 2.—The elimination of the protective principle from the tariff, and the gradual substitution of a direct tax upon land values and upon public franchises for the indirect tariff tax.
 - 3.—The establishment of freer trade with all countries, but particularly with the United States and with Great Britain.
 - 4.—The discouragement of all militarist propaganda and the encouragement of international amity, arbitration instead of war as a method of settling international disputes.
 - 5.—Local option for municipalities in methods of municipal taxation.
 - 6.—The extension of the principle of direct legislation through the initiative and referendum.
- The above objects with those dealing with education, should, we think, appeal to the majority of our farmers, as well as to many city residents. The officers of the Grange, therefore, extend an invitation to assist in the work to all those who are in sympathy with the Grange and its aims, and have confidence in the integrity of its officers.

Brant Co., Ont.

W. C. GOOD,
Master Dom. Grange.

A Fake Surveyor.

Editor "The Farmer's Advocate":

We noticed in your paper of February 20, a letter from A. Adamson, describing a man going around with a telescope and a field-glass. That fake was here in October last—but said his name was Ivan D. Campbell. He claimed to be in the Government survey and was locating a site for an observatory and wireless telegraphy. He was in this neighborhood for two weeks, staying about two days at a place, then he would quietly move to another place without settling for his board.

Bruce Co., Ont.

J. D.

The ministerial order prohibiting the importation of cattle into Canada from Great Britain, Ireland and the Channel Islands, on steamers carrying horses from Continental Europe, for three months from April 1st, has been extended to cover other ruminants and swine on these vessels.

Some writer has said, "too many spend too much time farming, and not enough time living."

REVIEW

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Markets.

Toronto.

REVIEW OF LAST WEEK'S MARKETS

At West Toronto, on Monday, April 7, receipts numbered 40 cars, comprising 679 cattle, 223 hogs, 28 sheep, 21 calves, and 35 horses. There were no sales at this market, but three carloads were sold at the City yards. Cattle, sheep, and calves, sold at steady prices. Hogs were lower, at \$9.50, fed and watered, and \$9.25 f. o. b. cars at country points.

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

	City.	Union.	Total.
Cars	21	867	888
Cattle	452	4,405	4,857
Hogs	835	8,923	9,758
Sheep	155	260	415
Calves	90	953	1,043
Horses	16	77	93

The total receipts of live stock at the two yards for the corresponding week of 1912 were as follows:

	City.	Union.	Total.
Cars	112	172	284
Cattle	1,258	2,442	3,700
Hogs	2,742	1,237	3,979
Sheep	860	127	987
Calves	874	87	961
Horses	4	113	117

The combined receipts of live stock at the two markets, show an increase of 104 cars, 1,157 cattle, 5,279 hogs, 572 sheep, and 82 calves, but a decrease of 24 horses, in comparison with the corresponding week of 1912.

Receipts of cattle were larger than in our last report. The quality also was better, as there were, during the week, about 700 or 800 steers of export quality delivered at the Union Stock-yards. Trade was much improved, as there were several buyers from outside points, as well as a couple of orders from American firms for exporters, for the London market, and prices advanced about 10 cents per cwt. for all classes of fat cattle, over our last report.

Exporters.—Steers, 1,200 to 1,300 lbs., sold at \$6.80 to \$7.10, but only three carloads during the week brought the latter price; export heifers, 1,100 to 1,200 lbs., sold at \$6.60 to \$6.75; export bulls, \$5.25 to \$5.75, and a few bulls of very fine quality brought as high as \$6.

Butchers'.—Choice butchers' cattle sold at \$6.60 to \$6.75; loads of good, \$6.25 to \$6.50; medium, \$5.90 to \$6.25; common, \$5.50 to \$5.75; inferior, light cattle, \$5 to \$5.25; cows, \$4 to \$5.50, with a few choice at \$5.75; canners and cutters, \$2.50 to \$3.50; bulls, \$4 to \$5. Stockers and Feeders.—Feeders, 800 to 900 lbs., sold at \$5.50 to \$5.80; stockers, 500 to 600 lbs., sold at \$5 to \$5.40; common, light stockers, sold at \$4.25 to \$4.75.

Milkers and Springers.—There was a moderate demand for milkers and springers, at about steady prices, which ranged from \$50 to \$65 for medium to good cows, and \$70 to \$72 was reached for a few of choice quality.

Veal Calves.—Receipts of veal calves were larger. The demand was good, and prices remained firm. Good to choice calves sold at \$9 to \$10 per cwt.; fair to good, light calves, \$6.50 to \$8.50; strong-weight calves, \$6.75 to \$8; inferior, rough, heavy calves, \$3.50 to \$5; bobs, \$2 to \$3 each.

Sheep and Lambs.—Sheep, ewes sold at \$6.50 to \$7.25 for ewes; rams, \$5.50 to \$6.25; yearling lambs, \$7 to \$9; spring lambs are worth from \$4 to \$10 each. Few good spring lambs thus far this season have been offered.

Hogs.—Receipts have been moderate, as the country roads have been impassible. Prices were very firm all week, closing as follows: Selects, fed and watered, \$9.85 to \$9.95, and \$9.50 to \$9.60, f. o. b. cars at country points, and \$10.10 to \$10.15 weighed off cars.

Horses.—There was a steady trade in horses at the Union Horse Exchange, Union Stock-yards, all week. The principal demand came from the farmers in different parts of Ontario. There was also a local demand from the different city cartage companies, and wholesale

merchants. No sales were reported for the Northwest. Prices were quoted as follows: Drafters, \$175 to \$250; general-purpose horses, \$150 to \$225; express and wagon horses, \$160 to \$225; drivers, \$100 to \$150; serviceably sound, \$45 to \$100.

BREADSTUFFS.

Wheat.—Ontario, No. 2 red, white or mixed, 93c. to 95c., outside; inferior grades, down to 70c. Manitoba wheat, No. 1 northern, 97c.; No. 2 northern, 94½c., track, lake ports. Oats—Ontario, No. 2, 33c. to 34c., outside; 33c., track, Toronto. Manitoba oats, No. 2, 41c.; No. 3, 39½c., lake ports. Rye—No. 2, 60c. to 63c., outside. Peas—No. 2, \$1 to \$1.05, outside. Buckwheat—51c. to 52c., outside. Corn—No. 2 yellow, 58c., track, Toronto, all-rail shipment. Barley—For malting, 51c. to 53c.; for feed, 43c. to 48c., outside. Flour—Ontario winter-wheat flour, \$3.90 to \$3.95, sea-board. Manitoba flour—Prices at Toronto are: First patents, \$5.30; second patents, \$4.80; in cotton, 10c. more; strong bakers', \$4.60, in jute.

HAY AND MILLFEED.

Hay.—Baled, car lots, track, Toronto, No. 1, per ton, \$12 to \$13; No. 2, \$10 to \$11 per ton. Straw.—Baled, car lots, track, Toronto, \$9 to \$10 per ton.

TORONTO SEED MARKET.

Toronto seedsmen are quoting re-cleaned seeds to farmers at the following prices per cwt.: Alsike No. 1, \$28.50 to \$31.50; alsike No. 2, \$24.50 to \$26.50; red clover No. 1, \$25 to \$25.50; red clover No. 2, \$23; timothy No. 1, \$7.50 to \$8; timothy No. 2, \$6 to \$6.50; alfalfa No. 1, \$19.50 to \$20.50; alfalfa No. 2, \$17.50.

COUNTRY PRODUCE.

Butter.—Market remains steady, prices being unchanged. No. 1 creamery rolls, 32c. to 34c.; creamery solids, 28c. to 30c.; separator dairy, 28c. to 30c.; store lots, 22c. to 24c.

Eggs.—Receipts were large, and prices easier, at 21c. to 22c., in case lots.

Cheese.—Large, 14c.; twins, 15c.

Honey.—Extracted, 12½c. per lb.; combs per dozen sections, \$2.75.

Beans.—Broken car lots, at Toronto, handpicked, \$2.60 per bushel; primes, \$2.25, down to \$1.25 for poor quality.

Potatoes.—Ontario potatoes, 65c. to 70c. per bag, in car lots, track, Toronto; New Brunswick, 80c. per bag, in car lots, track, Toronto.

Poultry.—Receipts light, and prices higher. Turkeys, 26c. to 30c.; geese, 20c. per lb.; ducks, 22c. to 25c.; hens, 18c. to 20c.; broilers, 45c. to 60c. per lb., dressed.

HIDES AND SKINS.

No. 1 inspected steers and cows, 13c.; No. 2 inspected steers and cows, 12c.; city hides, flat 12½c.; country hides, cured, 12c.; country hides, green, 11c.; calf skins, per lb., 15c.; lamb skins, \$1.10 to \$1.50; horse hides, No. 1, \$3.50 each; horse hair, per lb., 37c.; tallow, No. 1, per lb., 5½c. to 6½c.

FRUITS AND VEGETABLES.

Apples—No. 1 Spies, \$4.25; Spies No. 2, \$3.75; Greenings No. 1, \$3.25 to \$3.75; Greenings No. 2, \$3 to \$3.50; Kings, No. 1 scarce, and worth \$4 to \$4.25; Baldwins No. 1, \$3.50 to \$3.75; Baldwins No. 2, \$3 to \$3.25; cabbage, \$1 per barrel; beets, 75c. per bag; onions, 90c. to \$1 per bag of 90 lbs.; turnips, 30c. to 40c. per bag; parsnips, 70c. to 80c. per bag.

Buffalo.

Cattle.—Prime steers, \$8.75 to \$9; shipping, \$8 to \$8.65; butchers', \$6 to \$8.60; heifers, \$6 to \$8.30; cows, \$3.75 to \$7; bulls, \$5 to \$7.25; stockers and feeders, \$5.50 to \$7.50; stock heifers, \$5 to \$6; fresh cows and springers, \$35 to \$38.

Veals.—\$5 to \$10.50. Hogs.—Heavy and mixed, \$9.40 to \$9.50; Yorkers and pigs, \$9.50 to \$9.60; roughs, \$8.40 to \$8.60; stags, \$7 to \$8; dairies, \$9.25 to \$9.60.

Sheep and Lambs.—Lambs, \$6.50 to \$9.50; yearlings, \$5.50 to \$8.50; whethers, \$7.25 to \$7.50; ewes, \$3.50 to \$7; sheep, mixed, \$5 to \$7.15.

British Cattle Market.

John Rogers & Co. cable Irish steers making from 14 1-5c. to 15½c. per lb.

Montreal.

Live Stock.—There was a very fair demand for cattle last week, and prices for the most part held very firm. Choice cattle sold as high as 7½c. per lb., and even up to 7½c. for a few, while fine stock sold at 7c., and good at 6½c. to 7c. Medium-quality cattle brought 5½c. to 6½c., and common ranged all the way down to 4c. The supply of sheep forward was light, and the market firm. Old sheep sold at 8c., and yearlings at 9c. per lb. The supply of spring lambs was larger than before, and prices ranged from \$6 to \$8 each, according to size and quality. Receipts of calves were on the increase, and some very poor stock was offered. These sold at \$1 to \$3, the better sorts at \$5 to \$12 each. Selected lots of hogs changed hands at 10½c. per lb., while a few odd lots 11c., weighed off cars.

Horses.—There is a fair supply in the stables, and no difficulty has been experienced in supplying the demand. Prices steady. Heavy-draft horses, 1,500 to 1,700 lbs., \$300 to \$350; light-draft, 1,400 to 1,500 lbs., \$225 to \$300; light horses, 1,000 to 1,100 lbs., \$125 to \$200, while broken-down animals sold at \$75 to \$125. Choice saddle and carriage animals, \$350 to \$500 each.

Poultry.—Nothing but storage stock was available, but merchants who have the goods claim a good demand. Prices were 23c. to 24c. per lb. for choicest turkeys; 15½c. to 16½c. for geese; 16c. to 17c. for fowls; 20c. to 22c. for ducks, and 18c. to 19c. per lb. for chickens.

Dressed Hogs.—There was a good demand for all the dressed hogs available, and the tone of the market was strong. Prices for choice, abattoir-killed hogs were 14½c. to 14½c. per lb.

Potatoes.—The tone of the market for potatoes was rather easy, but no price changes were reported. Green Mountains were quoted at 65c. to 67½c. per 90 lbs. carloads, track, while Quebec grades were 55c. to 60c. In smaller lots, the price in both cases was about 25c. more.

Honey and Syrup.—Some arrivals of new syrup were reported, but it is doubtful as to how liberal the crop may be. Dealers quoted the price as \$1.25 for 8½-lb. tins, for the fresh arrivals. White comb honey was 16c. to 17c. per lb., and dark 14c. to 15½c.; light extracted, 11½c. to 12c., and dark extracted, 8c. to 9c. per lb.

Eggs.—There has been a slight shortage, and dealers have been importing more freely again. Fresh stock was still quoted at 23c. to 24c. per dozen. Stock came from the other side of the line, as well as from Ontario.

Butter.—American buyers have been taking both cream and butter from Montreal and the sections south, and the market was very firm. New Zealand butter, however, was arriving, and sold at 31½c. to 32c., in the case of New Zealand, and at 31c. in the case of Canadian. Some new-milk butter was said to have been received, but the quantity was not worth mentioning.

Grain.—The market was dull, and prices steady, at 41½c. to 42c. per bushel for Canadian Western, ear lots, ex store, and 40½c. to 41c. for No. 1 feed, extra.

Flour.—The market showed no change. Prices of Manitoba patents, firsts, were \$5.40 per barrel, while seconds were \$4.90, and strong bakers' \$4.70; Ontario winter-wheat patents were worth \$5.25, and straight rollers, \$4.85.

Millfeed.—There was little change in the market. Demand was good, and bran continued to sell at \$20 per ton, in bags, while shorts were \$22 per ton, and middlings \$25. Pure grain mouille was \$35 to \$36 per ton, and mixed \$30 to \$33 per ton.

Hay.—The market was firm, owing to the bad roads and interference with delivery. Prices were steady, at \$13 to \$13.50 per ton for pressed hay, carloads, track, for No. 1; \$11 to \$12 for No. 2 extra; \$9 to \$10 for No. 2 ordinary, and \$8 to \$9 for ordinary.

Seeds.—Practically everything is already in, although timothy is still coming forward pretty freely. The stream has turned the other way, however, and buying was more active than selling. Prices to buyers were \$4.50 to \$7.50 per 100 lbs. for timothy seed; \$18 to \$26 for red clover, and \$22 to \$28 for alsike, all per 100 lbs.

Hides.—Prices were 12c., 13c. and 14c. per lb. for Nos. 3, 2 and 1 hides; 16c. and 18c. for Nos. 2 and 1 calf skins; \$1

to \$1.10 each for sheep skins, and 10c. each for lamb skins. Horse hides sold at \$1.75 and \$2.50 each, while tallow was 1½c. to 3c. per lb. for rough, and 6c. to 6½c. for rendered.

Chicago.

Cattle.—Beeves, \$7.25 to \$9.20; Texas steers, \$6.70 to \$7.85; stockers and feeders, \$6.10 to \$8.15; cows and heifers, \$3.75 to \$8.10; calves, \$6 to \$8.75.

Hogs.—Light, \$8.90 to \$9.80; mixed, \$8.75 to \$9.15; heavy, \$8.55 to \$9.10; rough, \$8.55 to \$8.70; pigs, \$8.85 to \$9.10.

Sheep and Lambs.—Sheep, Native, \$6.10 to \$7.25; yearlings, \$7.25 to \$8.25; lambs, native, \$7 to \$9.

Gossip.

The Finance Committee of the Western Fair Board have decided to add \$2,000 to the already substantial prize list in the live-stock and agricultural departments of the 1913 Western Fair, to be held September 5th to 13th next. The prize list is now in the hands of the printers.

R. H. Harding, of Thorndale, Ont., writes: "My clearing sale on March 20th was very largely attended, and prices paid were fairly satisfactory. Clydesdales averaged \$300; Holsteins about \$150; grades \$58, and Dorsets about \$20 each, one pair of ewes bringing \$25 each. I am now located in Thorndale, and am practically lost without any stock, excepting one horse, and a dog. The principal buyers from a distance were J. A. Orchard, Sheddin; J. C. Nichol, Hubrey; Glenhudson Steak Farm, Myrtle, Ont.; W. H. Reeve, Arva; J. H. Patrick, Ilderton; Wm. Capstick, Dorchester, and McKay Ramsay, Thorndale. Receipts, \$4,200."

At a contribution sale of Shorthorn cattle, held at Galesburg, Illinois, March 25th, the highest price obtained was \$610 for the red yearling Clipper bull, Lord Robin, listed by C. T. Nelson, and purchased by G. W. Chandler, Illinois. Sultan's Best, a roan yearling bull, went at \$500, to O. Bigler, Illinois. The highest price for a female was \$470, for the roan four-year-old, Rosetta 18th, a daughter of The Conqueror, listed by O. T. Nelson, went to Geo. J. Sayer, at \$470. Forty-three head sold for an average of \$217, thirteen bulls averaging \$277.

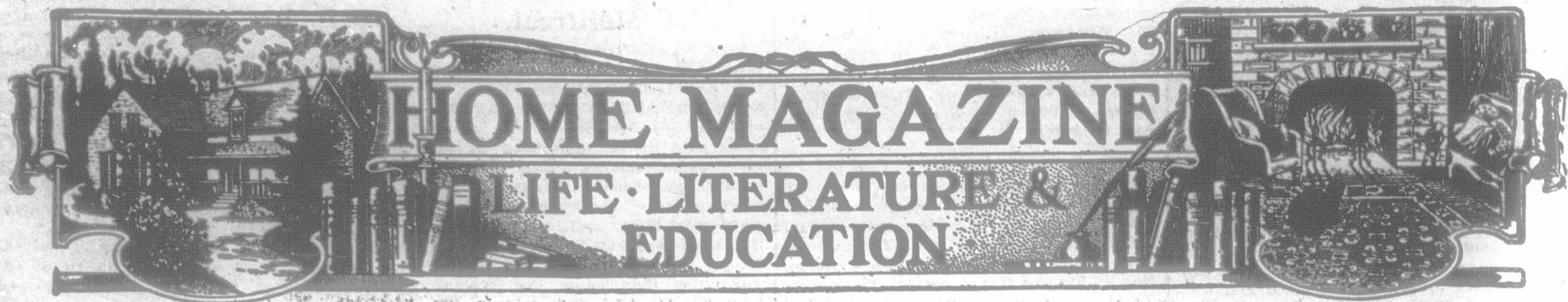
Volume 1, of the Canadian Holstein Yearbook, has been published in pocket-book form, containing a list of all official and semi-official butter and milk records of the Holstein-Friesian Association of Canada, which have been admitted to the Record of Merit and Record of Performance, up to September 30th, 1912, together with a list of all record cows under their sires and under their dams, with the proven sires of such sires and dams, also the highest-record cows in each division. This book, in handy form, affords invaluable information regarding the families, which are uniformly great producers and cannot help but prove of great assistance to breeders. G. W. Clemons, St. George, Ont., is Secretary of the Association, and editor of the creditable yearbook.

Trade Topics.

The kind of heating system to place in the home is a question which many have difficulty in deciding. It is necessary to install a system which will be as economical as possible on fuel, which is increasing in price. Before buying, be sure and see the advertisement in another column, of the Hall Zryd Foundry Co., Limited, the makers of Pilot Stoves and Ranges, Hespeler, Ont.

AROUND THE WORLD VIA "EMPRESS OF ASIA."

The "Empress of Asia" will leave Liverpool June 14, calling at Madeira, Cape Town, Durban, Colombo, Singapore, and Hong-Kong, arriving Vancouver August 30th. Vessel remains 14 days at Hong Kong. "Rate for entire cruise, \$689.10," exclusive of maintenance between arrival time in England and departure of "Empress of Asia," and stop-over at Hong Kong. Particulars from Canadian Pacific Agents, or write M. G. Murphy, District Passenger Agent, Toronto.



The New Public Health.

The Farmer's Advocate Bureau of Public Health Information.
QUESTIONS, ANSWERS, AND COMMENTS.

Conducted by Institute of Public Health, London, Ont.

[Questions should be addressed: "New Public Health, care of 'The Farmer's Advocate,' London, Ont." Private questions, accompanied by a stamped, self-addressed envelope, will receive private answers. Medical treatment for individual cases cannot be prescribed.]

The Farm Water Supply.

Water is absolutely necessary to the maintenance of life, and pure water aids towards a general state of good health. On the other hand, impure water may actually carry disease, if the disease germs get into it. In the cities and larger towns, it is the duty of the Board of Water Commissioners to see that the water supply under their control is safe for domestic use. To the person who lives in the country or small town where there is no public water supply, the question of the purity of the well or spring upon which he is dependent for his individual supply, becomes one of great importance.

The term, "pure water," as used here, means a water of good sanitary quality; that is, a water free from all kinds of animal contamination, and from disease germs. Animal contamination consists of drainage and washings from stables, hogpens, etc. For aesthetic and economic reasons, it is desirable to have a clear, colorless, soft water, for domestic use, but it is of far more importance, from a standpoint of health, to use a harder and more highly-colored water, if it be of better sanitary quality.

The two most common sources of water for individual supplies, are springs and wells. Upon the larger farms, the question of an absolutely pure-water supply is one that is often easily solved. In many instances, pure spring water is available. This is generally clear, often almost colorless, and is usually softer than deep well water.

Spring water can be pumped to a storage tank by means of a hydraulic ram. If a fall of water of 18 inches is available to supply power. This fall, or "head," can be increased by sinking the ram into a pit, if a drain can be secured to keep the pit free from water. With an increased head, the water can be forced to greater heights, and for longer distance from the spring. A hydraulic ram can be installed at small cost, it runs automatically and continuously, and therefore supplies a constant stream of water. Not the least of its advantages is that it requires but little attention, it being an exceedingly simple machine, and all of the wear being confined to two valves. If pumped to an elevated tank, the overflow water can be used to run a water-motor, and this used in many ways to save hand-labor. No set rules can be laid down to pro-

tect every spring from contamination, because each individual spring furnishes its own problem. A few general rules, however, apply to all cases. The stables, hogpens, and privy, should be located several hundred yards away from the spring, and should never be located on the slope above the spring itself.

A concrete wall built around the spring, extending several feet into the ground, and at least a foot above the surface of the ground upon the up-hillside, will serve both as a collecting basin and to prevent surface wash from entering in stormy weather. Before the concrete has set, an outlet-pipe can be introduced in the most convenient place.

A tight board fence, or spring-house, will prevent cattle and dogs from wading in the water. It must be remembered that in lime-stone regions polluted water can travel many miles through fissures or crevices in the earth without receiving any purification. Therefore, in such a region, the purity of any spring-water should not be taken for granted, regardless of its distance from any visible source of pollution.

The deep well, with or without the windmill for power, is comparatively simple to keep pure. The principal cost is the cost of installation, for the power is free, and the cost of upkeep is slight. The well casing must be kept tight to prevent surface drainage from entering. The ground around the well should be kept clean, and, if possible, should be turfed. The windmill will pump large quantities of water, and if used continuously, will draw upon the ground water supply for considerable distances. All sources of contamination should be located as far distant as possible, although, with a sandy or gravelly soil, the most probable source of contamination would either be around the casing or through a leaky casing.

The real problem is that of the small farmer, with limited means at his disposal, who must rely upon the shallow, dug well, for his water supply. His work is hard, and his hours are long, and too often when buying a farm, he accepts conditions as left by the former owner, or when building a new home, plans to make everything compact, and thus save himself as many steps as possible. The result, in either case, is that the barn is located within a stone-throw of the house, and a privy, a well, and a sink-drain, are to be found somewhere between the two. All these we admit are necessary, and the problem is to have the greatest amount of convenience with perfect safety. The barnyard drainage, if from animals alone, does not constitute a serious menace to the health of the family from the dread water-borne disease, typhoid fever, which does not occur amongst animals. But it often happens that there is more or less human waste along with the barnyard drainage. The well should, therefore, have a water-tight wall of concrete extending for several feet under ground, and one foot above ground. The well platform should be made of concrete or tightly-fitting planks, with tongued and grooved edges, and fit the pump tightly, so that there will be no danger of waste water running back into the well.

The privy can be made safe and sanitary by many simple methods. The vault may be made of concrete, built high enough so that storms cannot wash the excreta out. Probably the simplest way to make a sanitary privy is the bucket method. Here a large, water-tight bucket, partly filled with dry earth, is employed, and each time after use, a scoopful of dry loam is thrown in. This tends to destroy foul odors, is not so attractive to flies, and has the advantage that it is very readily cleaned, which surely is one great disadvantage of the vault system. Every privy, re-

gardless of its type, should be carefully screened to keep out flies.

You may feel reasonably sure that if you are drawing your water supply from a dug well within twenty or thirty feet of the house, that any kitchen or chamber slops which are thrown into the yard will eventually find their way into the well. To what extent they are purified before reaching the well depends on the character of the soil through which they have to pass. Because a water is clear and cold and sparkling, is no sign that it is pure. You doubtless have heard people say: "There is nothing the matter with my well-water. My grandfather dug this well, and he and my father drank this water all their lives, and they both lived to be over eighty." But suppose this same man was induced to take summer boarders, and one young city man who was feeling "overworked," availed himself of the privilege of spending a vacation on the farm. Let us suppose his "overworked feeling" proved to be incipient typhoid fever. Then it might be several days before the doctor really decided what was the matter with him, and in the meanwhile his undisinfected typhoid wastes might have been contributed to the family privy, and from there to the well. As a result, probably some of the family would contract typhoid fever, and the only reason why the same thing did not happen in the grandfather's time was because no one happened to come along with the necessary initial case of typhoid.

