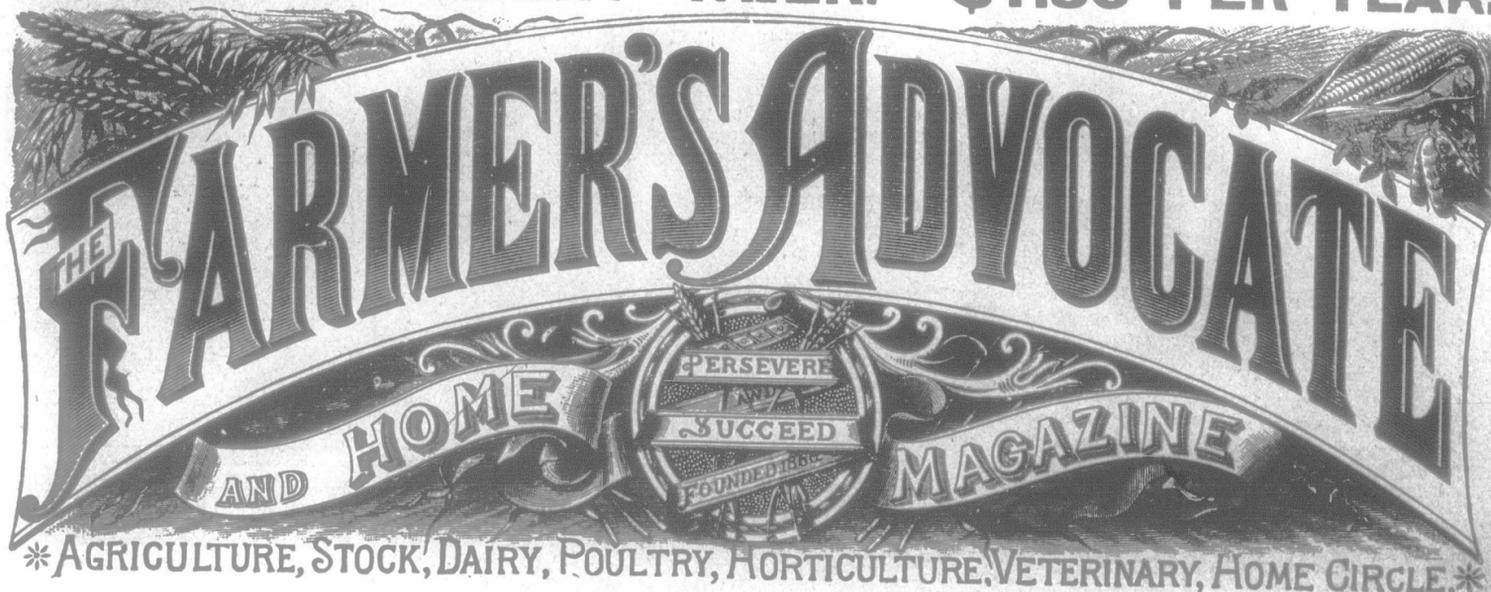


PUBLISHED EVERY WEEK. \$1.50 PER YEAR.



* AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE *

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VOL. LI.

LONDON, ONTARIO, FEBRUARY 17, 1916.

No. 1221

The Spring Telephone Call

The Calendar says "Spring is near at hand." The call is to get busy and organize that independent local or municipal telephone system you've been talking about for some time. Your locality should be brought right up to date with those that enjoy the benefits of modern telephone service.

* * * * *

Many telephone systems now in operation will be extending their lines this spring. We are ready to take care of orders and make prompt shipments. On account of large contracts made some time ago, we are in a position to do well by our customers. There will be changes undoubtedly in prices of construction materials this year, because of the unsettled conditions of the metal markets. Our advice is to get our prices.

* * * * *

If you want telephone information of any kind, do not hesitate to write us. We assisted the majority of the independent systems in Ontario to get organized, and started under conditions that insured success. We have been identified with the progress of the independent telephone movement since its inception. Independent telephone systems in the process of organization, as well as those now in operation, will find our experience and knowledge of benefit to them in solving any problems that may arise from time to time.

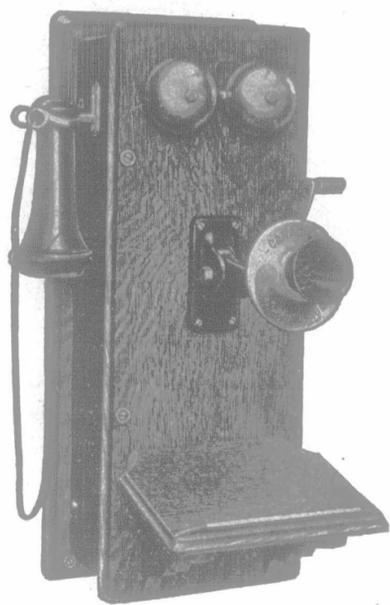
* * * * *

Our Bulletins, Nos. 3 and 4, contain valuable information, and are free on request.

Canadian Independent Telephone Co.

LIMITED

261 Adelaide Street West, Toronto



This is the latest model of our rural telephone. It is of the highest quality throughout and fully guaranteed.

HYLO SILAGE IS "CANNED SUNSHINE" It Puts Your Cows on June Pastures in January

The GILSON HYLO SILO insures perfect ensilage, down to the last forkful—sweet, fresh and nutritious.

The HYLO SILO is the result of immense resources and facilities focussed in a steady effort toward perfection. It is not an ordinary silo—it is different.

The material used—Imported, Long Leaf Southern Yellow Pine—is naturally impregnated with preservatives, and is the one wood endowed by nature with all the requisites of silo service. This wood costs us twice as much as the material generally used in other silos, but it is our policy to use only the best, regardless of cost.

The HYLO SILO is purchased by the modern farmer, the man who farms on a business basis. He buys his silo for the money it will make him. He knows that a cheap, inferior silo is a waster and a continuous loss.

Some of the many advantages of the HYLO SILO are as follows:

Self-adjusting hoops, which auto-

matically take up all expansion and contraction—single length and two-piece staves used exclusively—all staves tongued, grooved and bevelled on both sides and ends, making perfect self-draining, spliced joints—interchangeable, perfect fitting doors with patent lock—reinforced door frame of special construction, rigid anchoring system, etc.

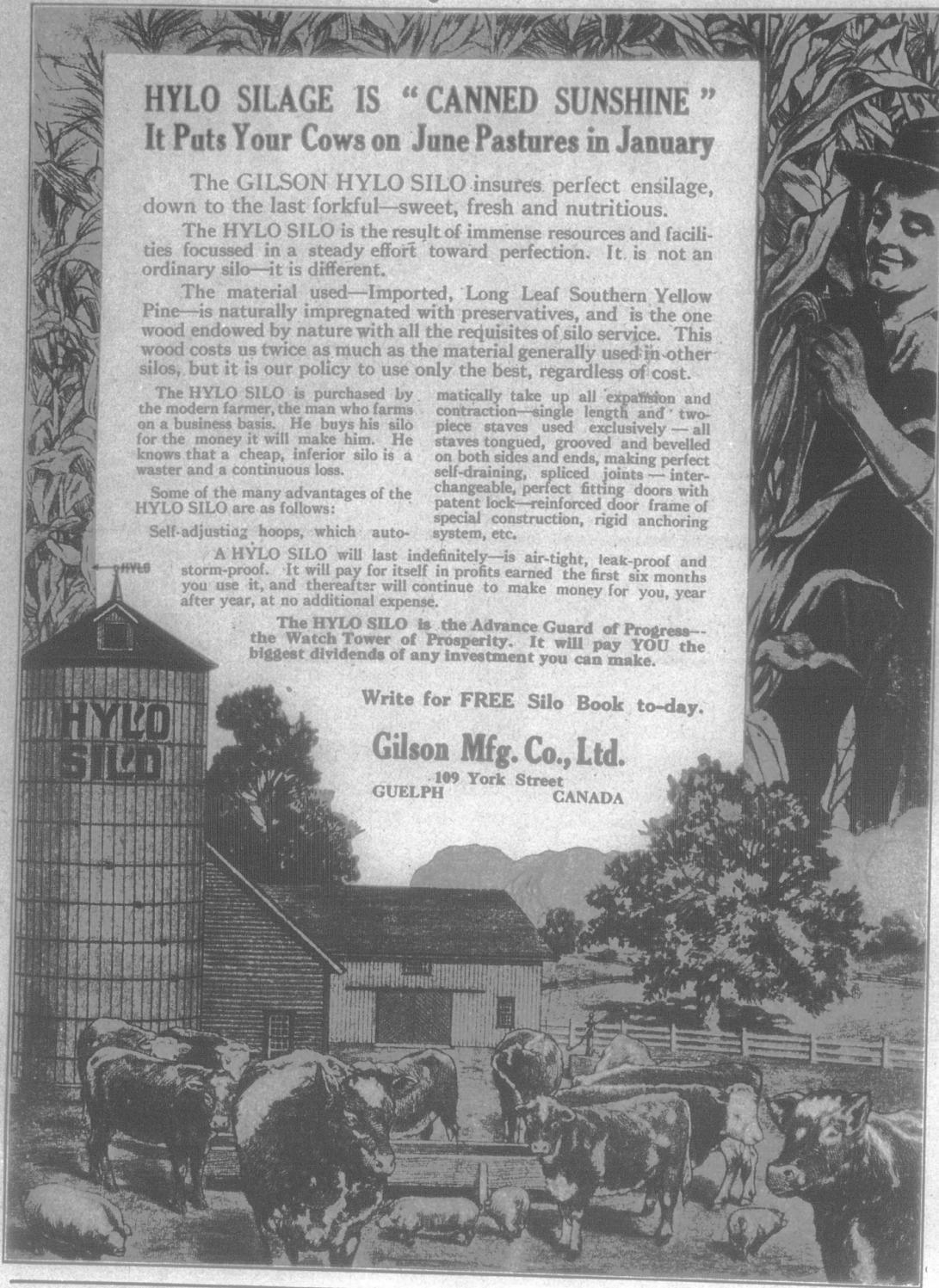
A HYLO SILO will last indefinitely—is air-tight, leak-proof and storm-proof. It will pay for itself in profits earned the first six months you use it, and thereafter will continue to make money for you, year after year, at no additional expense.

The HYLO SILO is the Advance Guard of Progress—the Watch Tower of Prosperity. It will pay YOU the biggest dividends of any investment you can make.

Write for FREE Silo Book to-day.

Gilson Mfg. Co., Ltd.

109 York Street
GUELPH CANADA



GILSON
POWER plus SERVICE
After 9 years of Service
Mr. H. TUTTON, of Brantford, Ont., writes:
Gentlemen—As my 6 h.p. Engine has been such a big saving to me during the 9 years I have had it, I thought I would write you. I have 175 acres, keep a lot of stock, and do all my own chopping, feed cutting, wood sawing, etc. My engine is as good as new now, and compared with other makes around me, I am perfectly satisfied with its superior fuel economy, power and reliability.
Write for FREE catalogue and prices.
—ALL SIZES—
Gilson Mfg. Co. Ltd. 59 York St. Guelph, Canada

To the top of the highest silo

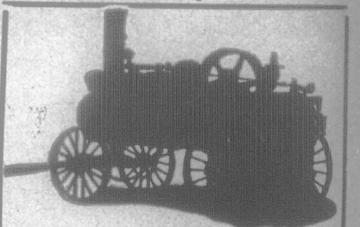
THE GILSON SILO FILLER is the one blower that can be successfully operated with as little power as 4 h.p. There is a Gilson Silo Filler for every purpose—for the individual farmer, for the syndicate, and our large capacity machine for the custom jobber.

GILSON ENSILAGE CUTTER

We guarantee every Gilson Silo Filler to cut and elevate more ensilage with the same power than any other blower cutter.

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All sizes for sale cheap. Complete threshing outfit, traction engine with cab, separator, wind stacker in good operative condition..... \$875

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- Alfalfa (Limited quantity)
- Hungarian Millet
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All seeds Government Standard. Samples and prices gladly furnished. Ask for them.

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Canadian-grown seed corn. Your money back if not satisfied.
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THE GILSON SILO FILLER is the one blower that can be successfully operated with as little power as 4 h.p. There is a Gilson Silo Filler for every purpose—for the individual farmer, for the syndicate, and our large capacity machines for the custom jobber.

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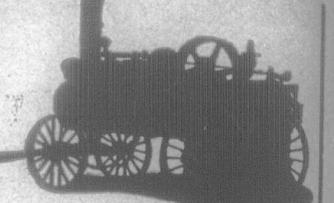
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Seed Corn

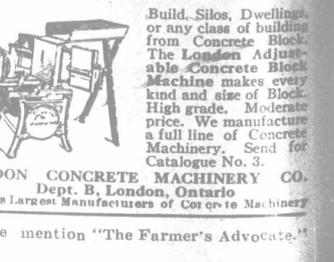
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Build, Silos, Dwellings, or any class of building from Concrete Block. The London Adjustable Concrete Block Machine makes every kind and size of Block. High grade. Moderate price. We manufacture a full line of Concrete Machinery. Send for Catalogue No. 3.

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Then you can be quite sure that the seeds will germinate and grow—that the plants will be strong and healthy—and that the bloom will be abundant and beautiful.

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Don't Miss the Big Money

THE virgin soil that the stumps keep out of cultivation in the best soil you have. You can pull out an acre or more of stumps in a day at a cost of from 3c to 5c per stump. No matter how big or tough the stump, it walks right out when the Hercules gets hold of it. With the stump come all the long tap roots that spread out in all directions. The land is left ready for cultivation.

HERCULES Triple Stump Puller

Let us send you proof that thousands of farmers have made big money by the Hercules. Get our money saving proposition.

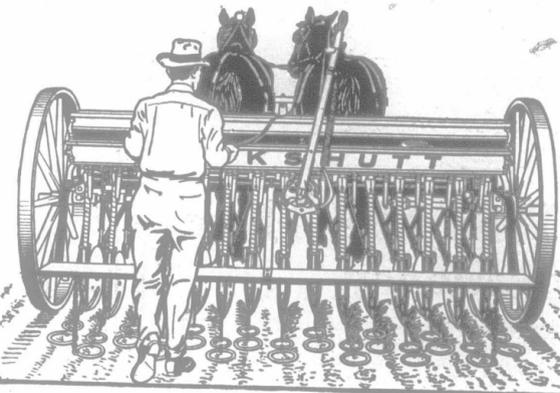
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Ask About Hand-Power Pullers Low Price 120,000 Pounds Pull



Cockshutt Disc Drills

Uniform Seeding Guaranteed—3 to 5 bushels more per acre



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Superior construction guarantees rapid, easy, correct seeding

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Cockshutt Standard Drills are built in 12, 13 and 15 Disc sizes with 6-inch spacing, and in 11 and 13 sizes fitted with either single discs or hoes, with 7-inch spacing.

Cockshutt Grain and Fertilizer Drills. You can drill the fertilizer into trench with the seed. Accurate work, durability and light draft are three dominant Cockshutt qualities in this splendid implement for bringing your land back to virgin fertility in a systematic, positive way.

Made in 9, 11 and 13 sizes fitted with either single discs, or hoes, with 7 inch spacing between. Get Cockshutt Disc Drill Booklet from our nearest Branch, it gives you fullest particulars.

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It was designed and built by us, especially to meet the requirements of Canadian Farmers.

It is just the right size for easy handling—not too large nor too small, and compares favorably in appearance with the best of cars—has powerful "Valve-in-head" motor developing from 30-35 H.P., electric starting and lighting system—vacuum feed—all improvements.

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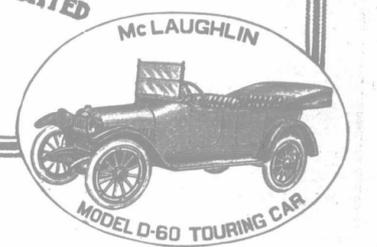
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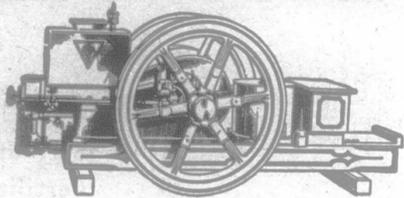
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MODEL D-60 TOURING CAR




Alpha Gas Engines



The Men Who Use Them Save Money

You can save money by using an Alpha Gas Engine just as do many other men. An Alpha Gas Engine is a saving investment any way you look at it. It will save money you now must pay out to get work done that requires power, because you can own and operate the engine at less cost than that of hiring some one with an engine.

It will do quickly work that you are now doing by hand and wasting a lot of valuable time over. It will pump water and do other similar jobs without attention and leave you free to get other work done. Your wife or your boy can start and operate it at many jobs to which you now must give your time. Having an engine will relieve you of the odd jobs that are time-wasters and give you more time to attend to the important work on your farm.

You need an engine and the sooner you buy one the quicker you will save the cost of the engine. Get an Alpha Gas Engine now, put it to work; and it will pay for itself in a few months. Ask for catalogue, prices and complete information.

Feed Silage

It is the best and cheapest feed for all kinds of live stock. Silage fed cows produce more milk at less cost than cows on any other feed. Stop the waste of your corn crop due to the fodder being dried and exposed to the weather and make the work of feeding easier by erecting an Ideal Green Feed Silo. It will pay for itself the first year and give you many years of service. Ask for catalogues that show why you get greater value for your money in this silo than in any other.



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ONE MAN WITH A KIRSTIN STUMP PULLER Quickest-Cheapest-Best Way To Clear Stump Land

The Kirstin way of land clearing is the easy, sensible, practical, economical way. Small investment to start with—no extra cost for help, because one man alone operates the Kirstin with ease, pulling out the biggest, toughest kind of stumps in less time than by any other method. With brush, hedges, small stumps, saplings, etc., you "yank 'em out" in bunches. Clear an acre from one anchor.

The "KIRSTIN" Improved Double Leverage Model has enormous strength and power. Until you see a Kirstin at work you cannot realize what wonderful power is developed by our system of compound leverage. The work positively is easier, to say nothing of being quicker and cheaper than with the cumbersome hand power pullers or the big horse-power pullers that require a team and two or three men to operate. Our Quick-Detachable Connections, Auto Release, Non-Twisting Cable and other special patented features put the Kirstin in a class by itself. Endorsed by Government and State officials. Used by the thousands all over the world. Holds record for lowest land clearing costs.

Write Today For Big New Catalog which explains all about the Kirstin, tells best way to clear land, describes Kirstin Service, Liberal Try-out Offer, Easy Payments, etc. Get this book before you buy a stump puller. Write today—now. Agents Wanted

A. J. KIRSTIN CANADIAN COMPANY
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Do You Wish to Buy or Sell Western Ontario Property?

If so, it will pay you to get in touch with our firm. We have hundreds of properties of all kinds (farms, city, town, village and business) for sale and exchange. BUYERS will PROFIT by getting lists of our places. Sellers can make no mistake in placing their property in our hands for sale. Now is the time to buy your farm to get spring possession. Get in touch with our nearest agent. A postal to us will bring his address. We can and will help you. Dozens of exchange propositions on our lists. State your requirements.

The Western Real Estate Exchange, 78 Dundas Street, London, Ont.

Grand Prize

At Panama-Pacific International Exposition for
Chemical Purity Rust-Resisting Property
Welding Quality Enameling Property
Electrical Conductivity

This certainly ought to guide you in the buying of sheet metal products for farm equipment, for no higher prize was ever awarded any sheet metal. This substantiates our claim that

ARMCO IRON Resists Rust

Armco Iron's rust-resistance is due to its great purity, and to rigid inspection in every phase of its manufacture.

Every modern farmer should send for and read our free booklet, "A Journey to Armco Farm"

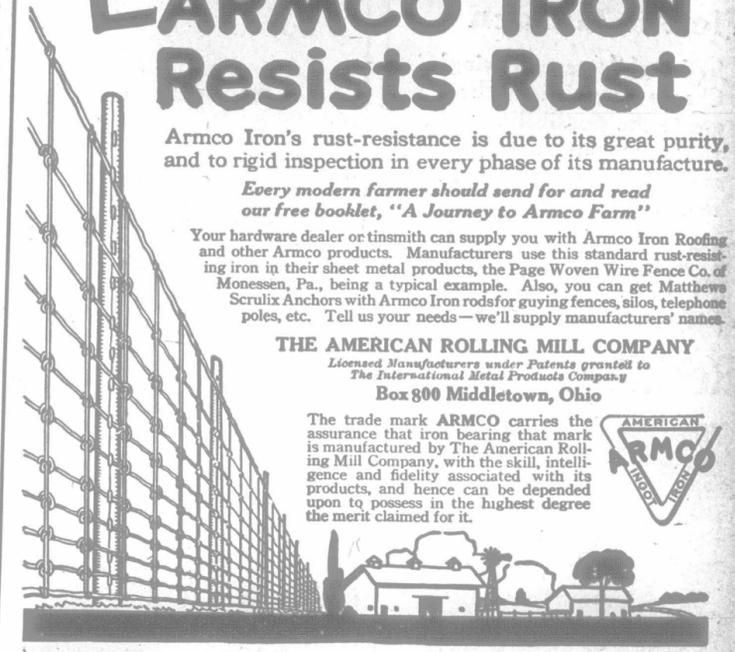
Your hardware dealer or tinsmith can supply you with Armco Iron Roofing and other Armco products. Manufacturers use this standard rust-resisting iron in their sheet metal products, the Page Woven Wire Fence Co. of Monessen, Pa., being a typical example. Also, you can get Matthews Scrulix Anchors with Armco Iron rods for guying fences, silos, telephone poles, etc. Tell us your needs—we'll supply manufacturers' names.

THE AMERICAN ROLLING MILL COMPANY

Licensed Manufacturers under Patents granted to The International Metal Products Company

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The trade mark ARMCO carries the assurance that iron bearing that mark is manufactured by The American Rolling Mill Company, with the skill, intelligence and fidelity associated with its products, and hence can be depended upon to possess in the highest degree the merit claimed for it.



More Profit

THROUGH better, more intelligent, more economical use of good tools will come the profit that is so hard to find each year on many crops. Plant right so you will get full benefit. Work faster with better tools so you can cultivate and spray often. Study whether there isn't some tool that will do your work better.

IRON AGE

Potato machinery, spraying machinery, garden tools, etc., are built to give you just what you need to do things right. Almost any combination you can think of in each line. Eighty years of factory and farm experience behind their manufacture.

Ask your dealer to show them, but write us for separate booklets fully describing lines in which you are interested. Let us make good our claims.

The Bateman-Wilkinson Co., Ltd.
416 Symington Ave. Toronto, Ontario

Garden Seed Drills

- Wheel Hoes
- Potato Planters
- Plows
- Riding Cultivators
- Walking Cultivators
- Potato Sprayers
- Bucket, Barrel and Power Sprayers
- Potato Diggers
- Ensilage Cutters
- Fertilizer Distributors
- Root Pulpers
- Straw Cutters
- Tarap Drills
- Drag Harrows
- Land Rollers



Planet Jr. Wheel Hoe

gets bigger crops with half the work.

This No. 16 Planet Jr Single Wheel Hoe, Cultivator, Rake and Plow is the highest type of single wheel hoe made. Light and durable—can be used by man, woman, or boy. Will do all the cultivation in your garden in the easiest, quickest and best way. Strong indestructible steel frame. High, easy-running steel wheel. Costs little, and lasts a lifetime. 14 other styles of wheel hoes—various prices.

New 72-page Catalog (184 illustrations) free! Describes over 70 tools, including 12 entirely new ones, and improvements to our Horse Hoes, Harrows, Orchard and Beet Cultivators, Seeders and Wheel Hoes.

Write for the name of our nearest Agency S. L. Allen & Co Box 1108F Philadelphia

If you are a farmer, trucker, orchardist, or suburbanite with a kitchen-garden, there is a Planet Jr made for your special need. You can't afford to work without a Planet Jr.



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equipment, for no
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is due to its great purity,
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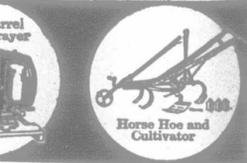


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LONDON, ONTARIO, FEBRUARY 17, 1916.

1221

EDITORIAL.

If you can do so, grow more live stock.

Buy your seed corn, grass seeds, and all seeds early.

It seems about time warnings were heeded in Canada.

The man who buys seed corn, shelled, is taking too big a risk.

Wilson is the U. S. President, but Roosevelt appears to set the pace.

A badly-managed convention or public meeting detracts greatly from the value of the good things accomplished.

If there is any unemployment among able-bodied men in Canada this year, there is something wrong with the men.

Men who have risen from the ranks are becoming increasingly popular the world over, and generally they are most efficient.

The feeder must always remember when measuring out his feed at this season of the year that it is a long way to June grass.

Good seed corn is worth \$3 per bushel; ordinary corn is worth 60 cents per bushel. So says Prof. Moore, the corn man of Wisconsin.

Not only did Canada produce a magnificent crop in 1915, but this country's live-stock men had a prosperous year, as indicated by the reports of the various breed society annual meetings in last week's issue.

Perhaps a few indications of Hun frightfulness will awaken Canada's authorities to the fact that Canada is at war with a clever, crafty and "cultured" foe, and that it is necessary to guard certain property in this country a little more closely.

It was one of the ironies of fate that Canada's Senate, after the Parliament Buildings' fire, was called upon to meet in a room in Victoria Museum, set apart for fossils and extinct leviathans, and that the House of Commons met in the theatre of the same building with curtains and footlights.

A practical farmer recently said to us: "I like the old Farmer's Advocate because its publishers never attempt to induce us to subscribe by giving us a fountain pen that will not write, or a razor that will not cut. We get good value in the paper itself, and have no time for trashy premiums."

We would advise everyone who can do so to save a few good roots—mangels and turnips—to plant for the production of their own seed this year. A young farmer recently told us of his experience last year, when from 100 mangels he produced 15 lbs. of cleaned seed. He found no trouble in growing the seed which germinates nearly 100 per cent.

The Best Use of Fertilizers.

Every farmer is interested in fertilizers. It is essential to his prosperity that he grow big crops. We have heard men say that they did not believe in growing twice as much and getting half the price per unit for it, totalling them no more than if they grew half the amount and sold it at double the price, and no one can blame the producer in ordinary times, for considering such a question. All producers should carefully consider cost of production and profits made from the sale price. There is a point in increasing production beyond which it is impossible to go and still make a profit, but our best farmers believe in getting a big crop from a smaller acreage rather than a lighter yield from a larger area. To get this big crop, fertilizer of some kind is necessary. As a basis of fertilization, Prof. Harcourt, in an excellent article on fertilizers in this issue, places farmyard manure in its proper place. Artificial fertilizers are often necessary, but generally as a supplement to farmyard manure. Most farms have manure, and the more of it the better. On every farm some green manure should be plowed down. After this, commercial fertilizers may be and often are necessary, but the farmer must be sure that he is applying the proper materials. There is nothing to gain by adding expensive nitrogen to a soil in which there is plenty to ensure rapid and rank growth of the crop placed upon it. Likewise it would be wasted money to add phosphoric acid or potash to a soil in which these are abundant and in an available form. Sometimes it is necessary to add something to aid in rendering these available. Lime is a substance used for this purpose. It must be remembered that artificial fertilizers are not used to take the place of farmyard manure but to supplement it; they are not used to enrich the soil but to feed the plant; and that it is necessary to experiment in order to find out what the soil needs, keeping in mind the crops to be grown on it, for different crops require different kinds and amounts of plant food. The soil should be well drained. Read Prof. Harcourt's article.

No More Pooling System.

For nearly twenty years professors, dairy instructors and farmers have been agitating for some method of paying for milk at cheese factories that would be more just than the antique method known as the "pooling system." But, after all these years of talk, the farmer who has built up a high-testing herd, still receives at many factories, less than the actual value of the milk for cheese purposes, while the man with the low-testing herd receives more than he is entitled to. Surely no dairyman wishes to profit at his neighbor's expense. Authorities, who have conducted experiments in order to determine a just method of payment, have come to the conclusion that there are several methods more accurate than the old system of considering that all milk is of equal value for making cheese. By manufacturing milk from individual herds into cheese, Geo. H. Barr, Chief of the Dairy Division, Ottawa, found that with cheese at 15 cents per pound 100 lbs. of milk testing 3.4 per cent. fat and 2.3 per cent. casein made cheese valued at 91.34, while 100 lbs. of milk testing 4.1 per cent. fat and 2.1 per cent. casein was worth \$1.52, when made into cheese, or a difference of 18 cents per hundred pounds. On the pooling basis, with cheese figured at the same price, both samples of milk

would be paid for at the rate of \$1.30 per 100 lbs. It is impossible for a cheese-maker to manufacture the milk delivered by each man separately, and pay according to the amount and value of cheese made, but experiments have proven that "2" represents fairly accurately the amount of casein in the milk, and by taking the "per cent. fat plus "2" method of dividing money among patrons of cheese factories, Mr. Barr found it to correspond very closely with the value of cheese actually made. This system could be worked at every factory, the cheese-maker testing the milk each man delivers, and adding "2" to the test to represent the casein. True, it will mean more work for the cheese-maker, but the patrons can afford to pay for the extra work. Every dairyman will then receive what he is entitled to, and it will be an encouragement to improve the quality of the milk by building up a high-testing herd.

Market Only The Best Apples.

Co-operation will not solve the problem which apple growers have to face if they attempt to use a good organization through which to market bad fruit. There are two factors which may be considered paramount—organization and quality. Poor quality and good organization will make a very difficult team to handle, they cannot be harnessed together. Members who belong to associations having unimpeachable reputations are those who will best survive the adjustment of the fruit industry, which we hear from optimists is about to take place. What that adjustment signifies need not be discussed here, but if the record crop, which is expected both in Canada and the United States in 1916, materializes, the adjustment will receive a great impetus we are sure. To be brief, it seems necessary for all co-operative associations and marketing societies to advise the members against the practice of supplying the trade with anything inferior to a No. 1 or a No. 2. The standards for these two grades are at present low enough to suit any grower who seriously considers the competition he must meet, and is mindful for the future. Apples which would not class as No. 1 or No. 2 have been marketed in the past, and usually after expenses have been deducted the grower has become aware that he has accomplished little more than to destroy, to a considerable extent, the demand for the graded product out of which he must make profits.

A word of explanation may be opportune here. We do not wish to imply that Ontario growers are producing and marketing a poor quality of apples, but in every crop there is a percentage of inferior stuff, and too many ambitious packers have been loath to see it wasted. Through various channels this fruit of No. 3 quality, or whatever one wishes to term it, reaches the retail trade. In a parsimonious moment the consumer buys it. The demand for that quantity of standard fruit is destroyed, the purchaser is dissatisfied in the end, and the prospects for future sales are impaired. It is poor business; it reflects upon the grower most seriously, and upon the good and bad alike. Canadians are not the only ones guilty of misdemeanor in this regard. Shippers from the Northwestern States annually dump approximately 1,000 carloads of apples into the Prairie markets, and 85 per cent. of those apples are "C" grade. The effect is well explained in the words of R. M. Winslow, Horticulturist for British Columbia. He says, "The American

The Farmer's Advocate AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN THE
DOMINION.

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quotations absolutely set the market for British Columbia apples, and they are the dominating feature of that market." However, the Province on the Pacific increased the output from about 200,000 boxes in 1909 to 800,000 in 1915. This is pretty good evidence that the Ontario producer is suffering from American competition as well as the grower in British Columbia, and it is the former, perhaps, who is being squeezed out of the Prairie market. The growers of British Columbia have felt this influx of fruit to such an extent that they are asking the Government to consider or grant to them some degree of protection. They claim it to be a condition for which there is no analogy, and one that never occurs in the world of manufacture, for a great quantity of these "C" grade apples actually sell far below the average cost of production. The effect of it all has been to lower the price and debase the market. Growers, both in Canada and the United States, should right about face and endeavor to improve rather than to prostitute the market for apples. In 1915, in Ontario, it was necessary to provide means of selling apples that were blemished but of utility value. However, in normal years great care should be taken to place before the public only the best, and only superior quality should be offered in 1916 if our orchards produce as we now expect they will. There will be sufficient of the best to supply the trade, and it will be better policy to sell the good and destroy the bad rather than have a weak market for all grades. Fruit growers' associations could do much, the continent over, if they would admonish their members to allow only the good article to be distributed, and thus strengthen the demand for the product of the careful grower, which all should aim to become.

Newspapers have been forecasting a poor, maple syrup season, because of the open weather in January. There is time enough for winter yet. Though an open winter may affect the quality of the sap, the quantity of the flow depends upon the weather at the usual syrup-making season, and not on the character of the winter. Taking care of the sap will bother most farmers more than getting it.

Preparedness.

Whether or not the Parliament Buildings' fire was of an incendiary origin, and whether or not the various other recent fires in munition plants and buildings in which work on goods for the Allies is being carried out were started by an enemy torch or bomb, Canada cannot afford to take any more chances upon the safety of its public buildings and manufacturing plants essential to the welfare of our nation. It will be well to heed all warnings, whether they seem of a jocular nature or not. One thing is certain, if we are prepared for all contingencies property and human life in this country will be safe. The last eighteen months should have served to teach a lesson. It is not wise to take anything for granted in this time of colossal strife and unprecedented frightfulness. Perhaps the much-talked-of invasion of Canada by Hun sympathizers in the United States is a joke, but Canada should make it impossible, by preparation in this country, for any such disturbance to take place. Every munitions and army supply manufacturer should guard his plant for his own and for his country's good. And every government building and every big industry vital to Canada should be carefully guarded. This is not an alarmist idea; it is simply precautionary. It is always better to lock the door before the horse is stolen.

Nature's Diary.

A. B. Klugh, M.A.

We now come, in our consideration of plant formations, to that formation composed of the Coniferous trees. These trees, which are also termed cone-bearers or evergreens, occur on soil which is either physically or physiologically dry, either permanently or at some season. Where they occur on sand or in bogs the environment is permanently dry, while in northern countries where the winter is severe the environment is dry at that season. On mountains, where the soil is dry on account of the slope, and where the cold season is prolonged on account of the altitude we find all the trees are conifers.

The adaptations of these plants are particularly interesting to us in Canada, because such large tracts of our country are covered by this formation. These adaptations are: The leaves are reduced in surface area and tend towards the "needle" shape; they have an extremely heavy cuticle, which protects the underlying tissues; and the stomata are sunken. All these diminish the amount of water which is lost by transpiration by the leaves, and consequently conserve the water in the plant.

These trees are not only fitted to withstand dryness, but also heavy falls of clinging snow. This we pointed out at the time of the severe "ice-storm" which occurred three years ago over part of Ontario. The deciduous trees, in which the branches come off from the trunk at an acute angle suffered very greatly, branches being broken off, and in some cases trees being split in two, while the coniferous trees, in which the branches come off nearly at right angles to the trunk, merely had their branches bent down, the branches coming back to their original angle as soon as the ice melted, so that these trees come through uninjured.

Next we have to consider the Dry Thicket Formation, a formation made up of trees and shrubs adapted to a soil which is moderately physically dry. This formation is not as well defined as most of the others, and as it occurs in many regions it grades off into the next. Typical plants of this formation have hairy leaves, or leaves covered with raised scales, or leaves with a heavy cuticle. In Eastern Canada we have practically no areas covered with this as a primary formation, though it occurs as a secondary formation on land which has been severely burned over. By a primary formation we mean one which occurs naturally, by a secondary one due to the agency of man, this is one of the points which the worker in plant ecology has to be extremely careful about when working in a region which has been settled for some length of time, lest he mistake secondary formations for primary ones.

Our last formation is that which consists of mesophytes, that is, of plants which grow under medium conditions of moisture. The mesophytes are what are termed "ordinary plants," and since they live under medium conditions we do not find in this formation the adaptations which are developed by plants of other formations to guard against untoward conditions. However, we find some interesting adaptations even among mesophytes. In Southern Canada the primary mesophytic formation is the deciduous forest. The deciduous habit is in itself an adaptation to enable the plants to live through a period when condi-

tions are not favorable for the activities of the plant. The thin leaves of deciduous trees are very efficient for carrying on photosynthesis (the changing of the carbon dioxide of the air and the water of the soil into starch) respiration, transpiration (the eliminating of surplus water, etc.) but they are not at all well adapted to withstand the dryness incident upon the cold of winter. Consequently they are shed, this shedding taking place in a manner which we have already described when dealing with plant physiology, and the trees are then sealed up in a practically waterproof covering, so that at a time when little or no water is taken in, no water is lost.

When we consider the deciduous forest formation we include not only the trees which give it its name, but the herbs which grow on the forest floor. They also have their adaptations. Many of them are plants which put forth their leaves and flowers early in the spring, before the leaves on the trees above them have attained full size, and, therefore, at a time when plenty of light reaches them. They are all perennials, with underground parts, bulbs, corms, or root-stocks filled with food ready for a rapid development as soon as conditions in the spring are fit for growth. This is known as the vernal habit, and all our herbs of the hardwood bushes which are commonly known as "spring flowers" possess it. Such other plants as grow in the forest, and which send up leaves and flowers later in the season have leaves adapted for carrying on their work in a subdued light.

We have now considered in turn the different plant formations which are found in Canada, and the adaptations of the plants which compose them. We have shown that viewed in this new way the study of botany takes on a new lease of life. If, however, we leave our study of plant ecology here we miss the most vital point of the whole matter—the dynamic point of view, the idea of change. This aspect we shall deal with in our next and concluding note on plant ecology.

THE HORSE.

Lameness in Horses IX.

SPEEDY CUT.

Speedy cut or speedy stroke is the name given to an injury on the inner surface of the fore leg, on or below the knee, usually on the lower portion of the inner surface of the joint. The injury is caused by the horse striking his leg with the shoe of the opposite foot. In rare cases the injury is above the knee, and also may be between the knee and the pastern. Horses whose toes turn outwards when standing are very liable to this accident, as, when the foot is raised and brought forward, its toe turns inward towards the opposite leg, and the seat of contact will, of course, depend upon the height of action. Only horses with reasonably high action will strike on or above the knee when trotting, but when galloping any horse whose conformation predisposes to the accident may do so. When a horse strikes himself in this way he is liable to fall from the intensity of pain it causes, and thus endanger the safety of his rider or driver, and probably injure the front of the knees by coming in contact with the ground. Horses whose conformation predisposes to the accident are undesirable, except for slow work, and especially unsafe for saddle work. Horses on whose knees appear scars, enlargements, etc., which indicate former wounds from this cause, may justly be considered unsound, since they indicate a fault which may, at any time, interfere with the animal's usefulness.

SYMPTOMS.—While lameness is not always present, the symptoms are easily detected. There will be swelling and heat and tenderness of the injured part. In some cases there is an abrasion, but in most cases the wound is due to concussion, and no wound of the skin is noticeable. The swelling varies greatly in size and consistence. It may be comparatively small and hard, or large and puffy, indicating to the touch that it contains a fluid, which may be either serum or pus, generally the former. There is heat, and usually tenderness to the touch, and it may or may not be accompanied by lameness. When the contusion has been severe, and near or upon the joint, there will be lameness more or less well marked.

TREATMENT.—Preventive treatment is much better than curative. Horses that are predisposed to the injury, on account of conformation, should be shod with the idea of preventing it. In some cases, quite light shoes on the fore feet will so reduce the height of action as to cause the foot to pass the opposite leg between the knee and fetlock, when, unless the horse rolls to a considerable extent he will not strike (horses with the peculiar action noted are said to "roll.") In other cases where action is low, and the animal hits his fetlock, shoeing with heavy shoes will so increase the height of action as to cause him to go higher than the joint, but not so high as the knee, hence avoid striking. In some cases the use of three-quarter shoes will

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prevent the accident, but in many cases, where the ill-conformation is well marked, no method of shoeing will suffice, and all that can be done to avoid the accident is to wear knee boots. While the conformation noted predisposes to the accident, it will sometimes be noticed that horses in which this conformation is well marked will go clear, while in rare cases those which stand reasonably straight will strike. When the injury has been inflicted, treatment will depend upon the severity of the wound. Of course, a recurrence of the stroke should be avoided, either by giving the animal rest, driving at a gait at which he is not liable to strike, or wearing knee boots. If there be simply a swelling and tenderness, without the formation of fluid, the application of hot or cold water, followed by an anodyne liniment, as one made of 4 drams acetate of lead, 1 fluid oz. laudanum and water to make 8 fluid oz, several times daily will reduce the swelling and inflammation. When the soreness is well marked, hot water is probably better than cold, as it is more soothing, but it has not so much tendency to reduce swelling. In many cases hot water is used for a day or two, and then, when the soreness has been lessened, cold is substituted. In many cases where bathing is advisable, either quite hot or very cold water should be used; warm water does little good. When the enlargement contains any considerable amount of fluid, either serum or pus, an operation is necessary. If quite a small quantity of serum is present, (serum consists in a quantity of water fluid containing a percentage of blood, it being caused by a wounding of the small blood vessels and consequent effusion into the tissues) the treatment noted may be effective, and the fluid removed by absorption, but if the quantity be considerable, or if even a very small quantity of pus be present, the abscess must be opened. In most cases the fluid is serum. This is always the case when the enlargement has appeared suddenly, but when the contusion or striking has been frequent, but not severe enough to rupture the blood vessels, the swelling will gradually appear and usually contains pus. When an operation is necessary care should be taken to not lance too deeply, especially when the joint is involved, as cutting through the capsular ligament would be a serious matter, causing that condition known as open joint. An opening of considerable size should be made, in order that it may remain open and allow escape of pus that will form in a few days after the operation. Some recommend a small opening into which the operator inserts a piece of tow each time after dressing, to prevent closure, but we have found better results from making a free opening, into which it is not necessary to insert anything. The cavity should be flushed out twice daily with a 4 per cent. solution of carbolic acid or other antiseptic until it is filled and the wound healed. If an enlargement, due to a thickening of the tissues, remain repeated blistering will reduce it, and, of course, means must be taken to prevent a recurrence of the injury, as repeated operations will result in a chronic enlargement of greater or less size, that cannot be reduced. WHIP.

The Colt's First Winter.

The care and feed the colt receives during the first winter of its existence, is a determining factor in the size and temperament of the grown horse. If, through lack of proper feed and attention, a colt is stunted during the first year, it seldom fully recovers. The colt should be taught to eat grain long before it is weaned, so that there will be no serious setback when it must depend entirely on grain and roughage for its existence. The aim should always be to supply bone and muscle-forming fodder. Oats will always form the basis of the concentrate part of the ration, with wheat bran or linseed meal added if conditions warrant it. For roughage there is nothing better than good clover hay for the colt. So, where a person can feed five or six pounds of oats, and nine or ten pounds of good, sweet, clover hay per day, the young animal will not suffer for feed. A carrot or turnip added to the ration daily will be beneficial. The hot, stuffy stable is not ideal for the colt. A well-ventilated box stall is better. It need not be warm so long as it is dry. As with all young animals, exercise is essential to the development of muscles.

If the farmer is too busy to pay much attention to the colt, why not entrust its care to the boys? They usually enjoy looking after and training a young animal. The colt that becomes used to the halter, the harness, and even to being driven by the boy, will be a better horse than the one not handled.

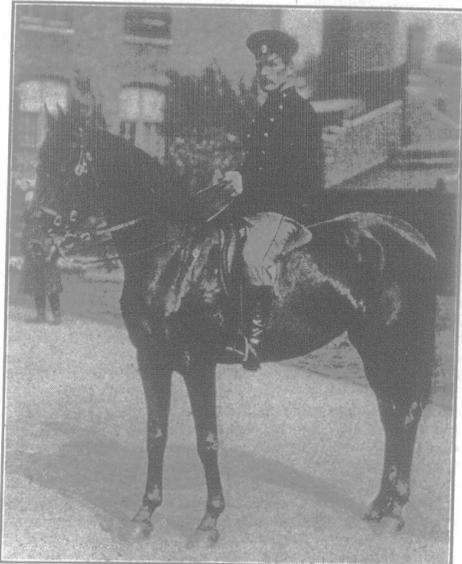
Weekly Visits Appreciated.

"The Farmer's Advocate" has been a weekly visitor to our home for a great many years, and we all look forward to its arrival with pleasure. It is appreciated by young and old.
Peel Co., Ont. DAVID CORDINGLY.

LIVE STOCK.

English Live Stock Notes and News.

Editor "The Farmer's Advocate":
The high prices of meat in England during 1915 drew forth unexpected but very welcome supplies to Britain of Canadian beef, amounting to some 6,280 tons, of which about 3,600 tons came to the United Kingdom, the remainder going direct to the Continent. Had more refrigerated freight been available, considerably larger quantities could have been shipped.
In view of Canada's loyalty as a British Dominion it is gratifying to be able to record this new departure, and opportune to express a hope that it may be found practicable to increase materially the contribution thus made to the food supply of the Empire from within its own borders. The Canadian Government is now alive to the desirability of fostering the export trade and putting it upon a permanent footing as soon as possible.
The total receipts of all kinds of frozen and chilled meat into the United Kingdom in 1915 amounted to 664,508 tons, against 694,427 tons in 1914, and 720,257 tons in 1913. The valuation of these arrivals was £39,671,913 in 1915, compared with £30,059,527 in 1914, and £26,648,161 in 1913. The quantities last year fell short of the previous year by only 4.31 per cent., but the valuation made at time of arrival increased by about 33 per cent. Taking 100 as indicating the average of top quotations recorded for twelve leading descriptions of frozen meat for the past ten years, the index figure for 1915 was 161.18 compared with 122.61 for 1914, 103.56 for 1913, 96.65 for 1912, and 86.26 for 1911. Wholesale values have risen by 86 per cent. within five years, and two-thirds of that advance has taken place since August 1914. Stated otherwise, the average prices current on Smithfield market in 1915 show an increase of over 40 per cent. since the outbreak of the war.



A Russian Officer and Mount.

The importance of frozen meat in connection with the conduct of the great war was made abundantly manifest in the course of 1914; but it was not until the beginning of 1915 that the British Government took the steps necessary to secure what was practically complete control of the industry at all stages. The requisitioning of the outputs of the freezing works of Australia and New Zealand, by agreement with the Australasian Governments, on terms more or less acceptable to the producers, secured the main supplies produced within the British Empire; while the simple expedient of commandeering the British refrigerated mercantile marine effectually secured control of foreign supplies—primarily of South America, and indirectly of North America and all outside sources. These important steps, far-reaching in their consequences, were taken with a view to guaranteeing the necessary supplies, not only for the British army and general public, but also for the French army, and, latterly, for the Italian. They involved fundamental changes in the methods of carrying on a vast trade which has been built up painstakingly during the past 30 years. In order to attain the objects of the Board of Trade and the War Office, existing contracts were left unfulfilled or unceremoniously cancelled; steamers were diverted on short notice from their intended routes; the established modes of buying and selling were entirely altered; freedom of contract ceased to exist; and at every stage the industry became regulated and con-

trolled at the will of the authorities, untrammelled by ordinary considerations of loss or profit.

The Continent played a very much more important part than usual in the year's trade, as the quantities directed to France and Italy are estimated to have amounted to over 150,000 tons, against an estimated total of only 26,210 tons in 1914.