It is well known that many country wells are improperly located, and poorly constructed, yet they are not an important factor in the spread of typhoid fever, because of the limited number of people who use any one well, and because any well must be contaminated with the discharges from a typhoid patient before it can cause the disease.

Every precaution should, however, be taken to make the individual well so safe that if any individual member of a family should develop a case of typhoid fever, there would be no danger of giving the disease to all of the users of the water supply. A. J. SLACK.

QUESTIONS AND ANSWERS.

Are there not places in Canada to which farmers may send bottles of water for analyzing? A. M.

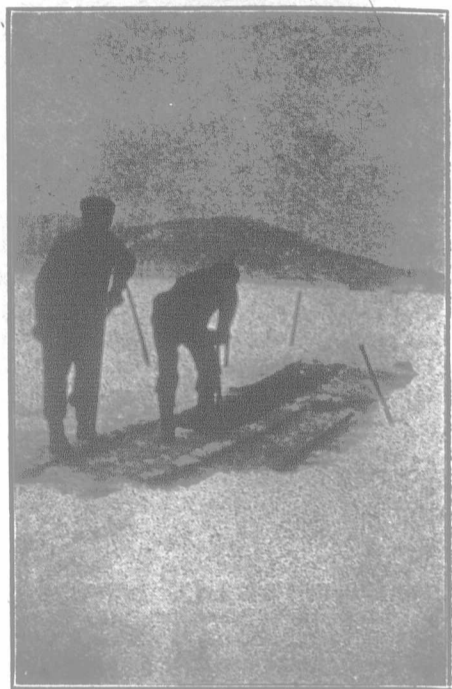
The Institute of Public Health, London, Ontario, is now ready to make analyses. Certain of these analyses are made free, i. e., if, in accordance with the rulings of the Provincial Board of Health, the samples are sent through the local Health Officer, but only if such analyses are for sanitary purposes. The proper bottles for collection may be had through the local Health Officer.

Analyses for other purposes, such as for the determination of iron, hardness, or medicinal qualities, etc., may also be made at the Institute, but in such cases a fee is charged. It is always well to write to the Institute for full directions before sending samples; also explain fully why you want the analysis; this saves mistakes and valuable time. Any questions relating to water supply, milk, or sewage disposal, etc., sent to the Institute, accompanied by a stamped, self-addressed envelope, will be answered free.

Examinations of sputum for tuberculosis germs, of cultures from the throat for diphtheria, or of blood for typhoid, are made free also, if the same are sent through the attending physician. The proper outfits may be obtained from the local Health Officer also.

H. W. HILL.

Note.—Analyses are also made in other places, e. g., at the Central Experimental Farm, Ottawa.—Ed.



Cutting the Hole in the Ice.

Smelt-Fishing in the Bay De Chaleur.

(By M. Mackenzie.)

It is with a chilly feeling that we sometimes read the accounts of the hardships and privations endured by the fishermen of Labrador; how, amidst snow, ice, and where the thermometer registers far below zero a great part of the year, the majority have to make a brave fight in order to exist, depending entirely on fishing for a living.

But do we ever stop to think of the hardships endured by those engaged in smelt-fishing during the winter season in our own Bay de Chaleur? Although we might say they have no deprivations in comparison with those of the people of Labrador, yet the work calls for a great amount of energy and drudgery; at the beginning, it involves considerable expense, and life is often risked in the attempt to set nets as soon as the fishing season begins.

The cost of one small net is no small item, but ranges from sixty to one hundred dollars, according to the size, the average being about sixty feet long, thirty-four feet wide, and twenty deep. Then two pickets forty to seventy feet long, and a brail, have to be procured; also a number of articles of minor importance. The nets being set usually in the middle of the bay, a break-wind about twenty-five yards long is absolutely necessary, for without such it would be impossible during a blizzard to fish; the opening in the ice would fill up with snow, and loss of the net might be the result.

Being several miles from shore, and having to remain on the ice a great part of the time, a roof over the fishermen's heads also is necessary, so they build little houses about eight feet by eight feet; a stove is placed therein, and on one side of the wall, two bunks made of boards, are fastened so they can lie down and rest when an opportunity presents itself. Necessary utensils for cooking, water, and food, are also taken from their homes once or twice a week, also wood and coal, for a fire is kept burning a great part of the time; and although they do not depend entirely on fishing for a living, being engaged in other occupations during the year, such as farming, lumbering, etc., yet many depend on a good run of smelts to meet current expenses.

The fishing season beginning before the ice makes in the Bay, those engaged in

the business everything as soon as the season opens, the only part of the cakes attempt to and some position of wind of winds go with their before the and were keep near never rear very often.

Not very most lost Bay de Chaleur of other supplies started for and was ing along he felt th and the footing th cries for h he had realizing be exposed several lo him his water, an pieces of as he tried daring to themselves aged, from under his was finally exhausted back to t

In another of great and during middle of broke av usually s under exce floated. of escape, ried miles tide. Af up by a to the c lives of especially for smelts and rather dollars, so

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The turn watched, tide, coming ing out w it starts i is pulled t height the on the ice. This being hole, but begins to be. The the mouth set on a cannot be current i allow one in certain who have best and in partners.

On Satu all nets h closed till hour. It does not Sabbath, eagerness. As it is, do so, wh day as a for sleep Perhaps winters not be Days go because of ing weath one can ex

the business feel that they must get everything ready and set the nets as soon as possible. With great expectation, they start out when the river is only partly frozen over, and even when the cakes are sinking beneath their feet, attempt to take out everything needful, and sometimes they are no sooner in a position to lower the nets, than a gale of wind comes; shanties, pickets, break-winds go down, and they merely escape with their lives. Horses have been lost before they reached the fishing-grounds, and were it not for boats which some keep near at hand, the fishers would never reach land, the ice breaking up very often at first along the shores.

Not very long ago a young man almost lost his life in the waters of the Bay de Chaleur. After assisting a number of others to take out their nets and supplies before it was really safe, he started for home one night after dark and was almost drowned. While walking along about half a mile from shore, he felt the ice sink from under his feet, and the more he endeavored to get safe footing the further he went down. His cries for help were heard by those whom he had left shortly before, and they, realizing the danger to which he might be exposed, hastened to the rescue with several long poles. When they reached him his head and shoulders were above water, and he was vainly clinging to pieces of ice that continued to break off as he tried to keep above water. Not daring to get too near in case they themselves might go under, they managed, from a distance, to place the poles under his arms, and, thus assisted, he was finally landed on the ice, and, much exhausted after the struggle, was carried back to the shanty.

In another part of the bay a person of great daring was fishing by himself, and during the high tides, about the middle of the night, the ice suddenly broke away, and the current being unusually strong, everything was drawn under except the shanty, which partly floated. Not seeing any other means of escape, he clung to it, and was carried miles from shore by the outgoing tide. After some time, he was picked up by a boat, half-frozen from exposure to the cold. Thus, we see how the lives of the fishermen are in danger, especially at the beginning of the season, for smelts are much more plentiful then, and rather than lose several hundred dollars, some will run almost any risk.

A great disadvantage is the long hours. It is almost day and night work, for the smelt-fishers fish by night as well as by day, there being just about five hours between each fishing, from the time they set the net till they take it up. If they get about ten barrels of fish, they are kept busy removing the seaweed, and raking the fish until they become frozen and ready to put in barrels for those who take them to market.

The turn of the tide has also to be watched, for the smelts run with the tide, coming in with the rising and going out with the falling water. When it starts to rise, the mouth of the net is pulled open; as it reaches its full height the net is closed, then hauled up on the ice, and the smelts taken out. This being done, it is put back in the hole, but not opened again until the tide begins to fall or rise as the case may be. The net is always placed so that the mouth is against the current. If set on a bar of the channel, the smelts cannot be fished by one alone as the current is too swift. Then the laws allow one person to fish with two nets in certain parts of the bay, so those who have had experience find that the best and most economical way is to go in partnership.

On Saturday night at twelve o'clock all nets have to be closed, and left closed till Sunday night at the same hour. It is a good thing that the law does not allow fishing to be done on the Sabbath, for if it did, many, in their eagerness, would not think of resting. As it is, they are simply compelled to do so, while others look forward to the day as a time when they can make up for sleep lost during the week.

Perhaps if it were not for the severe winters the smelt-fishing business would not be looked upon as a hardship. Days go by when it is impossible to fish because of the piercing cold, and blustering weather; even while in the shanty, one can expect almost anything to hap-

pen, should a great gust of wind strike it.

Two young men some time ago had a very interesting experience. For twenty-four hours there was such a terrific gale that they thought it best not to venture out to work, and after putting some coal in the stove, stretched themselves out to take a nap. The little building stood on blocks about two feet above the ice, and at the back, outside, there was a good-sized tub. Suddenly a terrific gust of wind came up, blowing the shanty backwards about five feet, so that it was carried off the blocks and landed on top of the tub. You can imagine the result. The tub was forced up through the floor, upsetting the stove; the pail of molasses fell off the shelf

ter. But I'll keep Tunis for my next letter, and tell you now of our trip here. When we left Taormina, on our way to Palermo, we stopped off at Messina a couple of hours to see the wreck of that once beautiful city. We were the only passengers to alight, and all the unemployed porters and guides fell upon us like ravening wolves the minute we landed. In spite of our emphatic protestations, we were speedily appropriated by an English-speaking guide, who whisked us off to a carriage and personally conducted us around the ruined city, entertaining us en route with harrowing tales of his own experiences during the terrible time. He had been buried five days under a fallen building, he said, and was the sole sur-

mals were issuing from a diminutive door, and scrambling fearlessly across to dry land. The Garden-of-Eden series was also intensely interesting, but was so near the ceiling that it was too break-necking a business to look at it for more than a few minutes at a time.

We were fortunate in seeing the Cathedral when it was peopled with worshippers,—but, oh, the contrast between the wealth on one side of the altar-rail and the poverty on the other! In the chancel, the richly-adorned priests and acolytes moving slowly through an elaborate ritual, the haze of rising incense, the scarlet-gowned choristers, the chanting and color, and the architectural beauty of the background, made a solemn picture of ideal beauty; contrasting with this was the picture in the nave, full of ignorant peasants, kneeling on the cold stones, the women with cheap-colored handkerchiefs on their heads, and the men bare-headed, ragged, and muffled in shawls. Shawls, by the way, are the overcoats of the Sicilian peasants.

The next day we visited the catacombs connected with the Cappuccini Monastery. A big, fat monk, cowed and sandalled, and garbed in the brown robes of his order, conducted us to the dim underground passages, where rest the bones of eight thousand monks—that is what our guide told us. We followed him through a labyrinth of narrow aisles, flanked on either side by dusty coffins and ancient skeletons, each one tagged and gowned, and standing upright, fastened to the wall behind his coffin. Such a ghastly sight!

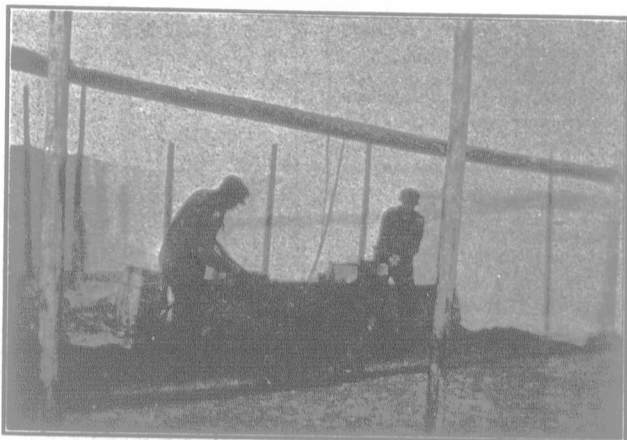
It made one break out in goose-flesh just to walk past them. Many of them had tilted forward, as if they were too tired to stand up any longer, and I should think they would be after being stationary for several centuries. Some of them had tipped over sideways, and some had fallen together in ghastly groups, and the frightful expression on those fleshless faces! Ugh! It gives me the shivers now to think of it! And just think—this awful form of burial was only discontinued thirty years ago. We did not stay long in the catacombs, the air was oppressively heavy, and the sight too gruesome. We were glad to get out into the disinfecting glare of sunlight again, and felt a tourist's pride in having accomplished a disagreeable item on our daily programme.

Palermo is both ancient and modern. The new town is quite up-to-date, with broad avenues, modern buildings, and jingling street-cars; the old part is a net-work of narrow streets, with fluttering clothes-lines above, and swarming humanity on the pavements below—and to go from one century to another, one has but to cross the street.

In the modern part, few women are seen on the streets except tourists and working women, as it is not regarded as proper in Palermo for women to go upon the streets unchaperoned. But at the sunset hour, all the fashionable women of the city may be seen in carriages upon the avenues. It is the event of the day, and all who wish to see or be seen, appear then. I shall always remember Palermo as part of a wonderful color scheme in which the marvellous streaks of blues and greens formed the foreground; the town in rich tones of yellow ochre the middle distance, and the brownish-pink hills, with their high, pointed peaks, sharply defined against a deep violet sky—the background.

That was the last glimpse we had of Palermo, as we sailed away from Sicily over the blue waters of the Mediterranean to Africa.

LAURA.



Drawing Net Up Through Hole in Ice.

above their heads; also a gallon of fresh water. No time was lost putting out the fire, replacing the stove, and gathering up the remnants, but no attempt was made to put the shanty on blocks till the storm subsided. After that, it was more securely fastened.

The price of smelts is a source of worry to many, because it varies at different times. If the fish are numerous in other waters besides the Bay de Chaleur, the price is apt to go down, but even when the value is low, if there is a large run of smelts, a great deal of money can be made. On the other hand, seasons go by when the fishing is poor, many merely making enough to pay expenses. However, there are times when the price is reasonable, and the fish plentiful, so that it pays the people to

live of a family of ten. It may have been true, and it may have been a dramatic touch inserted for our benefit, but it added to the desolation of the scene.

Apparently nothing has been done since the earthquake of four years ago. The city is a mass of ruined walls and crumbled stone. There is a current report about that terrible time, that no one seems to deny, and that is, that the enormous sums of money contributed by other countries for the relief of the destitute poor went principally into the pockets of rich men in power, and the people for whom it was intended were left to starve and suffer, or die.

We spent three busy days in Palermo sightseeing. One day we went by train to Monreale, a hill-town overlooking



Men in Shawls, Monreale, Sicily.

living along the shores of the Bay de Chaleur to engage in the business, notwithstanding the cold and hardship, and if they only make little more than what will meet their expenses the first year, they are usually more than compensated the second season, and so on.

Letters from Abroad.—VI.

ON MEDITERRANEAN SHORES.

Tunis, Africa, March 6, 1913.

Dear Jean,—I am so dazzled by the strange sights of this Mohammedan city that I can hardly keep away from the window long enough to write you a let-

ter. Palermo, which has a cathedral famous for its wonderful mosaics. The interior of the cathedral is very vast, and most impressive. The entire surface—ceiling, dome, walls, pillars, and floor, is fairly ablaze with marvellous mosaics, which depict the entire history of the Bible, from the Creation to the Resurrection.

The quaint conception of the old-time artists is most interesting. I remember especially the landing at Mt. Ararat, in the Noah's Ark series. The ark was a ridiculously small, cottage-like affair, with turned-up corners, and was resting on the crests of two rigid waves. A ladder reached from the door to the mountain, and the most mammoth ani-

An American doctor built an elegant home, says the San Francisco Chronicle. His bathroom was of white marble, and a music-box was concealed in the room. An Englishman came to visit the doctor, who, when he escorted his guest to the bath-room, turned on the music-box to give his guest a pleasant surprise. An hour later the Englishman joined his host, and the doctor asked what his guest thought of the bathroom. The Englishman replied, "It is beautiful." "How did you like my music-box?" Said his guest with great disgust in his tones: "Bah! That music-box! The old thing played 'God-Save the King,' and I had to stand up the whole time I was trying to bathe."

Hope's Quiet Hour.

Welcome the MASTER.

The Master saith, Where is thy guest-chamber? And he will himself show you a large upper room furnished and ready: and there make ready for us.—S. Mark xiv.: 14, 15, R. V.

"My garden must be beautiful,
For when the shadows play
In length'ning shapes along the wall,
And comes the cool of day,
Perchance my Lord might come to see
The place where roses bloom for me.
And, if He asked to come within
This house of mine to rest,
How fair and sweet the rooms should be
For such a wondrous Guest!
'Twere better far to keep them so,
Lest He might come before I know.
And, if He stayed for friendly speech
As fell the light of day,
How should I know to talk with Him,
Or holy things to say,
Unless my soul acquainted be
With some of heaven's mystery?"

During the Great Forty Days, between Easter and Ascension Day, the disciples of Christ must have been living in a state of eager expectation. When they gathered together for public worship on the first day of each week, they had good reason to think that suddenly they might see their Master in their midst. No one would try to manufacture excuses for staying at home, no one would be inattentive, or think of bringing only his body to church, leaving his spirit to wander elsewhere. When two friends went out for a walk together, they would look with friendly attention at every stranger they met—for had not two of the friends of Christ walked miles with Him along the public road, on Easter Day, without recognizing Him? If a woman were working alone in her house, she knew that the Master, who a few days before had stopped a woman's frantic weeping by saying quietly to her, "Mary!" might any moment call her by name.

The men were just as expectant, no matter what they were doing; for they knew of the secret interview which the repentant Apostle had been granted with his Living, Loving Lord. No wonder St. Peter silently pondered over that sacred meeting, which he could not have described if he would. There are some things which are secrets between the soul and God. We all have within us a hidden place, like the Holy of Holies in the Temple, where only the High Priest has the right of entrance. To throw open that Holy Place is not only desecration, but it is ruinous to our soul's life. Expose the physical heart, and the life ebbs and dies, expose the root of a plant, and every leaf withers. So, if a man is able and willing to tell the world all about his meetings with Christ—the life, which should be hidden in the depths of the soul, will grow thin and poor.

We want to help our comrades, and therefore we must go to our Master for the messages He wants to send through us. Nothing could give me greater joy than the statement recently made by one of our readers, that Hope's weekly message was "our Lord's message, through her," bringing special answers to private and unexpected questions. But, though we are sent like the women on Easter Day, to tell the wondering, incredulous world, that its rightful King is Living, and near; still there are some things which He whispers to us which are not to be published. Would a true woman publish the love-letters of her beloved? Would she tell to this friend or that acquaintance the words he intended for her alone? St. Paul declared that he had seen wonderful visions, and "heard unspeakable words which it is not lawful (or possible) for a man to utter."

It is the hidden life which sways the outer life; thoughts are seeds, hidden in the soil of the heart, from which words and actions grow. If our lives are good outwardly, and our thoughts are not beautiful, then we are hypocrites. We shrink away from the word, which is so detestable in the eyes of men, and which called forth terrible indignation from

Him Who was—and always is—the Friend of sinners. If we don't want to be like whitewashed sepulchres, which make a fine show outwardly, but within are foul and loathsome, then we must keep the hidden rooms of the heart fair and sweet. The guest-chamber must be always ready, so that the Master may keep the feast of joy with His disciples. Are you feeling lonely because one who is very dear to you is far away? Then seek the guest-chamber, where the Master waits to welcome you among His other guests. As you kneel at His feet, you can clasp the hand of that other servant of His who is close beside Him. Long before the discovery of "the wireless," men and women had found out that they had a common meeting-ground in the Presence of their Master. We need not be parted from our friends, for

"God keeps watch 'tween thee and me,
Both are His care.
One arm round thee and one round me,
Will keep us near."

The Master loves to hold friends always near to each other; and very often He brings them far nearer together in reality by the very distance that seems to be a barrier between them.

"And though our paths be separate,
And thy way be not mine,
Yet, coming to the mercy seat,
My soul shall meet with thine."

Let us seek out our Master and tell Him about our troubles, so that we may gain strength from Him to endure them bravely. St. Paul preached the manly doctrine that everyone should bear his own burden (Gal. vi.: 5). That does not mean going about groaning over every discomfort, as if life were a misery and sunshine only a luxury for millionaires. It means courage and cheeriness in hard times. It means forgetting one's own troubles in a daily custom of helping other people.

To-day, as I write, the papers are full of the horrors of the Ohio floods. When we know that many weak women and tender children are enduring hunger and cold, and many brave men are risking their lives and bearing hardships in trying to rescue them, we feel ashamed of grumbling about the weather, or some other trifling unpleasantness.

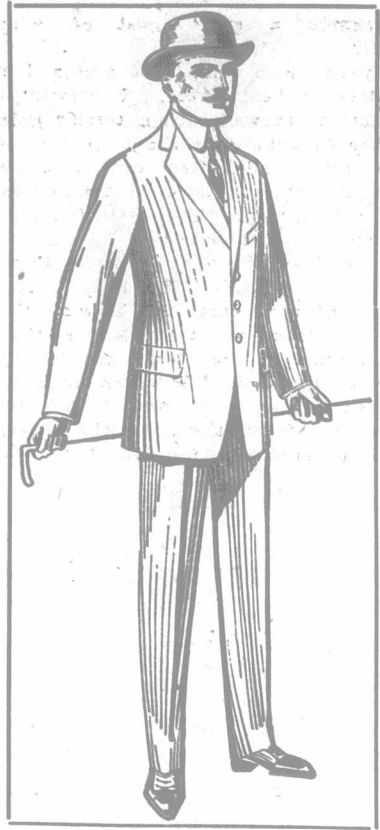
And, if you keep very near to our Master, we shall learn from Him to endure hardness as good soldiers should. Someone has slighted us, or been unkind in a small way. We feel like resenting it indignantly—but one look at our Lord so Kingly in His love for the disloyal disciple who had broken faith with Him, and in His forgiveness of the men who heaped insult and mockery upon Him, makes us ashamed of our paltry selfishness.

We never know when the Master will manifest His Presence vividly. Perhaps it may be when we are praying—just our usual everyday prayer, which is so often a wearisome duty rather than a privilege. Last night it was so with me. I knelt down as usual—and suddenly I felt that my Lord was there. Very often I only know it, but it is a great help to feel it sometimes. To say one's prayers as a duty is a necessity, if we want to make steady progress. It is fatal to only pray when our feelings are stirred—and yet the Lord knows well that our love is fanned into a brighter flame by the touch of His hand and the sound of His voice.

The ordinary work is pressing to be done, as you get up in the morning, but do not begin it without first kneeling at the feet of Christ, to take His special orders for the day, and to gain needed power from Him. Go to meet Him often, and then your heart will be glad when the wonderful message comes that you are summoned to see His Face. He says, through one of His servants:

"With the long day's work before you,
You rise up with the sun,
And the neighbors come in to talk a little

Of all that must be done;
But remember that I may be the next
To come in at the door,
To call you from your busy work
For evermore:
As you work, your heart must watch,
For the door is on the latch
In your room,
And it may be in the morning
I will come."



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Your suit is shipped five days after your order is received in London. We guarantee perfect satisfaction in every particular and detail of the transaction. The price includes the payment of all duty and carriage charges by us.



Blue Monday

You have often heard the expression, "Blue Monday." The reason that Monday is "Blue Monday" with a great many women is because it is wash-day, and they still have to do the family washing in the old-fashioned way.

There would be no "Blue Monday" if every housewife had a "Happy Hour" Washer to do the washing.

This washing machine is without a doubt one of the best on the market.

One customer says, "One of the happiest hours of my life is wash-day, when I am operating my 'Happy Hour' Washer."

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- Two-buckle, sizes 3-12, reg. \$1.75, 1 50
- Three-buckle, sizes 3-2, reg. \$2.25, 2 00
- Half Wellingtons, sizes 5-12, reg. \$2.75, 2 50
- Higher Wellingtons, sizes 5-12, reg. \$3.25, 2 60
- Napoleons, sizes 6-12, reg. \$3.90, 3 00

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Are you watching for a word or a touch from the Master Who is always—though unseen and often forgotten—in the midst of us? Are you glad when you remember that He is beside you, or do you feel afraid of His holy Presence? If you are allowing any favorite sin to live unchecked in the guest-chamber of the soul, call on the rightful Owner to enter and drive out the intruder before it has entirely wrecked your peace and beauty of holiness. "The Master saith, Where is thy 'guest-chamber?' Is it furnished according to His taste—do you read and think as He approves—and is it always ready for Him? Don't let the work, cares, or pleasures of life, crowd Him out.

DORA FARNCOMB.

The Roundabout Club.

Study III.---Continued.

[Subject.—If you were compelled to spend a year on an island and allowed but one book (exclusive of the Bible) what book would you choose?]

AN OLD FAVORITE.

(A prize essay.)

If I were compelled to live on just one article of food for a long period of time, what principles should guide me in choosing that article?

1.—It should contain all the food elements, proteins, carbo-hydrates, etc., in proper proportions.

2.—It should be, while not necessarily my favorite food, one for which I have a liking.

3.—It should not be a novelty, but a well-tested food.

4.—It should be capable of being

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We offer, subject to sale, the following stock, which we guarantee to be true to name. No. 1 stock in every respect; 5 to 7 feet high. Price, f.o.b. Pointe Claire, Que., \$27.00 'per 100.

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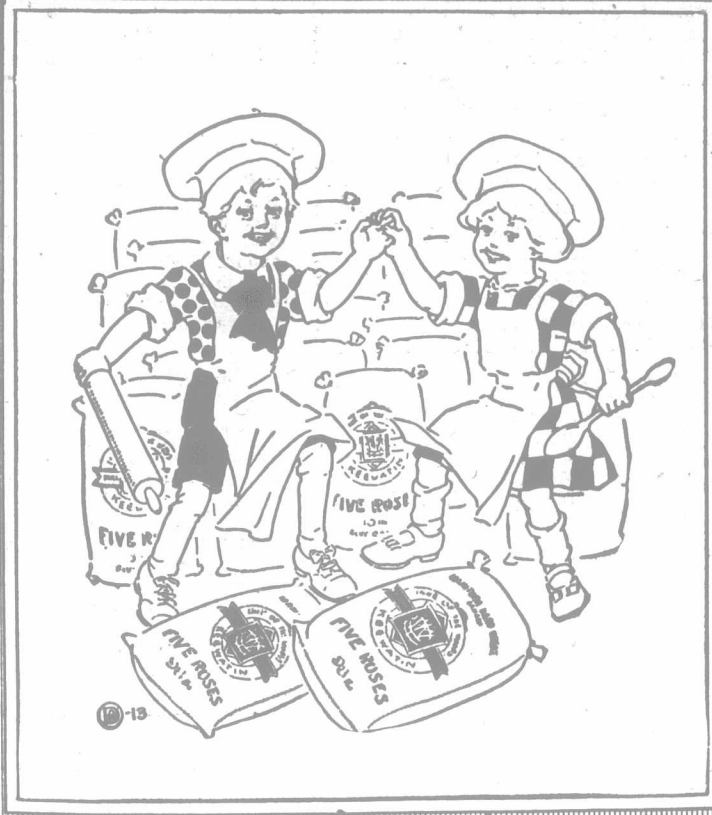
reserved in various ways, that it should become as little monotonous as possible.

Now these are the chief reasons which I should consider in choosing a book to be my companion for three hundred and sixty-five days (I trust I shouldn't be committed to that island for leap year.) My book must contain food for the imagination, for the reason, for the other mental faculties in due proportions.

I shall not choose poetry, much as I should like to slip in a few leaves of Tennyson. Poetry being easily memorized, I have some stores of it laid up; had I expected to go into exile I should have stored up more.

Eggs are a staple article of food, appetizing and nutritious, yet I know a healthy woman who can not eat them at all. Books which are highly recommended, and justly so, may, because of some personal peculiarity, be of little value to me. If I must live with a book for so long a time, it must be one which I like, one which "agrees" with me. Yet if I happen to like an unworthy or inferior book it would be a very great loss to waste twelve months of such intimate companionship upon it, so not only must the book be one I like; it must have won the approval of others, more competent judges of literature than I. It should be a masterpiece. To my mind that wonderful allegory "Pilgrim's Progress" meets these requirements.

"Pilgrim's Progress" is certainly no novelty. I don't know whether it ever was one of the "best sellers," but for more than two centuries it has held for children the charm of a fairy tale, while it has also proved strong meat for those of maturer age. If I read a book for a year, it would become a part of me; I should consciously or unconsciously be continually making allusions to it, or quotations from it, therefore, I



Why don't some flours behave?
Why don't they keep good?
Because they contain too much of the branny particles, too much of the inferior portions of the wheat—may be little pieces of the oily germ. Which act on one another—that's why some flours "work" in the sack. FIVE ROSES is the purest extract of Manitoba spring wheat berries. Free from branny particles and such like. It will keep sound, and sweet longer than necessary. Keep it in a dry place, and when needed you find it even healthier, sounder, fresher, drier than the day you bought it. Buy lots of FIVE ROSES. It keeps.

Five Roses Flour

Not Bleached  Not Blended

should wish it to be some well-known book that people might recognize and understand my references to it. I was surprised in re-reading "Pilgrim's Progress" recently, to find how many "household phrases" are from its pages. The book of my choice must be one which is sufficiently within my comprehension, that I may find something that I can understand and enjoy from the first; it should be also sufficiently beyond me that a few readings would not exhaust it, that there should still be hidden treasure to be dug for. I recently re-read and thoroughly enjoyed "Last Days of Pompeii," but I'm sure I shouldn't care to read it day after day.

For variety, I shall sometimes read the book just for the story, at other times search out what the allegory represents; I may try which of the characters I or my acquaintances most resemble; when I'm studious I shall read it carefully, looking up in the Bible all the references. As I explore my island I shall, perhaps, find the "hill of difficulty" in reality, I shall almost surely find it in my own experience, as also the "slough of despond," but as at close of day I turn westward the sunset will bring to mind the goal of the Pilgrim, the Celestial City.

Welland Co., Ont.

RUE.

MY ISLAND FRIEND

(A prize essay.)

In this age of reading matter, when books upon almost every subject under the sun and treated in nearly as many different ways are so available, when magazines and newspapers simply flood the country so that it is sometimes more of a problem to discriminate between the good things than to discard the indifferent and wholly bad, how could you, Mr. Editor, even in imagination—limit anyone to "one single, solitary" book for a whole month, to say nothing of twelve of them! As if the solitude, the isolation and the banishment were not enough! One book! Surely 'twere the essence of cruelty!

And then the making choice! Why; it has been nearly as bad as if it were to be a "really-truly" selection. But after the first shock is over, all the futile beating against the bars of the subject is past, and the "inevitableness" of the thing has proved sufficiently convincing, I finally—at the risk of being laughed at—choose an encyclopedia. Of course, I know it must be but one volume, but I should stipulate it be the very largest, most comprehensive and up-to-date one procurable.

Man is a social creature naturally. He loves his own kind, and, as a rule, seems to require communion of thought and interest with his fellowman to thoroughly enjoy them himself. Interchange of opinions; even though they be upon very trivial matters, seem to the average individual preferable to silence. Indeed, as society is constructed a certain amount of exchange of thought or at least a semblance of it through the medium of words is one of the necessities, and one of man's most valued prerogatives is the privilege of conversing with other minds. Among persons of congenial tastes there is, in either private conversation or public address, a charm and satisfaction attributable to the magnetism of personal contact, voice, gesture and general expression, which can never be experienced from the same matter on the printed or written form. All this one misses in the isolation of the experience in question.

But every situation has its compensations it is said, and possibly they may be found even on a desert island.

It is well known that in the profusion of reading matter the average reader is liable to do too much surface-reading. Now, the enforced solitude gives freedom to the mind to concentrate upon the matter given, and the fact of the supply in this case being so exceedingly meagre will naturally focus the attention in a way to give practical results. On the other hand the bane of solitude is monotony. The person suddenly isolated from other humans finds the stillness itself irksome, the continual silence is liable to have a wearing effect upon the nerves, and the mind often becomes unbalanced. To avoid this, as much

change of thought and occupation as possible is best. And this is my main reason for choosing the book I have.

An encyclopedia, while not giving a long account of any one person, place, system or creed, gives a concise statement embodying the facts necessary to a clear conception of the subject. From this one will naturally fill in the picture, and add as many embellishments as the case will permit, or his imagination will assist him with. For instance, from the interesting fact of the "Addled Parliament" to the equally entertaining sketch of life of the Greek philosopher Zeno, one has traversed a whole treasure-house of thought. As suits the mood one may take up a review of the inquisitorial period, a trip through Holland, or the study of the construction of a humming bird's wing. Should one be a nature lover and inclined to the absorbing delights of botanical research, no doubt ample opportunity will be found for "specimen" collecting, and again the book-friend of the long name will prove the friend in need to assist in proper classification.

If this island be one of abundant vegetation, the encyclopedia will doubtless furnish sufficient information upon the properties of the soil and its requirements under given conditions, its cultivation and possibilities, and the history of agriculture itself from its crudest beginnings, to awaken an interest—if it were not already there—for making some little attempt on one's own account.

Then the rock-foundations which to a casual observer are merely crude piles of stone, under the enlightening aid of "the book," may prove veritable "mines" of interest, with the possibility of some real gold dust thrown in.

The vast range of study, too, in bird and animal life aided by a work of this kind; the inspiration from the biographies of the earth's most famous people; the broadening of the mind as it surveys the countries of the globe on the maps given among its pages; the charm of studying the methods and manners of peoples far removed from the reader; and last, but not least, their religious systems and creeds, and still recognize the human interest in all.

And possibly, even in reading a prosaic encyclopedia, one may spend a year profitably, although I trust the fates may be so propitious that I will never be forced to prove my claim.

Bruce Co., Ont. BERNICE.

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.]

LAYER CAKE—LEMON CHEESE TARTS.

Dear Junia,—I am very sorry to see that I made a mistake in the layer-cake recipe I sent in. I hope no one will try it until she sees this, for I am sure she will be very much disappointed with the result. It should read: One cup sugar, 1 tablespoon butter, 1 egg, 2 cups flour, 1 cup sweet milk, 1 small teaspoon soda, and 2 small teaspoons cream of tartar. Put together as directed in the March 13th issue, adding the egg after the butter and sugar are stirred together. Just drop in the egg without beating it, stir, and add the milk and other ingredients as directed.

I wonder if either of the following recipes would be the butter-tart recipes asked for by N. W. in March 6th?

Butter Tarts.—Two eggs, 1 cup sugar, 1 teaspoon cornstarch, 1 teaspoon cinnamon, and $\frac{1}{2}$ cup butter. Cook all together till it thickens, and put in tart shells and bake.

I prefer this one' Lemon Cheese Tarts.—One lb. of granulated sugar, $\frac{1}{2}$ lb. butter, 6 eggs, 3 lemons, juice and grated rinds. Simmer all together till rather clear. This will keep for months.

Here is the way I make my crust: Take 4 cups flour, 1 tablespoon baking powder, and 1 teaspoon salt. Sift into a crock,

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for your worn-out hose, if those hose are "Holeproof," by replacing worn pairs free if any pairs wear out in six months. Send for six pairs and try them. With every six pairs you get six guarantee coupons.

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in the States and Canada now buy their hosiery this way—a million regular customers. For every pair they wear out within six months of the day they buy them, we pay them back with a new pair free. But we don't have to replace many pairs. In all of our thirteen years of "Holeproof," 95 per cent of the output has outlasted the guarantee. That means

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We are making this year 9,000,000 pairs to meet the demand for "Holeproof." Don't you want some of them?

We Spend \$60,000

just to inspect "Holeproof." Our inspectors' salaries cost that every year. But every pair is twice closely examined before it is sent out. That means perfect hosiery—no disappointment when the six pairs are received. It means, in all probability, that the hose will last longer than six months. We cannot afford to let poor hose go out, for we have a great reputa-



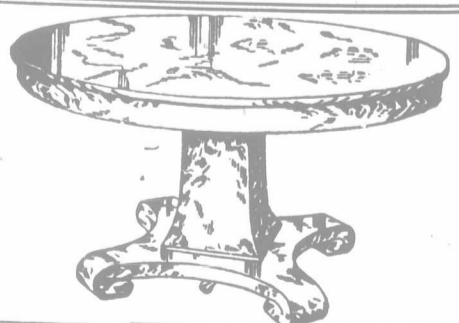
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W. H. Shaw

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W. H. Shaw, President

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THE Kemp four-speed distribution is instantly changed as desired. The flat-teeth do the work of 100 round-rod teeth. Get the full description of working parts before buying any spreader.

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Montreal, St. John

then work in with a knife or the fingers, 1 cup lard. Then add cold water enough to make a dough, not too wet. If you want it extra flaky, roll out, dot here and there with bits of butter or lard, and just a tiny sprinkle of flour; fold up and roll out again. Do this two or three times, and it will be extra nice, but for everyday use it is very nice without the extra shortening.

Well, I am very sure the Nookers will think that now I have got started I am never going to stop, but I will retire to my corner now and enjoy the chats from the other callers, and also the helpful talks from Junia. I always turn to the Ingle Nook first. AUNT DEE.
Middlesex Co., Ont.

TAKING OFF "SHINE."

Dear Junia,—I have never written to you before, but I do feel tempted to ask for some help now. I have a navy-blue serge dress which has not been worn very much, but is getting very shiny. Could you please tell me something that would help to remove the shine? I have tried pressing it with a damp cloth, and with vinegar, but neither has helped very much. A. E. J.
Peterboro Co., Ont.

It is said that rubbing cloth gently with fine sand-paper will remove shine. Here is a mixture that is recommended: Mix thoroughly 2 tablespoons ammonia, 2 tablespoons rum, 1½ teaspoons salt-petre, 1 quart water. Rub the shiny places well with this, applying with a rag.

MUSTARD PICKLES WITHOUT TURMERIC.

Dear Junia.—I am sending a recipe for mustard pickle without turmeric, requested by C's Wife. I have used this one for many years. I would not be without it, as it is excellent.

Mustard Pickles (without turmeric).—1½ quarts small cucumbers, 1½ quarts large cucumbers cut small, 1½ quarts onions, 2 heads cauliflower. Salt all, letting stand over night; drain and scald in 1 quart vinegar and 1 quart water. Throw this liquor away when scalding is done.

Dressing for Above.—Four quarts good cider vinegar, 5 cups yellow sugar, 24 tablespoons flour, ½ lb. mustard, ½ ounce curry powder. Blend dry ingredients together with a little vinegar, using that measured for pickles. Have the remainder hot—then pour ingredients in and boil till thick, stirring constantly.

Put pickles in a large crock with 3 red peppers cut in strips, then pour the boiling dressing over them. They will keep for months without sealing airtight. I use a three-gallon crock with a cover on, and have no trouble with them not keeping.

SUBSCRIBER'S WIFE.

Wentworth Co., Ont.

DEVIL CAKE—LEMON BUTTER.

Dear Junia,—I have been an interested reader of the Ingle Nook for some time, and have enjoyed the weekly chats very much. Like others, I come to you for help. Could anyone give me a good layer-cake recipe, one that doesn't take too many eggs? Could anyone tell me how to remove warts on the knuckles? I have had it charmed, and tried several ways of getting rid of it.

Here is a good recipe, one that we like, and have had good luck with:

Devil Cake.—Two eggs, ½ cup butter creamed, 2 cups brown sugar, ½ cup grated chocolate, ½ cup sour milk, ½ cup boiling water, 2½ cups flour, ½ teaspoon cream of tartar, 1 teaspoon soda in 1 tablespoon boiling water. Add sour milk last.

Here is a good lemon butter recipe:—Six eggs, beaten separately; six lemons. Use juice of six and rinds of three; add butter size of a walnut, and one pound of sugar. Put in a double-boiler, and boil. Put whites of eggs in last, and boil twenty minutes.
Ontario Co., Ont. BRIDGET.

Can anyone give a recipe for a one-egg layer-cake that is fine-grained, moist, yet light; in short, just what a layer-cake ought to be? Perhaps that given by Aunt Dee, above, is just what you want.

Lunar caustic touched frequently to warts, is said to remove them. Here

is a simple home treatment. Several times a day moisten the warts with water and rub them with a piece of washing-soda. Warts on the throat, or under the chin, should never be treated save by a specialist.

MANNERS OF GIRLS.

We all know that nearly every girl is anxious to be charming in all ways possible. True charm of manner comes mostly from a happy temperament and a pleasant disposition, but is cultivated to some extent by a sincere wish to please, true politeness, and an unwillingness to hurt another person's feelings by word or action. Cultivation of good manners plays an important part in the moulding of character; it not only sweetens, refines, and strengthens, but makes one thoughtful and more considerate of others, unselfish to do small kindnesses, and firm in the determination to live up to higher standards of conduct. Real polish of manners is the result of care.

Every girl who so desires may become a nobler woman,—having a great influence in making the world more pleasant for those she meets.

A girl who is independent, and has a manner pushing and self-aggressive, is not considered superior, though so many, yes, too many, these days, have this manner. If the girls just knew it, this style of conduct indicates a lack of intelligence. A fatal mistake is for a girl to think that gushing, high spirits, and a loud laugh, indicate fun and amusement. Repose of manner adds a wonderful charm. A girl of refinement is gentle, modest, and reserved. She never speaks loudly, but in quiet tones; she does not rush around in a bustling way, but moves quietly, with dignity, and gracefully.

Girls, right here, there is one thing I want to impress on you: no matter who your parents are, don't disregard them; bear in mind what you owe them, and don't put them in the background. Let your acquaintances see that you wish them to meet your parents. People are very quick in noticing trifles. For instance, if a girl does not seem to care whether her parents are introduced or not, to her friend or acquaintance, he naturally imagines more, perhaps, than is true.

A girl cannot be too careful in her conversation with men. Very few girls seem to realize that a man prefers a girl he seeks, rather than one who seeks him. He grows tired of a girl who is always thrusting herself upon his notice in one way or another. A man likes one who is not too easy to win, not one that can be had for the asking. He may amuse himself with the jolly, easy-going girl, but he does not admire her, and she is often astonished that he has been won away by a quiet, gentle girl, who has never made herself cheap by flirtations, and has preserved her simplicity of heart, and whose womanly qualities are such as a man looks for in a wife.
C. M. H.
Wellington Co., Ont.

RE SOAP.

Dear Junia,—I read a letter in your paper some time ago from "Success." She gave a recipe for making soap. I tried it, and found it very good, but the only kind of potash I could get, "The Refined Powdered Caustic Potash," was much more expensive than that used by "Success." Do you know of a cheaper grade of potash that can be used in making this soap?

CONSTANT READER.

Col. Co., N. S.

Does "Success" know of a cheaper potash?

TO MAKE HAIR GROW.

Dear Junia,—We take "The Farmer's Advocate," and I find the hints in the Ingle Nook very useful. My hair has been short for some time, and it will not grow long again. It was cut twice before, and it grew out long and thick, but now it is short and thin. Would you kindly give me some advice about it, to make it grow longer and thicker?
Durham Co., Ont. MARJORIE.

Get someone to massage your scalp every night, rubbing it hard for five minutes or more until the skin is in a glow, then have her rub in a little vase

line, or one of the bay-rum hair tonics. Wash the hair well once every two weeks (or once a month, if the hair is very dry), using tepid soft water, made into a lather with tar soap, and rinsing well through two waters. If you prefer, you may use an egg shampoo. Mix the yolk of an egg with a pint of water, and rub in some tar soap. Shampoo the head and hair well with this, then rinse well as before with tepid soft water.

Often the condition of the hair depends upon the state of the health. In this case, of course, the health must be built up before improvement can be expected.

CHOCOLATE DROP CAKES—REPORTERS AND LIBRARIANS.

Dear Junia,—We have had so much from Ingle Nook that I would like to "Help-on-a-bit."

I have a recipe for butter tarts which was given me by a friend last fall. I have never tried it, but she thought it was fine.

For One Dozen Tarts.—One cup of currants, $\frac{1}{2}$ cup of brown sugar, 1 heaping tablespoon butter, 1 teaspoon of vanilla. Boil until it thickens.

Here is one for chocolate drop cakes, which I have tried and know to be fine: One cup of brown sugar, $\frac{1}{2}$ cup of melted butter, $\frac{1}{2}$ cup of sour milk, $\frac{1}{2}$ cup nuts, $\frac{1}{2}$ cup raisins, 1 cake of melted chocolate, 1 egg, flour enough to make a stiff dough. Drop from a spoon on a well-greased pan, and bake in a quick oven. These are fine, and will keep a long time.

Now, Junia, I should like to ask you a few questions.

Can you tell me what qualifications are needed by a newspaper reporter?

Are there any other positions in connection with a newspaper that a woman can fill?

What are the qualifications needed by a librarian, and is the pay good?

Can anyone tell me what makes the leaves of the calla lily bend over?

Thanking you in advance, I am
Wellington Co., Ont. REBECCA.

The qualifications for a newspaper reporter are a good education, a quickly-working mind, a strong body, and a "nose" for gathering news. Women also fill the positions of editors and proof-readers, mail-sheet keepers, and typewriters, in newspaper offices.

A librarian also needs to have a good education, but she needs also to be quick of movement, obliging, and attractive in manner. The best libraries are now demanding "trained" librarians. The training course is, I understand, of two years' duration. Not many of the librarians in Canada receive, as yet, very high salaries. I have heard that in the United States, \$80 per month is not an uncommon rate.

Dear Junia,—Will you please tell me what are the enclosed species of bug?

The bug, I found on a print blouse, in a bright, sunny bedroom. The grubs were found in a box containing cotton clothing. Are they destructive, and what will I do to destroy them? I found one like the small grub last fall, and we put it in a glass with a piece of silk. It ate a few holes, and when we looked at it, it was dead.

A COUNTRY MAIDEN.

Frontenac Co., Ont.

The insects sent by "Country Maiden" are as follows: The small, blackish, oval beetle, about one-sixth of an inch long, and with reddish markings on the back, is the adult of a buffalo carpet beetle. The grubs are the larvae of the black-carpet beetle, a species very closely allied to the buffalo carpet beetle, and of similar habits, but not so common or destructive. There have probably been some buffalo carpet-beetle larvae—small, dark, hairy grubs,—feeding on woollens or furs in the house, and the adult has transformed from one of these. When the blossoms appear in the open, these adults may be found feeding on them. They then endeavor to get into houses or other sheltered places to lay eggs. The larvae are certainly very destructive to woollen goods and furs, especially where these are left undisturbed for some time. They do most destruction in the heat of the summer and early autumn.

As a means of control, we recommend the careful examination of all stored clothing and woollen or fur goods in



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A MUSCLE-BUILDING FOOD

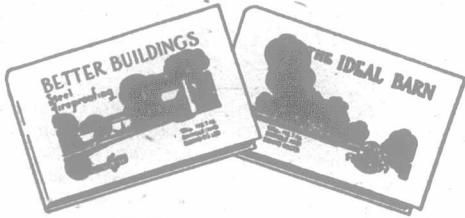
Growing youngsters work hard. They need food that is nourishing—food that satisfies the hunger and digests easily. Nothing is better for them than Cowan's Perfection Cocoa. Ground from the fresh Cocoa Beans, it has all the food value of pure Cocoa. It builds up the muscles and makes children healthy and strong. A cup of Cowan's made with half or one-third milk is a properly balanced food—one that the most delicate stomach can digest. And it is so delicious that it tempts the appetite when all other foods fail.

"Grandpa
Let's buy them some
COWAN'S"

**YOUR GROCER
HAS IT**

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SIGN the coupon below to-day and we will show you how you can have the best barn in your section.

The two books shown here are yours for the asking. They will give you a wonderful lot of information.

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Name.....

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Paper London Farmer's Advocate 207

THIS WASHER MUST PAY FOR ITSELF.

A MAN tried to sell me a horse once. He said it was a fine horse and had nothing the matter with it. I wanted a fine horse, but I didn't know anything about horses much. And I didn't know the man very well either.

So I told him I wanted to try the horse for a month. He said "All right," but pay me first, and I'll give you back your money if the horse isn't all right.

Well, I didn't like that. I was afraid the horse wasn't "all right" and that I might have to whistle for my money if I once parted with it. So I didn't buy the horse, although I wanted it badly. Now, this set me thinking.

You see I make Washing Machines—the "1900 Gravity" Washer. And I said to myself, lots of people may think about my Washing Machine as I thought about the horse, and about the man who owned it.

But I'd never know, because they wouldn't write and tell me. You see I sell my Washing Machines by mail. I have sold over half a million that way. So, thought I, it is only fair enough to let people try my Washing Machines for a month, before they pay for them, just as I wanted to try the horse.

Now, I know what our "1900 Gravity" Washer will do. I know it will wash the clothes, without wearing or tearing them, in less than half the time they can be washed by hand or by any other machine.

I know it will wash a tub full of very dirty clothes in Six Minutes. I know no other machine ever invented can do that, without wearing the clothes. Our "1900 Gravity" Washer does the work so easy that a child can run it almost as well as a strong woman, and it don't wear the clothes, fray the edges, nor break buttons, the way all other machines do.

It just drives soapy water clear through the fibres of the clothes like a force pump might.

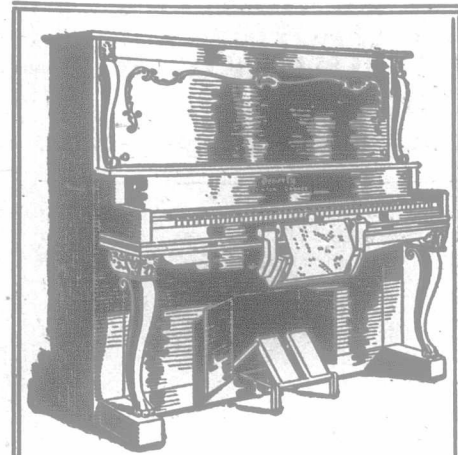
So, said I to myself, I will do with my "1900 Gravity" Washer what I wanted the man to do with the horse. Only I won't wait for people to ask me. I'll offer first, and I'll make good the offer every time.

Let me send you a "1900 Gravity" Washer on a month's free trial. I'll pay the freight out of my own pocket, and if you don't want the machine after you've used it a month, I'll take it back and pay the freight, too. Surely that is fair enough, isn't it?