In France, the increased consumption by the Army was met, to a large extent, by the introduction of these entirely new supplies of frozen meat with the result that values of French home-grown meat rose but little above normal; while in this country, the importation of meat being barely maintained and the home supplies showing no great expansion, the increased army consumption naturally brought about an important advance in values. On the whole, therefore, comparing 1915 with 1914, the civil population in France was in a better position than that of the United Kingdom, through being permitted to use British ships to supplement their home supply by importing frozen meat for the Army from Australia, South and North America, Canada, Madagascar, Brazil, etc.

Shire horses are selling at high prices in England. The entire stud of thirty-seven Shire horses, the property of the late Leopold Salomons, at Norbury Park, Dorking, were sold on January 19 when an aggregate of £12,885 16s. was secured, or an average of nearly £385. The nine stallions realized £806 15s. apiece, and the highest price for males was 3,000 guineas, paid by the Leicestershire expert, H. H. Smith-Carrington, for the twelve-year-old stallion Norbury Menestrel, whose stock have stood so high in the show-ring in London of late years. King of Tandridge made £2,000, falling to the bid of D. Collins, a Yorkshire breeder. The mares averaged £222 15s. and the fillies £180 10s. There were some wonderful bargains among the mares. H. H. Truman (Bushnell, Ill.) got the best mare for 220 guineas. This was the grey Abingworth Gipsy, by Sussex Menestrel, and a mare that will go right to the top of her classes in U. S. A.

There has been a desire on the part of our English Smithfield Club to eliminate from future shows of that body classes for wether sheep. The Leicester Sheep Breeders' Association are up in arms and submit that such action would be detrimental to the interests of breeders, and especially of the owners of long-wool flocks in the North of England. They ask that the classes should be included in the schedule as heretofore. The Council of the Smithfield declare that rearing wether sheep is a wasteful business in these days of early maturity.

British breeders of Herefords are resenting the "loost" which is made on the other side of the Atlantic in regard to the alleged superiority of American stock over English. At a recent meeting of the British Hereford Herd Book Society, Sir John Cotterell proposed, and it was agreed, that a letter be sent to the American Hereford Journal and other American papers, stating the exact position, and showing that if the policy of cutting adrift, one from the other, was adopted, it would be detrimental to the American Hereford breeders, the majority of whom rely periodically on a fresh fusion of blood from the home country, in order to keep up their herds to the proper standard.

In 1915 Canada sent to Britain 281 horses worth £68 2s. 4d. each, as against 504 worth £40 18s. 10d. each in 1914. War horses are not counted, of course.

In 1915 Canada took 187 head of pedigree cattle of the declared value of £82 8s. 1d. apiece, in 1914 she bought none. She took 140 pedigree sheep, worth £5 15s. 5d. each, as against 427 worth £6 6s. 8d. apiece in 1914.

For 1916 the British Government has granted £26,500 in aid of light horse breeding, and £40,000 to help the scheme for improving heavy horses, cattle, pigs, and the extension of the milk recording scheme, also the employment of livestock officers at agricultural institutions in England and Wales.

Good work at improving pedigree stock has already been accomplished under this scheme, and Yorkshire, Durham, Cumberland and Northumberland are among the first counties to have something tangible to show for the work. Cumberland has formed a new pig herd book for the Cumberland type, a large white of rare size with good hams. We are getting ready for peace times, when we shall have the goods to once more deliver to the nations of the world.
ALBION.

Subscriber for 32 Years.

I have been taking "The Farmer's Advocate" for the past 32 years, beginning when I was 18 years old. I don't think we could farm without it. I am sending you seven names; all young men. I have told them they could not afford to be without "The Farmer's Advocate."
Elgin Co., Ont. WM. H. JOHNSON.

Favors Sowing Corn Thickly.

Editor "The Farmer's Advocate":

We have read with interest, along with many others, the discussion in your valuable paper during the last few weeks, "Thin versus thick-sown corn." It is much more interesting and convincing when you are able to write from facts drawn from experiments conducted on your own farm known as "Weldwood." Perhaps a few lines drawn from observation, as well as personal experience, might be a help to those who are still in doubt. A successful dairyman and a horseman in this district, who fed more stock on a 100-acre farm than any other farmer in the district, was the first to draw my attention to thick-sown corn. He always sowed twice as thickly as we did, and always had twice as much per acre, and his feed seemed to produce as good results, but remember he got twice as much per acre. Then again, some years ago one of our men was drilling corn in a 12-acre field; the drill was set for about one-half bushel per acre, about 28 lbs. He sowed in this way till he got about half the field done, when he changed the index and did not tighten the screw properly, and the result was that about 50 lbs. per acre was sown on the other half. In the winter I managed to watch the results, and I could not see any difference when we came to the thin-sown corn with abundance of cobs, except that the cattle wasted more because the stalks were so thick that they left them untouched in manger. Although I was convinced, through this observation and personal experience, that thick-sowing was proper I still had my doubts because so many advocated thin sowing. But after all most of these are amateurs, and of course, they always know it all. I say I had my doubts until I read in your paper some few years ago about a test conducted by one of the experimental stations in the States. They experimented there much the same as you did at "Weldwood," but they found out that by feeding the two kinds of silage to a dairy herd that the thick-sown gave a larger amount of milk per acre than the thin-sown corn. Since then I have become enthusiastic over thick sowing. One point that you made strong that people should follow, is to get a corn that will mature, for we must remember that even if there are only a few cobs to mature, that the stalks must be matured. I might say in closing that we find in feeding our dairy cows this winter on thick-sown corn, that we have never yet had to carry any silage from their mangers, although our mangers are swept out twice a day, yet it is not because of the silage, for I never saw cows that cleaned up everything like they do the silage made from thick-sown corn. I am pleased that you started this discussion in time so that we will have it threshed out before sowing time.

Peel Co., Ont. JAS. B. ROSS.

Providing Summer Pasture for Swine.

More or less planning of crops and rotations is now in order, but, of course, the system on a well-regulated farm necessitates a certain order for the crops of 1916. In addition to the general plan, however, there is always the opportunity to vary a little to provide for exigencies that may arise, and if any phase of live stock husbandry and farm management requires consideration, it is the production of swine. The fields and what they are to produce can be so manipulated as to make hogs more profitable than they have been, and this factor should be given attention before seeding is commenced in the spring. In the past the majority of farmers have considered pigs most adapted to pens, and to rations of meal and slop. Originally the hog ran at large and subsisted on feed of coarse texture. The digestive system was arranged accordingly, but domestication has so altered the apparatus that converted nuts, leaves and grass into the assimilable form that we now have an animal constituted somewhat differently than were its ancestors. Practical farmers have demonstrated in the last few years that swine will quickly adapt themselves to conditions similar, in many respects, to the environments of the ancestral hog, and that breeders and growers have confined their stock too much from the viewpoint of health and profit alike. More pasture will reduce the cost of production, and that is really the aim of every producer, be he farmer or manufacturer.

A field of clover or alfalfa is almost ideal. It comes along early in the spring, it will grow up after being eaten off, and the quality of the grass makes it a very suitable substitute for the costly grains and meals that must be fed to pigs in close confinement. Grain should not be withheld altogether, even on good pasture, if the stock is turned over at the customary age for pork or bacon. It is while on grass that live stock give the maximum gains for meal fed.

The plan suggested by Prof. G. E. Day, O. A. C., to the meeting of stockmen at the Guelph Winter Fair, could be adopted on almost every farm. It was briefly as follows: Sow a small field near

the buildings to oats and barley, and seed with red clover, about 8 or 9 pounds per acre. Cut the grain for green feed or hay in late June, and turn the pigs on the clover, which will grow up quickly, about the middle of July. Fifteen or twenty pigs per acre can be pastured on a field such as this if the clover does well. Prof. Day recommended keeping the pigs inside until they would weigh in the vicinity of 100 pounds, and when turned to pasture they should receive at least one-half a full meal ration. Three-quarters of a full meal ration he thought would be even more profitable. A similar and adjoining field could be treated in the same way in the following season, and clover sown the year previous would come along and make early pasture.

It would be a grand idea to attempt to make two pigs grow where one grew before. Perhaps this is aiming too high, but farmers can reduce to a considerable extent the cost of production on the number of hogs they usually turn off in the fall. There is yet time to think it over before the season for action comes around.

The Outlook for Sheep Breeders.

At the annual meeting of the Dominion Sheep Breeders' Association, held in Toronto, on February 3, the outlook for sheep breeders was discussed from several viewpoints. The packers' ideas were voiced by John Taylor, of Gunn's Limited, Toronto, while the breeding and producing phases of the business were explained by W. A. Dryden, Brooklin; J. D. Brien, Ridgetown, and John Gardhouse, Weston. The essence of Mr. Taylor's remarks was that the market requires the handy lamb around 35 to 40 lbs. dressed weight, and the handy sheep around 70 to 80 pounds, with an absence of patchy fat, and evenly finished. In connection with the handling of the greater bulk of the Canadian lamb crop, the season for which extends from August to the end of December, the packers have the greatest trouble with the heavy lamb, and in this regard Mr. Taylor said they found the long-wooled lambs "the great offenders." At the time of year just mentioned, the lambs are ready for market and producers are ready to sell, so the packer has to buy and kill large numbers to fill his coolers, with which to supply the winter trade when lamb is no longer obtainable in any quantity in its live condition. "Here," continued the speaker, "is where the raiser of heavy lambs feels the pinch; heavy lambs being decidedly poor lambs for storing are rejected for this purpose, and all sold fresh. Now, anyone can see at a glance that this kind would be a drug on the market at this time, and in any ordinary year they sell from 2 to 3 cents per pound less than a handy lamb." Mr. Taylor commented upon the probable decimation of flocks within the War Zone in Europe, and the future demand to replenish the live stock of the warring countries. "The stocks of sheep and lamb," he said, "held in the largest exporting countries are very much smaller than usual, and Australia lost about 20,000,000 head last year owing to drought. Our home consumption is steadily increasing, and if the light, handy weights, properly finished, were marketed, double the present yearly importing about 5,000,000 pounds of mutton and lamb, this mostly being used in the Western Provinces, but why not furnish their supply from Eastern Canada? The outlook for marketing a very much increased production of sheep and lamb on a profitable basis never looked brighter, so far as it is possible to read future conditions."

The viewpoint of the breeder and producer was discussed by W. A. Dryden, Brooklin, who stated that if lambs weighing from 75 to 90 lbs. live weight, were required by the packers that it would include a great number of scrub lambs and encourage the breeding of such. One reason why packers were not getting the right kind of lambs in large numbers, he remarked, was because of our marketing system. "We as breeders of sheep, cattle or swine," he said, "do not always know the market requirements. In fact, I think sometimes the less we know the better the buyers of our products like it." Elaborating on this statement, Mr. Dryden, said that a buyer would come into a man's yard and purchase 50 lambs at an average rate. The producer had no way of learning which type of lamb sold the others. The speaker then described the system in vogue in Great Britain. There live stock, which is sold in a commercial way, is taken to a market, which is usually a local market. A small lot of lambs are put into a pen, and they are sold by auction. The buyer pays what he considers each small pen of lambs is worth, and the producer has an opportunity of knowing whether the

lambs he is producing are bringing the highest price. Mr. Dryden furthermore discussed the systems of breeding, and the chosen breeds in Great Britain. Different breeds are popular in different districts, where they breed for different purposes and under different conditions. "It has always struck me," he continued, "that, in Ontario particularly, the long-wooled breeds of sheep are the chief offenders in regard to the marketing of heavy lambs. It has always appeared to me that the long-wooled breeds of sheep have got a hold on the farmers of this Province, perhaps not through the demand of our local market, but through the demands of outside markets for breeding sheep. A few years ago there was a very large demand from the United States, for rams of the heavy, long-wooled breed. There were a great many sheep of this type imported from Great Britain to Ontario. Small flocks of pure-bred, long-wooled sheep were kept all over this Province with the idea of selling rams for export to the United States. That was quite all right at the time, but it produced in Ontario a good many small flocks of grade sheep of the heavy, long-wooled type." Mr. Dryden then applied Mr. Taylor's remarks to the get of these flocks, and opined that there is something wrong from the market point of view with regard to the kind of sheep the average farmer in Ontario is keeping.

The long-wooled breeds were championed by J. D. Brien, of Ridgetown, who said, "I think if we keep on breeding from the long-wooled sheep we can make our business pay about as well as the 'short-wooled' men." The reason for the feeling against heavy lambs on the market, Mr. Brien thought, was due to the fact that old sheep is too often served as lamb, consequently people are suspicious of heavy lambs.

"We know that things shift about a great deal," said John Gardhouse, Weston, "and probably about the time the average farmer would get a supply of the type of lamb they are asking for at the present time, packers might then say, 'we want something heavier.'" As regards different breeds, Mr. Gardhouse concurred with Mr. Brien's remarks.

THE FARM.

How About the Seed Grain?

While two months may elapse before seeding will be in full swing, it is not too early to think about a suitable supply of seed grain. On many farms oats lodged, last summer, before they were mature, consequently there are many light kernels. Owing to unfavorable harvest weather, considerable grain commenced to grow in the stook. Light-weight or sprouted grain is not the kind that gives heavy yields. Now, while there is considerable grain in the bins, is the proper time to commence cleaning the seed. The first time the grain is put through the fanning mill it is best to use plenty of wind, to remove the light-weight and many of the sprouted kernels.

It is surprising the number of kernels that blow over the screen and are worthless for seed. This is one reason why the grain should be cleaned while there is plenty to choose from. For the second cleaning it is wise to use screens that will remove the small seed, as tests have proven that small seeds, oats especially, do not produce as heavy a yield as large kernels. If, on examining grain prepared for seed, it is found unfit, there is still time to look around for suitable seed. The best that can be secured is none too good. The same applies to clover and grass seeds. Plump seed, free from impurities, is the only safe kind to sow.

If any of the small seeds grown on the home farm are not quite up to the mark, the following screens will aid in grading the seed and removing impurities: For clover, a screen with a mesh 4 by 22 or 4 by 24 wires to the square inch will clean out a good deal of rib grass or buckhorn and other weed seeds. A mesh 20 by 20 wires to the square inch is quite suitable for cleaning and grading alsike.

Favors Winter Application.

Editor "The Farmer's Advocate":

With pleasure we read the article from Glenarry Co. regarding spreading manure on fields during winter. I consider that is the proper time to do it, when one is not rushed with farm work. I have practiced it for the last five years, and with good results on a level, tile-drained farm. Conditions of land, of course, would make a difference I think.

Lambton Co., Ont.

J. E. D.

A Nova Scotia correspondent, Jas. Sterling, reports open weather in the Province by the sea. He plowed up to December 29, and again on Jan. 6. If Nova Scotia has experienced the April-January weather which prevailed in Ontario, more plowing may yet be reported.

Impressions of California.

Editor "The Farmer's Advocate":

To a person who has come from Southwestern Ontario, one of the first things that strikes the attention in California, is that it is mountainous. It is almost impossible to get out of sight of mountains anywhere. And in many places, as in San Francisco and Los Angeles, they loom up all around and so close that they encroach on city property. Travelling on the railway, mountains are always in the background, except, of course, when close up to or among them.

That this should be expected might be judged from any advertising literature of the country, of which there is no lack. This or that "promising locality" is almost invariably termed a "valley." Thus there is the "San Bernardino Valley," the "San Joaquin Valley," (pronounced San Wau-keen) the "Imperial Valley," the "Sacramento Valley," etc., etc. And valleys imply mountains. But to us who are untutored in mountain phrases, the term "valley" may not convey the correct idea. We incline to think of it as a deep trough between two lines of hills or mountains. A California valley is rather the flat expanse at the bottom, which may vary in width from a mere strip to a great plain, such as the valley of San Joaquin, sixty miles wide.

The Easterner is struck with another feature of the lay of the country, there seems to be no rolling land. Lots of hills and inaccessible mountains; valleys also, of varying widths and lengths, but all so level they look like filled up lakes. And between those two extremes, nothing, as a rule, at least.

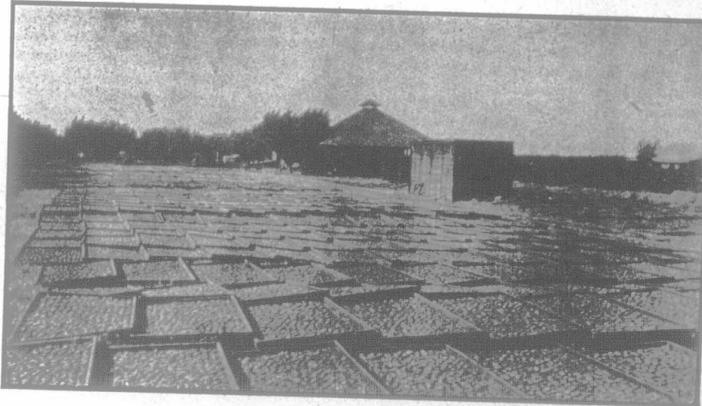
The Sierra Nevada Mountains, towards the east, and a parallel chain called the Coast Range, westerly though not quite at the coast, are the main mountain ridges of the State. Towards the north and at the southern end of the State also the mountains are jumbled up into isolated peaks or dislocated ranges. It is doubtful whether one-third the area of California is arable, but the valley lands, though limited, are usually of exceeding richness. We think of six or eight inches of dark surface soil as being all that need be looked for, there it often is of the same rich character for several feet down.

In going by train from Los Angeles to San Diego there were to be seen on the low table-land between the mountains and the sea wheat fields miles in length. In some places instead of wheat there were beans for miles. And again, over great areas sugar beets are the principal crop grown. These three, fall wheat, beans and sugar beets, with alfalfa added, seemed to be the main California farm crops. Now and again were to be seen piles of filled grain sacks eight or ten feet high, and, say, twenty by fifty feet ground dimensions, also larger piles of baled alfalfa, both flat-topped and coverless, ready to be hauled to nearest shipping point. No need for protection from rain, it never rains from May till September.

Inspiring as it was to see farming conducted on such a grand scale, there was one most noticeable lack. Farm houses and outbuildings, such as are common in Ontario, are not to be seen. Indeed, outside of the villages and towns there were scarcely any buildings at all. Miles without a house! Occasionally a cluster of two or three shacks together might be seen, but so squat and mean looking, as almost to accentuate the general lack of homes. The farms are large, and the farmers must be capitalists, and doubtless live in town. And owing to the style of farming and the use of machinery, the laborers are few. In the harvesting and threshing of wheat, for instance, combined machines are used, headers, which cut and thresh at the one operation, and require but four or five hands each. We saw one such machine at work, drawn by twenty-seven mules which cut a width of twenty feet. Another, driven by steam engine, cut a swath of

thirty feet. The latter would be able to cut and thresh at least seven acres per hour. With it all the old couplet kept recurring to the mind: "Ill fares the land to hastening ills a prey, Where wealth accumulates and men decay."

A great change in the occupancy of land and the kind of crops produced has, however, been going on in the last few years, and is going on still. Fruit growing is displacing the culture of wheat, and the thousand or ten-thousand-acre farms are being cut up into small lots for that purpose. It was our privilege to visit such a section at Acampo, a little town about one hundred miles due east of San Francisco. The soil and climate here have been found specially suitable for growing peaches, apricots, grapes, almond nuts and plums, and for a few miles around there is scarcely a plot left unplanted with one or other of these. About thirty acres is a fair-sized fruit ranch. Population, has, of course, increased greatly. Around Los Angeles and southward oranges, lemons, grapefruit, and walnuts are displacing the more ordinary farm



Drying Peaches in California.

crops. Deltas of rivers and other low-lying lands are being devoted to potatoes, onions and other garden truck. The gardeners in such districts are nearly all Chinese or Japs.

A land of wonders is California. At least that is how it strikes a Canadian from Ontario. Contrasts seem more in evidence than similarities. Here, the broad country between the lakes is generally level or gently rolling, the greatest heights being in hundreds of feet only. There, the Sierras, so called because their rugged peaks resemble the teeth of a saw, run for 500 miles, and rose, snow-lined, to heights up to 14,000 feet. With us the spread of temperature between the extremes of winter and summer may reach 130 degrees. There, 80 degrees is the limit, and in many sections it is much less. Here, it rains in summer, while in winter the glittering snow covering makes even the darkness light. In California the sun shines without intermission the whole summer long. Winter is the rainy and dull season, and in many places fogs prevail. Ontario apples are of the highest quality, in the Golden State they are scarce and dear, but oranges, figs and olives swell and ripen in the sunny warmth. When the land-hungry emigrants from Europe flowed as far west as Upper Canada, they each gladly settled in its deep woods and hewed out a home and a farm. But there always was a farther West. And westward the tide flowed, first to the prairie states, and then to the great wheat plains of our own West. And yet there was a West beyond. But when a pioneer has reached the shore of California or of

British Columbia he has come to the edge of things. To the west is not a great lake merely but the salt water of earth's widest sea, and beyond, not West but East, and from that East comes an opposing flood of immigration which is being strenuously held back. Canadian rivers increase in volume as they proceed. The streams of California in summer rush down from the mountain regions in strong flow, and then through the drain on the waters for irrigation purposes dwindle until they almost vanish. Crossing a great bridge at Los Angeles over a little stream in the wide gravel bed which one could step over, we asked the driver of the auto the name of the tiny stream, thinking that possibly it was too small to have a name. "Why!" said he, "that is the Los Angeles River!"

Sitting for a time in a car seat with a fine young man from the State of Mississippi, he told how his tour had led him up to Winnipeg, thence west to Vancouver, and on down. Said he: "You have a far prettier country up there than this. California is nothing but a reclaimed desert." The northern part of the State could not be included in that sweeping statement, as the rainfall is quite abundant there. But from the latitude of San Francisco southward to

Mexico the expression is scarcely too strong. It is true that there are great areas around Lodi and Acampo where fall wheat was once grown without irrigation. That crop is admirably adapted to such a mild, moist winter climate. It gets its growth before summer drought affects it. It is true also that peaches and grapes were for some years grown in that district. But not so now. Irrigation from bored wells is almost universal at present. It has been found to be profitable. But farther south practically nothing grows without added

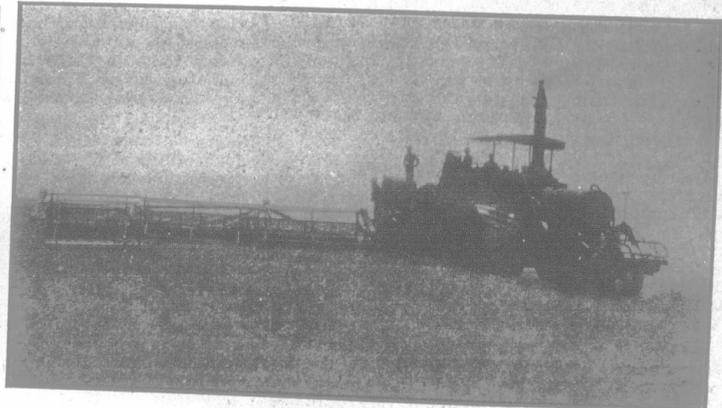
water. Orange trees need a plentiful supply. In the latter part of the journey from Stockton to Los Angeles by the valley line the train runs for hours through a veritable desert. Nothing green was to be seen on the bare earth but sage brush and tree yucca, and these were gray rather than green. The dusty, gray clumps of sage and the skeleton-like forms of the yucca rather intensified than relieved the barrenness. Yet the land was level and said to be fertile as need be, only it lacked moisture. A house and lot in the residence district of Los Angeles, which the owner had abandoned for a year, was pointed out to us. Not a green blade of grass or of anything else was to be seen. It had reverted to its original desert state, while all around were green lawns, blooming flowers and palm trees.

It is entirely to the credit of Californians that they have transformed so much of barren waste into thrifty orchards and fruitful farms. The area under irrigation is constantly being extended. Water is being taken to greater distances, and conservation of the supply is receiving special attention. In many sections the underground supply of water reached by bored wells is amazing. A gasoline engine or electric motor attached to a rotary pump may be run all day, and day after day and no slackening of the flow. One that we saw running threw a stream that, where it poured out, nearly filled a seven-inch pipe, and there were many larger.

The climate of San Francisco was a great surprise. We expected great heat at the end of July, and there was none. There never is. Some



A Palm Bordered California Highway and Orchard.



A Big Steam Header and Thresher at Work.

producing are bringing the highest. Dryden furthermore discussed the shearing, and the chosen breeds in Great Britain. Different breeds are popular in different countries. They breed for different purposes under different conditions. "It has always been so," he continued, "that, in Ontario, the long-woolled breeds of sheep are preferred in regard to the marketing of the wool. It has always appeared to me that the long-woolled breeds of sheep have got a better demand of our local market, but the demands of outside markets for heavy, long-woolled breed. There are many sheep of this type imported from Britain to Ontario. Small flocks of long-woolled sheep were kept all over the United States. That was quite a long time, but it produced in Ontario small flocks of grade sheep of the long-woolled type." Mr. Dryden then applied Mr. Dryden's remarks to the get of these sheep. He said that there is something wrong in the point of view with regard to the average farmer in Ontario.

woolled breeds were championed by Mr. Ridgetown, who said, "I think it is a mistake to breed from the long-woolled sheep for our business pay about as well as the short-woolled men." The reason for the heavy lambs on the market, Mr. Dryden was due to the fact that old sheep were served as lamb, consequently people are getting heavy lambs. Mr. Dryden said that things shift about a great deal. Mr. John Gardhouse, Weston, "and probably the average farmer would get the type of lamb they are asking for at the time, packers might then say, 'we want heavier.'" As regards different breeds, Mr. Gardhouse concurred with Mr. Brien's

THE FARM.

About the Seed Grain?

Months may elapse before seedling. It is not too early to think of the supply of seed grain. On many farms, last summer, before they were harvested, there are many light crops of unfavorable harvest weather. Rain commenced to grow in the weight or sprouted grain is not the heavy yields. Now, while there is grain in the bins, is the proper time to clean the seed. The first thing to be put through the fanning mill is plenty of wind, to remove the chaff and many of the sprouted kernels. The number of kernels that are screened and are worthless for seed. The reason why the grain should be cleaned is plenty to choose from. For cleaning it is wise to use screens that are small seed, as tests have proven that small seeds, especially, do not produce as large kernels. If, on the other hand, prepared for seed, it is found unprofitable to look around for suitable seed that can be secured is none too soon. Some applies to clover and grass seed, free from impurities, is the best to sow.

The small seeds grown on the home farm are up to the mark, the following is in grading the seed and removing the chaff. For clover, a screen with a mesh of 24 wires to the square inch is a good deal of rib grass or buckwheat seed. A mesh 20 by 20 square inch is quite suitable for cleaning alsike.

Winter Application.

The Farmer's Advocate: We read the article from Glenora, Ontario, regarding spreading manure on fields during the winter. It is the proper time to do so, and not to be rushed with farm work. I have done this for the last five years, and with good results. The tile-drained farm. Conditions here would make a difference in the results.

J. E. D.

Our correspondent, Jas. Sterling, writes from the Province by the sea on December 29, and again on January 1. He has experienced the April weather which prevailed in Ontario, and yet he reported.

afternoons and evenings when the wind blew in strong from the sea, and especially when fog settled down, overcoats and furs were in order. Yet the winters must be mild, for palms were growing in the open.

Farther inland the days were much warmer, but the mornings were always cool, almost chilly. There, where palms and olives are planted as roadside trees and where even oranges ripen, strange to say, corn does not do well. It is not warm enough for it. The farther south, if inland, the warmer. One day the temperature was a 102 degrees. But mornings are always cool and pleasant. Day by day the sun shone. Picnics are never postponed, because of the inclement weather. And yet, perhaps, because we are prejudiced in favor of what we are used to, the unvarying fine weather did not satisfy. We longed for a thunder shower to break the monotony and to cool and freshen the air. Even the sight of a cloud later on was gladdening. It must be admitted, though, that at the date of this writing, when the wind is searching through the buildings and the temperature hovers around zero, that the thought of that practically frostless climate has something of a draw.

Credit has already been given the Californians for their enterprise and energy in changing deserts into gardens. On two other counts at least they are deserving of the greatest praise. Their orchard culture is of the highest type. Neither grass nor weeds are to be seen, so thorough is the cultivation. As soon as possible after each irrigation the soil is plowed or cultivated to conserve moisture, and the process is continued between times as well. The other thing is the excellence of the leading roads. For a hundred miles and more in the one direction roads may be seen which rival the asphalt pavements of our cities. The construction of the road from Sacramento to Stockton was as follows: A layer of broken stone was first laid down and oiled profusely with some heavy oil and rolled. A second and finer layer followed, and was similarly treated. The finished road left more like rubber than stone. Another remark of the Mississippian may be quoted here. "We could grow just as good fruit and crops in our State and the same kinds as here, and without irrigation too, but we don't like to work so hard."

Californians, like other Westerners, whether north or south of the line, believe in boosting the country. As one man put it, rather bitterly, (he was leaving the State—had been unsuccessful) "California lives on Eastern suckers." There is a measure of truth in this remark. The city of Los Angeles, which has had a marvellous growth of from 20,000 in 1880 to 550,000, has been built up almost entirely by money brought in from the East. No city has advertised itself so lavishly, that's how, say the San Franciscans.

Discount it as we may, however, California is a land where fortunes have been made, and where very large returns per acre are produced. But so far as could be learned, there is nothing in the general prosperity of the farmers there to tempt one from a comfortable home in the East. There are drawbacks. Net returns are sometimes large, sometimes nil. Much that is produced is perishable and cannot be consumed in the State. Markets get glutted, and frequently watermelons, cantaloupes and even peaches are fed to hogs. The price of dried peaches fell so low last season, owing to the war, that they barely paid expenses of harvesting and drying. We here think of the orange districts as being frostless. There, one hears incidental references to the year of the "big freeze" when not only oranges but owners were bitten. Irrigation costs. Where water is drawn from a stream by ditches the cost, not including labor is around \$43.50 per acre per annum. Under pumping system in the southern counties it runs from \$5 to \$12 and up per acre each year. Land prices are away up. Even poor agricultural land, barely fit for cultivation is held at \$50 to \$80 per acre. In peach and apricot districts as high as \$300 per acre is asked for the bare soil, and for bearing orchards and vineyards up to \$500. The price of bearing orange groves per acre runs from \$1,200 to \$2,000 and upwards.

The visitor to California has the feeling constantly pressed upon him of being in another world. On the Pacific slope, facing westward rather than east, with its contrasts in climate, scenery, products and even people, it is well worth going to see, but it leaves one sort of giddy.

Getting back home and driving across country, the green roadsides with goldenrod and asters in bloom looked beautiful. Observing also the luxuriant foliage of the trees and the invigorating freshness of the atmosphere, and noting the comfortable farmsteads dotting the country, one felt there was no place quite equal to Old Ontario.

T. B.

A New York physician, Dr. Abraham Jacobi, offers the novel suggestion that all governments now have a Secretary of Peace rather than a Secretary of War. They could not very well have the two, or there might be war in the cabinets.

Questions of the Day in Canada.

Editor "The Farmer's Advocate":

In one of your recent issues Peter McArthur has called attention, in a most striking way, to some of the tremendously serious consequences of the authorization of five hundred thousand Canadian soldiers. You have also called attention to this matter editorially; and in the agricultural press elsewhere, the question has been discussed. There is absolutely no difference of opinion as to the effect which this amount of enlistment will have upon Canadian agriculture. It is scarcely credible that Canadian farmers can in any appreciable way nullify these effects by greater efforts, longer hours, or more systematic work. The shortage of labor, against which they have been struggling for so many years, has necessarily resulted in every possible economy of labor of which those concerned are capable. If we could replace our farmers by men twice as strong and twice as intelligent, or by men who did not need about eight hours sleep, something further might be hoped for. But, under the circumstances it is scarcely believable that the very serious consequences of such an added labor shortage as is involved in the authorized enlistment, can be in any material way avoided. About the only direction in which I see a ray of hope is that of various kinds of co-operative effort. And even in this respect I do not see how we may reasonably look for any great sudden expansion. I do not believe that the late P. and P. campaign was in any appreciable way responsible for the greater harvest of 1915; this latter was due almost wholly to climatic conditions and increased acreage, the latter inspired by the prospect of better prices. From a Canadian standpoint, the withdrawal of so many more young men from our farms is a national calamity; and its imperative necessity ought to be demonstrated beyond question before it is recommended.

There is another matter which should merit our Government's attention in connection with their enlistment proclamation. What means have they taken to enlist the wealth of the country? Talk of conscription! If the life of the poor artisan or laborer is to be confiscated, and laid upon the national altar, what of the wealth of the millionaire? It is even more important just now to provide financial strength than rifles, and what are we doing towards that end? The war loan is a pretty safe and profitable investment for all who have money, for the banks as well as the poor widow; and it is not necessary to pre-suppose much genuine patriotism as a condition of its being taken up. Otherwise, what is being done? War expenditure is not being paid for; the money is being borrowed, and the burden is to be laid upon posterity. The Government has apparently not seriously considered any scientific way of raising the required revenue, but has had recourse to effete and pernicious systems of taxation which restrict production, hamper industry, and put obstacles in the way of commerce. They have appealed to the young men to enlist, and have exercised various mild forms of compulsion. But what have they done with the rich? Have they made a similar appeal to them to furnish the "sinews of war"? On the contrary, it looks as though they had been party to gigantic thefts from the public treasury, or at least had winked at such, whereby Canadian financial and industrial magnates have covertly harvested their millions in war profits, all the while urging "the boys" to enlist. We have heard of international armament firms who deliberately fomented international animosities, so that they might profit by bigger orders for munitions. May God help them when the glazed eyes and mangled features of innocent millions look with reproach upon them! And may God also help those in Canada who have murdered "the boys" by paper shoes, restricted production of munitions, and the diminished purchasing power of British money! Our Government cannot be held responsible for all of this; but they are at least directly responsible for the duties imposed against British goods whereby British credit and financial strength is impaired. Nothing is more imperative just now than that British industries should receive all possible encouragement, and nothing seems to me a fouler blot, in the public acts of our Government, than the increase in the duties against British goods last winter.

One thing at all events is patent, the heaping up of war debts, in addition to the three or four billion debt which we have already incurred for various kinds of constructive work, combined with the withdrawal of so many workers from our already undermanned primary industries, and combined with a form of taxation which puts every possible obstacle in the way of industry and commerce, and which enriches the rich at the expense of the poor; all this can have but one end—national bankruptcy. Those who have guided this country's public policy during the last quarter of a century are not to be trusted. Their motives may be benevolent; if so their stupidity, greed, and lack of foresight, is almost incredible. If this country is to be saved democracy must become a fact instead of a name

amongst us, and power must be given to those who see instead of those who are blind. It is admitted on all hands that the development of our primary industries is an imperative necessity, and yet these industries have been throttled and hampered and burdened with the support of innumerable parasites; and now, in addition, comes the added burden of a huge war debt which must fall ultimately upon productive industry, already weakened and tottering. What is the end? Anyone whose conscience and mental faculties have not been drowned by a surfeit of ill-gotten gains can see for himself.

There is, I believe, a cure, a composite one. A new spirit must take possession of the people, and a new purpose animate them. A real interest in real politics must be born. False gods must be dethroned, and false prophets banished. New and true leaders must be discovered, and entrusted with the task of social reconstruction. Forms of taxation hitherto accepted without challenge must be examined, and, if pernicious, ruthlessly abolished. Industry and commerce must be freed from the burdens hitherto and now oppressing them, and labor must be guaranteed a just return. All this and more must be done. But it will not be done easily or quickly. It may be done, figuratively if not literally, through a sea of blood. If done, social health will be restored. If not done, this people, politically and socially, will decay and perish, like many nations in the past, and what material evidences of its civilization endure will be exhumed in future ages, like the temples and pyramids of Egypt, silent monuments of grandeur, folly and slavery. If we had discerning eyes we should see many temples and pyramids in Canada which are just as truly significant of national folly and economic slavery as any in ancient Egypt. But we have not yet discerning eyes; we do not really believe that the road to material prosperity is by seeking first the Kingdom of Righteousness. Shall we see or perish?

Brant Co., Ont.

W. C. GOOD

Agricultural Knowledge Cannot Be Standardized.

Editor "The Farmer's Advocate":

W. L. Martin, who writes in the Jan. 27 issue, seems to be somewhat of an idealist. He dreams of the day, when all men will see alike and everything will run along so smoothly. If one professor makes a statement it will be a breach of etiquette, or an indication of ignorance for another professor to contradict him. Your correspondent expects too much. It is not well for all men to agree. Furthermore, it is impossible. Man has not, in spite of good educational advantages reached, that degree of perfection when a standard of knowledge has been reached. On the contrary we can look forward as far as we like, and though man may be as erudite as Goldwin Smith, you will find that for everything he knows there will be a million things that he does not know.

He uses the term "Academic half-knowledge." It is true that it is half-knowledge, even less than that. Prof. Grisdale does not profess to know it all. His experiments with the Banner oat have led him to believe that it is the best of all, but his deductions in that line are not regarded by him as conclusive, which is indicated by the fact that he continues to experiment and improve, with the probable result that some other improved oat may finally supersede the Banner. But that will not cause him to cease experimenting, or some other professor to sit still and adopt his views. This is an age of progress and hurry, and we do not pay our professors to merely agree with the other fellow.

Prof. Zavitz is doubtless equally sanguine of the superiority of the O. A. C. No 72 oat, yet he like Prof. Grisdale, does not consider his researches completed. He still goes on experimenting, and will continue to do so as long as he occupies his present position, and so will the men who follow him.

As for his suggestions that the Professors "get together" and agree on these matters, it is out of the question. Prof. Zavitz could not very well agree with Prof. Grisdale on the best variety of oat because their experiments have led them to different opinions. The conscience of either would lead him to differ from the other. It would be perjury to do otherwise. Prof. Graham, who likes the Barred Rock chicken could not very well agree with some other professor whose experiments have led him to believe the White Wyandotte is the better of the two. Likewise the professor at Cornell and the professor at Macdonald College would disagree on the methods of feeding chickens. The different professors would likely discuss the relative merits of the Clydesdale, Percheron and the Belgian Horses, but after all their "threshing" out of the question no headway has been made. They remain of the same opinions as before. No kind of reasoning or persuasion is going to make a man conclude that the Banner oat is a better oat than the Siberian

and power must be given to those ad of those who are blind. It is all hands that the development of industries is an imperative necessity. Industries have been throttled and burdened with the support of insatiable; and now, in addition, comes a huge war debt which must be repaid upon productive industry, already tottering. What is the end? Any science and mental faculties have been by a surfeit of ill-gotten gains.

believe, a cure, a composite one must take possession of the people and animate them. A real politics must be born. False gods, false prophets, false leaders must be discovered, and the task of social reconstruction hitherto accepted without examination, and, if pernicious, must be abandoned. Industry and commerce, and labor must be guaranteed. All this and more must be done, and done easily or quickly. It is figuratively if not literally, through the people, that social health will be done, this people, politically and morally, and what material evidences of it will be exhumed in future ages, and pyramids of Egypt, silent grandeur, folly and slavery. If we eyes we should see many temples in Canada which are just as truly national folly and economic slavery as the pyramids of Egypt. But we have not yet done not really believe that the prosperity is by seeking first Righteousness. Shall we see or

W. C. GOOD.

1 Knowledge Cannot Be Standardized.

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oat, when his experiments of the previous year answer in favor of the Siberian.

I cannot agree with his infirmation that the "plain, everyday farmer of the back concessions" is behind other farmers of the front concessions in progress, or the adoption of new ideas. I am sure he is hopelessly wrong in this assumption, for a little local knowledge will tell him that the farmers on the back roads are as intelligent as those on the front road. I live on a front road

myself, but I do not consider that our advantages on this road admit of better educational advantages or more up-to-date farming knowledge. Schools are well established and rural mail is firmly established; so what difference does it make where a man resides?

No, we can not standardize agricultural knowledge any more than any other knowledge. Theologians differ on some questions of theology. Lawyers and judges interpret law differently, and

economists cannot see the same way in regard to their different theories. Then we can review the opinions of some nations. One nation may conclude that the way to continue at peace is to be "too proud to fight," while another nation will consider this method a sure way to get into trouble. No, I see no way to standardize knowledge, or to idealize man to perfection.

Essex Co., Ont.

D. KING.

Commercial Fertilizers and their Use in Crop Production.

By Prof. R. Harcourt.

To intelligently and economically use fertilizers it is essential that the farmer or gardener strive to make himself familiar with the characteristics of the crops he wishes to grow, the nature of the soil, and the fertilizers themselves.

The plant, like the animal, requires the oxygen of the air for respiration; it gives off carbon dioxide as a result of the oxidation of its food, that is, it breathes; it gives off water from its leaves, or lungs; it assimilates food; and it even excretes waste material. In all this it is very similar to the animal. But it even goes farther, and collects its food from the simple substances, such as carbon dioxide of the air, and various soluble salts found in the soil, and from these builds up the complex sugars, starches, fats and proteins which are essential to the life processes of the plant, and which are the food of the animal. It is subject to improvement by selection and breeding, as in the animal, but, unlike the animal, it is entirely dependent upon the supply of food within its reach, and it has no way of drawing attention to its wants, excepting as its appearance may make them known to the careful and trained observer. A clear conception of the fact that a plant, like an animal, requires warmth, air, sunshine, water, and an abundance of easily-absorbed food, will greatly aid in understanding the conditions under which it will make its best growth.

Food of the Plant.

The plant's food is derived from the atmosphere and soil. From the atmosphere it gathers carbon dioxide, and some plants, through outside agencies, are able to collect nitrogen. Nearly fifty per cent. of the dry matter of the plant is made up of carbon, which is entirely derived from the carbon dioxide of the air. This is taken up through the leaves of the plant, hence the need of good leaf development if the plant is to get the maximum amount of this constituent.

From the soil the plant derives nitrogen, chiefly in the form of nitrates, the ash constituents, and water. Fortunately, although ten elements are essential for the growth of the plant, there are only four that particularly interest the farmer, and the other six are usually found in abundance. These four are: nitrogen, potassium, phosphorus, and calcium. A continuous supply of all the essential constituents is absolutely necessary; for, if one constituent is absent, or present in an insufficient quantity, no matter what the amount of the other nutrients may be available, the plant cannot be fully developed. Each constituent has its own work to do, consequently, just as a chain is only as strong as its weakest link, so the crop-producing power of a soil is limited by the essential nutrient present in relatively the smallest quantity.

Functions of Plant Food Constituents.

An abundance of NITROGEN will produce a luxuriant growth of leaf and stem, but it will retard maturity, and, with cereals, will frequently cause the crop to lodge. Therefore, when crops such as cereals, tomatoes, etc., are to be matured, an over supply of nitrogen is injurious, but with crops such as lettuce, spinach, celery, etc., which are harvested in the immature condition, an abundance of nitrogen will, other fertilizing constituents being present, tend to force a strong, vigorous growth, and give crispness, or quality to these crops.

The function of POTASSIUM or potash, as it is commonly called, is apparently to aid in the production and transportation of the carbohydrates. The flavor and color of fruit is generally credited to potassium. All big, fleshy-leaved plants require an abundance of this constituent, and, where the formation and storing of sugar or starch is an important function of the plant, the presence of this constituent in an available form is very desirable.

PHOSPHORUS, in the form of phosphates, is an important plant food material. It tends to accumulate in the upper parts of the stem and leaves, and particularly in the seed. Its function apparently is to aid in the formation and transportation of the protein. Nitrogen forces leaf and stem growth, and phosphorus hastens maturity.

CALCIUM, or lime, is a constituent of the stem rather than the seed, and imparts hardness to the plant. It seems to aid in the construction of the cell walls, and according to some authorities, its absence is felt in less time than

either potassium or phosphorus. It is claimed that lime is just as essential to the plant in order that it may form cell walls from sugar and starch, as it is for the formation of bone in the animal.

Plants Differ in Their Requirements.

Again plants differ in their requirements and in their ability to secure that which they need. They differ in the time of the year in which they make their growth, in the length of time in which they have to gather their food, and in the ability to extract from the soil the materials they require. For instance, the cereals have a comparatively short period of growth, which, furthermore, is after the soil has been thoroughly leached of the soluble plant food by spring rains and before the soil has been sufficiently warmed to cause rapid nitrification. Some are deep-rooted, as oats, which thus have a better chance to pick up a supply of food than the shallower-rooted barley. Legumes require large quantities of potash, but apparently have not the power to extract this constituent from the soil that is enjoyed by the cereals, although they require only about half as much. Mangolds apparently have difficulty in securing a sufficient supply of nitrogen, and turnips—phosphorus. These are some facts with which a farmer should be familiar in order that he may intelligently manure the soil and plan the rotation of crops he wishes to follow in a manner that will give the best results.

The Soil.

But a knowledge of the plant and its requirements alone is not sufficient. It is very important that the farmer should know something about the constituents of the soil, and the manner in which they may be brought into a form that they will serve as food for the plant.

The soil is the home of the plant, and the home must be comfortable. Furthermore, the soil is also the home of myriads of organisms, millions of them in every cubic inch of the soil, and they require air, food, water and warmth just as much as the animal in the stable. Consequently the soil must be drained in order that the air may fill the spaces between the soil particles, that the soil may become warm enough so that the organisms which break down the organic matter in the soil and render the nitrogen available to the plant may do their work. Then, too, in the decay of the organic matter, acids are formed which bring the insoluble potash, phosphoric acid and lime into an available form, without which these essential materials natural to the soil cannot be of use to the plant. If lime is not present in sufficient quantities the acids formed render the soil sour, and check the action of the organisms and decay ceases. Solution of the plant food also ceases, and the home of the plant is made uncongenial. An abundance of decaying organic matter is thus absolutely necessary. It is the source of nitrogen, it furnishes the acids to bring the mineral plant-food constituents into an available form, and it furnishes the humus which has such a wonderful effect on the physical condition and water holding capacity of the soil. But, associated with it there must be enough lime to prevent the acids from rendering the soil sour, with all the ill effects, physical and chemical, that are associated therewith. The importance of good drainage, abundance of decaying organic matter and lime cannot be over estimated, and no added fertilizer can make up for the lack of these, nor can they render their best services when these are absent. Cultivation improves the conditions for all the above actions by breaking up crusts that may prevent free aeration of the soil, and by checking evaporation of water, and thus making conditions in general more congenial for the action of the organisms in the soil upon whose action so much depends.

Fertilizers.

In view of what has been stated, it is evident that when fertilizers are applied we are attempting to add some plant-food material that will supply some particular need of the crop to be grown. In general they are applied to feed the plant, not to enrich the soil. Consequently, we must know what the plant needs most, what the soil is probably most deficient in, and we must be sure that what we are applying will ful-

fill these wants. This brings up the fact that we must know what we are getting when we purchase fertilizers.