Doesn't it prove that the "1900 Gravity" Washer must be all that I say it is? And you can pay me out of what it saves for you. It will save its whole cost in a few months in wear and tear on the clothes alone. And then it will save 50 to 75 cents a week over that is washwoman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 60 cents a week, send me 50 cents a week 'till paid for. I'll take that cheerfully, and I'll wait for my money until the machine itself earns the balance.

Drop me a line to-day, and let me send you a book about the "1900 Gravity" Washer, that washes clothes in six minutes.

Address me personally:
M. U. MORRIS, Manager 1900 Washer Co., 357 Yonge St., Toronto, Can.



A Piano Owner Paid Us Only \$225
HE NOW OWNS AN
88-Note Player Piano

HE WRITES:—
"The Player Action installed in our Piano a short time ago, we are glad to say, has come up to our expectations. We are much pleased with the simplicity of the Player Action and the instrument as a whole is very satisfactory. We also might say that you need not hesitate to recommend the Doherty Attachable Player Action and I would be pleased to advise anyone should they write me personally."

Write for particulars.
W. DOHERTY PIANO & ORGAN CO., LIMITED
Clinton, Ontario

April or May, and again about the first of July. These should be taken outside, beaten and aired, and the closet or room swept, and if any larvae are seen, the floor should, where practicable, be washed with boiling water to kill eggs and larvae. Gasoline, or a mixture of about 20 parts of kerosene, 5 parts turpentine, and one part carbolic, should be sprayed into the cracks and crevices where the larvae might hide. If this is thoroughly done, it would take the place of scrubbing. It is wise to examine woollens again later in the season to see all is right.



7389 Girl's Middy Costume, 8 to 14 years.

I always brush furs and hats and place them in paper boxes, then wrap about five-ply of good wrapping-paper around them and tie up well before putting away for the summer. As a result, the larvae never do any damage to these, but they certainly would do so if they were not carefully wrapped, because they can enter through the tiniest opening.

Some experiments of an entirely different type are being planned for the control of house pests, which, if they prove satisfactory, will enable us later to announce a very simple, cheap, and convenient remedy.

Answered by L. Caesar, O. A. C., Guelph.

The Scrap Bag.

TO REMOVE PAINT.
Rub window-panes with hot, sharp vinegar, to remove paint.

REMOVING RUST.
Use oxalic acid, dissolved, to remove the rust stains caused by hooks and eyes on white blouses and skirts. Wash thoroughly, and replace by rustless hooks or dome fasteners.

BOTTLE FOR SICK.
Water may be taken by the sick without raising the head or danger of coughing, by using an ordinary nursing bottle, which permits the liquid to go through in small quantities.

MICE EXTERMINATOR.
Essence of peppermint about their runs is said to drive mice away.

BAKING BREAD.
If bread is in danger of burning from too hot a fire, set a dripping-pan containing cold water on the upper grate of the oven.

STARTING PLANTS.
Cucumbers, and other plants that do not transplant well, may be started in

the house in egg-shells. When setting the plants out, break the shells carefully away so that the soil is not disturbed.

TO BLEACH OLD DRESSES.

Faded cotton dresses of light colors may be bleached by boiling them in a solution of cream of tartar in water, 1 tablespoonful to each quart. Rinse as usual, and dry in hot sun. If the color persists, boil with 1 cup Javelle water added to boiling water.



DESIGN BY MAY MANTON.
7550 Boy's French Suit, 6 to 10 years.



DESIGN BY MAY MANTON.
7472 Boy's Suit, 2 to 8 years.

The "Farmer's Advocate" Fashions.

Order by number, giving age or measurement as required, and allowing at least ten days to receive pattern. Also state issue in which design appeared. Price ten cents PER NUMBER. If two numbers appear for the one suit, one for coat, the other for skirt, twenty cents must be sent. Address Fashion Department, "The Farmer's Advocate and Home Magazine," London, Ont.

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Princess Complexion Purifier.

An external remedy that is simple and easy to use, and that produces results. It clears away tan, freckles and other discolorations quickly. Price \$1.50, delivered.

SUPERFLUOUS HAIR, MOLES, WARTS, ETC. permanently removed. Booklet "F" explains. Send for it and free sample of toilet cream.

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Every woman who attempts to make a dress or shirt waist immediately discovers how difficult it is to obtain a good fit by the usual "trying-on-method" with herself for the model and a looking-glass with which to see how it fits at the back.

"Hall-Borchert Perfection Adjustable Dress Forms"

do away with all discomforts and disappointments in fitting, and render the work of dressmaking as once easy and satisfactory. This form can be adjusted to 25 different shapes and sizes; bust raised or lowered, also made longer and shorter at the waist line and form raised or lowered to suit any desired skirt length. Very easily adjusted, cannot get out of order, and will last a lifetime.

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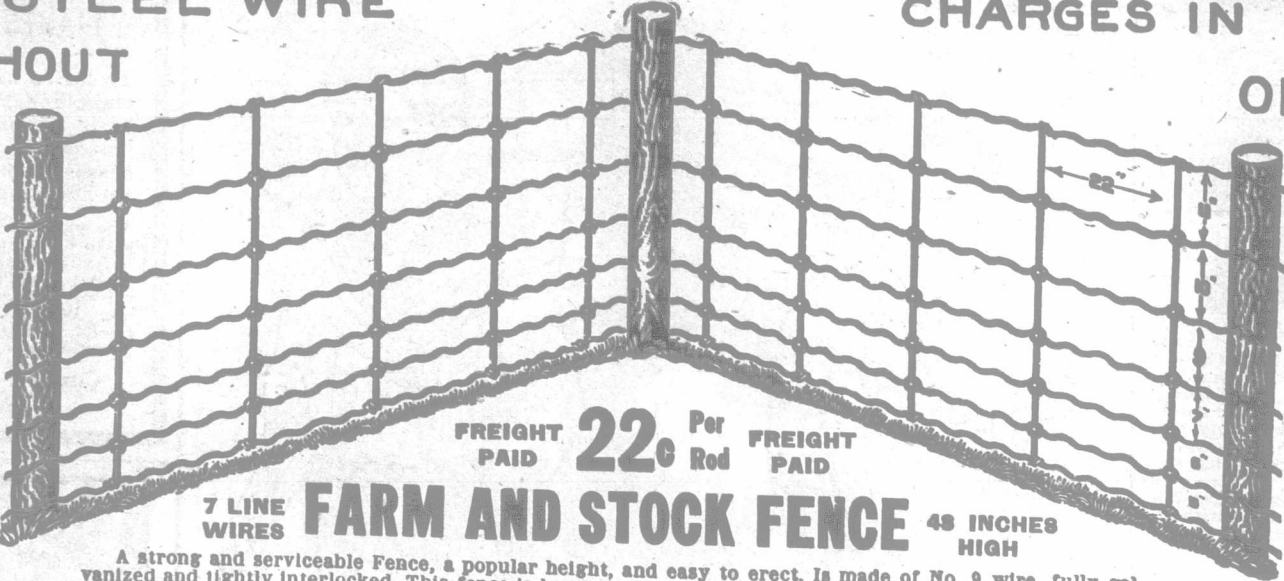
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MEDIUM WEIGHT CLOSE FENCE, 21¢ ROD

This is a most serviceable and popular style of fencing, and the durability of it is guaranteed. It is thoroughly constructed and completely galvanized, and we use a No. 9 wire for top and bottom lines, with a No. 12 wire filling. There are 15 stays to the rod, being only 18 inches apart, making it a close mesh for general use. A popular and tight fence.

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Our Hog Fence is interlocked so that line and stay wires can not slip or spread. It is a hog-tight fence with the upright stays 12 inches apart, height of fence is 34 inches; it has 5-line wires. The top and bottom wires are No. 9, with No. 12 filling, and heavily galvanized. Sold in 20 and 40 rod rolls.

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Coiled Spring Wire. Heavy No. 9 wire, finest quality steel, uniformly galvanized. Has spiral coil, thus allowing expansion and contraction. Sold only in full bundles of about 150 lbs. One pound contains about 17 1/4 feet.
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12-FOOT STEEL GATE, 3.90

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STRONG FARM DRIVE GATE. The frame is heavy tubular steel, perfectly welded by electrical process, and the filling of gate is heavy No. 9 galvanized wire. The frame is rigidly braced and painted black. Latch and hinges are supplied with gate. Freight paid to your nearest station in Ontario.

70-362X. 3-foot Walk Gate, 48 inches high.	Price...	1.95
70-363X. 3 1/2-foot Walk Gate, 48 inches high.	Price...	2.20
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70-367X. 6-foot Drive Gate, 48 inches high.	Price...	3.40
70-368X. 7-foot Drive Gate, 48 inches high.	Price...	3.90
70-369X. 8-foot Drive Gate, 48 inches high.	Price...	4.40
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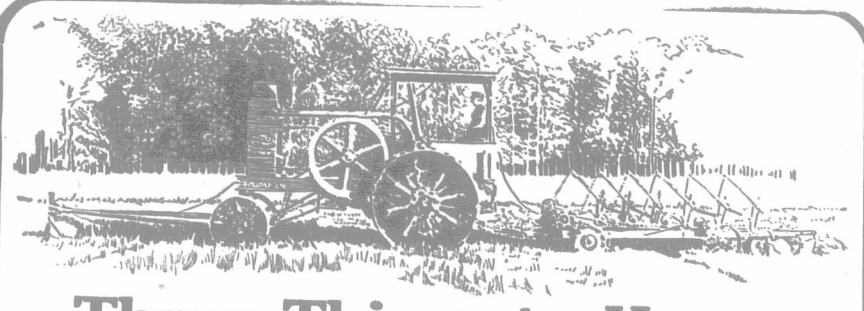
By Kate Douglas Wiggin.
 Serial rights secured from Houghton Mifflin Publishing Company, New York.
 XXV.

ROSES OF JOY.

The day before Rebecca started for the South with Miss Maxwell she was in the library with Emma Jane and Huldah, consulting dictionaries and encyclopaedias. As they were leaving they passed the locked cases containing the library of fiction, open to the teachers and townspeople, but forbidden to the students.

They looked longingly through the glass, getting some little comfort from the titles of the volumes, as hungry children imbibe emotional nourishment from the pies and tarts inside a confectioner's window. Rebecca's eyes fell upon a new book in the corner, and she read the name aloud with delight: 'The Rose of Joy. Listen, girls; isn't that lovely? The Rose of Joy. It sounds beautiful. What does it mean, I wonder?'

'I guess everybody has a different rose,' said Huldah shrewdly. 'I know what mine would be, and I'm not ashamed to own it. I'd like a year in a city, with just as much money as I wanted to spend, horses and splendid clothes and amusements every minute of



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The Rumely OilPull 30-60 h.p.

the only tractor that burns kerosene or distillate successfully. The tractor that's doing the cheapest plowing today.

TWO—The right plow for plowing—the "light pull" plow—strong, compact, flexible and light draft.

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5, 6, 8 and 10 bottoms—rolling or fin coulters—a bottom for every kind of soil.

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A steering guide that does away with tugging at the wheel—makes a straight furrow and leaves the tractor free to watch his plow. Every OilPull is furnished with a Dreadnought Guide—you get it free as part of the equipment. This combination will show your plowing through cheaply and quickly.

Send for Data-Book No. 353 on the OilPull—No. 338 on the Gang Plow and the folder on the Dreadnought Guide. Ask the name of our nearest dealer.

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 Power-Farming Machinery
 Toronto, Ont.

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BEST RESULTS ARE OBTAINED FROM ADVOCATE ADVERTISEMENTS.

the day; and I'd like above everything to live with people that wear low necks." (Poor Huldah never took off her dress without bewailing the fact that her lot was cast in Riverboro, where her pretty white shoulders could never be seen.)

"That would be fun, for a while anyway," Emma Jane remarked. "But wouldn't that be pleasure more than joy? Oh, I've got an idea!"

"Don't shriek so!" said the startled Huldah. "I thought it was a mouse."

"I don't have them very often," apologized Emma Jane,—"ideas; I mean; this one shook me like a stroke of lightning. Rebecca, couldn't it be success?"

"That's good," mused Rebecca; "I can see that success would be a joy, but it doesn't seem to me like a rose, somehow. I was wondering if it could be love?"

"I wish we could have a peep at that book! It must be perfectly elegant!" said Emma Jane. "But now you say it is love, I think that's the best guess yet."

All day long the four words haunted and possessed Rebecca; she said them over to herself continually. Even the prosaic Emma Jane was affected by them, for in the evening she said, "I don't expect you to believe it, but I have another idea,—that's two in one day; I had it while I was putting

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Costs No More
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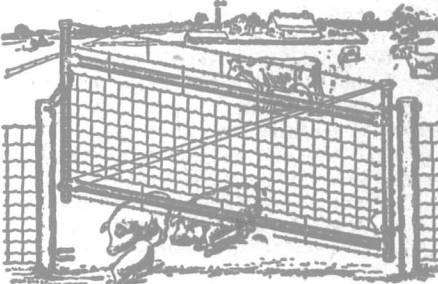
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cologne on your head. The rose of joy might be helpfulness."

"If it is, then it is always blooming in your dear little heart, you darlinest, kind Emmie, taking such good care of your troublesome Becky!"

"Don't dare to call yourself troublesome! You're—you're—you're my rose of joy, that's what you are!" And the two girls hugged each other affectionately.

In the middle of the night Rebecca touched Emma Jane on the shoulder softly. "Are you very fast asleep, Emmie?" she whispered.

"Not so very," answered Emma Jane drowsily.

"I've thought of something new. If you sang or painted or wrote,—not a little, but beautifully, you know,—wouldn't the doing of it, just as much as you wanted, give you the rose of joy?"

"It might if it was a real talent," answered Emma Jane, "though I don't like it so well as love. If you have another thought, Becky, keep it till morning."

"I did have one more inspiration," said Rebecca when they were dressing next morning, "but I didn't wake you. I wondered if the rose of joy could be sacrifice? But I think sacrifice would be a lily, not a rose; don't you?"

The journey southward, the first glimpse of the ocean, the strange new scenes, the ease and delicious freedom, the intimacy with Miss Maxwell, almost intoxicated Rebecca. In three days she was not only herself again, she was another self, thrilling with delight, anticipation, and realization. She had always been straining to make the outward world conform to her inward dreams, and now life had grown all at once rich and sweet, wide and full. She was using all her natural, God-given outlets; and Emily Maxwell marveled daily at the inexhaustible way in which the girl poured out and gathered in the treasures of thought and experience that belonged to her. She was a life-giver, altering the whole scheme of any picture she made a part of, by contributing new values. Have you ever seen the dull blues and greens of a room changed, transfigured by a burst of sunshine? That seemed to Miss Maxwell the effect of Rebecca on the groups of people with whom they now and then mingled; but they were commonly alone, reading to each other and having quiet talks. The prize essay was very much on Rebecca's mind. Secretly she thought she could never be happy unless she won it. She cared nothing for the value of it, and in this case almost nothing for the honor; she wanted to please Mr. Aladdin and justify his belief in her.

"If I ever succeed in choosing a subject, I must ask if you think I can write well on it; and then I suppose I must work in silence and secret, never even reading the essay to you, nor talking about it."

Miss Maxwell and Rebecca were sitting by a little brook on a sunny spring day. They had been in a stretch of wood by the sea since breakfast, going every now and then for a bark on the warm white sand, and returning to their shady solitude when tired of the sun's glare.

"The subject is very important," said Miss Maxwell, "but I do not dare choose for you. Have you decided on anything yet?"

"No," Rebecca answered; "I plan a new essay every night. I've begun one on What is Failure? and another on He and She. That would be a dialogue between a boy and girl just as they were leaving school, and would tell their ideals of life. Then do you remember you said to me one day, 'Follow your Saint'? I'd love to write about that. I didn't have a single thought in Wareham, and now I have a new one every minute, so I must try and write the essay here; think it out, at any rate, while I am so happy and free and rested. Look at the pebbles in the bottom of the pool, Miss Emily, so round and smooth and shining."

"Yes, but where did they get that beautiful polish, that satin skin, that lovely shape, Rebecca? Not in the still pool lying on the sands. It was never



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there that their angles were rubbed off and their rough surfaces polished, but in the strife and warfare of running waters. They have jostled against other pebbles, dashed against sharp rocks, and now we look at them and call them beautiful."

"If Fate had not made somebody a teacher.
 "She might have been, oh! such a splendid preacher!"

rhymed Rebecca. "Oh! if I could only think and speak as you do!" she sighed. "I am so afraid I shall never get education enough to make a good writer."

"You could worry about plenty of other things to better advantage," said Miss Maxwell, a little scornfully. "Be afraid, for instance, that you won't understand human nature; that you won't realize the beauty of the outer world; that you may lack sympathy, and thus never be able to read a heart; that your faculty of expression may not keep pace with your ideas,—a thousand things, every one of them more important to the writer than the knowledge that is found in books. Aesop was a Greek slave who could not even write down his wonderful fables; yet all the world reads them."

"I didn't know that," said Rebecca, with a half sob. "I didn't know anything until I met you!"

"You will only have a high-school course, but the most famous universities do not always succeed in making men and women. When I long to go abroad and study, I always remember that there were three great schools in Athens and two in Jerusalem, but the Teacher of all teachers came out of Nazareth, a little village hidden away from the bigger, busier world."

"Mr. Ladd says that you are almost wasted on Wareham," said Rebecca thoughtfully.

"He is wrong; my talent is not a great one, but no talent is wholly wasted unless its owner chooses to hide it in a napkin. Remember that of your own gifts, Rebecca; they may not be praised of men, but they may cheer, console, inspire, perhaps, when and where you least expect. The brimming glass that overflows its own rim moistens the earth about it."

"Did you ever hear of The Rose of Joy," asked Rebecca, after a long silence.

"Yes, of course; where did you see it?"
 "On the outside of a book in the library."

"I saw it on the inside of a book in the library," smiled Miss Maxwell. "It is from Emerson, but I'm afraid you haven't quite grown up to it, Rebecca, and it is one of the things impossible to explain."

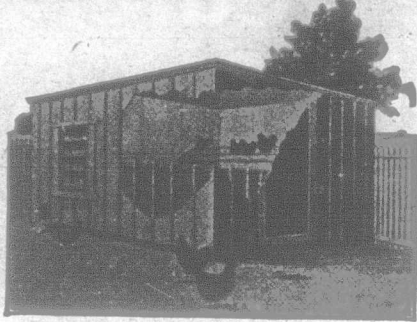
"Oh, try me, dear Miss Maxwell!" pleaded Rebecca. "Perhaps by thinking hard I can guess a little bit what it means."

"In the actual—this painful kingdom of time and chance—are Care, Canker, and Sorrow; with thought, with the Ideal, is immortal hilarity—the rose of Joy; round it all the Muses sing," quoted Miss Maxwell.

Rebecca repeated it over and over again until she had learned it by heart; then she said, "I don't want to be conceited, but I almost believe I do understand it, Miss Maxwell. Not altogether, perhaps, because it is puzzling and difficult; but a little, enough to go on with. It's as if a splendid shape galloped past you on horseback; you are surprised and your eyes move so slowly you cannot half see it, but you just catch a glimpse as it whisks by, and you know it is beautiful. It's all settled. My essay is going to be called The Rose of Joy. I've just decided. It hasn't any beginning, nor any middle, but there will be a thrilling ending, something like this: let me see; joy, boy, toy, ahoy, decoy, alloy:—
 Then come what will of weal or woe
 (Since off the gold hath alloy),
 Thou'lt bloom unwithered in this heart,
 My Rose of Joy!"

Now I'm going to tuck you up in the shawl and give you the fir pillow, and while you sleep I am going down on the shore and write a fairy story for you. It's one of our 'supposing' kind; it flies far, far into the future, and makes beautiful things happen that may never really all come to pass; but some of

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OATS

Nothing else in them

them will,—you'll see! and then you'll take out the little fairy story from your desk and remember Rebecca."

"I wonder why these young things always choose subjects that would tax the powers of a great essayist!" thought Miss Maxwell, as she tried to sleep. "Are they dazzled, captivated, taken possession of, by the splendor of the theme, and do they fancy they can write up to it? Poor little innocents, hitching their toy wagons to the stars!

How pretty this particular innocent looks under her new sunshade!"

Adam Ladd had been driving through Boston streets on a cold spring day when nature and the fashion-mongers were holding out promises which seemed far from performance. Suddenly his vision was assailed by the sight of a rose-colored parasol gayly unfurled in a shop window, signalling the passer-by and setting him to dream of summer sunshine. It reminded Adam of a New England apple tree in full bloom, the outer covering of deep pink shining through the thin white lining, and a fluffy, fringe-like edge of mingled rose and cream dropping over the green handle. All at once he remembered one of Rebecca's early confidences,—the little pink sunshade that had given her the only peep into the gay world of fashion that her childhood had ever known; her adoration of the flimsy bit of finery and its tragic and sacrificial end. He entered the shop, bought the extravagant bauble, and expressed it to Wareham at once, not a single doubt of its appropriateness crossing the darkness of his masculine mind. He thought only of the joy in Rebecca's eyes; of the poise of her head under the apple-blossom canopy. It was a trifle embarrassing to return an hour later and buy a blue parasol for Emma Jane Perkins, but it seemed increasingly difficult, as the years went on, to remember her existence at all the proper times and seasons.

This is Rebecca's fairy story, copied the next day and given to Emily Maxwell just as she was going to her room for the night. She read it with tears in her eyes and then sent it to Adam Ladd, thinking he had earned a share in it, and that he deserved a glimpse of the girl's budding imagination, as well as of her grateful young heart.

A FAIRY STORY.

There was once a tired and rather poverty-stricken Princess who dwelt in a cottage on the great highway between two cities. She was not as unhappy as thousands of others; indeed, she had much to be grateful for, but the life she lived and the work she did were full hard for one who was fashioned slenderly.

Now the cottage stood by the edge of a great green forest where the wind was always singing in the branches and the sunshine filtering through the leaves.

And one day when the Princess was sitting by the wayside quite spent by her labor in the fields, she saw a golden chariot rolling down the King's Highway, and in it a person who could be none other than somebody's Fairy Godmother on her way to the Court. The chariot halted at her door, and though the Princess had read of such beneficent personages, she never dreamed for an instant that one of them could ever alight at her cottage.

"If you are tired, poor little Princess, why do you not go into the cool green forest and rest?" asked the Fairy Godmother.

"Because I have no time," she answered. "I must go back to my plough."

"Is that your plough leaning by the tree, and is it not too heavy?"

"It is heavy," answered the Princess, "but I love to turn the hard earth into soft furrows and know that I am making good soil wherein my seeds may grow. When I feel the weight too much, I try to think of the harvest."

The golden chariot passed on, and the two talked no more together that day; nevertheless the King's messengers were busy, for they whispered one word into the ear of the Fairy Godmother and another into the ear of the Princess, though so faintly that neither of them realized that the King had spoken.

The next morning a strong man knocked at the cottage door, and doffing his hat to the Princess said: "A golden

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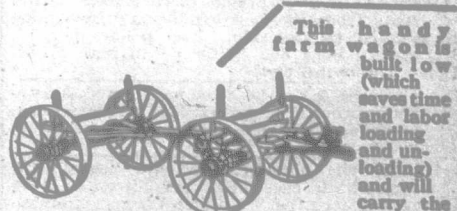
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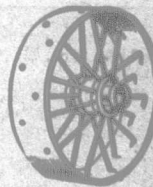
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BRED-TO-LAY—Single-Comb Rhode Island Reds from the best exhibition prize-winning stock. Red to the skin. Two dollars per 15. Best utility eggs one dollar per fifteen. B. M. Haney, Dunnville, Ont.

BARRED ROCK eggs from well barred, heavy-laying stock (Pringle and McCormick strain), \$1. \$1.50 and \$3 per setting. T. L. Patrick, Iderton, Ont.

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BRED TO LAY Anconas and Columbian Wyandottes, eggs for hatching ten cents each. E. Wardle, Corinth, Ont.

BRONZE Turkey eggs for sale, also Rouen Duck eggs. Prices reasonable. C. A. Powell, Arva, Ont.

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EGGS FROM OUR "GREATEST LAYERS"—Barred Rocks, only one dollar per fifteen; five dollars per hundred. Few birds for sale. Central Ontario Poultry Yards, Colborne, Ont.

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EGGS from pure-bred vigorous stock—White Wyandottes, Barred Plymouth Rocks, Single Comb White Leghorns, and Silver Campines, all great layers. Birds raised on 40-acre open range and orchard. Prices on application. W. H. Furber, Dunganon Poultry Farm, Box 436, Coburg, Ont.

EGGS from prizewinning Indian Runner ducks, layers of pure white eggs. Two dollars per twelve. Miss Mary Bertram, Vinemount, Ont.

EGGS from Imported Single Comb Brown Leghorns, grand layers, sixty-three eggs gathered daily from eighty hens. Price \$1. for fifteen, \$2.00 for forty or \$4.50 for a hundred. W. C. Shearer, Bright, Ont.

EGGS, Barred Rocks: good winter layers and prizewinners. \$1.00 per thirteen, \$5.00 per hundred. Miss Z. Barbour, Erin, Ont.

FAIR VIEW BRED-TO-LAY Barred Plymouth Rocks pay; why? because they are a uniformly well colored flock of strong healthy birds. Always had large orchard run. During Dec. Jan. and Feb. my 100 hens laid 228 dozen large yellow eggs \$1. per 15, \$5 per 100. S. H. Culp, Campden, Lincoln, Co.

FOR SALE—Eggs from Beauty Buttercups and Anconas. Are unexcelled. Write for prices. Herbert Taylor, Wingham, Ont.

FOR SALE—Ten White Wyandotte yearling cock birds at \$2.50 each. Jno. Pringle, London, Ont.

GOLDEN Wyandottes—Large, handsome, hardy, great layers. Beautiful pullets \$1.00, up; show cockerels \$2.00. Eggs \$1.50 for 15. Get in on these bargains. Glenore Stock Farm, Rodney, Ontario.

IMPROVE THE FLOCK by buying eggs from the famous utility breed, Rhode Island Reds. \$2.00 per setting. Order quick if you want early layers. W. B. Powell, Essex, Ont.

S. C. White Leghorns eggs from high-grade stock. Great layers. \$1 per fifteen; \$5 per hundred. E. M. Crone, Maudamin, Ont.

SINGLE COMB BROWN LEGHORNS. Prize-winning strain Cockerels and Pullet matings. Eggs—First pens, \$1.50; second \$1.00 for fifteen. Arthur Irwin, Mount Forest, Ont.

SINGLE Comb White Orpingtons—Bred to win and lay. Eggs from pen of prize-winners \$5.00 per fifteen. From known layers \$2.00 per fifteen, \$5.00 per fifty, \$9.00 per hundred. Wm. Kappler, St. Mary's, Ont.

SUPERIOR Barred Rocks—Laid 4,928 eggs this winter in sixty days. Pullets laid at four and a half months. Pens headed by Ringlet males. Eggs \$1.25 per fifteen. Unfertile eggs replaced free. Charles Watson, Londesboro, Ont.

SILVER Campines—The greatest layers yet. Eggs \$2.50 per setting. Walter Watson, Richmond Hill, Ont.

SINGLE Comb White Leghorns for sale—Now is the time to buy your eggs for hatching. Ideal Poultry Yards, Collingwood, Ont., is the place to get choice stock. Prices reasonable. Fine pullets, laying. R. Hughes, Prop., Collingwood.

SILVER CAMPINES The great egg machines. Eggs for setting from imported stock at \$3.00 per 13. The Valley Poultry Yards, W. B. McCulloch, Brampton, Ont.

TWENTY large, vigorous, white Wyandotte cockerels of heavy laying strain, at \$2.75 each—Our best birds. Also Barred Rock Cockerels—Canada's champions, satisfaction guaranteed or money refunded. First comers get the choice ones. Jno. Pringle, London, Ont.

THE R. ROY farm breeds R. I. Reds, both combs; Barred Rock utility bred, and White Leghorns bred for egg production. Barred Rock and Leghorn eggs, \$1.50 for 15; \$5 per 100. My Reds have been winning at some of our best shows. Noted for size, shape, color and egg production. Ruppel Bros., Elmira, Ont., Box 98.

WHITE Wyandotte eggs from bred-to-lay stock. \$1 per 15; cockerels, \$2. John Orchard, Shedden, Ont.

WHITE ROCKS, Guelph winners. Booklet free. John Pettit, Fruitland, Ont.

WHITE WYANDOTTES, big, vigorous, stay-white cockerels from heavy laying strain, \$2, \$3, and \$5. each. Have won \$6 out of 42 first prizes at New York State Fair in seven years. Eggs \$3. per 30, \$9. per 100. Free illustrated catalogue. John S. Martin, Drawer R, Port Dover, Ont.

WHITE WYANDOTTES—Bred for utility and show. Excellent layers. Eggs one dollar per fifteen. Allan McPhail, R. R. No. 4, Galt, Ont.

WHITE WYANDOTTE COCKERELS of the best breeding; 20 of them while they last; \$2, \$3, and \$5. each. Send to us and get a bargain. Our mating list will be sent on request. Marshall & Marshall, Niagara Falls, Canada.

WHITE ORPINGTONS—Eggs from best pens (Moore and Kellerstrass), \$1.50 for 15. Jacob M. Moyer, Box 47, Campden, Ont.

INCUBATORS AND BROODERS COMBINED The Philo System

We promise you the largest percentage of hatch and stronger chickens than any other machine on the market. The hen is not in it with this machine. Free catalogue. Address

THE CYCLE HATCHER COMPANY G. M. COLLINS, Canadian Manager Dept. 4. 415 Symington Ave., Toronto, Ont.

FERTILIZERS

For information regarding all kinds of mixed and unmixt fertilizers of the highest grade write:

THE WILLIAM DAVIES CO., LIM. West Toronto, Ontario.

Cream Wanted

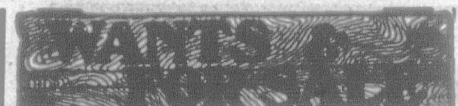
We guarantee highest Toronto prices, full weights and prompt returns. Our 15 years experience ensures satisfaction. We furnish cream cans and pay express charges. Write:

Toronto Creamery Co., Limited Toronto, Ontario.

Seed Corn for Sale High germination test white cap yellow dent, grown on our own farm. TISDELLE BROS., Tilbury, Ont. Essex County.

Poland-Chinas and Shorthorns—An offering now 20 good young sows for spring farrow. This herd contains more Toronto winners than all other herds of the breed combined. Also choice young Shorthorns of either sex. Prices easy. GEORGE G. GOULD, Edgar's Mills, Essex Co., Ont.

Canadian National Horse Show TORONTO ARMOURIES APRIL 29th to MAY 3rd. Prize Lists Now Ready Entries close Apr. 19. Address Alexander Miln, 701 Traders Bank Bldg, Toronto REDUCED RAILWAY RATES



Advertisements will be inserted under this heading, such as Farm Properties, Help and Situations Wanted, and Pet Stock.

TERMS—Three cents per word each insertion. Each initial counts for one word and figures for two words. Names and addresses are counted. Cash must always accompany the order. No advertisement inserted for less than 50 cents.

ALL KINDS OF FARMS—Fruit Farms a specialty. W. B. Calder, Grimsby.

FARM FOR SALE—A fine 100 acre farm, clay loam, wire fenced, excellent water, large brick house, large basement barn, cement stables; in first class state of cultivation. Price \$3200. Address: Isaac M. McGrath, Strathroy, Ont.

FRUIT FARMS for sale, from 2 to 150 acres, in Grimsby, Beamsville and Winona Districts—Peter Bertram, Grimsby, Ont.

GIRL for general housework; also experienced man for farm work. Good wages. J. Henderson, Limehouse, Ont.

HOUSEKEEPER wanted at once for farm home. No outside work. Give references of character. State wages. Box Y, Farmer's Advocate, London, Ont.

RELIABLE young man wanted to drive milk wagon and make himself useful around dairy. Must be strictly temperate; references required. Wages, first year, \$300. Thornhill Farm Dairy, North Bay.

SITUATIONS WANTED.—Married couples and single men require positions. Send full particulars, C. Herbert, 140 Victoria, Toronto. Phone Main 3293.

SCOTCH COLLIES FOR SALE.—Choice Pedigreed Puppies. Farm raised; good workers. A. B. Armstrong, Codrington, Ont.

WE HAVE a few choice farms within sixty miles of Winnipeg, good for grain or mixed farming, cultivated, with fair buildings. Price from Twenty-five to Forty Dollars per acre, according to location and improvements; also choice wild land in Saskatchewan. Eighteen Dollars per acre. Royal Canadian Agencies Limited, Winnipeg, Canada.

WANTED—Position as farm manager or superintendent of stock or dairy farm. Experienced in all branches of farm management, gasoline engines, steam or electric power, bookkeeping, etc. Married, college graduate, best of references.—Box C., Farmer's Advocate, London, Ont.

WANTED Two good men to work on large stock farm. Only experienced men need apply. Also, a good milker to assist in dairy barn. Highest wages to the right men, and ye iry engagement if satisfied.—Farmer's Advocate, Box 40, London, Ont.

WESTSIDE FARM offers choice S. C. Brown Leghorn eggs at one fifty per fifteen. David A. Ashworth, Maple Grove, Ont.

WANTED—Position as manager or herdsman on large dairy farm. Life experience in all its branches; can produce highest references. Further information apply Box E, Farmer's Advocate, London, Ont.

C. E. S. PEERLESS BARRED ROCKS—And compare results with any \$10 setting. Eggs from choice exhibition matings \$3 per thirteen, \$5 for twenty-five, \$8 for fifty. Also choice hens, pullets and cockerels from \$2 to \$5 each. G. E. SKINNER, Mitchell Nursery Co., Mitchell, Ont.

For Sale Seed potatoes, Sir David Worriors, \$2.00 per bushel; First Choice \$1.75 per bag. These are two of the best late potatoes growing. F. W. KROUSE, Guelph, Ont.

69 Acres, \$1100, Easy Terms

Machinery and Tools Included Chance of a lifetime in the Mohawk Valley; part cash payment gives possession; timber will soon be worth \$300; smooth, level, easily worked fields, spring and brook-watered pasture, remaining wood and timber; 10 apple trees; 7-room house nearly new, barn 30 x 40, poultry house, cow-shed; owner has other business, cannot care for farm; if taken now there will be included wagons, sleighs machinery and all small tools; \$1100 takes all easy terms. For further information and traveling directions to see it, page 14, "Strout's Farm Catalogue 36" just out, write today for free copy. E. A. Strout Farm Agency, Station 2415, 47 West 34th Street and 150 Nassau St., New York

WANTED

Live representatives to sell high-class nursery stock in best districts of south and western Ontario. Experience not necessary. Take advantage of large demand for fruit trees at present time. Free equipment. Exclusive territory. Pay weekly. Write for terms.

STONE & WELLINGTON

Fonhill Nurseries, TORONTO.

Essex-grown "White Cap" Yellow" Dent Seed Corn for sale, \$1.10 per 70 lbs., on cob; sacks free. Money refunded if not satisfied. JAS. HYLAND, Essex, Ont.

chariot passed me yesterday, and one within it flung me a purse of ducats, saying: 'Go out into the King's Highway and search until you find a cottage and a heavy plough leaning against a tree near by. Enter and say to the Princess whom you will find there: 'I will guide the plough and you must go and rest, or walk in the cool green forest; for this is the command of your Fairy Godmother.'

And the same thing happened every day, and every day the tired Princess walked in the green wood. Many times she caught the glitter of the chariot and ran into the Highway to give thanks to the Fairy Godmother; but she was never fleet enough to reach the spot. She could only stand with eager eyes and longing heart as the chariot passed by. Yet she never failed to catch a smile, and sometimes a word or two floated back to her, words that sounded like: "I would not be thanked. We are all children of the same King, and I am only his messenger."

Now as the Princess walked daily in the green forest, hearing the wind singing in the branches and seeing the sunlight filter through the lattice-work of green leaves, there came unto her thoughts that had lain asleep in the stifling air of the cottage and the weariness of guiding the plough. And by and by she took a needle from her girdle and pricked the thoughts on the leaves of the trees and sent them into the air to float hither and thither. And it came to pass that people began to pick them up, and holding them against the sun, to read what was written on them, and this was because the simple little words on the leaves were only, after all, a part of one of the King's messages, such as the Fairy Godmother dropped continually from her golden chariot.

But the miracle of the story lies deeper than all this.

Whenever the Princess pricked the words upon the leaves she added a thought of her Fairy Godmother, and folding it close within, sent the leaf out on the breeze to float hither and thither and fall where it would. And many other little Princesses felt the same impulse and did the same thing. And as nothing is ever lost in the King's Dominion, so these thoughts and wishes and hopes, being full of love and gratitude, had no power to die, but took unto themselves other shapes and lived on forever. They cannot be seen, our vision is too weak; nor heard, our hearing is too dull; but they can sometimes be felt, and we know not what force is stirring our hearts to nobler aims.

The end of the story is not come, but it may be that some day when the Fairy Godmother has a message to deliver in person straight to the King, he will say: "Your face I know, your thoughts, and your heart. I have heard the rumble of your chariot wheels on the great Highway, and I know that you were on the King's business. Here in my hand is a sheaf of messages from every quarter of my kingdom. They were delivered by weary and footsore travellers, who said that they could never have reached the gate in safety had it not been for your help and inspiration. Read them, that you may know when and where and how you sped the King's service."

And when the Fairy Godmother reads them, it may be that sweet odors will rise from the pages, and half-forgotten memories will stir in the air; but in the gladness of the moment nothing will be half so lovely as the voice of the King when he said: "Read, and know how you sped the King's service."

REBECCA ROWENA RANDALL. (To be continued.)

The German airship, Zeppelin IV., which landed in the military-parade ground, at Luneville, France, on April 3rd, was permitted to depart on the payment of \$2,000 duty. This great vessel is 550 feet in length, and 30 feet across.

SEED POTATOES FOR SALE The enormous leading main crop variety. Even size, shallow eyes Excellent shipper and keeper, \$1.25 per bag, bags free. For further information, write, JOSEPH. PETTIT, Ballycroy, Ont.

Improved Early Ohio White heavy cropper; quality extra; choice seed, \$2 per bushel, Second \$1.40. per bag, f.o.b. St. Thomas, P. N. Haight, Box 124, St. Thomas, Ont.

PURE OIL CAKE MEAL

Digestibility is the true test. What the animals digest will produce flesh and milk.

USE

J. & J. Livingston Brand Oil Cake

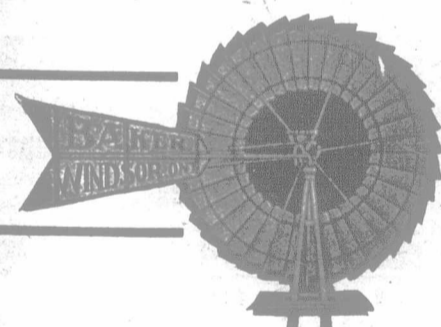
MADE BY THE OLD PROCESS.

Fine ground, Coarse Ground and Pea Size. Also Linseed Meal and Flax Seed.

If your dealer cannot supply you, write us for prices.

THE DOMINION LINSEED OIL CO. LIMITED, MANUFACTURERS
BADEN, Ontario, and MONTREAL, Quebec.

Windmill Power is Growing in Popularity



For pumping, and it is not equalled by any power.

Thousands of farmers who have done their first power pumping by gasoline engine have become tired of it, and are buying windmills.

You can save the cost of a BAKER in one year.

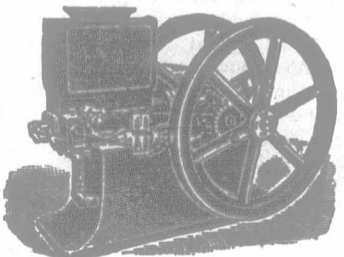
The cost of gasoline, oil, batteries and repairs in pumping for 150 head of stock and the average farm home with a gasoline engine will buy a BAKER Back-gear Ball-bearing Pumping Mill every year.

You can't afford to waste both money and your time. Look into this proposition. Send for catalogue and list of satisfied users.

The HELLER-ALLER COMPANY, Windsor, Ont.

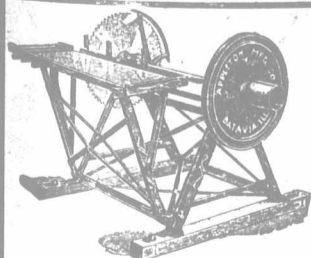
"Monarchs" Make Farm Work Light

A willing, easily-moved "Monarch" Engine saves hours of work sawing wood, pumping, grinding, cutting silage, cream separating, etc. It pays to have one. The "Monarch" has spark retarder, throttle, speed regulator, priming cup, carbon-steel shaft, sight fuel gauge, etc.—the quality features of an automobile engine. Sizes from 1 1/2 to 35 h.p.



Get our "red circle" folder for a post card. It explains every feature.

CANADIAN ENGINES, LIMITED, DUNNVILLE, ONT.
Sole Selling Agents in Eastern Canada
The FROST & WOOD CO., Ltd., Smith's Falls, Ont.
Montreal, Quebec, St. John, N. B.



Wood Saws

Tilting Table, Sliding Table and Drag Saws. Portable Sawing Outfits, Gasoline Engines and Farm Machinery.

WRITE FOR CATALOGUES

GILSON MFG. CO., LIMITED, 99 York Street, GUELPH, ONTARIO

Gossip.

A three-days' sale of Shire stallions was held at Peterborough, England, March 18-20 last, when 520 head were catalogued. The highest price realized was 300 guineas, for F. W. Griffin's four-year-old Boro Forester II., by Coleshill Forester. L. Atkinson's three-year-old Kaiser II., sold for 240 guineas, and F. S. Hawthorn's two-year-old, Roycroft Forest King, by Ratcliffe Forest King, for 165 guineas.

Last autumn William Perkins Bull, K. C., purchased the Wenonah ranch property, containing upwards of 1,000 acres, at Cobble Hill, on the C. N. R., situated to the north-west of Victoria, B. C., on the Canadian Government Automobile Highway. This ranch is a highly-improved property, with up-to-date buildings, machinery, plant, etc., and it is admirably adapted to the pure-bred stock business. Mr. Bull will operate it as a Jersey dairy ranch. He has already partially stocked it with pedigree Jerseys from the Brampton herd and from Jersey Island, and has secured as manager, Martin Casswell, of Fulbeck, Grantham, England, one of the noted British breeders of Shire horses, pedigree cattle, and Lincoln sheep. One of his rams, "Pointon Record," sold at auction for 500 guineas. Mr. Casswell will assume the personal management of Wenonah Ranch early this month. Mr. Bull has added to this ranch, in addition, a nursery, greenhouse, and town-planning industry, which will be under the management of R. Mawson Mattocks, the famous English landscape expert.

WOODBINE HOLSTEINS.

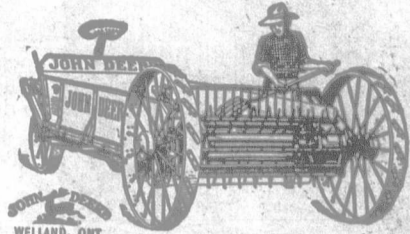
There are few men breeding Holsteins in this country who have paid more attention to the sire end of their herd than A. Kennedy & Son, of Ayr, Ont., owners of the great Woodbine herd. Individually, in the matter of quality, type and producing ability, this is one of the great herds of the country, and certainly none other is better bred on great producing lines. Unfortunately, Mr. Kennedy has been too busy a man to give much time to official testing, but what has been done gives a little criterion of the herd's ability. Twenty pounds of butter and over in seven days, without any crowding, is not by any means their limit. Several bulls, carrying the best blood of the breed in the United States, have been in use, the one following being used on the former's daughter for many years, Sir Mechthilde Posch, whose several nearest female relatives' records average 27 lbs. Following him was Sir Creamelle, of the famous Ormsby tribe, whose several nearest dams' records average 24 lbs. Succeeding him was King Segis Pontiac Lad, one of the richest-bred bulls ever imported to Canada. Following him was the present stock bull, Duke Beauty Pietertje, whose seven nearest dams' records average 27 lbs. Bred on this illustrious line, for sale, are young cows in calf to the present stock bull, and young bulls sired by King Segis Pontiac Lad. Parties wanting choice Holsteins, bred on the greatest blood lines of the breed, should write their wants to the Messrs. Kennedy.

Trade Topic.

Anyone interested in sporting will find useful information in the new illustrated gun catalogue issued by the Marlin Firearms Co., New Haven, Conn., whose Marlin repeating rifles and shot guns are made in all popular calibres, gauges and styles, giving the sportsman a wide choice of guns in any particular branch of shooting. The Marlin Company claim to make the most extensive line of repeating shot guns in the world. Their new catalogue will be mailed to any shooter on receipt of three cents postage sent to the Marlin Firearms Co., 113, New Haven, Conn., U. S. This catalogue is illustrated with scores of pictures of repeating rifles and shotguns, and their parts, together with cartridges of various sizes, and much useful information.

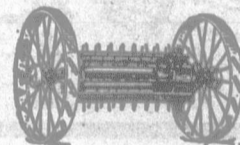
John Deere Spreader

The Spreader with the Beater on the Axle



Take any manure spreader you have ever seen, remove all the clutches and chains, all the countershafts and stub axles, do away with all adjustments and mount the beater on the rear axle. Rebuild the spreader so that the top of the box is only as high as your hips. Make it stronger. Remove some two hundred trouble-giving parts and throw them away. You will have some sort of an idea of what the John Deere Spreader, the Spreader with the Beater on the Axle, is like.

The Beater on the Axle



The beater and all its driving parts are mounted on the rear axle. This construction is patented. You cannot get it on any other spreader made.

Power to drive the beater is taken from the rear axle through a planetary transmission (like that on automobiles). It is positive, runs in oil, and does not get out of order.

Few Working Parts

The John Deere Spreader is so simple that there are no adjustments. It has some two hundred less parts than the simplest spreader heretofore made.

There are no clutches to throw it into gear. The lever at the driver's right is moved back until the finger, or dog, engages a large stop at the rear of the machine. All the chains and adjustments have been done away with.

Only "Hip-High"

Because the beater is mounted on the rear axle, it is only "hip-high" to the top of the box. Each forkful of manure is put just where it is needed. You can always see into the spreader.

Roller bearings, few working parts, the center of the load comparatively near the horses, and the weight distributed over four wheels, make the John Deere Spreader light draft.

Spreader Data Free—Tells about manure, when and how to use it, how to store it, and a description of the John Deere Spreader. Ask for this data as Package No. Y 119

John Deere Plow Company, Limited
Toronto, Ontario

BRIGHTEN UP

Your home with the wonderful White Flame Burner. Makes your old lamps and lanterns give a brilliant soft white light better than electricity or gas. Saves eyesight and makes reading or sewing a pleasure. No flame to break. Reliable and economical. Satisfaction guaranteed. Delights every user. Complete Sample Mailed to any address for 35 cts. or 3 for \$1.00. Money back if not satisfactory. Mail orders promptly filled.

Bright Light Co., Merrickville, Ont.

O. A. C. No. 21 Barley

We increased one pound to nine-hundred bushels in three crops. Our present supply was all grown after corn and roots. Sample beautiful. Price 85c per bush. Bags extra.

JNO. ELDER HENSALL, ONTARIO

Canadian Apple Growers' Guide, authentic, up-to-date, cultural and descriptive. Fifty years' experience, ten in Canadian Experiment Stations. One dollar fifty postpaid. Address: Linus Woolverton, M. A., Grimsby, Ont.



WATER
An abundance of water is one of the richest treasures on the farm. Without it neither man nor beast can attain fullest strength and vigor.

Why Waste Your Time in Drudgery and Toil, When a **GILSON "GOES LIKE SIXTY" ENGINE**

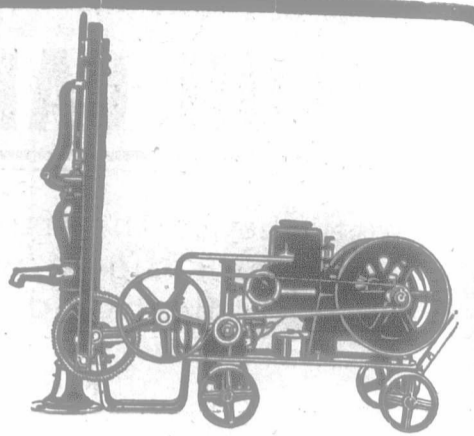
will do your work cheaper, faster and better. It will do all your pumping and will operate your cream separator, churn, washing machine, cutting-box, grinder, pulper, grindstone, etc., at trifling cost. It is a complete power house on wheels—equipped to do your work. It lends itself to more different jobs than any other engine made. It gives the exact speed required for each job—it saves investment for extras required with other engines.

The 1 1/2 and 3 h.-p. sizes consist of a powerful and efficient engine, mounted on truck, with line shaft, five interchangeable pulleys of various sizes, and a universal pump-jack for any pump—all ready for work. No other engine will give the service that the Gilson yields. It is properly equipped for 100% service.

Sizes 5, 6 and 8 h.-p. are either stationary or portable, and are fitted with a patented 5-Rim Friction Clutch pulley and high-tension magneto. No batteries required, easiest starting engines made. No pulling and tugging and cranking. A boy or girl can start them.

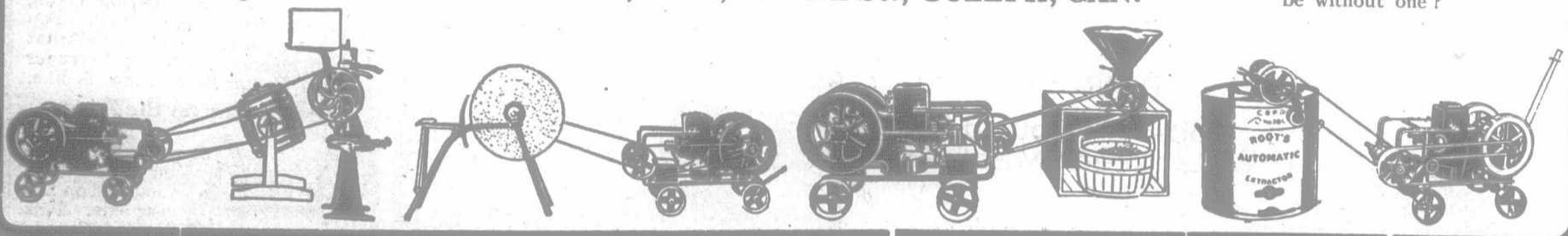
Send for complete descriptive catalogue and state what size most interests you. Agents wanted.