To aid in the intelligent purchase of fertilizers the Dominion Government have enacted a law whereby it is made illegal for anyone to sell a fertilizer without giving a guarantee of the amount of plant-food contained therein. A copy of the Fertilizer Act may be had by applying to the Minister of the Inland Revenue Department, Ottawa. The object of this Act is to make it possible for the purchaser to know what amount of each of the fertilizer constituents there is in the material offered for sale. He has thus the information which is necessary in deciding which brand of fertilizer will most nearly answer his requirements, and a basis upon which to calculate its value, or to compare the selling price of one fertilizer with another.

It is true that the statement of the guarantee is sometimes confusing, but the essential point is to note the amount of nitrogen, available phosphoric acid and total potash. These are the three constituents that give value to the fertilizer. A 3-6-3 fertilizer is one that contains 3 per cent. of nitrogen, 6 per cent. of available phosphoric acid, and 3 per cent. of potash. The trade name given to a fertilizer, such as "Potato Manure," "Small Fruit Special," "Tobacco Grower," indicates the fact that these manures have been prepared for these crops, and, presumably, are adapted to the needs of the crops, and average condition of soils. But entire dependence should not be placed upon this, for, some of our soils may be deficient in one constituent and some in another. In the neighborhood of Guelph and north through the county of Wellington phosphatic manures nearly always give the best results. When the soil survey work we are now engaged on is completed we hope to be able to show the needs of the various types of soils throughout the Province, and thus aid in simplifying this part of the question. In the meantime, it is essential that every farmer do some experimental work for himself.

It is well to remember that farmyard manure is our main fertilizer, that the supply of organic matter in the soil should be maintained or increased by growing some catch crop to plough down, that the tendency towards sourness be counteracted by the use of lime, and that the soil be well drained and well cultivated. Commercial fertilizers will give their best results when they are applied to supplement these conditions. They should never be used to take the place of the stable manure, excepting where this material is not procurable, and then extra efforts must be made to incorporate organic matter derived from other sources. Fertilizers contain plant-food materials, but they are too expensive to use other than as a supplemental supply. They have a place in our agriculture, but few men can afford to use them freely without doing some experimental work to prove that they are really applying the proper materials.

The Seed Control Act Applies to Farmers.

Editor "The Farmer's Advocate":

On page 149, column one, Questions and Answers, "Trade in Clover Seed," you quote from the Seed Control Act and say: "We understand this to mean that a farmer may dispose of his seed or seeds to another farmer on his own place and may make the sale not subject to the provisions of the Seed Control Act."

As intimated in the quotation of the Act given, farmers are exempt from the provisions of sections 6 and 7. They are not, however, exempt from any other section of the Act. Sections 8, 9 and 10 apply to farmers as well as to seed merchants. In effect, the farmer may, on his own premises, sell seed grain or other seeds to a neighbor or other person who comes to his farm to buy seed for his own use without indicating, as required by section 6, the kind of weed seeds in the seed sold.

Farmers may sell timothy and clover on their own premises without grading them, as required by section 7; but if any farmer, even on his own premises, does of his own volition represent his seed to be No. 1 or No. 2 quality, then he must observe the standards for these grades as defined in section 8.

The farmer is permitted to sell timothy or

clover that is below No. 3 standard of quality (or, in other words, which contains more than 400 weed seeds per ounce) only for the purpose of being re-cleaned. In effect, section 9 expects farmers, when they have timothy or clover fowl with weed seeds, to clean it to conform at least to grade No. 3 before selling it even to their neighbors. If they have not the facilities for cleaning seed, it is their privilege, of course, to sell it for the purpose of being re-cleaned, or of using it on their own farms.

I make this explanation because I realize that it is not the desire of "The Farmer's Advocate" to lead any farmers unwittingly into trouble through selling clover seed containing more than 400 weed seeds per ounce to their neighbors.

GEO. H. CLARK,
Seed Commissioner.

Prof. Grisdale on Standardization.

Editor "The Farmer's Advocate":

I notice in your issue of Jan. 27 a letter signed "W. L. Martin, Northumberland County, Ontario," in which my name is mentioned two or three times.

I do not propose to discuss all the various matters mentioned in Mr. Martin's communication; but would like to draw attention to the fact that while, as he says, Professor Zavitz does recommend O.A.C. No. 72 oats for Ontario in a general way, I advocated Banner for Eastern Ontario, and while the O. A. C. No. 72 is an excellent oat, in Eastern Ontario we have not found it to be any better suited for our requirements than choice Banner, hence as nearly everyone is stocked up with Banner I recommended this variety, and I still think that for Eastern Ontario it is quite as good, if not superior to O. A. C. No. 72. It must be remembered that climatic conditions in the Ottawa and St. Lawrence valleys are very different from those which maintain in the Great Lakes region, and often varieties of cereals, fruits, etc., that do very well in the Great Lakes region are not found at all suited for climatic conditions as they obtain in this part of the Province.

I quite agree that sometimes it must be rather confusing to farmers to have one man recommend a certain variety of grain, and shortly afterward hear some other speaker who might be considered an authority recommend an entirely different variety.

It is safe to say, however, that if farmers would use either one or the other of the two varieties of oats referred to they would be fairly safe, as compared with many inferior varieties which are found on the market. I might write a long letter explaining what is meant in this connection, but I do not consider it necessary, since anyone who gives the matter a little thought will understand.

As to using barley and oats together, I may say that we, like Prof. Zavitz, have found that a mixture of grains will give a higher yield than any single grain; but it is rare indeed that any farmer is ready to sow a barley and oats mixture for his whole crop. To the use of this mixture, or some similar mixture as a part of his crop, he will raise no objection; but the using of any mixed grain as his whole crop is very objectionable, for the reason that live stock that do well on one kind of grain do not always do well on another. For instance, barley fed in large quantities to horses is not usually advisable, nor is it a good feed for dairy cows, save in very moderate quantities, while oats in the mixture is not very suitable for swine, although a moderate amount does fairly well. Everything considered, it is probably advisable that the crops be sown with pure grains, thus permitting the farmer to mix them according to his requirements, even although there should be somewhat of a loss in yield by sowing them separately.

In conclusion, let me say that I do not think there is any disagreement among agricultural college and experimental station men as to live-stock matters, since experimental work with live stock will give the same results if carried on either at Ottawa, Guelph, Lethbridge, or Fort Vermillion. Climatic and soil conditions do not enter into these problems, hence experimenters are agreed. It is where climatic conditions have to be considered that there is found any important divergence of opinion as to what had best be recommended. That the farmers on the "back concessions" are being won over to "believe in the teaching of our agricultural colleges and farms" is becoming more and more evident every day if we may judge by the demands for information and the reception accorded our publications to-day as compared with conditions as they existed eighteen or twenty years ago.

J. H. GRISDALE.

It Remains.

We have cut out two papers for 1916, but we simply can't do without the one with the yellow back, as we consider it the best value of the whole lot for the money.

Bruce Co., Ont.

C. W. P.

Habit.

Editor "The Farmer's Advocate":

It's noo aboot the time tae be breakin' oor New Year's Resolutions gin we hae na' already done it, sae maybe ye will no' mind my sayin' a word on the subject. Makin' guid resolutions is aboot the pleasantest an' maist consolatin' past-time that ony mon can go at, an' until the time comes for pitin' them intae effect there's na reason why ye should na' be tolerably happy an' self-satisfied, even gin it is war-time, an' ye have enlisted in the King's army.

But the warst o' it is that it's never vera lang until ye're up against somethin' that mak's ye wish ye had na' been sae basty wi' yer promises tae reform, or at least that ye had na' made yer change o' heart sae public. The travelin' gets sae unco' rough that ye canna' keep frae thinkin' aboot turnin' back. I saw a guid picture along this line a few days back. It represented "Habit" as the Auld Nick himsel', sittin' on a pile o' cigarettes, wi' pipes an' bottles in the background. There was a wee man, wi' a string aroond his neck, rinnin' awa' frae him as hard as he kened hoo, but Habit had hauld o' the end o' the string, an' the question below the picture was: "How far will he get?" Judgin' frae the mile-posts he was passin' he would na' get muckle past the second week in January, for he was unco' tired lookin'.

It's a queer thing, this feeling we ca' Habit. It will mak' us dae onything on airt, na' matter how foolish it is, or how muckle ye'd think we'd want tae dae the opposite. I wis readin' the ither day aboot a mon that had been in jail for aboot twenty years, an' when he was fuallly let oot he just went roond kind o' lonesome like for a few days an' then went back an' asked them tae pit him in again. He'd got the jail habit, an' he did na' like ower muckle freedom. It reminds me o' a wee bull I had one time. He'd been tied up in the stable for a long while, an' I finally got sorry for him an' thought I'd let him oot in the pasture where the grass was guid an' where he wad hae congenial company. Weel, next mornin' I went oot tae the barn, an' ye may believe me or no', but that bull was there in the stable standin' in his auld place an' lookin' as though he did na' care whether he ever saw blue sky or green grass again. Gates an' fences could na' keep him frae his hame in the barn.

Sae we canna' wonder that, gin habit is sic an instinctive thing as it seems tae be, we find it hard tae get awa' frae. I heard anither story aboot an auld soldier, wha wis comin' hame frae the store one day wi' a dozen eggs an' a wee pall o' molasses that he had bought for the auld wumman. Anither chap, that was a bit o' a joker in his way, was comin' along behind him an' kennin' the ways o' the army he called oot, "attention." As quick as ye could think it the auld soldier straightened up an' drapped his hands tae his side, an' awa' went his eggs an' molasses over the sidewalk. He'd heard the command till he got the habit, an' it stayed wi' him.

Noo, a' this gae's tae prove what a guid mony o' us hae loond oot for ourselves, an' that is that it tak's a lang time tae form a habit, be it guid or bad, an' it must in the nature o' things tak' a lang time tae break awa' frae the habit that we want tae get rid o'. When we ken this we willna' need tae be over muckle discouraged gin oor first or second attempts turn oot failures. Gin we get up ilka time we're knocked doon we'll get the use o' oor legs aifter a while. A' the same, gin ye can stick tae yer New Year's resolution, nobody will be findin' fault an' ye'll feel an unco' sight better yersel'. Habits are like babies; they'll soon die gin ye never feed them, sae gin there's man eneuch in ye, ye'll maybe be able tae cut oot the food supply right on the start. It's the easiest way, no mistak' aboot that. But frae a' my experience I wad say that the best way tae get rid o' the habits ye dinna' like is tae fill up yer life wi' habits that ye ken are richt, an' that will na' be likely tae get ye intae jail or the poor-house. As I see it, the one thing that is keepin' this warld frae gaein' tae the bad entirely is that the great majoriv o' people in it hae got the habit o' wark. Their time is pretty weel used up in earnin' a livin', an' as a consequence they dinna' get intae the mischief that some o' that unfortunate "born-rich" class are sae taken up wi'. Habit is one o' the best things goin' when ye've got the richt one. And the way tae get it is tae start practicin' on it at once. We dinna' get anywhere by juist thinkin' aboot daein' onything else. In fact it weakens us mair than onything else. But we hae got tae tak' the first an' every ither chance, tae dae the things we find difficult an' disagreeable, an' in this way keepin' oor will-nower alive an' active. For it's only by exercise that we can keep oor will growin' an' gettin' stronger ilka day. It's juist like yer muscle in that respect.

One o' the best habits for ony mon tae get is that o' rollin' oot o' bed at a certain time ilka mornin'. Be it at five o'clock or earlier,

gin his business requires it, let him get oot on the mornin', na matter how dark or cauld it is, an' he can say he's started the day richt ony-way. There's naething mair weakenin' tae yer will than lyin' in bed half asleep aifter ye ken ye should be up an' at wark. Ilka time ye dae the richt thing, in this or onything else, mak's it easier on the next round, and ilka guid habit ye form increases yer chances o' formin' anither. It's worth an effort, I can tell ye, for oor happiness or misery a' depends on it. Juist look aboot ye a wee bit an ye'll see plenty proof o' that.

An' gin it's worth the effort ye may also depend on it that wi'oot the effort ye'll get naething. It reminds me o' what an Irishman said tae a friend o' his who was thinkin' o' undertakin' a certain job, but was afraid he might not make a success o' it. "Och man," says Pat, "juist spit on yer hands." It was his way o' tellin' his friend that gin he pit energy eneuch intae his wark he'd bring it tae a guid teinish a'richt. Sae, when we start in tae acquire a guid habit we may as weel remember the Irishman's advice, for though it was maybe no' an Irishman that wrote the Book o' Proverbs, still they come oot wi' a guid thing noo an' again, an' we should na' be aboot takin' notice o' them.

SANDY FRASER.

A Little Potato and Field Root Experience.

Last year was not a good year for potatoes in Ontario, especially on heavy land, like that of "The Farmer's Advocate" farm, "Weldwood." However, thinking that readers might be interested we may say that good results were obtained from the use of Basic Slag on this crop, potatoes being produced at the rate of 17 bags where the Slag was sown 300 lbs. per acre, to 7 bags where none was applied. This is nearly 2½ times the yield where no slag was sown. Of course, it should be remembered that the yield was low on both lots on account of rot.

We also had some mangels and turnips fertilized with Basic Slag. From six rows of mangels fertilized, seven 2,200-lb. loads of mangels were taken, while from six like rows unfertilized four loads and 1,200 lbs. was the yield. On six rows of turnips the yield was one-half load heavier on the fertilized than on the unfertilized. The mangels were a big crop, but the turnips were not so good. The Slag was applied to the roots at about 400 lbs. per acre.

THE DAIRY.

British Columbia Milk and Cream Contests.

The third annual Milk and Cream Contest in connection with the annual convention of the B. C. Dairymen's Association, held at New Westminster, on January 27 and 28, brought out a splendid display of high-class products. Three classes were offered; viz., Approved Milk, Market Milk and Market Cream, open to producers only. Entries were forwarded from Vancouver Island, interior and lower mainland points. The milk was drawn on January 20 and shipped to New Westminster, where it was stored with the New Westminster Creamery Association. The products were scored on January 24 on bacteria, flavor, sediment, acidity, fat, solids not fat, and package. Prizes of \$20, \$15, \$10, and \$5 were awarded in each class. A bacteria count of 48 hours' duration was made, and a remarkable feature of the Contest was the low bacteria counts recorded, the highest count in the Milk Classes being 3,000 per c.c., and the highest in the Cream Class being 6,500 per c.c. The average count of all the exhibits in both Approved and Market Classes, 17 in number, being 800 per c.c. Eleven samples resulted in a count of 500 per c.c. and under.

The Market Milk entry of Joseph Thompson, Sardis, B. C., scored highest in the Contest, the final score being 99.05. In the Approved Milk Class, J. M. Steves, of Steveston, B. C., and Shannon Bros., of Cloverdale, B. C., tied for first place with a score of 98. In the Market Cream Class, first honors went to William Hampton, of Port Hammond, B. C., with a score of 97.3.

The following is a list of the prize-winners, and the total scores obtained:

APPROVED MILK CLASS.—1, J. M. Steves, Steveston, 98; Shannon Bros., Cloverdale, 98; 2, Thos. Davison, Port Hammond, 97.75; J. A. Laity, Port Hammond, 97.75; 3, A. Laity, Port Hammond, 94.75; 4, E. & T. Raper, Victoria, 94.35.

MARKET MILK (producers only).—1, Joseph Thompson, Sardis, 99.05; 2, Grimmer Bros., Port Washington, Pender Island, 97.5; 3, Isaac Else, Agassiz, 96.65; 4, Joseph Hamilton, Chilliwack, 96.5.

MARKET CREAM (producers only).—1, William Hampton, Port Hammond, 97.30; 2, Isaac Else, 93; 3, J. W. Langley, Canford, 90.6; 4, Bridge Bros., Sandwick, 87.

The Dairy Herd in Winter.

Editor "The Farmer's Advocate":

I have frequently been asked, "Does winter dairying pay?" To this, I can answer, yes. It pays both directly and indirectly. In the first place, I get the advantage of the increased price of dairy products during the winter season. Then, the individual records of my herd show that I am getting more milk during each lactation period than formerly, due, I believe, to the better care entailed by winter dairying. I have noticed time and again that a cow freshening in the fall will maintain a good flow of milk through the winter, then go on to grass and give practically as much milk in the middle of her lactation period as she did when fresh. I think that winter dairying aids in solving the farm labor problem. With only a herd of dry cows to feed through the winter, I certainly would have no work for an extra man. Then when spring came there would be all the bother of securing new help. No good, capable man likes the idea of hunting a new job every fall, and the day is past when he is willing to work throughout the winter for board and lodging. Nor can he afford to be idle three or four months out of the year, and we dairymen cannot afford to let him be so.

To produce winter milk profitably there are a number of essentials that must be carefully observed. It takes healthy cows to produce a large quantity of pure milk. To have the sanitary conditions right, there must be light, ventilation and absolute dryness. Then, too, the cow should be comfortably warm. There are men who are cruelly neglectful of the health and welfare of their animals, and there are others who are cruelly solicitous regarding them. Neither will make any profit. The question is, "how can the best results be obtained at the least expense?" The profit comes, it comes at all, from feed consumed in excess of the maintenance ration, and which may be called the productive ration. It behooves us, therefore, to see, if by modifying conditions, we can reduce the amount of feed required for maintenance to the very lowest point. The average temperature of the cow is 102 degrees Fahrenheit, and this must be maintained no matter what the surrounding temperature may be. Under the most favorable conditions 70 per cent. of the maintenance ration is used as fuel to keep the cow warm. The more cold she is forced to endure, the more feed will be required to keep up the necessary warmth. It follows then, that to make milk cheaply the stable must be warm. Warm air is not necessarily impure air. If a good system of ventilation is installed, the hygienic conditions will be all right. It has been found that a cow can warm a space containing 600 cubic feet and maintain the temperature, but if there is no ventilation she will smother in a night. I like a system that brings the fresh air into the stable through an underground pipe, thus warming it, considerably before its introduction into and distribution throughout the stable. The fresh air coming in causes a constant outgoing of the lighter, foul air. A continual change is thereby being effected, and the air in the stable is kept pure.

No other branch of farming has enlisted the scientific ability of the country to such an extent as that of caring for the stock, and the handling of their products. Consumers of dairy products are becoming alarmed, and justly so, over the conditions under which milk is being produced. Ten years from now dairymen will look back and wonder at their stupidity in attempting to produce milk under some of the conditions that exist at the present time.

If, then, we are to have clean milk, it is essential that the stables be clean. One of the things we do previous to bringing the cows into their winter quarters is to whitewash the walls and ceiling. This wash is made of ordinary lime and skim-milk, to which is added about five or six teaspoonfuls of crude carbolic acid for each gallon of whitewash. It is then put on with an ordinary spray-pump, such as is used in spraying fruit trees. This gives us a light, clean stable, and is very important if we are to have anything like sanitary conditions. In our stables we have done away with the manger entirely, having reached the conclusion that they are an unnecessary nuisance. The dirt accumulates in them very rapidly, and it was practically impossible to keep them clean. We now have the cows eating off the same level on which they stand. The feed passage in front of the cows is about ten inches higher than the one on which they stand. This forms, to some extent, the back-ground, and we can go along with a broom and clean the feed passage in a very short time, something we could not do with the ordinary manger.

Currying and brushing the cows will be found a profitable operation. Experiments have demonstrated that this will increase the flow of milk from two to four quarts per cow, or, in a large herd, sufficient to pay the wages of a hired man. When the cows are stabled for winter I make it a practice to clip the udder and hind parts. By

this means they are easily kept clean, and there is little trouble from foreign material getting in to the milk.

There are various methods of tying dairy cows, and all have some good points. Everything considered, we like the swinging stanchion better than any other method. It is cheap, simple in construction, and gives the cow a considerable amount of freedom. To say the least, they are a long way in advance of that old relic of barbarism, the stationary stanchion, which all true dairymen have relegated to the scrap-heap.

In regard to feeding, there are a number of general principles which no feeder should lose sight of. The cow is no latter-day worker of miracles. The milk must come either directly or indirectly from the feed consumed. Every large producer must be a large consumer. At the same time there is no profit in filling the cow up on any food that may be at hand or is possible to buy. If we are to keep the cost of production down, there must be a familiarity, both with the feeding value and the market price of various feeds. I feel certain that every intelligent and experienced feeder of dairy cattle will agree that a cow's ration should be palatable and fairly well balanced to produce best results. It is often pointed out that there is nothing better than pasture as a milk producer. In the proportion of its constituents, clover hay does not differ materially, but to feed clover hay alone, a cow would soon tire of it and only eat enough for maintenance. Combined with roots or corn silage the succulence makes the bulky part of the ration more palatable, and it is eaten with a relish that produces much better results. In my own

Look at the difference in location of barnyards. While one may be almost surrounded by buildings, another may be exposed to all the winds that blow. I turned my cows out last winter for exercise; they had water in the stable and every time they failed in milk supply. The last three months of last winter they were not turned out at all. I had no sick cows, and no stiff legs. This winter they have not been out yet, and if there are eight cows doing better than ours, taking length of time milking and age of cows into consideration, then that man can figure he has some pretty good cows.

Wentworth Co., Ont. A. HASLAM.

Care and Management of the Dairy Herd.

Editor "The Farmer's Advocate":

Care and management of the dairy herd is a wide subject, and we have to limit ourselves to a review of a few of the leading points. It will be found most profitable for the dairy farmer to confine himself to some one of the well-recognized dairy breeds. I do not mean by this, that they should be pure-bred and registered cows. Having made a selection of the breed, always use a pure-bred sire of that breed, and see that he possesses a strong constitution and is descended, on both sides of his parentage, from heavy milkers or producers of butter-fat.

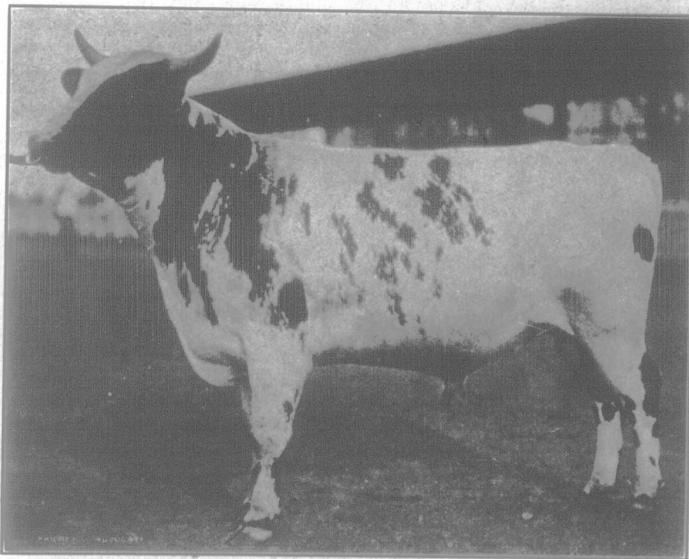
It will be found the most satisfactory plan for dairy farmers to raise their own cows. In the creamery districts this is easily done, as there is always plenty of fresh skim-milk.

Feed the young calf whole milk for the first ten days, then gradually add a little skim-milk, so that at the end of three weeks the whole milk will be substituted altogether by skim-milk. As the whole milk is reduced, add a little ground flaxseed to take the place of the natural fat of the milk. This along with grass in the summer or alfalfa hay, corn silage and roots in the winter, will be all the feed required to raise a good calf. If alfalfa hay cannot be had, feed ground oats to take its place.

Young heifers should not drop their first calf until they have reached the age of thirty months. This will give them a chance to develop a strong, vigorous body.

The management of the dairy herd in the early summer months is a comparatively easy matter. At that time the cows are in the field with plenty of fresh air, sunshine, succulent and palatable grass and pure water. These are the ideal rations for the dairy herd.