GILSON MFG. CO., LTD., 68 York St., GUELPH, CAN.



WATER

A Gilson Engine will pump 1,000 gals., or 35 bbls., in one hour for one cent. No need to be stingy with water then. Can you afford to be without one?



Bruce's Big Four Field Root Specialties

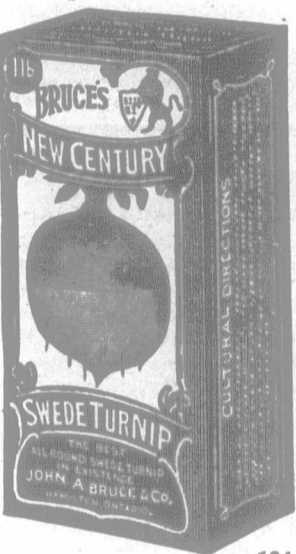
BRUCE'S GIANT FEEDING BEET—The most valuable Field Root on the market; combines the rich qualities of the Sugar Beet with the long-keeping, large size and heavy cropping qualities of the Mangel. We offer two colors, **WHITE and ROSE**. 1/2 lb. 18c, 1/4 lb. 9c, 1 lb. 50c, postpaid.

BRUCE'S MAMMOTH INTERMEDIATE SMOOTH WHITE CARROT—The Best of all Field Carrots. 1/2 lb. 53c, 1/4 lb. 26c, 1 lb. 91.90, postpaid.

BRUCE'S GIANT YELLOW INTERMEDIATE MANGEL—A very close second to our Giant Feeding Beet, and equally easy to harvest. 1/2 lb. 18c, 1/4 lb. 9c, 1 lb. 50c, postpaid.

BRUCE'S NEW CENTURY SWEDE TURNIP—The best shipping variety, as well as the best for cooking; handsome shape, uniform growth, purple top. 1/2 lb. 18c, 1/4 lb. 9c, 1 lb. 40c, postpaid.

FREE—Our handsomely illustrated 112-page Catalogue of Vegetable, Farm and Flower Seeds, Plants, Bulbs, Poultry Supplies, Garden Implements, etc., for 1913. Send for it.



JOHN A. BRUCE & CO., Ltd. Hamilton, Ontario
Established Sixty-three years

5% Debentures

Five per cent. allowed on Debentures. Interest payable (by coupons) half-yearly.

Debentures issued in sums of \$100.00 and multiples thereof for terms of three to ten years, or shorter periods if desired.

Security to Debenture Holders

Paid-up Capital and Reserve, nearly \$3,000,000. Total Assets, over \$6,000,000.

To Trustees and Executors

The deposits and debentures of this Company are especially authorized by an Order-in-Council, Province of Ontario, as an investment for trust funds.

The Great West Permanent Loan Company

(Incorporated by Dominion Charter)

20 King Street West TORONTO, ONT.

Also offices at Winnipeg, Regina, Edmonton, Calgary, Vancouver, Victoria, and Edinburgh, Scotland.

CANUCK FEEDS

BABY CHICK FEED makes strong, healthy birds. A sure PROFIT-MAKER.
SCRATCH FEED The great EGG PRODUCER. Write us for free samples and prove the astonishing results.

CHISHOLM MILLING CO., LIMITED, TORONTO, ONT.



Book Review.

THE GASOLINE ENGINE ON THE FARM.

"The Gasoline Engine on the Farm" is the title of a new book, by Xneo W. Putman, and published by the Norman W. Hendley Co., of New York. This is a book specially written for the ordinary man who runs a gasoline engine. It is published in popular style, and simple, practical language. While this is true, it at the same time deals with the fundamental principles underlying gasoline engines. Only an author of wide, practical experience and technical knowledge, could write a book so full of detail, all to the point, yet so clearly and simply stated. One feels as he reads it that, in all probability, the author received his early lessons on the subject by the same hard experience through which many readers of this review received theirs. And thus appreciating the beginner's difficulties, he writes with the beginner in mind, whether explaining the engine, or dealing with its occasional diseases. There is no trouble the gasoline engine is heir to, so far as I know, but receives attention and directions as to remedy somewhere in the course of the book. At least two specific troubles which I have never seen dealt with elsewhere are considered and satisfactorily explained. Besides dealing with the engine itself, the author gives full directions for setting the engine, including both the bed and lining the shafting by the engine, or vice versa. There are also chapters on tractors, shafting, belts and belting, homemade power conveniences, etc. Prof. W. H. Day, of the O. A. C., Guelph, who reviewed this book for "The Farmer's Advocate," terms it the most suitable gasoline-engine book for farmers' use that he has seen. The book may be had through this office, at \$2.50, postpaid.

Trade Topic.

A good clipping machine is a valuable outfit to have in the stable. Those who have studied the horse are practically agreed that to clip at the proper time is beneficial. Before the spring work begins is a good time. Remove the winter coat. Your horses require much the same treatment that you give yourself to keep in the best health, and you shed your winter clothes before you get down to the hard, spring work. Treat your horses similarly. Remember, nature did not oblige them to work originally, and they could shed out gradually, but you make them work strenuously, and you should treat them accordingly. See the advertisement of Stewart Ball-bearing Clipping Machines in another column.

New Telephone Directory

The Bell Telephone Company of Canada is soon to print a new issue of its Official Telephone Directory for the District of Western Ontario including

LONDON

Parties who contemplate becoming Subscribers, or those who wish changes in their present entry should place their orders with the Local Manager at once to insure insertion in this issue.

Connecting Companies

Should also report additions and changes in their list of subscribers, either to the Local Manager, or direct to the Special Agent's Department, Montreal.

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We Originated the treatment of horses—Under Signed Contract to Return Money if Remedy Fails.
Our Latest Save-The-Horse BOOK is our 17 Years' Discoveries. Fully describes how to locate and treat 58 forms of lameness—Illustrated.
This BOOK—Sample Contract and Advice—ALL FREE to (Horse Owners and Managers only).
Address: **TROY CHEMICAL CO., Binghampton, N. Y.** Canadian Office and Laboratory, 148 Van Horn St., Toronto, Ont. Druggists everywhere sell Save-The-Horse WITH CONTRACT or we send by Parcel Post or Express paid.

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You can get 2 to 6 mares in foal from each service of your stallion or jack by using our Impregnators, we guarantee it, and that'll increase your profits from your breeding stables. Easily used by anyone. Prices, \$1.00, \$1.50 and \$4.00 each.
Use our Improved "Safety" Impregnating Outfit and get in foal irregular-breeding and so-called barren mares. Saves your stallion and you can make more money with him. Price \$5.00.
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Gossip.

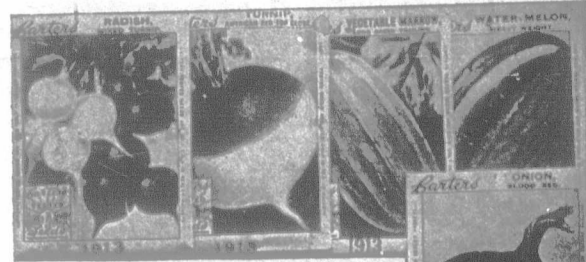
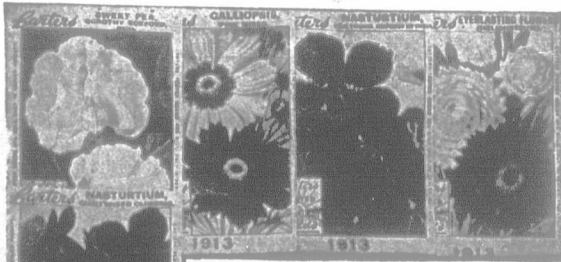
At the annual show and sale of Hereford cattle, at Hereford, England, March 12th, good prices were realized, the highest being \$760, for the yearling bull, Columbus, contributed by D. A. Thomas. Two other young bulls sold for \$500 each, and one for \$525.

At an auction sale of Percherons at Marshalltown, Iowa, March 6th, fifty head sold for an average of \$423. The highest price attained was \$1,110, for the four-year-old stallion, Jambameau, and the highest for mares was \$820, two others selling for \$750 each. At a sale of Percherons, at Grand Island, Nebraska, March 20th and 21st, thirty-one head averaged \$646, the highest price for a stallion being \$1,310, realized for the gray three-year-old stallion, Adelbert. The black two-year-old colt, Besique, brought \$1,100, while the black four-year-old mare, Bonavita, sold for \$1,560.

The death is announced of the noted Scottish breeder of Shorthorn cattle, A. M. Gordon, of Newton, Aberdeenshire, in his sixty-seventh year. He was a member of the Council of the Shorthorn Society, and the Newton herd, which was founded in 1872, under his management, came to the very front. He was the first Scottish exhibitor to challenge English exhibitors on their own ground with a Scotch bull, and the victory of his celebrated Duthie-bred Mario, did probably more than anything else to overcome the English prejudice against Cruickshank cattle. He is survived by his wife and two children. His son, Captain Alexander Theodoré Gordon, succeeds to the estate.

THE "DON" JERSEYS.

Another visit to the great Don herd of high-producing and show-ring quality Jerseys, found then coming through the winter in splendid condition, and paying a big dividend on their individual value and their cost of keep. The twenty now in milk, several of which are two-year-old heifers in milk for the first time, are averaging eight gallons of 28-per-cent. cream per day. As an indication of the high-producing standard to which the herd has been brought, through the use, for many years, of richly-bred sires, purchased from the leading herds of the United States, it is only necessary to mention the big showing being made by several now running in the R. O. P. official test. Gussie's Sweet Vernal, since freshening in November, has given 5,700 lbs., highest amount in one day 50 lbs.; Matinella of Don, in three months, gave 2,400 lbs., highest in one day 43 lbs.; Leada's Golden Bell, in three months, has given 2,300 lbs.; Fancy Sweet Favorite, is giving 45 lbs. a day; Golden Duchess, in three months, has given 3,800 lbs. Others in the test are averaging about the same, which is certainly a splendid showing. Many of the younger ones in milk are daughters of the great bull, Fontaine's Boyle, a son of the famous sire, Golden Fern's Lad, and his dam was the \$1,035 cow, Nunthorpe Fontaine (imp.), with a record of 3 lbs. of butter a day, and her dam a butter record of 2 lbs. 10 ounces a day. These, with many of the others, are now being bred to the junior stock bull, Eminent Royal Fern, a grandson of Golden Fern's Lad, and out of Eminent Evasion, whose milk record is 54 lbs. a day, and seven-day butter record, 22.6 lbs. From such breeding as this, for sale, is a limited number of young females, and the following young bulls of serviceable age: A yearling son of the old bull, and out of Golden Fern, giving 10 lbs. a day; another, same age, is out of Cora, a 34-lb.-a-day two-year-old daughter of the old bull, and sired by the young bull; another yearling, most richly-bred, is by the young bull, and out of Rosebud of Don, 32 lbs. a day at first calving, and her sire was the great Brilliant's Golden Fern, and her dam, Matinella of Don; still another is by the old bull, and out of Nita Belle, 43 lbs. a day. When in want of something choice in Jerseys, write D. Dunham & Son, Don P. O., Ont.



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Cornflower, Blue
Dianthus, Large Flowered, Mixed
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Linum, Scarlet
Lobelia, Dwarf Dark Blue
Lupinus, Annual, Mixed
Mignonette, Large Flowering
Morning Glory, Mixed
Nasturtium, Dwarf, Mixed
Nasturtium, Giant, Mixed, Climbing
Nigella, (Love in a Mist)
Night-Scented Stock
Pansy, Choice Mixed

- Phlox, Annual, Dwarf, Mixed
Poppy, Double Facony, Mixed
Poppy, Shirley, Mixed
Pyrethrum, (Golden Feather)
Stock, Double Ten-week, Finest Mixed
Sunflower, Fine Dwarf Single
Sunflower, Tall Double
Sweet Pea, Dorothy Eckford
Sweet Pea, King Edward VII
Sweet Pea, Large Flowering, Mixed
Sweet Scabious, Fine Mixed
Sweet William, Mixed
Virginian Stock, Finest Mixed
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Peas, English Wonder
Peas, Daisy
Pepper, Long Red Cayenne
Pepper, Ruby King
Radish, French Breakfast
Radish, Selected Long Scarlet
Savoy, Drumhead
Spinach, Round or Summer
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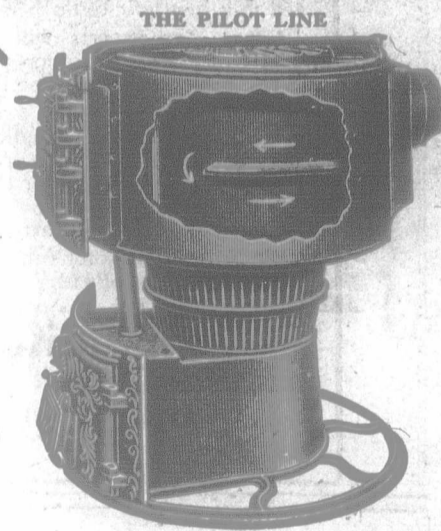
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In fact, our experts will be very glad to tell you anything they can in regard to increasing the yield from your farm. Write them. Get our free booklets. Get our advice on how best to raise your crops.

If your dealer doesn't handle **POTASH**, send us his name and we will see that you are supplied immediately. Don't waste your money on a fertilizer that is not going to get the best results from your land. Decide NOW to make your farm yield a big crop this year.

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Questions and Answers.

Miscellaneous.

Cement for Wall.

How much cement, sand, and stone fillers, will it take for a foundation 70 x 40 feet, base 18 in. x 1 ft. high, and 12 inches wide by 8 at top, 8 feet high, in all, a wall 4 feet high, using as much stone fillers as possible?

D. W. F.

Ans.—From 28 to 30 barrels of cement and between 7 and 8 cords of gravel and stones. A considerable portion of stones could be used in the bottom part of the wall.

Mare Stiff—Sprain.

1. Old mare is stiff. What will take stiffness out?

2. Horse hurt his ankle drawing. It is swollen and sore. What treatment should I follow.

T. S. R.

Ans.—1. It would be necessary to know the cause and location of the trouble before being able to prescribe. It is somewhat doubtful whether it can be relieved in an aged animal.

2. Give rest. Bathe the joint well with cold water three times daily; then rub well with camphorated liniment, and in an hour apply a bandage, moderately tight. Keep this up until cured.

Horses Cough.

What is the best cure for a cough in horses after having influenza, or something of that sort. They seem to get cold easily, and get a rattling in the throat. Some days they cough quite a lot, and others not so much. They have been fed on boiled oats and bran, and good, clean hay, all winter.

J. A.

Ans.—Take 3 ounces pulverized gum opium, 1 ounce powdered digitalis, 4 drams arsenic acid, 4 ounces powdered liquorice root. Mix, and make into 24 powders. Give a powder every night in damp food. Repeat the prescription if necessary.

Cement Tile.

Are cement tile better than clay tile? Do the cement tile soak more water than the other? Will they last better?

J. H.

Ans.—Clay tile have given good results, and no doubt cement tile, properly constructed, will be satisfactory. We would not say they were better than clay tile. The porosity depends upon the strength of the mixing of the cement. Porosity is not essential to drainage tile, and compactness is, therefore tile should be 1 of cement to 4 of sand or gravel. Their lasting qualities have not been tested out against clay, but they should prove durable. See article in this issue by Prof. W. H. Day.

Sale of Farm.

A bought farm from B.—B holding possession of barn and yard for three months. In the meantime, the roof of said barn is partly destroyed by wind-storm. Who is liable for repairs, A or B?

2. In the same barn are a hay-car and ropes. Are they considered fixtures, nothing being said by either party?

Ontario.

Ans.—1. We do not see that B is liable to repair the roof; and it would follow that A must attend to such repairs as may be required.

2. It is probable that the entire hay-car outfit is to be regarded as a fixture. We cannot speak more definitely about it without further information as to facts.

Title by Possession.

1. How long does a man have peaceable possession of a farm before he can claim it?

2. B has had the deed of A's place for twenty years. A has been living on it for seventeen years, and has had no incumbrance for twelve years. Can A get a new deed, making the first one void?

A. M.

Ontario.
Ans.—1. Ten years, according to the general rule. But, there are many circumstances to be considered along with the matter of length of possession.

2. We do not see that it is a case for a new deed. A might bring an action to have his title declared by the Court; but perhaps his more prudent course would be to simply continue his possession and full enjoyment of the farm and await attack.



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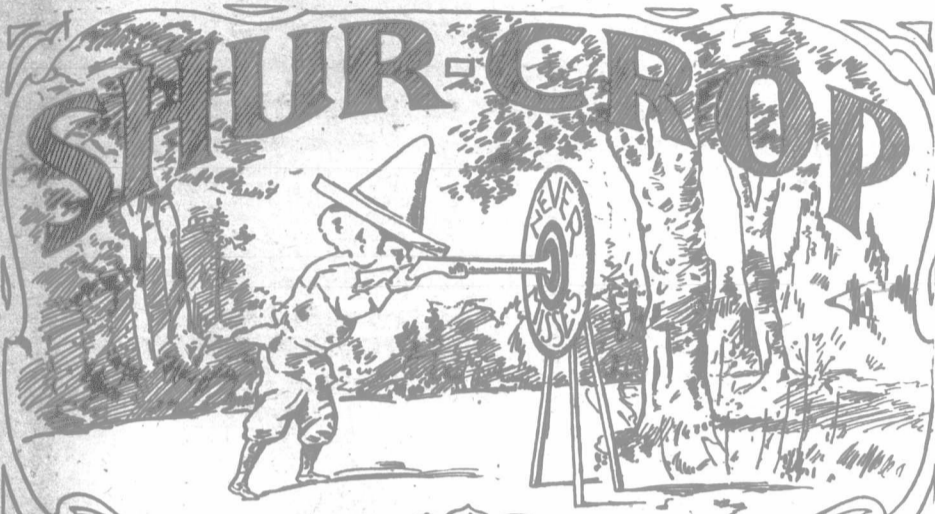
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Questions and Answers. Miscellaneous.

A Trustee.

1. Has a public-school trustee of a rural-school section, special privileges in the matter of using the water from the cistern provided for the use of the school children?

2. Can he legally use such water for his cattle?

3. Would this not be stealing the use of school-section property, and appropriating the use for his own personal benefit?

4. Would not such action disqualify him as a school trustee?

5. What steps should the ratepayers take to prevent such conduct in future? Ontario. **SUBSCRIBER.**

Ans.—1 and 2. No.
 3. Hardly.
 4. It is possible. See Sec. 118 of The Public Schools Act (Ontario Statutes, 1909, Chap. 89); but it is not clear that it would.
 5. We should think that a serious and explicit warning ought to be sufficient.

A Horse Trade.

A and B trade horses. B recently purchased the horse from C. B stated that there was nothing against the horse which he traded to A. Now D comes along and says there is a note against the horse which B traded to A.

1. Must A look up the sale from C to B to see whether there is a note given by B to C?

2. Can A take possession of the horse which B received in the deal, or what proceedings should be taken? J. Ontario.

Ans.—1. We think that A ought to search in the office of the Clerk of the Peace to ascertain whether there is any encumbrance on record against the animal.

2. It does not appear from your statement of the case that he is legally in a position to do so.

Breeding Mares—Hens Die.

I live in the northern part of Ontario and am just starting farming. I would like to know whether there are chances of getting mares in foal. Their ages are eleven and twelve. I bought them up here, and there is no chance of knowing how long ago, or whether they ever had colts. I would like your opinion, or some of the other readers of "The Farmer's Advocate," as I have to raft my horses across the Abitibi river, and then take them seven miles to Cochrane to a horse, as the country is just opening up.

2. I have had about a dozen hens die on me this winter. They all start with a rattle in their throat. I have been feeding barley with the husks on.

J. A.

Ans.—1. If the mares are healthy, most certainly there is a chance of getting them with foal.

2. The symptoms are too meagre to venture an answer. Are you sure they did not choke to death on the long barley awns?

Eczema—Feeding Cows.

1. Have a young mare having two or three places of a scabby nature, not unlike eczema, but the trouble seems to be under the skin, and the hair is off on these places only.

2. Which would give the better milk results, feeding long hay (consisting mainly of wild grasses), and meal, or same hay cut and damped, with meal? J. S. H.

Ans.—1. Clip the mare. Wash her thoroughly with warm water and strong, soft-soap suds, applied with a scrubbing brush. Rub until dry. Then dress well twice daily with a solution of corrosive sublimate, 25 grains to a quart of water. (Remember that this drug is poison, and should be so labelled.) Give internally one ounce Fowler's Solution of Arsenic, twice daily, every alternate week as long as necessary.

2. If the hay is first-class, and the cows have good teeth, probably there would be little difference, but the cut feed would likely be more appetizing, and give the best results. A little long hay could be fed as well.

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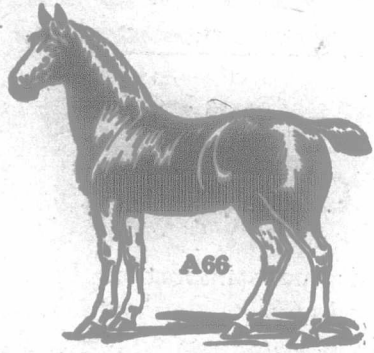
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Wind Puff, Weak, Sprained and Ruptured
Tendons, Sweeny, Shoulder or Hip Lameness
and every form of lameness affecting
the horse. We have deposited One Thousand
Dollars in the bank to back up our guaran-
tee. Cures while he works. No scars, no
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Your druggist will furnish you with
Mack's \$1,000 Spavin Remedy. If he
hasn't it in stock, write us.
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SPAVIN CURE**

For the cure of Spavins, Ringbone, Curbs,
Splints, Windgalls, Capped Hock, Strains or
Bruises, Thick Neck from Distemper, Ring-
worm on
cattle, and
to remove
all unnatur-
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This pre-
paration is
unlike
others, acts
by absorb-
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than blister.
This is the
only preparation in the world guaranteed to kill
a Ringbone or any Spavin, or money refunded,
and will not kill the hair. Manufactured by
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shire Road, London, E. C. Mailed to any ad-
dress upon receipt of price, \$1.00. Canadian
agents:

J. A. JOHNSTON & CO., Druggists
171 King Street, E. Toronto Ont.

PLEASE MENTION THE ADVOCATE.

Questions and Answers.

Miscellaneous.

Drainage.

I have a pond I wish to drain into
B's field. Part of the water in this
pond comes off B's farm.

1. Is B entitled to help with this
drain, as it will have to be dug into
B's field about 100 yards?

2. Can B stop us taking levels on his
property, as it is the natural course for
the water to go?

Ontario.

SUBSCRIBER.

Ans.—1. We think so.

2. Not if you take the appropriate
proceedings, under The Ditches and
Water-courses Act, and you should take
such proceedings if you cannot come to
an amicable and neighborly agreement
about this matter of ditching.

Black Muck Soil.

1. I have three or four acres of black
muck about a foot and a half in depth.
It is fine, and of made-up land, greasy
or oily-looking. Would it be profitable
for potatoes, roots, or corn, on a sandy
loam, or a clay loam. (I have both
loams on my farm.)

2. What would be the best way to
apply it? Clay loam is fall-plowed.
Sandy loam is still a clover sod.

C. R. A.

Ans.—1 and 2. No doubt black muck
would add to the fertility of a clay
loam or sandy-loam soil, but consider-
able would require to be added, and the
operation would be rather expensive. If
the black muck is not too acid, it would
be valuable. If applied, simply spread
it over the land. Would it be practica-
ble to drain the muck soil and work it.
It would make a fine place to grow
garden vegetables, especially celery, which
is very profitable.

Waterproofing Cloth or Canvas.

I saw a recipe in "The Farmer's Ad-
vocate" a year or so ago to make a
canvas waterproof. There were Japan
and soap in it, but I have forgotten the
quantity. Could you again publish the
recipe?

A. M. T.

Ans.—There are several methods of
waterproofing cloth. Take 2 ounces
soap, 4 ounces glue, 1 gallon water.
Soften the glue in cold water and dis-
solve it together with the soap in the
water by the aid of heat and agitation.
Boil the cloth in the liquid for several
hours. Wring out and expose to the air
until dry, then place in a solution of
alum 13 ounces, salt 15 ounces, water
1 gallon, for from 5 to 12 hours.
Finally, wring out, rinse in clear water,
and dry at a temperature of 80 degrees
F. Cotton or canvas is frequently
waterproofed by painting with raw lin-
seed oil. Another method is as fol-
lows: Add to 3 pints boiling water 2
ounces yellow soap. When dissolved,
stir in 1 quart boiled linseed oil, and
when cold add ½ pint drier, known as
brown Japan.

Enlarging Photos.

An agent for enlarging photos came
along one day when I was absent, and
by a deal of persuasion, got my wife
to let him take a photo to enlarge, say-
ing he would do so and return it al-
ready framed for ninety cents. In course
of time, he returned with the enlarged
picture framed, and wanted four dollars,
saying he thought if he brought the
cheap frame he would never get any
more work, as it would be poor stuff.
She gave him two dollars. He left the
picture, and told her to send the other
two in about two weeks, when he sent
an order (she thinks he called it)
through the mail. We know nothing of
the man's name or address. He had her
sign a receipt for the picture, with two
dollars paid, and at the same time agree-
ing to pay the other two.