Having met many of the farmers of Ontario during the past years, I notice a great change in their dairy methods. Formerly, most of the cows were milked for only a few months during the summer. This system is gradually giving place to dairying the year round. Many of the cows are now milked a period of about ten months. This has been brought about largely by the demand for milk and cream for the town and city trade. With this change the production of milk during the winter becomes an important matter. Clean, sanitary milk can only be produced from healthy cows kept in clean, well-lighted stables, with good ventilation, and with good feed and pure water. The stable should be well lighted with large windows. I prefer the sash being one solid piece with the length placed vertically. This should be made stationary at the bottom, but arranged to drop inwards at the top. This permits the windows to be partly opened on warm days without any draft striking the cows. During cold weather the windows should be kept closed, and the air conducted from near the ground outside up a flue and discharged into the stable near the ceiling. The foul air should be removed from the stable from near the floor, as that is where the deadly gas settles after being thrown off by the animals' lungs. This can be accomplished by having a tight board flue made to carry the foul air up from the stable floor and above the ridge of the barn. A hinged door should be put on the side of the flue near the ceiling, so that it may be opened when the stable gets too warm. By keeping the opening closed in cold weather it prevents the escape of the warm air in the body of the stable, and carries off the cool, foul air from the floor. A common



Fairview Milkman.

First-prize yearling Ayrshire bull at the Canadian National Exhibition, Toronto, 1915. Exhibited by Laurie Bros., Malvern, Ont.

stable corn and clover form the basis of the ration, supplemented with concentrates we can raise on the farm, and purchased nitrogen feeds as may be required to make the ration reasonably well balanced. The following is a ration that has given good results with my own herd: corn silage, 40 pounds; clover hay, 10 pounds; pea meal, 2 pounds; oil meal, 2 pounds; ground oats, 2 pounds; wheat bran, 2 pounds; salt 1/4 pound.

It is important that water be before the cows at all times. In full flow of milk they require from 90 to 125 pounds a day. It is simply impossible for them to drink this amount at one time. With easy access to it at all times they will help themselves probably twenty times in twenty-four hours. In a herd of eighteen cows as much extra milk will be produced as if there were an additional cow in the stable. This extra profit alone would put the water into the barn for several generations of cows.

Elgin Co., Ont.

AGRICOLA.

His Best-spent Money.

Editor "The Farmer's Advocate":

Enclosed please find \$1.50 for renewal of our yellow-backed friend, the best spent money of the year's outgo. Friend Peter McArthur is always looked for, with his stories about the "Red Cow" and other farm topics. Keep up the discussion on winter exercise for dairy cows. I can't see how anyone can compare one year's doings of a herd with the next year. Where is there a herd this winter, with the same individual cows freshening at the same time as a year ago? How can anyone figure the difference between turning cows out for water and keeping them tied all the time, when the herd is made up of different individuals?

requires it, let him get out on a matter how dark or cauld it is, he's started the day right on nothing mair weakening tae yer in bed half asleep aifter ye ken an' at wark. Ilka time ye see in this or anything else, mak' the next round, and ilka guid habit ye yer chances o' formin' anither. I can tell ye, for oor happi- depends on it. Juist look about ye'll see plenty proof o' that. worth the effort ye may also de- wi'oot the effort ye'll get naeth- me o' what an Irishman said his who was thinkin' o' under- job, but was afraid he micht cess o' it. "Och man," says Pat, yer hands." It was his way o' d that gin he pit energy enouch he'd bring it tae a guid feenish when we start in tae acquire a may as weel remember the Irish- or though it was maybe no' an wrote the Book o' Proverbs, still i' a guid thing noo an' again, an' e above takin' notice o' them.

SANDY FRASER.

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THE DAIRY.

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error is made by supposing that warm air is foul air, and that cold air is pure. The reverse may be the case in our stables. Our farm animals could live several days without food or water, but they could not live many minutes without air. Therefore, fresh air is the most essential element in the maintenance of life. It is the cheapest and most easily obtained of all the life-sustaining elements, but, judging from what we see in many stables, farmers use it as if it were costly. Judging from what I have seen in many of the best farms in the Province, I am satisfied that this is the weakest point in the housing of stock in our country.

The importance of water will be more clearly understood when we consider that an average cow as she stands consists of about 50 per cent. water, her milk about 87 per cent., and her blood about 90 per cent., and that all the food is carried through the system by the action of water. The water should be pure, spring water, free from any contamination, and constantly in front of the cows, in the stable, where they can drink at will. If allowed to drink whenever they please, they will never drink enough at one time to cause a chill. A cow that gives a large flow of milk must of necessity drink a large quantity of water. The day has gone by when a man can afford to stand and pump water by hand for a large number of cows. Some power should be used for that purpose, such as wind, gasoline, or electricity. This permits the well or spring to be located a considerable distance from the barns, where it will not be contaminated by sewage from the barnyard. A storage tank should be provided so that the drinking troughs can be supplied automatically by gravitation, but prevented from overflowing by a valve.

Owing to the high price of lumber and its comparatively short life in the stable, it is hardly necessary to say that cement floors and mangers are the best from a sanitary and economical standpoint. The stables should be whitewashed every fall, which adds much to their light and sanitary condition; the manure removed from the gutters twice a day, and the cows curried and brushed daily. This adds much to their comfort and health.

What to feed for milk production is always an interesting subject. An analysis of milk shows that it contains about 87 per cent. water, and 13 per cent. of solids. Of these solids, the percentage of butter-fat is the only part of the milk that the butter-maker is much interested in. It is the most valuable element of the milk from a commercial standpoint. We should aim to get cheap feeds, mostly raised on our own farms, that will fill our requirements. We have in mangel, sugar beets and corn silage cheap, bulky palatable and succulent feeds. Corn silage lacks that very necessary element, protein, that is required for milk production. Therefore, it must be supplied from some other source, such as clovers, oats, peas or vetches. The best supplement to corn silage is alfalfa hay, and where alfalfa can be successfully grown, protein can be produced at less cost than in any other way. If protein has to be purchased, we can secure it from such feeds as wheat, bran, oil cake, cottonseed meal and gluten meal.

The forty million dollars' worth of milk produced is only one instance of the great agricultural wealth of the Province of Ontario. The value is not only in the money that comes to the people for their work, but the fact that during these years the grain and the other feed grown on the farm has been used to feed the cows, and the farms become more and more productive year by year. In every section of the Province, where dairying has been carried on to any great extent, the people have been increasing the fertility of the soil.

Bruce Co., Ont.

R. B. D.

Not Afraid of Western Butter.

Editor "The Farmer's Advocate":

I have read with considerable interest your editorial, in Jan. 27 number, re "Dairymen should demand cream grading." In the main, I can endorse what you say, but I am not one of those who is alarmed at the Northwest Butter Bogey, so far as Ontario markets are concerned. There are two factors that will always limit the importation of Western butter in Ontario—the long, expensive freight haul, and the fact that the Ontario trade is largely a print trade in butter.

However, for the good of Ontario butter-making in creameries, some grading system should be adopted. The remedy is so simple that it seems hardly possible the matter has been so long neglected. Let the creamerymen agree among themselves to pay a lower price, say two to three cents per pound fat, for all second-grade cream, and stick to that agreement. In three years the whole problem would be solved. With all due respect to our creamerymen (and we have some of the best dairymen in Canada, and particularly in the Province of Ontario among creamery owners

and mangers), I hope they will forgive me if I say, the present system (muddle if you like) is largely the fault of the butter manufacturers. The remedy lies in their own hands. Let this useless, "cut-throat" competition cease, and pay for cream what it is actually worth. No class is so sensitive to a cut in price as are the producers of cream, because a slight lowering of the rate per pound of fat, makes considerable difference in the returns on a can of cream—much more so than on a can of milk. If the creamerymen adopt this plan and give the farmers a "square deal," there will be very little "kick" from patrons.

O. A. C.

H. H. DEAN.

POULTRY.

Layers Which Laid.

Editor "The Farmer's Advocate":

I would like to give further results in handling the flock of 95 White Leghorn pullets mentioned in one of my recent letters to "The Farmer's Advocate." It will be remembered that these pullets were mostly hatched on April 12, and a few on May 7. They started to lay on September 25, and by the middle of October they were laying a dozen eggs a day and keeping themselves. Here is their record from November 23 to December 23, when the 90 pullets laid 1,349 eggs in the month, yielding a net profit of \$32.90 for the month only. Up to January 2, when I last heard, they were doing still better, and this from Leghorns, which are not usually considered winter layers.

Now, are you doing anything like this? And if not why not? One reader of my former article has been interested enough to write me for information as to the methods used, and although I have replied at some length to his letter direct, probably you too are interested in knowing how my friend and I got those results.

My friend at the beginning of last year determined to go in for poultry-keeping. He had never kept any before. He was a railroad clerk living in an Ontario town. He thought he would try Leghorns as egg-layers, and he, therefore, bought 1,000 eggs of the best breeding he could get hold of in Canada, eggs laid by birds bred from stock that had won in laying competitions, and with the famous blood of Tom Barron's stock appearing in their pedigree. I hatched those eggs for him in two batches, setting 500 at a time in two incubators of 250-egg capacity each. We had no marvellous success with the hatching. It is always possible to get better results if the eggs do not have to travel and be shaken about. From the first lot we got 255 chickens, from the second 280. When the first lot of chickens appeared on April 12 they were put into a little hut built for them with a large brooder stove in the centre. That kept them warm. The floor was covered with straw and chaff. They thrived amazingly. Some were taken by rats, a very few died, but the rest did well. The second lot followed later, but when they were about a week old someone left the hut door open, one cold, stormy afternoon for several hours. They all took cold and nearly all the second lot died. The first lot which were older were not affected by the cold. Altogether there were left about 250. They were kept in the brooder house until six weeks to two months old, being allowed an outside run, and then as they grew too big for their run I took them out with me to a farm I had my own birds on. There they had free range, shelter, lots of good feed but no forcing materials, clean water three times a day or more often in the hot weather, until the beginning of September. Meantime the cockerels were shipped to Montreal, but alas! the proceeds were only sufficient to cover cost of rearing. What were left were about 100 pullets, whose performances I have described above.

The first secret of success is breeding. It is useless to expect 200 eggs per year from a hen that has not been bred for that particular purpose. The next secret is feeding. To obtain such results the feed must be of certain chemical constituents blended and balanced to get the best results. The next secret is exercise. The birds must be kept warm in winter, not by artificial heat, nor by double or treble walls, but by their own hard work. The grain food must be thrown into several inches of straw or other scratching materials and buried in it, six inches at least. Do not be afraid of wasting the straw. The more there is the longer it will keep clean. The hen-house must be clean, airy, well-ventilated, but free from drafts—and above all things, dry. In addition to this you have early pullets of a good laying strain, your profits are sure. My friend made \$32.90 in one month from 90 pullets. Are you doing the same from yours?
England.

W. J. FLETCHER.

Canning Chicken in the Home Kitchen.

At a recent meeting of the Ottawa Poultry Association, an interesting paper was read by Dr. Robert Barnes, Health of Animals Branch, Department of Agriculture, Ottawa. The importance of the law regarding canned goods was first discussed, and it was shown how the provisions of the Act had protected honest canners, and had made it possible for them to compete in all lines. Previously, he said, dishonest canners prepared veal and sold it for canned chicken or turkey, thus making competition very unfavorable for those who put up a reliable product. A process was also described whereby a few neighbors might co-operate and can their surplus stock. But of more interest to readers, probably would be Dr. Barnes' recommendations regarding canning chicken or fowl in the home kitchen. "I may say that it is quite possible," he remarked, "for the housewife to can her own poultry on the kitchen stove, and provide herself with a supply of nourishing food, such as is looked upon in many homes as a delicacy, and fit to set before the best in the land."

The method of operation is as follows: Clean and cut up the chicken. Sort out the fleshy portions, such as the legs, thighs, and breast. Break off the protruding portions of the bone in each piece. Pack these fleshy portions in a gem jar, or other container, as closely as possible. Add salt and pepper (about a teaspoonful of salt and one-eighth teaspoonful of pepper). Fill to within three-quarters inch of overflowing with the liquid that comes from "the balance of the chicken," which is treated according to the process described later in this paragraph. Next place the jars in a boiler, or other vessel containing warm water, and gradually bring to a boil. For pint jars boil 2½ hours, for quart jars boil 3½ hours. For "the balance of the chicken" treat as follows: Place in a kettle and boil till the meat will strip free from the bones. Strip off all the meat and pack in the jar. Pour off the balance of the liquid that has not been used to cover the fleshy portions in the jars mentioned in the previous process. If there is not enough liquid remaining to fill the jars, add water. Place in boiler, as mentioned heretofore, and boil pint jars 1½ hours; boil quart jars 2½ hours. If desired, the entire chicken may be prepared as has been advised for "the balance of the chicken." In all cases take care not to expose the gem jars to a sudden change of temperature; also, after the jars have cooled off, examine the tops to see that the covers are air-tight. During the cooking of the product place the glass tops on the sealers, but do not fasten them. Any steam or gas which may be generated will escape. As soon, however, as the processing is finished, fasten the tops securely.

Glass containers were recommended by Dr. Barnes. However, in commercial canning, he said it was found necessary to resort to tin. The canneries prefer good, plump fowls, with a fair proportion of chickens, the bones of the latter giving a firmer jelly and lessening the danger of a soupy or slushy product. As a precaution against this condition, where the pack is as described in the first part of the paragraph, gelatin may be and is often used. As regards the preparation of fowl for canning, Dr. Barnes said, "All poultry intended for food, canned or otherwise, after being properly starved, bled and plucked, should be left undrawn and kept in a suitable temperature for at least a week, in order that the chemical changes which follow killing of the bird may have an opportunity to take place."

HORTICULTURE.

Feeding the Orchard.

In the large commercial orchard, the owner supplies manure and fertilizers even more abundantly than the grain or stock farmer does for his crops of corn or roots. As the average farmer would not consider growing his hoed crops without fertilizer of some kind, so the fruit-grower does not expect his trees to bear him a profitable crop of apples without feeding them. But where fruit growing is only a side-line the trees are usually woefully neglected, drawing nourishment from the same soil for twenty-five or thirty years with only an occasional dressing of manure, and yet they are expected to bear large, highly-colored apples every year. It is too much to expect of the trees. If first-class apples are desired for winter use, the trees require the best attention. Plan to give the old orchard a liberal supply of good, farmyard manure this spring. Do not put it just around the trunk, but cover all the ground, as the little feeders of the roots extend out as far as the branches. If the orchard is a sod, allow the grass to grow up through the manure, and instead of pasturing or harvesting allow it to remain on the ground. When the manure is applied on the frozen ground

Chicken in the Home Kitchen.

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of operation is as follows: Clean the chicken. Sort out the fleshy parts, the legs, thighs, and breast, protruding portions of the bones in these fleshy portions in a gum container, as closely as possible. Sprinkle (about a teaspoonful of salt and a teaspoonful of pepper). Fill to within an inch of overflowing with water. Comes from "the balance of the chicken" is treated according to the proper in this paragraph. Next place in a smaller, or other vessel containing gradually bring to a boil. For 2 hours, for quart jars boil 3 hours. The balance of the chicken" treat in a kettle and boil till the bones are free from the bones. Strip off the fat in the jar. Pour off the fat that has not been used to cover the bones in the jars mentioned in the text. If there is not enough liquid in the jars, add water. Place in a kettle heretofore, and boil pint jars for 2 1/2 hours. If desired, the jars may be prepared as has been described in the balance of the chicken." In all cases to expose the gem jars to a temperature; also, after the jars are examined the tops to see that the glass is tight. During the cooking of the jars, glass tops on the sealers, but not to escape steam or gas which will escape. As soon as the cooking is finished, fasten the tops.

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it tends to hold the frost longer in the spring, consequently the trees do not blossom quite so early. In some cases they are late enough to escape injury from the spring frosts. Where the trees do not put forth satisfactory growth each year, it is an indication of a deficiency of nitrates in the soil. This can be remedied by sowing a legume crop in July or earlier, and plowing it under the following spring. Farmyard manure supplies potash, and phosphates as well as a considerable quantity of nitrates, at the same time adding humus, which improves the physical properties of the soil.

FARM BULLETIN.

The Trebilcock Sale.

C. E. Trebilcock, of London, Ont., held his auction sale of registered Holstein cattle, as advertised in this paper. The cattle were all in good condition. T. M. Moore, of Springfield, conducted the sale in his usual jovial manner. The crowd was large, and the bidding was brisk throughout the entire sale. The four-year-old cow, Tea's Baroness, was the highest-priced animal at the sale, and went to the bid of Mr. McNee, Seaforth, for \$270. King Lyons Korndyke, the herd bull, sold for \$235. Several heifer calves brought around \$95 each. The following list of cattle selling at \$100 and over gives an idea of prices paid:

Alice Faforit, F. Bodkin, Wilton Grove.....	\$115
Maud Faforit Posch, W. H. Thornton, London Junction.....	170
Daisy Bell Teake, W. Ellis, The Grove.....	175
Pauline Wayne De Kol, W. Bank, Thamesford.....	205
May Darling, H. Stead, Kingsville.....	150
Jubilee Queen B. 2nd., J. Bradish, Glanworth.....	235
Aggie Grace Cornucopia, W. H. Shore, Glanworth.....	140
Pauline Abbe'erk Dewdrop, W. Ellis.....	280
Unique Rose, W. Ellis.....	215
Johanna Mercedes Clothilde, Mr. McNee, Seaforth.....	235
Beatrice Abbe'erk Bess, W. G. Walters, Thorndale.....	185
Griselda of Evergreen, W. Gleason, Lakeside.....	105
Princess Abbe'erk Dewdrop, C. Stamp, Thorndale.....	185
Diamond Queen, W. H. Thornton.....	200
Minnie Faforit Posch, W. Bent, Thamesford.....	195
Teake Baroness, Mr. McNee.....	270
Clothilde Jewel, W. Bent.....	225
Clothilde Princess Posch, J. Bradish.....	200
Victoria Jubilee, W. G. Brown, London.....	175
Canary Mercedes Rose, W. H. Shore.....	200
Mercedes Abbe'erk Clothilde, W. G. Walters.....	205
Daisy Bell Pandora, H. Stead.....	190
Fern Dewdrop, J. W. Shosbottom, Ballymote.....	180
Sarah Ann Dewdrop, W. Gleason.....	105
Lady Jane Dewdrop, W. Gleason.....	110
Molly Teake Abbe'erk, J. B. Carmichael, Ilderton.....	135
Dewdrop Queen, W. Shosbottom, Ballymote.....	130
Annie Faforit, W. H. Thornton.....	150
Bell Abbe'erk Teake, J. Bradish.....	140
Fannie Faforit Abbe'erk, E. Beachman, Lakeside.....	115
Unique Rose Dewdrop, W. H. Thornton.....	120
Unique Rose Abbe'erk, W. H. Thornton.....	120
King Lyons Korndyke, W. Ellis.....	235

The Rife Holstein Sale.

The sale of Holsteins of Wm. A. Rife, Hespeler, was fairly well attended, but as the day was wet the crowd was not as large as it otherwise would have been. The cows sold for a fair average, but the heifers and males went at bargain prices. The herd sire was sold subject to reserve bid, and was retained.

The buyers were: Neil McLean, Rockwood; H. Bagg, Downsview; C. E. Sparks, Millgrove; Jas. Gartley, Puslinch; Jas. Stewart, Guelph; F. Spencer, Toronto; R. Carson, Listowel; M. A. Sparks, Millgrove; A. Panabaker, Hespeler; Alex. Stewart, Guelph; Jas. E. Thomas, Guelph; Geo. Edworthy, Orkney.

The following is a list of prices over \$100:

Abbe'erk Maid, five years.....	\$135
Fussie Boutsje De Kol, five years.....	170
Pietertje Mercedes Mechthilde, five years.....	105
Norine Wayne Mercedes, four years.....	200
Pietertje Mercedes Wayne, five years.....	145
Queen Abbe'erk Mercedes, four years.....	110
Pietertje Mercedes Gretqui, three years.....	110
Bittina 3rd, seven years.....	205
Lady Wayne Mercedes, three years.....	165
Queen Betty Wayne, three years.....	225
Fussie Boutsje Wayne, three years.....	300
Queen Bittina Wayne, two years.....	100
Pontiac Norine Segis, one year.....	150
Pietertje Boutsje Wayne, one year.....	100

Winter Notes.

By Peter McArthur.

As I look out through the window and see the snow falling, I regard it with mixed feelings. The prospect of a few days or possibly weeks of good sleighing, is decidedly pleasant. For some time past the roads have been unfit for travel of any kind. During the mild spell they got worked up by passing wagons, and in some places were plowed up by traction engines, and when they were at their worst the cold snap came and froze them as hard as stone. As I have had to make long drives, some of them at night, I have been shaken almost "joint from joint." The horse could only walk, except on scattered stretches of stone road, and the buggy bounced around as if it were bewitched. So when I see the snow falling and realize that my next drives may be taken in a smoothly slipping cutter, a feeling of thankfulness wells up within me. But when I remember that I did not manage to get the tar paper on the little trees in the young orchard last fall and that I must trample the snow around them after every snowfall, the falling flakes do not look so cheering. This job means a walk of about four miles, with a stop every forty feet to pack down the snow so that the mice cannot get to the little trees and gnaw the bark. Fortunately the little wretches do not attack the trees unless they are able to approach them under the snow, and that makes it possible to keep them away, by packing the snow so that they cannot get through it. This winter I have had to trample the snow only twice, as there has been so much open weather. In the previous trappings I noticed only one tree that had been nibbled at, and it was not damaged to any extent. But the snow that is falling to-day is light and



R. J. Messenger, B. A.
President of the Nova Scotia Farmers' Association, 1915.

fluffy and ideal for mouse tunnels. I will have to take my walk all right. And as this conviction is forced on me I remember with some wrath that last fall I bought the tar paper to wrap around the trees and cut it to the proper size, but something always happened to keep me from putting it on until the winter came, and then it was too late. O! Well! walking is healthy exercise.

The habit of thinking about something else while doing farm work is all right as a general rule, but sometimes a fellow will make mistakes. Sometimes I become absorbed in a problem and devote my mind to it while my hands are busy about some simple routine work that does not require any thought, with the result that I get done with the hand work sooner than I had expected, and waken up for a few minutes to see that I haven't neglected something. This method of doing two things at once will doubtless be condemned by people who hold that a man should have his mind on his work all the time. Perhaps they are right. Anyway, I freely admit that they are right sometimes. A couple of days ago I was doing the chores and grappling with that most delicate problem, "rural recruiting." Everything went smoothly until I started to give the milk cows their daily ration of bran and oil cake. (I am not sure that it is a scientific ration, but it has long been used in this district, and who am I that I should go against local opinion and

do things differently? As I was going to say, I was handing out this ration in buckets, and when I reached the last cow I discovered that my supply of buckets had run out. This brought me back to earth at once, for I was certain that I had mixed the right amount. I have a safe rule when working about the stable, and that is: when anything goes wrong look and see what Fencer-viewer I. is doing. I looked and found that she was gobbling bran and oil cake as if her life depended on it. Then there was excitement. As she is not milking just now she is not being fed for milk production, and I had absentmindedly given her the bucket meant for another cow. But what she had she was bound to hold, and it took some wild wrestling to pry her loose from that unexpected feed. And when I finally got away from her what was left she let out an indignant bawl that suggested what she would do to me if she were not chained. I guess when I am choring around her it will be just as well to keep my mind on my work.