1. Will I have to pay the two dol-
lars?

2. Is such work as this lawful in this
country of ours, for men to go through
the country deceiving, or insisting on
getting the photos, until the women give
them to them to get rid of them? (I
know of two places where he did this.)

3. If I don't pay, can he sue me for it?
Ontario.

Ans.—1 and 3. You are not, personal-
ly, liable; but your wife is.

2. It is not illegal.

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LAMENESS FROM
SPAVIN,
QUARTER CRACKS,
SCRATCHES,
POLL EVIL,
PARASITES.**

REMOVES

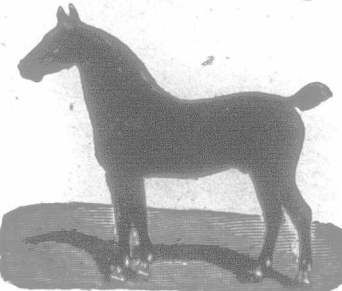
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I have used GOMBAULT'S CAUSTIC BAL-
SAM as a good deal, and for a blister it's the best
I ever used. I wish your remedy every season.
CHAS. MOTT, Manager,
Mayfield Stud Farm, Leesburg, Va.

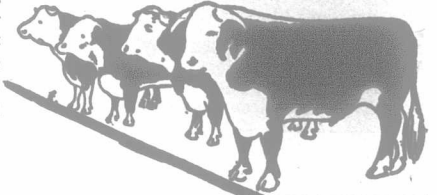
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APPLICATIONS.**

Have used your GOMBAULT'S CAUSTIC BAL-
SAM to cure curb. I blistered it twice, and
there is no sign of it any more. The horse is
as good as ever.—BAH SCHWAB, Evergreen, Ill.

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Questions and Answers.

Miscellaneous.

A Lease.

I have a farm rented for four years (lease), and the landlord is very ill. If he should die, the farm is to be sold. The lease was drawn up by him, the lawyer, and myself. Can they put me off before my lease is up? I have been told death breaks the lease.

Ontario. SUBSCRIBER.

Ans.—No.

Purchaser in Default

A bought land from B for twenty-one hundred dollars. B received one hundred dollars at time of agreement, and was to give A a satisfactory deed March 1st, when A was to give B one thousand dollars, and one thousand dollars mortgage on land. B has only received the one hundred at time of agreement. A does not offer to do anything about agreement.

1. Can B keep one hundred dollars, and sell land to C?
2. Has A now any claim on land?

Ontario. M. D.

Ans.—1 and 2. Possibly so—as to both questions. Definite answers cannot be given without an examination of the agreement.

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As I am feeding no steers this winter I have filled my stables with imported fillies, selected personally in Scotland; many in foal to such sires as Hiawatha, Sir Hugo, King's Champion, Sir Rudolph, etc. Fourteen have been sold, eighteen of the best are still on hand—the selections being made more on account of price than superiority. There are no culls in the lot. Send for pedigrees and particulars before buying elsewhere. Inspection invited.

D. McEACHRAN.

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They have arrived—my third importation for 1913, stallions and fillies. I have now the biggest selection in Canada, and a few toppers in stallions. High-class breeding and high-class quality and low prices.

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Alfalfa Dodder.

1. How can a field of alfalfa be cleaned of dodder?
2. Will it make a stand in grain or other crops?

YOUNG FARMER.

Ans.—1. If the weed is simply noticed in patches, they should at once be mown with a scythe and the refuse burned. Alfalfa fields which are badly infested should be brought under cultivation. If cutting is resorted to, it must be repeated frequently to prevent seeding.

2. No. Not unless alfalfa plants are present. It is parasitic, and must have the host plant to survive.

Cow Coughs.

I have a cow six years old which I am feeding to put on grass. Four weeks ago she took a cold. I gave her different kinds of stuff, but she still coughs. She is doing well. Would like if you could tell me of anything that would stop her coughing.

A. M.

Ans.—If it was just a cold, and the cow is doing well, the cough will likely cease with the arrival of warm weather and pasture. Heavy colds sometimes leave the animals with a cough for some time. If you have any suspicions of tubercular troubles, have her tested.

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We have lately landed a shipment of Clyde stallions and fillies, several Scotch winners among them. Their breeding is unsurpassed. Comparison with any others in the country will make you a buyer from us. Our prices are as low as the lowest. L.D. Phone. **GOODFELLOW BROS., R.R. No. 3, Bolton, Ont. Bolton Sta., C.P.R.**

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OF ALL the losses owners are liable to, none can be less prevented or modified in any manner whatsoever than loss by foaling. Notwithstanding the best care and attention, although a mare may have foaled many times successfully, she is always a cause of worry and anxiety to the owner through the fear of losing by death the often very high cash value of the Beast, not to mention service fee, care and expenses incurred for no avail. Why risk such loss when a payment of a few dollars in premiums would cover you should it happen. Reduce the amount of the RISK by insuring, only risking thereby the loss of the Premium if the mare foals allright. We issue 30 days, 6 months and 12 months policies with or without cover on foal.

Write for address of nearest agent. All kinds of live stock insurance transacted. Head Office: THE GENERAL ANIMALS INSURANCE CO. OF CANADA, 71a St. James St., Montreal, Que.

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Your livestock is exposed to dangers from without and within. Indigestion, sluggish liver and bowels, weak circulation, are the cause of greater loss than accidents, since poor condition usually affects all the stock and accidents strike individuals. It pays big to keep horses, cattle, sheep and hogs in prime condition, capable of doing their best at all times. This means the difference between profit and loss.

Pratt's Animal Regulator

is the best animal conditioner known to stock growers. It has stood the practical test of forty years and made good all the time and everywhere. It is a tonic, not a food, and acts directly upon the organs of digestion. It maintains a keen appetite, perfect digestion, heavy production. You can't afford to be without it!

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Questions and Answers.

Miscellaneous.

Tanning Hides

Give a recipe for tanning muskrat hides. SUBSCRIBER.

Ans.—See answer to "Tanning Hide" queries in recent issues.

Bordeaux Spraying.

Would you kindly publish the recipe for Bordeaux mixture; also an estimate of amount required for one hundred and fifty large apple trees? C. T.

Ans.—See "Spray Calendar," on page 578 issue of March 27th. For the calyx spray, it would require from five to eight gallons per tree. Somewhat smaller quantities would suffice for the other sprays.

Grass for Pasture.

Would you recommend Brome grass for permanent pasture, principally for horses, or would Canadian blue grass or orchard grass be better? Which of them would be the hardest to plow up after some years in sod, and how much seed per acre? P. A. F.

Ans.—We would not recommend Brome grass, neither would we sow Canadian blue grass or orchard grass alone for permanent pasture. Better results will be obtained from a mixture, and we know no better than that recommended by Prof. C. A. Zavitz, O. A. C., which is: alfalfa, 5 lbs.; alsike, 2 lbs.; white clover, 2 lbs.; orchard grass, 4 lbs.; meadow fescue, 4 lbs.; tall oat grass, 3 lbs.; meadow foxtail, 2 lbs., and timothy, 2 lbs., or 24 lbs. per acre. If land is low, or the district not suited to alfalfa, it might be omitted, the remainder being sown at 19 lbs. per acre.

Contagious Mammitis or Garget.

1. After my cows freshen a day or two, the udders swell up. One, two, and three quarters, in some cows, get affected. The udder becomes hard, and curdled milk and water comes out. They also get lame on one hind leg. I have been working with them for two weeks, using hot water, and a salve made of lard and camphor. Those that get better lose that part of the udder.
2. Do you think that they would come all right when they freshen again? Please give treatment. W. S.

Ans.—1. In an article on mammitis, the veterinary editor of "The Farmer's Advocate" explains that occasionally an outbreak of garget appears in a herd, which seems to be infectious. Several cows, especially those milked by the same milker, suffer from an attack without appreciable cause, the infection being probably carried on the hands of the milker. Care in preventing the spread of the contagion is obviously called for. Milk into a special vessel and burn or destroy the curdled material drawn from infected quarters. Have a different person milk sound and infected cows, if possible. If not, have the milker wash off his hands between cows with a bi-chloride-of-mercury solution, prepared by dissolving in a gallon of water a bi-chloride tablet, procured from a druggist or dealer in veterinary supplies. Bathe often with hot water, dry thoroughly, and apply the camphorated salve you have been using. An occasional pound of salts, with a tablespoonful of bicarbonate of soda added, is good for udder trouble.
2. When a cow loses a quarter of an udder during a lactation period, it is generally gone for good.

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Any person, however inexperienced, can readily cure either disease with

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Fistula and Poll Evil Cure

—even bad old cases that skilled doctors have abandoned. Easy and simple; no cutting; just a little attention every fifth day—and your money refunded if it ever fails. Cures most cases within thirty days, leaving the horse sound and smooth. All particulars given in

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Aberdeen-Angus of Show Form and Quality. For this reason my offering in young bulls and heifers, are topers, every one. Show-ring form and quality, and bred from show winners. T. B. BROADFOOT, Fergus, Ont. G. T. R. and C. P. R.

Spring Valley Shorthorns

A few of the best young bull prospects we had. They will please you. Will sell females too. Visit the herd; we think we can suit you. Particulars on application. KYLE BROS. AYR, ONT.

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and get longer, better wool that will bring the highest price.

You can easily net from 15c to 20c more on every sheep you shear with a Stewart No. 9 Machine. Don't labor with hand shears, in the old, hard, sweaty way. Don't have aching, swollen wrists. Don't scar and disfigure your sheep with uneven shearing and spoil the wool with second cuts. Take off the fleece smoothly and quickly in one unbroken blanket with a

Stewart No. 9 Ball Bearing Shearing Machine

It's the most perfect hand operated shearing machine ever devised. Has ball bearings in every part where friction or wear occurs. Has a ball bearing shearing head of the latest improved Stewart pattern. Complete, including four combs and four cutters of the celebrated Stewart quality \$15.75. Get one from your dealer, or send \$2 and we will ship C.O.D. for balance. Satisfaction Guaranteed. Catalogue of Sheep Shearing and Horse Clipping Machines FREE. CHICAGO FLEXIBLE SHAFT CO. 111 LaSalle Ave., CHICAGO, ILL.

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Stewart Ball Bearing Clipping Machine

It turns easier, clips faster and closer and stays sharp longer than any other. Gears are all file hard and cut from solid steel bar. They are enclosed, protected and run in oil. Little friction little wear. Has six feet of new style easy running flexible shaft and celebrated Stewart single tension clippers head. PRICE \$9.75



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Come and see them; it won't take long or cost much. I can save you \$200 to \$500 on a stallion. JOHN HAWTHORNE, SIMCOE, ONTARIO

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Stallions and fillies of either breed. Over forty head to select from. Draft horses in and prices to suit. T. D. ELLIOTT & SON, BOLTON, ONTARIO.

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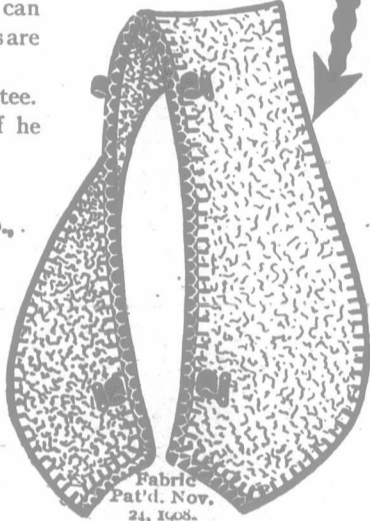
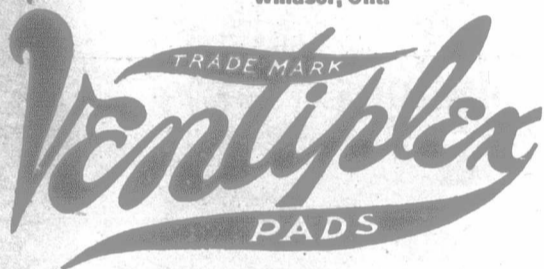
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VENTIPLEX pads cure and prevent galls and sores by the very principle on which they are constructed, being made of a soft woollen fabric which is porous and absolutely non-poisonous (acting on perspiration as a blotter on ink) thus keeping the horse's shoulders dry and well at all times. VENTIPLEX pads can be cleansed when dirty and wearing qualities are unequalled.

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We have females of all ages and of the best Scotch families for sale. Those interested should come and see us. Correspondence invited.

BELL 'PHONE. Guelph or Rockwood Stations. **A. F. & G. Auld, Eden Mills, Ont.**

10 SHORTHORN BULLS 10

If in need of a bull those that we are offering should interest you. They range from 8 to 14 months old, and are nearly all bred direct from imported stock. We also have females of all ages. Bell 'Phone Burlington Junction, G. T. R. **W. G. PETTIT & SONS,** Freeman, Ontario.

DAIRY-BRED SHORTHORNS
We have for sale Scotch- and English-bred Shorthorns. A few bulls of improved breeding on big milking lines; also others pure Scotch and heifers of both breed lines. L.-D. 'Phone. **G. E. MORDEN & SON, Oakville, Ont.**

MEADOW LAWN SHORTHORNS of richest and most fashionable Scotch breeding, and of high-class type and condition. I can supply young bulls and heifers—Clarets, Roan Ladys, Mildreds, Stamfords, etc. L.-D. 'Phone. **F. W. EWING,** R. R. No. 1, ELORA, ONT.

Shorthorns—Records show that cattle bought from the Salem herd won numerous ribbons the past season. We have others. Several young bulls are priced reasonably. Elora G. T. R. and C. P. R. **J. A. WATT, Salem, Ont.**

5 Shorthorn Bulls 5—We have for sale at moderate prices five Scotch Shorthorn bulls, including one of our herd bulls. Also a number of high-class heifers and heifer calves. Myrtle G. T. R. & C. P. R. **A. J. HOWDEN & CO., Columbus, Ont.**

SCOTCH SHORTHORNS One High-class Imported yearling bull. 10 bull calves, from 7 to 16 months old. 40 heifers and young cows, all by imported sires. Also some Imp. yearling heifers. MITCHELL BROS., BURLINGTON, ONT. Farm 1/4-mile from Burlington Junction.

Springhurst Shorthorns Four of the first-prize Shorthorns at the late Guelph show, including the champion and grand champion fat heifer, were all sired by bulls of my breeding. I have now for sale ten young herd leaders of this champion-producing breeding. HARRY SMITH, HAY P. O. ONT. Exeter Station. Long-distance Telephone.

FOR SALE 3 EXTRA GOOD YOUNG SHORTHORN BULLS including the show bulls, Meadow Signet and Orange Signet; also S. C. W. L. and White Wyandotte eggs for hatching \$4.00 per 100; excellent varieties. Correspondence solicited; inspection invited. **Geo Amos & Sons, Moffat, Ont.** Moffat stn. 11 miles east of Guelph on C.P.R.

Questions and Answers. Miscellaneous.

Unfenced Side Road.

1. At present there are no fences on either side of the unused side-road, and Mr. B wants Mr. S to put up a fence to keep his (S's) cows out of B's grain. Can he compel him, or please state fully what he (Mr. B) can compel S to do?
2. Can B compel S to fence pasture side, while he (B) leaves his side of road unfenced, and yet pastures in the fall?
SUBSCRIBER.

Algoma District.

Ans.—1 and 2. We do not think that B. is in a position to legally compel S to do anything,—unless possibly under a local municipal by-law. The Clerk of the municipality should be seen, and enquiry made of him as to such by-law, if any, on the subject.

Swelling on Mare's Abdomen—Feeding Mash.

1. Pregnant mare, due to foal in one month, being fed on timothy, straw, bran and oats, shows signs of dropsy under belly. Do you advise giving any medicine for this disease should it develop to any great extent?
2. Do soft-boiled feed and bran mashes have a tendency to weaken the foal?
W. P. S.

Ans.—The legs and floor of the abdomen of all horses have a tendency to swell during idleness, and, in many cases, this tendency is intensified in pregnant mares, and of course there is a strong tendency to swelling of the mammae. No drugs should be given. Give laxative, easily-digested food, and give regular exercise or light work, and a box stall when in the stable.

2. If not fed to excess, so as to make the colt large and flabby, they should do no harm, provided the mare is accustomed to them.

Colt Queries.

1. I have a colt which has a wart under the abdomen. What could I do for it?
2. Would you tell me how to make a colt's mane grow?
3. What is the cause of a colt scrubbing her tail? Please give a cure.
4. Is there any cure for a colt two years old which holds its tail off to one side most of the time?
R. L.

Ans.—1. If the wart has a constricted neck, clip it off with a sharp pair of shears, and treat as an ordinary wound. If it covers a larger surface, apply butter of antimony once daily with a feather.
2. Try monthly applications of tincture of cantharides in moderation. The action is that of a mild sweat blister.
3. Give a thorough washing with strong, warm, soft-soap suds. Rub until dry, and dress daily with a solution of corrosive sublimate, 40 grains to 1 quart of water.
4. A crupper contrivance might be arranged to prevent the holding of the tail to one side while driving.

Succession Duty—Devolution of Estate

I enclose a copy of will. The estate, amounting to a little over ten thousand dollars, the Government took five-per-cent. succession duties, the testator being a single man.

1. Should a percentage of the succession duties be taken from the four thousand dollars, the interest of which was to be given to his sister during her lifetime, or are the Executors required to give the interest on four thousand dollars, independent of the succession duties during her life-time?
2. Since the will was probated, one of the last-named nieces got married, and died a few months after. To whom should her share be given when the money has to be divided? Can her husband claim her share, or part of it, or does it go to the other two last-named nieces, or whom?
EXECUTOR, Ontario.

Ans.—1. We think that the succession duty applicable to this legacy must be deducted from the \$4,000, the amount thereof, leaving the balance only to be invested.

2. Assuming that she died intestate, her husband would be entitled to one-half, and the rest would go to her next of kin.

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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, PROPS.,** Cargill, Ont., Bruce Co. John Clancy, Manager.

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Our present offering in Shorthorn heifers and young bulls are modern in type and of richest Scotch breeding, and the prices are low; Cotswold Ewe and Ram lambs of high quality.

WM. SMITH & SON, COLUMBUS, ONT. L. D. Phone

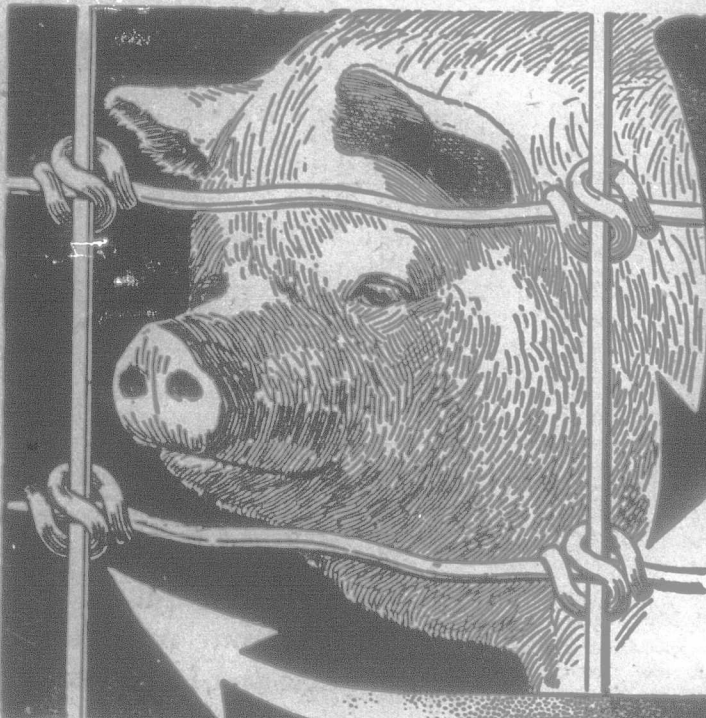
Woodholme Shorthorns
I have for sale a number of choice young bulls, from 8 to 14 months old (pure Scotch); also a number of heifers, 1 to 3 years old, of this level type, and richest breeding. **G. M. FORSYTH,** North Claremont, Ont.

Shorthorn Bulls and Heifers—I have a choice lot of young bulls and heifers in calf now to offer. Former sires, Joy of Morning (Imp.) =32070 = and Benachie (Imp.) =60954 =. Present stock bull, Royal Bruce (Imp.) =56038 = (89009) 273853. **W. D. FLETCHER, R. R. No. 2, Eria, Ont.**

Oakland—50 Shorthorns.
Offering for winter and spring trade, is six excellent bulls from ten months to two years old. Out of fine dual purpose dams and sired by our noted Scotch Grey Bull 72692. He is a beautiful man and all quality, he is also for sale or exchange. **John Elder & Sons, Hensall, Ont.** Station and P.

ATHELSTANE SHORTHORNS
For sale: Five choice young bulls, sired by Roan Chief (Imp.) =60685 =. They are a choicely bred lot, and will be priced right; also a few heifers. They are of good milking dams. **WM. WALDIE, R. R. No. 2, Stratford, L.-D. 'phone.**

FOR SALE 3 HIGH-CLASS YOUNG SHORTHORN BULLS some from heavy milking dams. Prices right. **STEWART M. GRAHAM** Lindsay, Ontario.



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When we say the uprights or stays on "Ideal" Fence are 16 1/2 inches apart, they are 16 1/2 inches, not 18 or 20 inches, and the same with 22 inch spacing.

A fence can be greatly cheapened by using under-gauged wire or having the stays farther apart than advertised. From top to bottom "Ideal" Fence is all the same, made of large gauge, No. 9, evenly galvanized hard steel wire—no small or soft wires—all are full size, true to gauge, tough

and hard. The reason that there are more miles of "Ideal" Fence sold in Canada annually than any other make is not due to salesmanship or advertising, but it is due to the merit of the fence itself, to the quality of material and workmanship that enters into it, to the protection it affords, to the service it renders and to our many satisfied customers all over the Dominion. Do not experiment in buying fence; it will not pay you. If you buy "Ideal" you are absolutely sure of getting a fence exactly as represented. We invite you to compare "Ideal" Fence with any and every other make on the market. Compare the size of wires, compare the weight, to the rod of fence; study the quality of workmanship; test it—test it in the severest way you can think of, and you will find "Ideal" to be superior in every way. Do not spend money in buying fence—invest it in "Ideal".

A postal card will bring you the "Ideal" catalogue which shows many different styles of fence—a style for every purpose; also our complete line of Field and Stock Gates, Lawn Fence and all fences supplies.

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Guaranteed Percentage
of Protein and Fat

25%

PRICE \$20.00
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BRANTFORD ONTARIO

Questions and Answers. Miscellaneous.

Breeds of Poultry.

1. Can you tell me of any breed of fowls adapted for prolific laying?

2. Also for weight.

W. B.
Ans.—1. Any of the Mediterranean breeds, as Leghorns, Andalusians, etc. also several general-purpose breeds are good layers—Plymouth Rocks, Wyandottes, Rhode Island Reds, and Orpingtons.

2. The general-purpose breeds are also valuable for meat, as are also, Dorkings, Brahmas, Games, etc.

Teat Obstruction.

I have a cow four years old which freshened two weeks ago, and has a sort of callus ring inside of teat which seems to stop her milk from coming down freely. Can you recommend a cure, and what is the cause?

J. R.
Ans.—If this is a lumpy obstruction to the milk duct, it will be difficult to cure. It is generally necessary to operate if the growth extends so as to totally obstruct the duct. A veterinarian is required to do the work. Sometimes the duct may be kept open by using a self-retaining teat syphon. Very often these growths are due to a congenital disposition.

Dog has Mange.

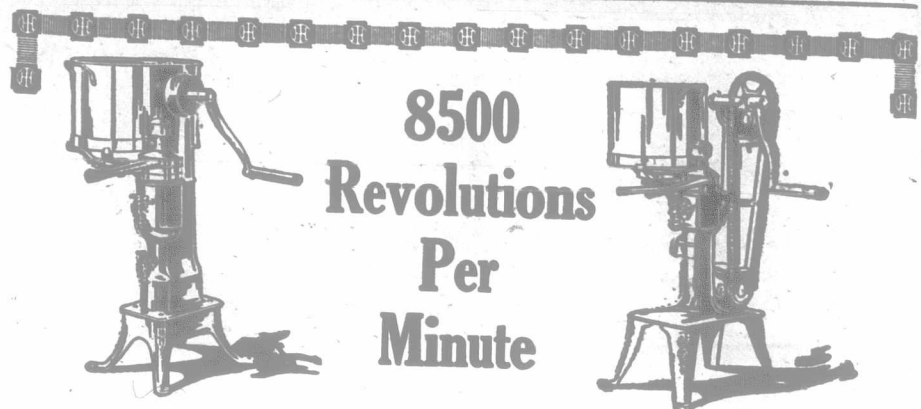
Have a large collie dog coming six years old, which has been suffering with mange. Raw, itchy sores break out over his body and in ears. Have been treating with a mixture of lard, sulphur, and oil, which gives relief for a time. Is there any permanent cure?

D. T.
Ans.—Give as a drench 1/2 ounce of salts, and repeat the dose in a few days if necessary, gauging according to action of first dose. Wash well with warm water and Castile soap, and rub well into the skin every three days, the following ointment: Tanner's oil, 1 quart; spirits of turpentine, 1 large wineglassful, and sufficient sulphur to make a thin paste. Continue this for three weeks, and again wash well with the Castile soap and warm water. If a cure is not effected, continue the treatment.

Mushrooms.

Where could I get a reliable book on planting and raising mushrooms, and the price of it? Could they be grown successfully out-doors, in shady places? What kind of spawn would do best in northern climate?

M. J. L.
Ans.—One of the standard books on mushroom-culture is called "Mushrooms: How to Grow Them," by Wm. Falconer. This book is published by the Orange-Judd Co., New York; price, \$1.50. Another practical little book is, "The Secrets of Mushroom Culture Simplified and Explained," by A. V. Jackson, 3267 Northwestern Avenue, Chicago, Ill.; price, \$1. These volumes could be obtained direct from the publishers, or through a local bookseller. Get the spawn from one of the seedsmen advertising in these columns. Mushrooms should be grown in cellars or basements, where the winter temperature does not go below 55 degrees, or rise above 65 degrees.



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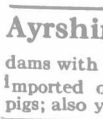


Willow Bank Stock Farm—Shorthorn Herd Established 1855. The grand imported Butterfly bull, Ross Chief good lot of young bulls on hand, fit for service and at very reasonable prices. Some

JAMES DOUGLAS, Caledonia, Ont.



75 Hillcrest Ayrshires—Our Ayrshires are selected and bred for big production, and show-ring quality. Many of the heifers we are offering are grand-daughters of the two Ex-World's Champions, Jean Armour, Rec. 20174 lbs., and Primrose of Tanglewyld, Rec. 16195 lbs. F. H. HARRIS, Mount Elgin P.O. & Sta.



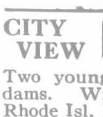
Ayrshires and Yorkshires—We now offer at bargain bull calves dropped in July, 1912. All bred from (imp.) sire and from either imported or home-bred. Some choice February

Alex Hume & Co., Menie, Ont.



Stonehouse Ayrshires—Of choicest imported stock and with imp. sires and dams. I am offering young cows, 3, 4 and 5 years of age; a grand bunch of imp. yearling heifers, and a particularly good pair of young bulls.

HECTOR GORDON, Howick, Que.



CITY Record of Performance Ayrshires—Two young bulls and one of Jan., 1913. All from R. O. P. cows and sired by bulls from R. O. P. dams. Will buy young cows that are capable of making good. Eggs for setting. R. C. and S. C. Rhode Isl. Reds, selected for laying qualities; \$1.50 per 15. Jas. Begg & Son, R.R. 1, St. Thomas.

When writing advertisers please mention this paper.

Shorthorns, Cotswolds, Berkshires

For sale: 10 bulls, from 7 to 10 months; also cows, heifers and heifer calves. Would sell a few young Cotswold ewes. No Berkshires to offer at present.

CHAS. E. BONNYCASTLE
F.O. and Station, Campbellford, Ontario

1854 Maple Lodge Stock Farm 1913

Am offering a very fine lot of young Shorthorn bulls just now. Excellent breeding and most from splendid milking dams. The kind that is needed.

House is one mile from Lucan Crossing, G. T. R.
A. W. SMITH, Maple Lodge P.O., Ont.

CEDARDALE SHORTHORNS—To make room for newcomers, I am now offering some rare value in Scotch-bred cows and heifers, beautifully bred and high-class in type; also 1 yearling bull. Dr. T. S. Sproule, Markdale, Ont.

Spruce Lodge Shorthorns & Leicesters Present offering: Young bulls and heifers from grand milking dams. Also a choice lot of Leicester rams and ewe lambs, and ewes of all ages bred to imp. rams. W. A. Douglas, Tuscarora, Ont.

Clover Dell Shorthorns—Choice young stock of both sexes. Dual-purpose a specialty. Herd headed by (imp.) Ivanhoe, L. A. WAKELY, BOLTON, ONT.

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Size	Price doz.	Fifty tags
Cattle	75c.	\$2.00
Light Cattle	60c.	1.50
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No postage or duty to pay. Cattle sizes with name and address and name and numbers; sheep or hog size, name and numbers. Get your neighbors to order with you and get better rate. Circular and sample Mailed free. F. G. JAMES, Bowmanville, Ont.

High-class Ayrshires—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, Kelso, Que.

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The result of over 100 years' experience with calf-raisers. The only Calf-Meal made in an exclusive Calf Meal Factory. As rich as new milk at less than half the cost. Makes rapid growth. Stops scouring. Three calves can be raised on it at the cost of one. Get Bulletin, "How to Raise Calves Cheaply and Successfully Without Milk," by sending a post card to STEELE BRIGGS SEED COMPANY Toronto, Ont.



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Offers young bulls and heifers for sale; heifers bred to Eminent Royal Fern. D. DUNCAN, DON, ONTARIO Phone L.-D. Agincourt. Duncan Stn., C. N. R.

For Sale Jersey cows and heifers and bulls for exportation. All pedigree and head-book stock. For further particulars apply to A. T. SPRINGATE, Breeder and Exporter Goray, Jersey, Europe.

HERD BULL for sale. Count of Lakeview (9076); calved March 28, 1910. Bred by Lakeview Stock Farm, Bronte, Ont. A splendid stock-getter. Over 80 per cent of his get are females. Must sell him as I have a number of heifers from him of breeding age. He is quiet and sure. Also two young bulls now ready for service, bred by Count of Lakeview whose dams are granddaughters of Johanna Rhue 4th Lad. Straight and nicely marked. Will sell a few cows due to freshen this month. Bell 'Phone, Fenwick Stn G. V. ROBBINS' RIVER BEND, ONT.

Lawthorne Glen Holstein Herd

Offers young bulls ready for service, one from Calamity Houwtje, winner of 1st prize in cow class at Guelph, 1912; also a half-brother to Pontiac Jessie, sweepstakes heifer under 36 months; also a few females. Prices reasonable.

Write for particulars, or come and make your choice. MARTIN McDOWELL Eastwood Sta., G. T. R. Oxford Centre, Ont.

PURE-BRED 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 ASSOCIATION, P. L. Houghton, Sec., Box 127, Battleboro, Vt.

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Headed by Prince Aggie Mechthilde. For sale at present: Choice bull calves, from Record of Merit dams with records up to 20 lbs. butter in 7 days; All sired by our own herd bull. Prices reasonable.

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Holstein-Heifer Calves from heavy-milking, high-testing unregistered dams, sired by the great bull, Cornelius De Kol. Price, \$12 each.

GLENORO STOCK FARM, Rodney, Ontario

Glenwood Stock Farm 5 BULL CALVES fit for service, out of big milking strains, at low figure for quick sale. THOS. B. CARLAW & SON, WARKWORTH, ONT. Campbellford Sta.

Questions and Answers. Miscellaneous.

Draining 25 Acres

My farm consists of twenty-five acres. I send a diagram of the way I think of tiling. Will you tell me if I am right or not? Is a six-inch tile large enough for the main, and how far apart should I put the branches? G. L. C.

Ans.—Not knowing the fall in each drain, and exactly how much land dumps its surface water on this twenty-five acres, it is rather difficult to state whether or not the plan is the best possible. However, under ordinary circumstances, three-inch tile should be large enough for all laterals, and your method of alternating their connection with the main drain is good, also the position in which they are placed. It would not likely be necessary to run a six-inch tile throughout the full length of the main. A four-inch should be large enough for the beginning, increasing to a five-inch, and a six-inch towards the outlet of the main. If the land is heavy, laterals should be placed about four rods apart. If loamy, drains often give good satisfaction eighty feet, or sometimes one hundred feet, apart.

Ewes Lose Lambs.

Could you give me any information as to why a ewe should have one live lamb and one dead one? My ewes are in good condition. I am feeding corn fodder and oats, and what lambs are alive are strong and vigorous, and the ewes have plenty of milk. R. N.

Ans.—It quite frequently happens that a ewe will carry two lambs the full gestation period, and one will be dead at parturition, and the other alive. It very often happens, under such circumstances, that the living lamb is rather weak. These conditions cannot always be accounted for. Were you on hand when the lambs came? Sometimes a lamb is yeaned, and is unable to break the fetal membranes, and so smothered. But where one of the lambs is dead, and has been dead for some time, it might be result of injury, or due to some unfavorable condition of feed, or of the system of the ewe. Over-fat ewes, which have had little exercise, sometimes produce these conditions, as also do ewes which are improperly nourished. One fetus is stronger than the other and survives. Feed the ewes some clover hay, a few roots, and some bran with the oats, after the lambs come, and give pregnant ewes plenty of exercise. Clover hay or good, bright, pea-straw, should always form a part of the ration.

House Ventilation.

As I am intending to build a new house this season, I would like you to give me a system of ventilation which would not be too expensive, yet modern and hygienic. This will be rendered necessary, as we intend to install a hot-water system for heating. I have one in my mind, which I will outline as briefly to you as possible, and see if it meets in any way what a hygienic system calls for. I intend to have my chimney built from the ground up through the center of the house, and the house is planned so that most of the rooms are around the chimney, and in building the chimney, in addition to the two flues for smoke, I would put common, four-inch field-tile till I got near top, and then finish with glazed tile, and through the rooms which this chimney passes through I would put check-dampers, same as in a stovepipe, both at or near the floor, also one near the ceiling, the one at the bottom of the partition taking the foul air off the floor in the winter, and the one at the ceiling would take off hot air in the summer. They could be closed or opened at any time, as condition of atmosphere might demand. As far as I have gone, I have only planned to take out hot or foul air from the house, and made no provision for incoming fresh air, which I will leave for you to answer. C. E. H.

Ans.—With these outlet openings leading to a flue constructed for the express purpose, they would work all right, but such openings should never be placed in a smoke-flue. Windows opening top and bottom would likely answer for inlets.



Pride and Paint

YOU never saw a down-at-the-heels farmer, or his wife, busy with a paint brush. It takes pride in your possessions to make you care what they look like. But it takes a knowledge of values to lead you—even with all the pride you may have—to the sure selection of the right paint.



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Several imported cows and bulls for sale. Canada's Greatest Jersey Herd. B. H. Bull & Son, Brampton, Ont.

Holstein-Friesians Special offering: Bulls from 1 to 15 months old. The growthy kind that will give good service. One from a son of Evergreen March, and all from Record of Merit dams. Write for particulars. G. W. CLEMONS, St. George, Ont. Bell telephone.

Evergreen Stock Farm 4 bulls, 12 mos. old, from officially backed ancestors, running from 18 1/2 lbs. at 3 yrs. to 22 1-3 lbs. as matured cows, and on sire's side from 24 6-10 to 29 lbs. of butter in 7 days. Write 'phone, or come to F. E. Pettit, Burgessville, Ont.

SERVICE BULLS AND BULL CALVES FROM A. R. O. DAMS. Sons of Johanna Concordia Champion, No. 60575, one of the richest bred and best individual bulls of the breed. His granddams, Colantha 4th's Johanna 35.22 lbs. butter in 7 days; fat 4.32 per cent., and Johanna Colantha 2nd 32.90 lbs. butter in 7 days; fat 5.02 per cent. Average butter in 7 days 30.06 lbs.; average fat 4.67 per cent. If you want to increase the butter-fat in your herd, let me sell you one of these bulls. I can spare a few good cows and heifers bred to the "Champion." Write me your wants and I will try and please you. MAPLE AVENUE STOCK FARM, L. E. CONNELL, Prop., FAYETTE, FULTON CO., OHIO, U.S.A.

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Woodbine Holsteins Herd headed by King Segis Pontiac Lad, whose sire's dam is the champion cow of the world. Sire's sire is the only bull that has sired five three-year-olds. His two great grand sires are the only bulls in the world that have sired two 37-lb. cows. Bulls and bull calves for sale. A. KENNEDY, AYR, ONT.

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\$150.00 buys a 2-year-old HOLSTEIN heifer just freshened. Have also for sale some Yorkshire pigs just weaned. R. R. No. 1. A. WATSON & SONS St. Thomas, Ont.

HOME OF THE CHAMPIONS We now have a cow that has beat the 7-day record for Canada. The get of our stock bull, "Grace Extra 2nd Sir Colantha", has won Grand Champion at the leading Fairs for the last two years; a few extra bull calves for sale also heifer and young cows in calf. G. T. R. station on Oxford Co. on G. T. R. M. L. HALEY and M. H. HALEY, Springford, Ontario

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Cure the lameness and remove the bump without scarring the horse—have the part looking just as it did before the blemish came.

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The best in their respective breeds Write for information to:

ROBT. McEWEN, Byron, Ont.
R.R. Sta. and Tel. Office, London.

Oxford Down Sheep, Shorthorn Cattle, Yorkshire Hogs—Present offering: Lambs of either sex. For prices, etc., write to **John Cousins & Sons** Bucas Vista Farm, Harrison, Ont.

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Bred from the Prize-winning herds of England have a choice lot of young pigs, both sexes, pairs not akin; and also the dual-purpose Shorthorns Satisfaction guaranteed. C. Currie, Morriston.

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Bred from prizewinning stock of England and Canada. Have a choice lot of young pigs of both sexes, pairs not akin, to offer at reasonable price. Guaranteed satisfaction. **Joseph Featherston & Son, Streetville, Ont.**

A contribution sale of Hereford cattle, held at Kansas City, Mo., March 4th and 5th, was very successful, 84 head selling for an average of \$242. The top price for a bull was \$535, for the two-year-old, Generous 5th, consigned by James A. Gibson, and purchased by W. I. Bowman & Co., Kansas. The two-year-old bull, Beau Ultra, listed by the Missouri State University, sold for \$525, for F. Hug, Scranton, Kansas. The highest price for a female was \$230, for a two-year-old heifer.

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Antiseptic Hand Cleaner
Softens and whitens the hands; removes the most obstinate stains—oil, grease, paint, etc.

ASK YOUR DEALER
SNAP COMPANY, LIMITED, Montreal.

Questions and Answers. Miscellaneous.

Engine Distant from Pump.

I have a well that is 115 feet from barn. The water comes 65 or 70 feet from the top of ground.

1. Is there any way in which I can place a gasoline engine and pump in barn, and draw the water from well to barn?

2. Would I gain any advantage by placing check-valves in well (where the straight lift is), every 25, 20, 15 feet, etc.?

3. Would it be any further advantage to place check-valves in the horizontal pipe from well to barn, where gasoline engine and pump are? W. B. M.

Ans.—1. There is a way in which the gasoline engine situated in the barn can be made to pump water from the well. You understand, of course, that the pump must be situated at the well, and the sucker must go down within about 25 feet of the surface of the water. The engine should be connected up with a wheel, which will work a rod back and forth in the same way as the piston of a binder or mowing machine is worked. This rod goes out to the well, where it connects with an angular lever which works a "walking-beam," and the "walking beam" in turn works the pump, or it could be so arranged that the angular lever would work the pump direct. The wheel should be so arranged that it can be thrown in gear or out of gear as desired. The details of the arrangement may be worked out in many ways. This is the principle by which a number of oil wells are pumped from one central station, although sometimes located half a mile or more away.

2 and 3. No advantage would be gained by placing check-valves in the well, or in the horizontal section of the pipe.

Check-row Corn Planter—Cement Silo—Oil Cake for Calves.

1. I would like to know, through your valuable paper, what you think of the corn planters for planting with a team? Have you had any experience with them? Some think they are hard to get to work satisfactory. I am tired of the old way of marking one way first and then turning around and marking the other way, and then planting by the hand-planter. It is a tiresome job, besides being so slow. I am putting in ten acres. What do you think of drilling in with common drill? As far as I have seen it done, it is hard to keep the field clean, and I don't think the stalks cob nearly so well.

2. I am putting up a cement silo 12 x 35, say, 10 or 12 inches at bottom and 6 inches at top, with about 1 to 8 of cement and gravel. Do you think it would need any wire or iron rods to strengthen it, or would it be strong enough to hold the strain without any?

3. Is oil cake all right to feed to calves just sprinkled dry into the milk, or would it be better scalded? Which do you count the cheaper, oil cake at two cents per pound, or ground flax seed at five cents per pound? A. P.

Ans.—A good make of check-row corn planter is not more difficult to operate than a grain drill, once a person gets accustomed to it. We use one, and like it, but would scarcely feel justified in recommending the expenditure, if a person had only ten acres of corn to plant. If several neighbors could go in together, or if one's neighbors would hire him at a fair price per acre to plant their corn, it would be a good enough investment.

2. A little reinforcing will save a good deal of cement and gravel. We should rather have a silo with a wall eight inches thick at the bottom, tapering to six at the top, made of cement mixed 1:8, and reinforced with three-eighths-inch rods, than a silo with a wall ten inches thick at the bottom (the usual thickness), but without any reinforcing.

3. Some merely sprinkle the dry oil cake into the milk, and claim to have good results. As a substitute for cream to calves, fed on skim milk, flaxseed at five cents a pound is probably better value than oil cake at two cents. For other cattle, the by-product (oil cake) is the more economical feed.

There's a right way

to protect your barn and its valuable contents—and a wrong way!

Perhaps you have the right kind of a roof; possibly you have put a metal roof on your barn.

But if you haven't, let us explain why you should; how you can save money by doing so; and just how you ought to go about it in order to ensure the best results.

We have important information for every farmer on this important subject of barns. If you will write us, we'll send this information free—together with samples, catalogues and plans, showing in the simplest possible form the process of roofing your barn with Galt Steel Shingles.

A little investigation now may save you hundreds of dollars later on. Possibly you've been "putting off" the "putting on" of that new roof because you thought it would cost too much to do it right.

Don't believe that until you know it's so. It will only cost you the price of a post card to find out definitely what it will cost, and to gain an accurate idea of the ultimate saving to you of putting on the right kind of a roof right now.

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Strongly made and closely spaced—making it a complete barrier against large animals as well as small poultry. Top and bottom wires No. 9—intermediates No. 12 wire—made by the Open Hearth process which time and other tests have proven to be the best material made for the manufacture of wire fencing. Send for literature. Ask about our farm and ornamental fencing. Agencies nearly everywhere. Live agents wanted in unassigned territory.

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This fall I have the best lot of lambs I ever bred. I have plenty of show material, bred from the best stock procurable in England. Order early if you want the best. Ram lambs, shearings and ewe lambs. Yorkshires of all ages.

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Lamb or Beeton stations. Long-distance phone.

Shropshire and Cotswold Ewes at greatly reduced prices. They are all registered and in lamb to good rams. Are going to be sold; whoever gets order in first will get the choice.

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Present offering: Select sows. 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.

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Grand stock, either sex, constantly for sale. Price reasonable. **MAC CAMPBELL & SONS,** Northwood, Ontario.


Cloverdale Berkshires—Present offering: Sows bred of both sexes and young pigs of both sexes supplied not akin, and from imported stock from the best of all ages. Show stock a specialty. **C. J. LANG,** Hampton, Ont. Durham Co.

Large White Yorkshires Have a choice lot of sows in pig. Boars ready for service and young pigs of both sexes supplied not akin, and from imported stock from the best of all ages. Write or call on **G.T.R. Long-distance phone.** **H. J. DAVIS,** Woodstock, Ont. C.P.R. and

Prize Chester White Swine—Winners High-class in type and quality, bred from winners and champions Young stock, both sexes, any age; reasonable prices. **W. E. Wright & Son,** Glanworth P.O., Ont.

SWINE OF ALL BREEDS FOR SALE. Yorkshires, Tamworths, Berkshires, Hampshires, Chester Whites, Poland-Chinas, and Duroc-Jerseys. I have constantly in hand both sexes of all ages. Show stock a specialty. **JOHN HARVEY,** Frelighsburg, Que.

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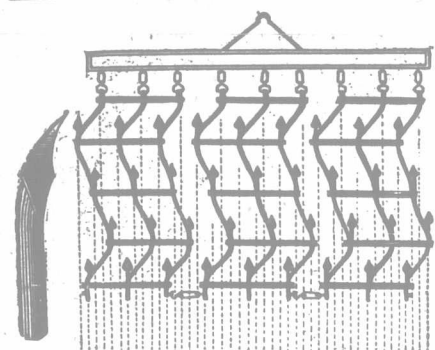
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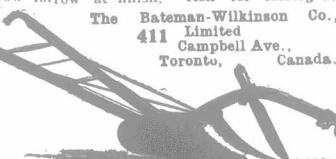
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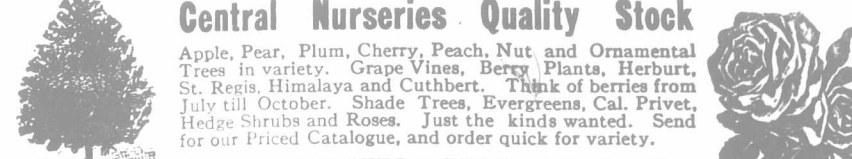
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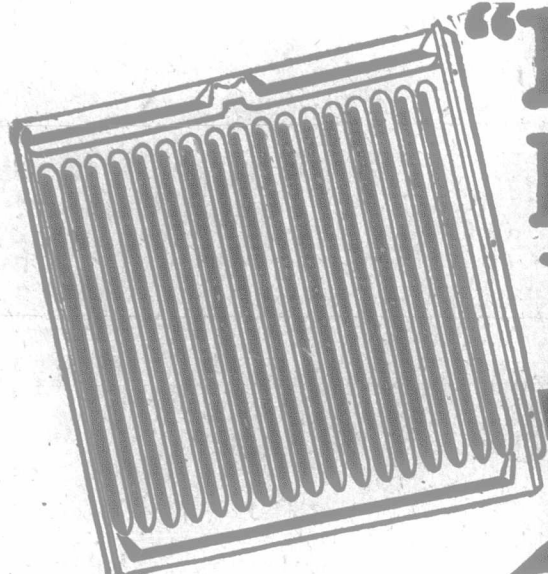
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"HERE is my big 'George' Shingle in metal, just put on the market. Every shingle covers 4 square feet. It is the most economical roof for a barn to-day, because it saves costly labor in laying, needs no repairs, requires no paint, and is good for 100 years of service." *G. H. Pedlar*



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"You, and I, and my son, realized how lumber is getting scarcer, high in price, and wood shingle much poorer in quality as the years go on. Lumber is used in barns to-day that would not be looked at twenty years ago. Labor asks much higher wages."

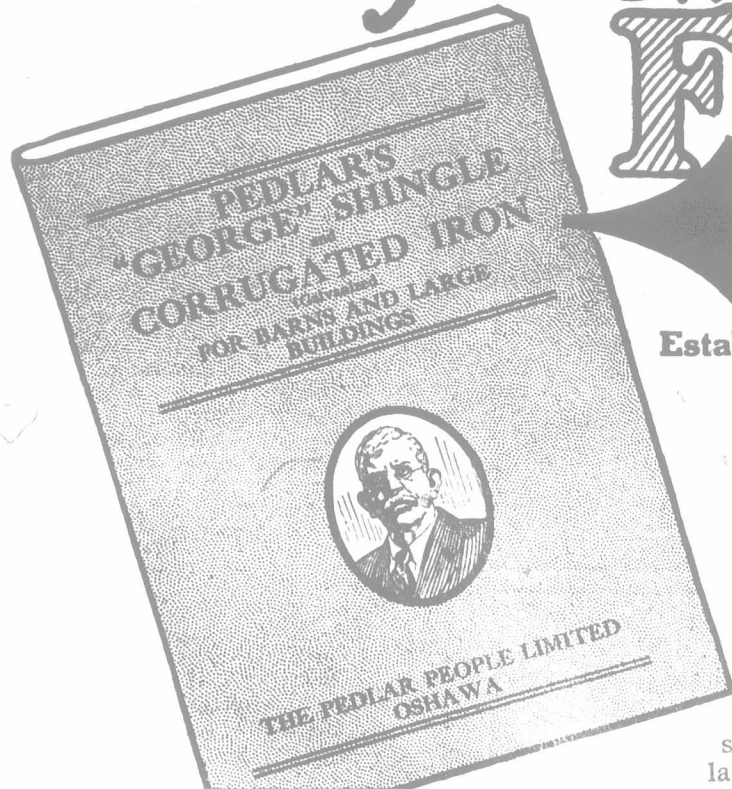
"To-day, my 'George' Shingle on the roof, and sheets of my galvanized, corrugated iron on the walls, instead of boards, makes you a better barn at less cost than an all-wood barn properly painted. It saves in the labor needed."

"I am ready to help you build a better barn than you planned, and yet save you money. Use my 'George' Shingle and my corrugated iron, and you save so much in lumber bills, repairs and paint, and labor of construction, that it pays to use my fireproof material. You get a better barn at an astoundingly moderate figure."

"I have just written you a book about this. It shows how one of these new barns is built. My galvanized, corrugated iron is used on the walls and my 'George' Shingle on the roof."

"Won't you send to me for this book, friends? I will be glad to send it anywhere. It probably will help you. It shows the most economical way to build a barn now-a-days. Write a post card for it." *G. H. Pedlar*

Get My New Book FREE



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"My new, big shingle is made for big barn roofs. The average barn is getting bigger every year. By using a large metal shingle on a big barn roof, the owner saves so much in labor of applying, when compared with wood, that the metal shingle becomes immediately the more economical article."

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