Speaking of rural recruiting, I am glad that the United Farmers of Ontario and the Ploughmen have taken a definite stand. If five hundred thousand men are to be recruited it will be necessary to adopt a properly considered plan for the purpose. The only light and leading the authorities have given the farmers is to tell them that they are expected to produce more, but the recruiting officers are going about everywhere saying that everyone who is fit should enlist, even if farms are left idle. And the way some of them say it is not pleasant to listen to. Apparently their idea is that men must go even if the productive work of the country should come to a standstill. And while this is going on the Department of Finance is calling for greater production so that the credit of the country may be maintained. I believe that the farmers are as willing as anyone else to do their bit, but they are confused by the different calls that are made on them. That city people are chafing under the present haphazard method of recruiting is shown by the following comment made by the Toronto Star on a paragraph in the News. As this comment reflects the opinion of both political parties, the News being Conservative and the Star Liberal, it should be safe to quote it in an independent paper:

"Some of the attacks upon Canadians by recruiting agents, display intolerable ignorance and insolence."—Toronto News.

With this we entirely agree. Some of the talk used by men who are not Canadians to men who who are, has been endured with a patience that is not guaranteed to last.

Notes from Ontario County.

Editor "The Farmer's Advocate":

Winter is again well under way, and we have not as yet experienced such a winter as we were led to believe we were to get, by the learned weather prophets. No snow is visible, and while we have had about a week's fair sleighing, most of what fell was soon piled in fence corners by the wind, of which we have had an unusual amount.

Cattle—particularly milch cows—have been selling unusually high at sales, where credit is given, but at a cash sale most of the crowd stand and look. Oh! How far away 10 or 12 months appears to some people. Feed is plentiful, although roots are only keeping fairly well. Roots are all right in their place, but we need have no fear of silage not keeping.

Clover seed is scarce, and the yield very small. Unless some seed is obtained from an outside source, we have fear much less than usual will be sown. Timothy seed is not so scarce, and is of very fair quality.

Beans were almost a failure. The crop was small and the sample poor, due to the wet summer. The price, although high, is not sufficient to make beans a paying proposition.

Many fields of potatoes were never dug, and even what were harvested kept poorly, but beans and potatoes are not staple crops in our county, and what was lacking in these crops was more than made up in the cereal crops which were unusually good.

Ontario Co., Ont. W. H.

Worth Many Times Its Cost.

"I may say that I have only been taking 'The Farmer's Advocate' for one year, but have received many times the worth of the subscription price even in that short time, and wish you continued success in your good work of helping the farmer."

Nipissing District, Ont. W. G. CARR.

A farmer, D. F. Armstrong, of Leeds Co., Ont., writes that he applies common wood ashes to pigs having piles with good results, and that as a preventative of retention of the after-birth he feeds the cow just before calving a handful of flaxseed in her meal. We pass these on for what they are worth.

AGRICULTURE.

g the Orchard.

Commercial orchard, the owner and fertilizers even more abundant or stock farmer does for roots. As the average farmer growing his hoed crops of some kind, so the fruit-keeper his trees to bear him apples without feeding them. Pruning is only a side-line the woefully neglected, drawing the same soil for twenty-five or thirty years, and an occasional dressing of the soil are expected to bear large crops every year. It is too late to plant trees. If first-class apples are to be raised, the trees require the same care as the old orchard. Good farmyard manure this year, just around the trunk, and as the little feeders of the soil as far as the branches. If you allow the grass to grow up and instead of pasturing or mowing to remain on the ground, it applied on the frozen ground

County Road Superintendents in Conference Discuss Road Work.

There is a spirit in the atmosphere of approaching spring that induces one to "start something," and the Department of Highways, in the Provincial Government, naturally first consider starting road-work. Preparatory to this the County Road Superintendents and Engineers were called together at the Parliament Buildings, Toronto, on Feb. 8 to 11 in a conference, in order to equip themselves with the most modern ideas, and to relate experiences in their work. The sessions were presided over by W. A. McLean, Deputy Minister of Highways, and although much of the discussion was of a technical nature there was considerable that must interest the layman, especially when that layman contributes liberally to the cost of the work that is carried out. The council is the executive body administering the affairs of the county. It, through various committees, looks after the people's interests, and spends their money, as, in the wisdom of the councillors is deemed advisable. Our highways will be one of the big questions of the future, and when the heroes of the battles of Europe return, it has been suggested that those who cannot settle at once to their original labors be utilized in extending and improving Ontario's roadways to a very considerable extent. It is evident, therefore, that our rural population will be interested directly in an extensive highway propaganda in future years, and their knowledge of roads, and road construction should be such as will enable them to consider the question in the light of modern requirements. Every county and every township should possess good roads and bridges, but there must first be public sentiment in favor of such, and a general knowledge of what constitutes thoroughfares of this kind. The series of lectures given at the Conference last week were designed, more especially as a means of giving Departmental instruction to County Engineers and Superintendents who are in charge of roads subsidized by the Government under the Highway Improvement Act, but those present still remembered that about 80 per cent. of the 56,000 miles of roadway in the Province of Ontario, will continue for some time to be common earth roads, and that they will require attention and supervision. The whole scheme of Highway Improvement is divided by the Department into two main classes of roads, viz., county or market roads, and township roads. While the former class require a considerable cash outlay per mile, and considerable engineering skill in their construction, the township roads, over which farmers must travel before they reach the market or county road, must be kept in a good state of repair, else the efficiency and service of the roadways put down at a considerable expense will be minimized to a considerable degree.

SPECIAL PROBLEMS IN DRAINAGE.

Seven rules were enunciated by M. A. Kemp, B. Sc., in discussing the problem of drainage, as it relates to public highways. These rules were as follows: 1. Consider the main water-courses, crossing or adjacent to the roads, which can be used as outlets, and the natural slope of the road to these. 2. Then grade the road and open the drains at the sides so that water will flow steadily to these outlets. 3. Every side drain should have an outlet, nor should depressions be left at the side to hold water. 4. Place culverts under the road whenever needed, to provide outlets for the water. 5. Crown the road well so that water will flow steadily to the side drains. 6. Dispose of the water in small quantities, do not carry it in long ditches, past natural outlets, to avoid making culverts. 7. Lay tile drains below the water line. In general tiles without gravel surfacing is better than gravel surfacing without tile.

The whole science of road building, said Mr. Kemp, is founded on the principle that good drainage is of vital necessity to a good road. The surface drainage must be able to handle the water as it falls in rain, or results from melting snow, and get it to the ditches without delay. To do this the road centre must be smooth and the crown sufficient. When used in conjunction with other drains, the side ditches never need to be deep, but in all cases they must have a steady fall to a good outlet. Water should never be carried long distances in the ditches, for the purpose of avoiding the putting in of a culvert. It is usually cheaper and easier to place a number of small pipe culverts, where required, than carry the water in the ditch a mile or so and then have to build a 24-inch or 30-inch pipe, or even a larger culvert. As the volume of the water grows, the difficulty of handling it increases, and its destructive effect on the road becomes greater.

The location of under drains in relation to the road itself depends on circumstances. It is usually better to place the tile under the side drains. The soil is soft there and easy to excavate. It is poor policy, except in extreme cases, to soften the hard, travelled portion of the road by digging a trench in it. The most effective arrange-

ment is that of a tile drain under each side ditch, and V-shaped drains running from the centre of the road to connect with the tile at the sides. This should be suitable for the worst spots. Others might require only a line of tile on each side or a tile drain on one side only, or tiles only at springy or damp spots. All things considered on level ground, and in average soil, a single line of tile placed 2½ or 3 feet below the side ditch when the road is graded 24 feet wide, will accomplish about all that under-draining can be expected to do. The tile should never be less than 4 inches as a general rule; 800 to 1,000 feet of 4-inch tile may be used ordinarily. Where the fall is doubled, the capacity is increased 40 per cent. If the diameter is increased one-third the capacity is doubled. In heavy clay a tile will drain about six times its depth on each side, and in porous soils as much as 15 or 20 times its depth. The speaker furthermore stated that the grade should not be less than 3 inches in 100 feet, nor greater than 1 inch in 5 feet. In dense soil the trench should be filled with gravel, broken stone, or cinders, up to about one foot from the surface. The outlet should be protected with a headwall extending down below the frost line, and several sections of the tile at the end should be vitrified or concrete pipe.

THE SPLIT-LOG DRAG.

The care of earthroads and the use of the split-log drag were treated in a practical paper by W. H. Losee, B. Sc. He said, the importance of the study of earth roads construction is very evident when we consider that out of the 56,000 miles of highways in Ontario some 20,000 miles are earth roads. It has been estimated that the improvement of about 20 per cent. of the existing road mileage in each county will take care of about 80 per cent. of the traffic. We have then about 80 per cent. of roads which carry a small amount of traffic and feed into the heavier-travelled highways, which in turn lead to the main market centres and shipping points. These lightly-travelled roads lead past the doors of the great majority of farmers, and should be brought up to a certain standard of efficiency. Mr. Losee emphasized the point that it was of no use to improve small strips of highways and leave the greater percentage of roads uncared for. In addition to much good advice and recommendations, as to how earth roads might be improved and maintained, the speaker fully described the construction and use of the split-log drag. The following paragraph sets forth a few of the essentials in the construction and operation of such an implement.

A log from five to seven feet long is split, or sawn in half. The halves are placed parallel to one another, the edges down, and the flat face to the front. They are firmly braced together in this position with three cross-bars, wedged into 2-inch holes bored through the log. A chain hitch is attached in such a manner as to incline the drag at the desired angle; say 45 degrees; the forward corner being at the outer edge of the road, and the inner corner at the centre. Use a light drag, preferably of cedar, pine or basswood, and such as can be readily managed by a team of horses. Fasten strips of steel along the lower face-edges of the drag, from 2 to 4 inches wide and ½ inch thick. A straightened wagon tire, or sleigh runner, is ordinarily used. Instead of making the drag with square ends, give the rear slab a setback, so that when the chain is hitched at the ordinary angle the ends of the drag will be parallel with the sides of the road. Attach the end of the chain at the outer side of the drag to the cross-bar and the end at centre to a ring in front, or pass through a hole in front of the drag. If both ends of the chain are fastened to the cross-bars, there is a downward bearing on the front of the drag, liable to upset it in a manner dangerous to the operator. The length of chain changes the line of draft in such a way as to regulate the hold taken on the earth. To lengthen the chain is equivalent to putting a weight on the drag. If the drag is too heavy, shorten the chain. To move more earth, lengthen the top than the bottom to allow the earth to pass underneath them. Place a couple of planks over the cross-bars for the operator to stand on. The operator can regulate the work of the drag by moving from one end to the other.

It was recommended that the council should establish a plan for dragging the earth roads systematically. It will not be done properly when left to Statute Labor, or to individual effort. Sections should be let by tender, one or two miles in length, and the work inspected by the Road Superintendent.

PAINTING STEEL HIGHWAY BRIDGES.

George Hogarth, of the Department of Highways, gave an excellent paper, describing the

necessity of and the technique in painting and maintaining steel highway bridges. The railways of the country, he said, have millions of dollars invested in steel bridges, and they insist that experienced men paint all steel structures as often as necessary. A bridge which is painted every four years, after being built, will require only five complete paintings to last 24 or 25 years, and at the end of that time it will be in good condition. Yet the experience is that bridges built 20 and 22 years ago are to-day in a very doubtful condition through rusting away of a considerable quantity of steel. The cost of a few paintings is only a fraction of the cost of any steel structure, and when at small cost the life of such structures can be prolonged indefinitely, it is economy to use paint. As regards paints to use, Mr. Hogarth recited the results of a ten-year test conducted in the United States. One paint which gave particularly good service consisted of red lead and linseed oil, with a small amount of carbon pigment added in the third, or finishing coat. Where objection, he said, is made to the bright color of red lead in the finishing coat, the third coat can be darkened by adding some lamp black. Many other points regarding the painting of bridges was brought out in Mr. Hogarth's paper, while maintaining steel highway bridges was also discussed at some length.

THE ORGANIZATION OF A MAINTENANCE SYSTEM.

The matter of maintenance is a live question, especially after improved highways are constructed. This matter was discussed by A. A. Smith. Of the various suggestions thrown out by the speaker, the patrol system was advised, after the kind adopted in New York State. There the patrolman must furnish a horse and cart, but he will be supplied with all tools and road materials, by the municipality, which are placed at proper intervals along the road. He must be employed continuously and have charge of from five to ten miles of road, the length varying with the class of construction. His work will be directed towards preventing unnecessary deterioration of the metal surface, which includes the removal of loose stone, the repair of wear in the centre, due to horses' feet, and supplying binder in dry weather to prevent ravelling. He would also be expected to clear out gutters, culverts, catch basins, and all waterways, lower the shoulders of the roads, repair damage due to wash and freshets of all slopes, and make other minor repairs.

Over these patrolmen should be placed a Highway Inspector, or Foreman, and he would be held directly responsible for a distance covering from 60 to 100 miles of roadway. Under him will be from eight to twelve patrolmen, the duties of which have already been mentioned. The Foreman would be empowered to O. K. the men's requisitions for tools, supplies, team labor, etc., and he in turn would be held responsible to the Superintendent, or County Engineer. Accurate time-sheets, and expense statements should be kept, in order that the County Superintendent could provide the council at any time with the cost of maintenance of any mile of roadway in the county.

DUST PREVENTION.

In a paper on Dust Prevention, W. Huber gave some valuable information as to the application and use of oils. No particular oil was recommended, but those having an asphaltic base were, of course, mentioned as preferable, and are most commonly used. Following the speaker, some of the Engineers intimated that after one thorough application of oil subsequent applications could be made lighter and less frequently. In their experience the oil as applied to stone and macadam roads had done good service in holding the particles together, and preventing dust. Mr. Huber advised against oiling roads that were covered with dust. This should first be swept off and carried away. Oil and dust, he said, would churn up into an offensive and injurious mixture that will indelibly soil any clothing, carpets, or other textile goods with which it may come in contact. Oil should not be applied on wet days, as the moisture will prevent adhesion between the oil and the road and failure will result. Neither should oil be applied to a newly-built macadam road, as it prevents and retards the setting of the same. Oil should be applied in warm weather.

THE ONTARIO HIGHWAYS ACT.

The Highway Improvement Act was originally passed in 1901; was consolidated and revised in 1907; important amendments were introduced in 1912, and the New Ontario Highways Act was passed in 1915. W. A. McLean, Deputy Minister of Highways, discussed the provisions of this Act at the Conference.

The general basis of the Ontario Highways Act passed in 1915, is as follows: 1. A county council is authorized to assume a system of roads for construction and maintenance. 2. A by-law adopting such a system may be passed by a two-thirds majority of the county council, represent-

Discuss

the technique in painting and highway bridges. The railways said, have millions of dollars worth of steel structures as often as bridges, and they insist that every bridge which is painted every year, will require only one painting to last 24 or 25 years. At that time it will be in good shape. The experience is that bridges years ago are to-day in a very poor state through rusting away of a coat of steel. The cost of a few coats of paint is a fraction of the cost of any bridge when at small cost the life of a bridge can be prolonged indefinitely, it is said. As regards paints to use, the results of a ten-year test in the United States. One paint which gave good service consisted of red lead, with a small amount of zinc oxide in the third, or finishing coat, he said, is made to the lead in the finishing coat, the darkening by adding some lamp black. Points regarding the painting were brought out in Mr. Hogarth's statement steel highway bridges at some length.

QUESTION OF A MAINTENANCE SYSTEM.

Maintenance is a live question, improved highways are constantly being discussed by A. A. Harris suggestions thrown out by the patrol system was advised, adopted in New York State. A man must furnish a horse and be supplied with all tools and by the municipality, which are intervals along the road. He continuously and have charge on miles of road, the length class of construction. His work towards preventing unnecessary metal surface, which includes stone, the repair of ware in to horses' feet, and supplying water to prevent raveling. He is expected to clear out gutters, culverts, and all waterways, lower the roads, repair damage due to of all slopes, and make other

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PROPOSED HIGHWAYS ACT.

The proposed Act was originally as consolidated and revised in amendments were introduced in the Ontario Highways Act was V. A. McLean, Deputy Minister used the provisions of this Act.

is as follows: 1. A county to assume a system of roads and maintenance. 2. A by-law system may be passed by a two-thirds majority of the county council, represent-

ing at least one-half of the equalized assessment of the county. 3. Failing to receive the two-thirds majority of the county council, it may be carried by a simple majority of the council, and confirmed by a majority vote of the ratepayers. 4. The roads assumed are to be such as will accommodate the greater part of the local market travel, creating a system of main market roads. 5. The roads are to be built in accordance with the regulation of the Department of Public Works and Highways.

The cost of roads, as stated by the Department, varies with local conditions. The mileage of roads assumed also varies, but is usually from 12 to 15 per cent. of the total road mileage of the county. Gravel roads are commonly built at a cost of from \$1,000 to \$2,500 per mile; broken stone roads from \$2,500 to \$4,000. The length of wagon haul is an important factor.

Suburban roads, for the most part, are subdivisions of the market roads. They are simply market roads entering the larger cities, and to which the cities should contribute.

To promote the construction of county or market roads the Government, under the new legislation, has increased the amount of the Provincial contribution from 33 1-3 per cent. to 40 per cent. of the construction. The Government will pay also 20 per cent. of the cost of maintenance, and this provision is made to extend to any county that has adopted a by-law under the Highway Improvement Act.

With regard to suburban roads, the Act provides that upon application of any county adopting a system of county roads, the Lieutenant-Governor in Council shall direct the appointment of a commission to determine suburban areas to be served by a proposed system of suburban roads; such commission to be selected by the councils of the city and county.

The expenditure upon roads within any suburban area shall be borne as follows: 30 per cent. by the county, 30 per cent. by the city or town, and 40 per cent. by the Province; but the amount to be contributed by the city shall not exceed the proceeds of a rate of one-half mill on the dollar of the assessment. The expenditure for maintenance and repair shall be borne by the city and the county in the ratio of 40 per cent. each, the Province paying 20 per cent.

Where a city or town has a population of less than 50,000, the commission to be appointed shall be composed of three persons, one to be appointed by the city, one by the county, who together will choose a third; and in default of

agreement, by the Lieutenant-Governor in Council. Where the population is over 50,000 the commission shall consist of five persons, two each from the city and county, and one by agreement as before.

For the purpose of facilitating the establishment of good township roads, the question of township organization has been regarded as most important. The Public Roads and Highways Commission in its report pointed out that much money and energy was wasted on these roads through lack of proper organization to give attention when it is necessary. It is felt by the Government that for the present, the most benefit can be derived, not by giving financial aid to the townships for road construction, but by encouraging a more efficient township organization. To this end the Government will lend financial assistance in the form of salaries.

Brantford Holstein-Friesian Sale.

The Brant District Holstein-Friesian Breeders' Club, held their auction sale, as advertised in this paper. The sale was a success in every way. Between seven and eight hundred people were present, and bidding was lively with Col. Almas as auctioneer. Prices as a rule were fairly good. The following is a list of cattle selling for \$100 and over:

Maud H., Jno. S. Smith, Millgrove.....	\$145
Priscilla H., G. T. Packham, Vinemount.....	200
Elsie Maud, C. H. Summerby, Paris.....	105
Lady Abbeckerk Mary, W. H. Hird, Onondaga.....	200
Lady Ormsby Abbeckerk, Jas. Young, Mchawk.....	105
Woodland Beauty 4th, J. A. Campbell, Brantford.....	160
Lillie Bonheur, G. T. Packham, Vinemount.....	125
Mercena Faforit Queen, Robt. Innis, Brantford.....	110
Jennie De Kol Pride, G. T. Packham, Vinemount.....	160
Floss Fairmount Brook, Geo. A. Smith, Cookville.....	115
Houwte De Kol Pet, R. M. Robb, Troy.....	135
Arkano Albino De Kol, Bruce Mason, Onondaga.....	145
Flossie Abbeckerk Mercena, W. G. Brown, Cainsville.....	200
Maud Schuiling De Kol, Geo. Clark, Brantford.....	110
Dandy Polly, J. S. Dipple, Walkerton.....	160
Jude Mechthilde, Robt. Innis, Brantford.....	145

Lakeview Countess Chase, Jno. S. Smith, Millgrove.....	125
Artis Cornucopia Mechthilde, J. P. Griffin, Freeman.....	125
Doris De Kol Korndyke, J. S. Dipple, Walkerton.....	155
Avondalis Jewel De Kol, Ross Poole, Norwich.....	120
Abbeckerk Monarch, G. T. Packham, Vinemount.....	130
Alta Stienstra Bess, J. A. Campbell, Brantford.....	160
Butter King's Daisy, E. C. Chamber, Hatchley.....	155
Erie Perfection Posch, W. H. Hird, Onondaga.....	145
In'a De Kol Posch, Robt. Geddie, Paris.....	140
Jessie Faforit Narona, W. Farrington, Farrington.....	150
Boliver Mercena Jewel, A. Edwards, Brantford.....	105
Countess Abbeckerk Mechthilde, W. M. Miles, Waterford.....	125
Viola Countess Sprink, Glat's Dean, Harley.....	115
Dee Mischief De Kol 3rd, J. Richardson, Freeman.....	185
Spotted Fayne, D. Brooks, Kelvin.....	145
Fauline Schuiling Mercena, J. Caldwell, Scotland.....	115
Johanna Korndyke Grant, J. H. McCormick, Freeman.....	185
Ida Korndyke, J. Caldwell, Scotland.....	105
Juliet Acme De Kol, Wm. Harrison, Middleport.....	180
Ressie Posch Faforit, D. McVicar, Onondaga.....	130
Smithdale Maggie Faforit, Robt. Geddie, Paris.....	125
Lynn River Mercedes Netherland, D. McVicar.....	110
Tolly Banks, Francis Davies, Scotland.....	265
Dorel Korndyke, W. M. Niles, Vanessa.....	140
Jude De Kol Pontiac, H. Dymont, Dundas.....	100
Ia Vata De Kol, A. Todd, Brantford.....	120
Lady Claire Pietertje, E. Roberts, Brantford.....	120
Laura Netherland Rue, W. G. Bailey, Paris.....	265
Queen Posch Bella, Clark Dean, Harley.....	140
Knightdale Hermes, Robt. Par's, Troy.....	\$102.50

Brings Results.

L. K. Weber, Hawkesville, Ont., when sending his remittance for advertising, writes the following: "The Farmer's Advocate" for good results with good people!"

Toronto, Montreal, Buffalo, and Other Leading Markets.

Toronto.

Receipts at the Union Stock Yards, West Toronto, from Saturday, Feb. 12, to Monday, Feb. 14, numbered 139 cars, comprising 2,313 cattle, 328 hogs, 138 sheep, and 137 calves. Choice heavy steers, \$7.75 to \$8; choice butchers', \$7.50 to \$7.75; good, \$7.25 to \$7.35; medium, \$6.75 to \$7. Cows were firm, at \$3.75 to \$7; bulls, \$5.50 to \$7; stockers steady; milkers steady, and calves, sheep and lambs firm, at Thursday's prices. Hogs, \$10, fed and watered.

REVIEW OF LAST WEEK'S MARKETS

The total receipts of live stock at the City and Union Stock Yards for the last week were:

	City.	Union.	Total.
Cars.....	33	849	882
Cattle.....	571	4,916	5,487
Hogs.....	1,460	17,633	19,093
Sheep.....	446	855	1,301
Calves.....	28	370	398
Horses.....	87	68	155

The total receipts of live stock at the two markets for the corresponding week of 1915 were:

	City.	Union.	Total.
Cars.....	46	484	530
Cattle.....	465	5,435	5,900
Hogs.....	1,460	17,633	19,093
Sheep.....	601	1,374	1,975
Calves.....	33	354	387
Horses.....	30	47	77

The combined receipts of live stock at the two markets for the past week show a decrease of 148 cars, 413 cattle, 10,574 hogs, 674 sheep and lambs, and an increase of 11 calves and 78 horses, compared with the corresponding week of 1915.

The fat cattle market was quite active and strong, at the previous week's closing values. The deliveries were not excessive all week, just enough to keep the market from becoming congested. The cold weather coming was a considerable

factor in the improvement of the bovine trade. Values held steady all week, with the exception of one or two extra well finished loads of 1,200 to 1,300-lb. steers, which sold at \$8.25 to \$8.80, thirty-two cattle having been sold at these prices. This is a slight gain for this class of cattle. The quality of the bulk of the offerings still continues to be common and medium, too many of the green, unfinished being brought forward. The best of the bulls and cows found a ready market at \$6.50 to \$6.75, with a few at \$7, and even \$7.25 was again reached. There was not much change in the light and bologna bulls, which sold at \$5 to \$5.75. Stockers and feeders were strong all week, with a scarcity of well-bred dehorned steers. It took a 900 to 1,000-lb. steer to bring \$7, until the past week, when the 700 to 750 steers sold from \$6.60 to \$7. Milkers and springers of the choice kinds were in demand all week, and especially so on Wednesday and Thursday. There were many sales around \$90, and several at \$100 and over. Veal calves came forward in small numbers considering the season of the year, but this may be accounted for in that immature or "bob" calves are being debarred from the market, the meat inspectors not allowing them to be sold only for the hide values, the carcasses being condemned. This has made a change, and veal calves were scarce, selling up to \$11.50, and in some instances \$12 was paid. Light consignments of sheep and lambs caused firm and higher values. Light, handy yearling ewes sold at \$8.50 to \$9, and in one instance \$9.75 per cwt. was paid for a small lot. Lambs were still firmer, with values at \$12 to \$12.50 for the choice kind, and an extra choice lot of Shrops, weighing 90 lbs. each, sold on Wednesday at \$12.65. Hog prices have again advanced, the market being firm, at \$10.25 for selects fed and watered.

Butchers' Cattle.—Choice heavy steers at \$7.75 to \$8; choice butchers' cattle at \$7.50 to \$7.75; good at \$7.25 to \$7.35; medium at \$6.75 to \$7.10; common at \$6.25 to \$6.50; choice cows,

\$6.50 to \$6.75; good cows, \$6.25 to \$6.50; medium cows, \$5.40 to \$5.90; common cows, \$4.75 to \$5.25; canners and cutters, \$3.50 to \$4.50; light bulls, \$5.50 to \$6; heavy bulls, \$6.25 to \$7.

Stockers and Feeders.—Choice feeders, 900 to 950 lbs., \$6.75 to \$7; good feeders, 800 to 900 lbs., \$6.50 to \$6.75; stockers, 700 to 800 lbs., \$5.75 to \$6.25; yearlings, 600 to 650 lbs., \$6 to \$6.50.

Milkers and Springers.—Choice milkers and springers at \$9 to \$10; good cows at \$7 to \$8; common cows at \$4.5 to \$6.5.

Veal Calves.—Choice, \$10.50 to \$11.50; good, \$8.50 to \$10; common, \$5.50 to \$7.50; heavy, fat, \$7 to \$8.50.

Sheep and Lambs.—Light sheep at \$7.75 to \$8.50; heavy sheep at \$6.50 to \$7.50; cull sheep, \$5.25 to \$5.75; lambs, \$11 to \$12.75; cull lambs, \$7.50 to \$8.50.

Hogs.—Select, fed and watered, at \$10.25; 50 cents is being deducted for heavy, fat hogs, and thin, light hogs; \$2.50 off for sows, and \$4 off for stags, from prices paid for selects. One-half of 1 per cent. off all hogs for inspection.

BREADSTUFFS.

Wheat.—Ontario, No. 2 winter, per car lot, \$1.12 to \$1.14; slightly sprouted, \$1.08 to \$1.12, according to sample; sprouted, smutty and tough, \$1 to \$1.05, according to sample; feed wheat, 90c. to 95c. Manitoba, No. 1 northern, \$1.23, Fort William; No. 2 northern, \$1.20, Fort William; No. 3 northern, \$1.18, Fort William.

Oats.—Ontario, No. 3 white, 43c. to 44c., according to freights outside; commercial oats, 42c. to 43c.; No. 2 Canada Western, 43c., in store, Fort William; No. 3 Canada Western, 40c., in store, Fort William; extra No. 1 feed, 40c., in store, Fort William; No. 1 feed, 39c., in store, Fort William.

Barley.—Ontario, good malting, 64c. to 66c.; feed barley, 57c. to 60c., according to freights outside.

Rye.—No. 1 commercial, 92c. to 94c., according to freights outside; rejected, 83c. to 85c., according to sample.

Buckwheat.—Nominal, car lots, 73c. to 79c., according to freights outside.

American Corn.—No. 3 yellow, new, 80c., track, Toronto.

Canadian Corn.—Feed, 74c. to 75c., track, Toronto.

Peas.—No. 2, \$1.80, according to freights outside; sample peas, according to sample, \$1.25 to \$1.75.

Flour.—Winter, \$4.80 to \$5, according to sample, seaboard or Toronto freights, in bags, prompt shipment. Manitoba flour—First patents, \$7.20; second patents, \$6.70 in jute; strong bakers, \$6.50 in jute, in cotton, 10c. more.

HAY AND MILLFEED.

Hay.—Baled, car lots, track, Toronto, No. 1, \$18 to \$19; No. 2, \$15 to \$16, track, Toronto, per ton.

Straw.—Baled, car lots, \$6.50 to \$7, track, Toronto.

Bran.—\$25 in bags, Montreal freight; shorts, \$26, Montreal freight; middlings, \$27, Montreal freight; good feed flour, per bag, \$1.75, Montreal freight.

COUNTRY PRODUCE.

Butter.—Prices remained stationary on the wholesales during the past week. Creamery pound squares, fresh made, 35c. to 36c.; creamery cut squares, 34c. to 35c.; creamery solids, 34c.; separator dairy, 33c. to 34c.

Eggs.—New-laid eggs again declined on the wholesales during the past week, selling at 33c. to 35c. per dozen, wholesale, and cold-storage at 28c. to 31c. per dozen.

Cheese.—New, large, 19c.; twins, 19c. per lb.

Honey.—Extracted, 11c. to 12c. per pound; combs, per dozen sections, \$2.40 to \$3.

Beans.—Prime, \$4.20; hand-picked, \$4.50 per bushel.

Potatoes.—Ontario, per bag, car lot, \$1.70; New Brunswick, per bag, car lot, \$1.80 to \$1.90.

Poultry.—Live weight: Chickens, 14c. to 17c. per lb.; ducks, 14c. per lb.; geese, 12c. per lb.; turkeys, young, 18c. to 20c.

THE ROYAL BANK OF CANADA

Capital Authorized - - - \$ 25,000,000
Capital Paid up - - - 11,500,000
Reserve Funds - - - 13,000,000
Total Assets - - - 100,000,000

HEAD OFFICE: MONTREAL

Branches throughout every Province
of the Dominion of Canada

Accounts of Farmers
Invited

Sale Notes Collected

Savings Department at all
Branches

per lb.; turkeys, old, 15c. per lb.; fowl,
heavy, 14c. per lb.; fowl, light, 11c. to
12c. per lb.

HIDES AND SKINS.

City hides, flat 18c.; country hides,
cured, 16c. to 17c.; country hides, part
cured, 15c. to 16c.; country hides, green,
14c. to 15c.; calf skins, per lb., 18c.;
kip skins, per lb., 16c.; sheep skins, city,
\$2 to \$3; sheep skins, country, \$1.50 to
\$2.25; lamb skins and pelts, \$1.20 to
\$1.25; horse hair, per lb., 37c. to 40c.;
horse hides, No. 1, \$4 to \$6; No. 2, \$3
to \$4. Wool, washed, 40c. to 44c.;
wool, rejections, 38c. to 35c.; wool, un-
washed, 28c. to 32c.

FRUITS AND VEGETABLES.

The views as to the potato prices vary
greatly. Some expect them to advance,
and others to be easier. They have
been such a slow sale lately, however,
that some of the wholesalers are now
selling the New Brunswick Delawares at
\$2 to \$2.10 per bag, instead of \$2.10
straight.

Apples.—Spys, \$4 to \$6 per barrel;
Greenings and Baldwins, \$3 to \$4.50 per
barrel; Russets, \$3 to \$4.50 per barrel;
Kings, \$3.50 to \$4.50; Ontario, boxed,
\$1.50 to \$2.50 per box.

Grapefruit.—Florida, \$3.50 to \$4.25 per
case; Cuban, \$3.50 per case.

Bananas.—\$1.75 to \$2.50 per bunch.

Lemons.—California, \$4 to \$4.25 per
box; Messina, \$3.50 to \$4 per box.

Orange.—Navels, \$3.50 to \$3.75 and \$4
per case.

Strawberries.—40c. per box.

Tomatoes.—Hot-house, 20c. to 27¢
per lb.

Beets.—60c. per bag.

Cabbage.—\$1.25 per barrel.

Carrots.—75c. to 85c. per bag; new, \$1
per dozen bunches.

Celery.—California, \$7; Florida, \$3.75
to \$4 and \$4.25 per case.

Mushrooms.—Imported, \$2 per six-quart
basket; home-grown, 50c. per lb.

Onions.—No. 1's, \$2 per bag; others,
\$1.75 and \$1.50 per bag; British
Columbias, \$2.50 to \$2.75 per bag;
Spanish, \$5.25 per large and \$2.75 per
half case; green, small, 20c.; large, 50c.
per dozen bunches.

Potatoes.—New Brunswick Delawares,
\$2 to \$2.10 per bag; Ontarios, \$1.90
per bag.

Potatoes.—New, \$10 per barrel.

Rhubarb.—75c. per dozen bunches.

Chicago.

Cattle.—Beeves, \$6.25 to \$9.65; cows
and heifers, \$3 to \$8; calves, \$8.50 to
\$11.50.

Hogs.—Light, \$7.85 to \$8.35; mixed,
\$8 to \$8.40; heavy, \$8 to \$8.40; rough,
\$8 to \$8.15; pigs, \$6.50 to \$7.50; bulk
of sales, \$8.10 to \$8.35.

Sheep and Lambs.—Sheep, native, \$5.50
to \$8.35; lambs, native, \$9 to \$11.50.

Montreal.

Live Stock.—The live-stock market
showed additional strength. This was,
in part, due to the more favorable
weather, and also to the strength of
outside markets and the scarcity of
stock coming forward. Demand for
packers was more active, and the price
of cattle strengthened slightly. Full
loads of choice steers and heifers sold at

8c. to 8½c. per lb., while 8½c. has been
realized for smaller lots. Canning cat-
tle were not at all plentiful, but the
tone of the market was not greatly
changed, largely for the reason that
packers were not bidding very actively
at the moment. The price ranged from
3½c. to 4½c. per lb. Common butchers'
steers ranged from 5½c. to 6c. per lb.,
and medium to good from 6c. to 7c.,
while butchers' cows ranged from 4½c.
to 6½c., and bulls from 5½c. to 7c. The
market for lambs continued to display
great firmness, and prices advanced ¼c.
to ½c. per lb. Ontario stock sold at
10½c. to 11c., while Quebec stock brought
10c. to 10½c. Offerings of sheep were
light, and the price ranged from 6½c. to
7c. for ewes, and 6½c. to 6½c. for bucks
and culls. There was a good demand
for milk-fed calves, and supplies were
light, while the price was firm, at 10½c.
to 11c. per lb. Offerings of hogs were
hardly sufficient to meet the demand,
and the price was very firm, being 10½c.
to 10½c. per lb. Sows sold at 8½c. to
a shade more, and stags at around five
and two-fifths cents, weighed off cars.

Horses.—Demand continued dull throug-
out the market. Cartage companies
picked up a few animals here and there.
Prices were unchanged, being as follows:
Heavy draft horses, weighing 1,500 to
1,700 lbs., \$200 to \$250 each; light
draft, 1,400 to 1,500 lbs., \$150 to \$200
each; small horses, \$100 to \$125; and
culls, \$50 to \$75 each. Fine saddle and
carriage animals were \$200 to \$250
each.

Dressed Hogs.—Owing to the firmness
in the market for live hogs, dressed hogs
also brought slightly higher prices, being
14½c. to 15c. for abattoir-dressed, fresh-
killed hogs. Light-weight country hogs
ranged from 13½c. to 14c. per lb.

Poultry.—Supplies of poultry offered on
the market here were not large, and the
quality seemed to be very good. The
range of prices was firm, at recent quo-
tations, being 27c. to 28c. for choice,
while ordinary stock brought from 25c.
to 26½c. Chickens were firm, at 22c. to
26c., while ducks brought 19c. to 20c.,
and geese and fowl from 17c. to 20c.,
according to quality.

Potatoes.—Supplies of potatoes con-
tinued on the light side, and the price
was firm, at prices quoted the previous
week, \$1.85 to \$1.90 per bag of 90 lbs.,
ex-track, and \$2.10 to \$2.15 per bag in
a smaller way.

Honey and Maple Syrup.—There was no
change in this market. It will be some
time yet until the new crop of syrup
comes along, but 95c. was quoted for
8-lb. tins; \$1.10 for 10-lb. tins, and
\$1.40 for 13-lb. tins, while maple sugar
was 13c. per lb. Honey was also steady
in price, white-clover comb being 15c. to
16c., and extracted 12c. to 12½c. Brown
clover comb was 12½c. to 13c., and ex-
tracted 10c. to 11c. Buckwheat honey
was 8c. to 9c.

Eggs.—The market for new-laid eggs
alters somewhat from day to day, ac-
cording to receipts. Last week, fresh
stock was quoted at a slight advance,
being 37c. per dozen. Select eggs were
steady, at 29c. to 30c., and No. 1 can-
dled at 27c., while No. 2 were 24c.
to 25c.

Butter.—The price of creamery held
fairly steady, choicest being quoted at
34c. to 35c., while fine stock brought
33½c. to 33½c., and seconds 31½c. to
32½c. Dairy butter was 28c. to 29c.

Cheese.—Quotations were firmer, at
18½c. to 18½c. for colored, and 18c. to
18½c. for white.

Grain.—Wheat fluctuated violently with-
out showing any definite trend. Oats
were rather easier, at 50½c. for No. 2
white, Ontario and Quebec; 49½c. for
No. 3, and 48½c. for No. 4, per bushel,
ex-store.

Flour.—The market was unchanged and
firm, at \$7.30 per barrel for first patent
Manitoba flour, in bags; \$6.80 for sec-
onds, and \$6.60 for strong bakers'. On-
tario winter-wheat flour advanced again
to \$6.70 per barrel for choice patents,
and \$6 to \$6.10 for straight rollers, in
wood, the latter being \$2.90 per bag.

Hay.—The market for hay was steady,
with No. 1 quoted at \$21 per ton, ex-
track; \$20.50 for No. 2 extra good; \$20
for No. 2, and \$18.50 for No. 3.

Seeds.—Red clover was still quoted by
dealers at \$10 to \$12 per bushel, at
country points, while alsike was \$7 to
\$10, and timothy \$9 to \$12, the latter
being per 100 lbs.

Hides.—Beef hides were a cent higher,
at 21c., 20c. and 19c. per lb. for Nos.
1, 2 and 3. Calf skins were 20c. and
18c. for Nos. 1 and 2, and horse hides
\$1.50 and \$2 each. Rough tallow was
1½c. to 2c. per lb., while rendered was
6½c. per lb.

Buffalo.

Cattle.—Buffalo had a rattling good
market on the opening day last week.
Receipts were light, there being around
110 loads, and prices generally were
fifteen to a quarter higher than the pre-
vious Monday. Cow stuff, in a few in-
stances, however, sold as much as fifty
cents above the week before. The per-
centage of shipping steers was small, but
some rather good kinds were among the
offerings in this division, and one load,
averaging better than 1,400 pounds, sold
up to \$9. Other sales on shipping steers
ranged from \$8.25 to \$8.60. Handy
butchering steers, kinds weighing around
1,050 pounds, reached \$8.25, and very
little in the steer line fell below the \$7
mark. Heifers brought up to \$7.75,
some selling in with steers at \$8, and
best heavy fat cows made \$6.50. Butchering
cows, kinds that sold the previous Monday
from \$5 to \$5.50, ranged from \$5.50 to \$6,
medium kinds landed around \$5 and \$5.25,
good cutters brought up around \$4 and \$4.25,
and canners went from \$3.60 down.
Stocker and feeder supply was light, and
they sold strong, best bringing \$6.75.
Bulls were good, firm sale, bringing up
to \$7.25 for prime heavy ones, and fresh
cows and springers also showed a strong
to higher market. It was a good fast
trade all round, and a clearance was had
early. Trade the latter part of the
week, however, was weaker, steer stuff
in the butchering line showing a loss of
ten to fifteen cents. Receipts last week
were 3,500 head, as compared with 3,675
head for the week before, and 3,800 head
for the same week a year ago.

Shipping Steers.—Choice to prime na-
tives, \$8.50 to \$9; fair to good, \$8.15
to \$8.35; plain, \$7.50 to \$7.75; very
coarse and common, \$6.75 to \$7; best
Canadians, \$8 to \$8.25; fair to good,
\$7.25 to \$7.75; common and plain, \$6.50
to \$7.

Butchering Steers.—Choice heavy, \$8 to
\$8.25; fair to good, \$7.25 to \$7.40; best
handy, \$7.75 to \$8.25; common to good,
\$6.25 to \$7.40; light, thin, \$5.50 to \$6;
yearlings, prime, \$8 to \$8.75; yearlings,
common to good, \$7 to \$7.75.

Cows and Heifers.—Prime weighty heif-
ers, \$6.75 to \$7; best handy butcher
heifers, \$6.75 to \$7.25; common to good,
\$4.50 to \$6.50; best heavy fat cows, \$6
to \$6.25; good butchering cows, \$5.25 to
\$5.75; medium to fair, \$4.75 to \$5; cut-
ters, \$3.75 to \$4.25; canners, \$3 to
\$3.60.

Bulls.—Best heavy, \$6.50 to \$6.75;
good butchering, \$6 to \$6.25.

Stocker and Feeders.—Best feeders,
\$6.25 to \$6.50; common to good, \$5.50
to \$6; best stockers, \$6 to \$6.25; com-
mon to good, \$4.50 to \$5.75; good year-
lings, \$6 to \$6.50; common, \$4 to \$4.75.

Milkers and Springers.—Good to best,
in small lots, \$7 to \$8.5; in carloads,
\$60 to \$70; medium to fair, in small
lots, \$45 to \$55; in carloads, \$45 to
\$50; common, \$30 to \$40.

Hogs.—Prices at Buffalo last week were
within striking distance of the \$9 mark.
Monday, top was \$8.65, with bulk going
at \$8.60; Tuesday, one load reached
\$8.85, with the majority going at \$8.75
and \$8.80; Wednesday, top was \$8.90,
with bulk \$8.85, and Thursday the gen-
eral market was \$8.90, with a few
reaching \$8.95. Friday's trade was
steady to a nickel lower, sales on better-
weight grades being made at \$8.85 and
\$8.90. Monday and Tuesday pigs sold
mostly at \$8, and the next three days
they ranged from \$8 to \$8.25. Roughts
mostly \$7.50 and \$7.60, and stags \$5.75
down. Receipts last week were 33,700
head, being against 33,160 head for the
previous week, and 35,000 head for the
same week a year ago.

Sheep and Lambs.—Buffalo sold lambs
as high as \$11.85 last week. It was the
highest price ever paid on the local mar-
ket, and a record for this time of the
year. Monday was the low day of the
past week, top lambs selling at \$11.40
and \$11.50, and Tuesday and Friday
were the high days, when three loads
reached \$11.85. Cull lambs brought up
to \$10.50 and \$10.75; top yearlings were

quotable up to \$10.50; best wether sheep
around \$9.50, and ewes \$8 down. Re-
ceipts last week were 19,000 head, as
compared with 18,840 head for the week
previous, and 28,800 head for the same
week a year ago.

Calves.—Never before in the history of
this or any other yards did calves sell
as high as they did at Buffalo last week.
Monday and Tuesday top brought \$12.50;
Wednesday they made \$12.75; Thursday
they dropped to \$12.50, and Friday,
under a red-hot demand, best veals sold
generally at \$13.50, with some reaching
the record price of \$13.75. Cull grades
the fore part of the week went from \$10
down, and on Friday's market some
good throwouts reached up to \$11.50.
Heavy fat calves ranged from \$7 to
\$8.50, and the fed calves went from
\$5.75 down. Receipts last week were
1,850 head, being against 1,886 head for
the week before, and 1,700 head for the
corresponding week a year ago.

Gossip.

On another page in this issue appears
the advertisement of W. J. Cox, Peter-
boro, Ont. He has a long list of high-
class registered horses for sale.

In the write-up of Dumfries' Holsteins,
De Kol Mechthilde Prince was stated to
have been re-purchased by Walburn Rivers.
The bull re-purchased was Prince Aaggie
Mechthilde.

John Tuck, Breslau, Ont., has arranged
to hold a dispersion sale on Wednesday,
March 8. The sale will include Short-
horn cattle, Leicesters, and Yorkshires.

A splendid lot of bulls are listed for
the sale of Shorthorns to be held in
Guelph on March 1. Some extra good
entries are coming from the well-known
Pine Grove herd of W. C. Edwards &
Co., Rockland. The matrons of this
herd possess some of the richest breed-
ing to be had in any country, and were
collected at an enormous cost. The
sires used have been equally as well
bred. Special mention might be made
of a roan son of Prince of Orange
=72478=, dam Flower Girl 13th (imp.),
whose full brother topped this sale in
1914 at \$375. Another very promising
junior yearling is a roan son of Bapton
Mandolin (imp.), and from a Brawith
Bud dam. A junior yearling Marr
Emma, by the same sire, is also a
grand proposition, as well as several
others. Some good entries of choice
breeding, by such noted sires as Hand-
man's Commander, Superb Sultan, Broad-
hook's Ringleader, and others, come from
herds whose consignments are smaller.
Through the Ontario Department of
Agriculture, the freight charges on single
shipments to any point in Ontario will
be refunded. For catalogues, apply to
J. M. Duff, Secretary, Guelph.

SALE DATES CLAIMED.

Feb. 18.—J. M. Gardhouse, Weston,

Ont.; sale of Scotch Shorthorns, at

Union Stock Yards, West Toronto.

Feb. 18.—W. S. Shearer, Listowel, Ont.;

Holsteins.

Feb. 18.—Estate of the late D. J.

Campbell, Woodville, Ont.; Shorthorns,

Clydesdales and Shropshires.

Feb. 25.—W. J. Cox, Peterboro, Ont.;

grade stock and implements.

Feb. 29.—Rettie Bros., Burgessville,

Ont.; Holsteins.

March 1.—Guelph Fat Stock Club sale,

at Guelph; J. M. Duff, Secretary.

March 1.—T. L. Dunkin, Norwich, Ont.;

Holsteins.

March 2.—Bruce County Stock Breed-

ers' Association Annual Consignment

Sale, Walkerton, Ont., N. C. Mackay,

Secretary.

March 8.—W. J. Isaac, R. R. 1, Balti-

more, Ont.; pure-bred stock.

March 8.—John Tuck, R. R. 2, Breslau,

Ont.; Shorthorns, sheep and swine.

March 9.—Elias Ruby, Tavistock, Ont.;

Holsteins.

March 14.—East Elgin Breeders' Sale,

at Aylmer, H. C. Mann, Secretary.

March 15.—Oxford District Holstein

Breeders' Club Consignment Sale, at

Woodstock; W. E. Thomson, Woodstock,

Secretary.

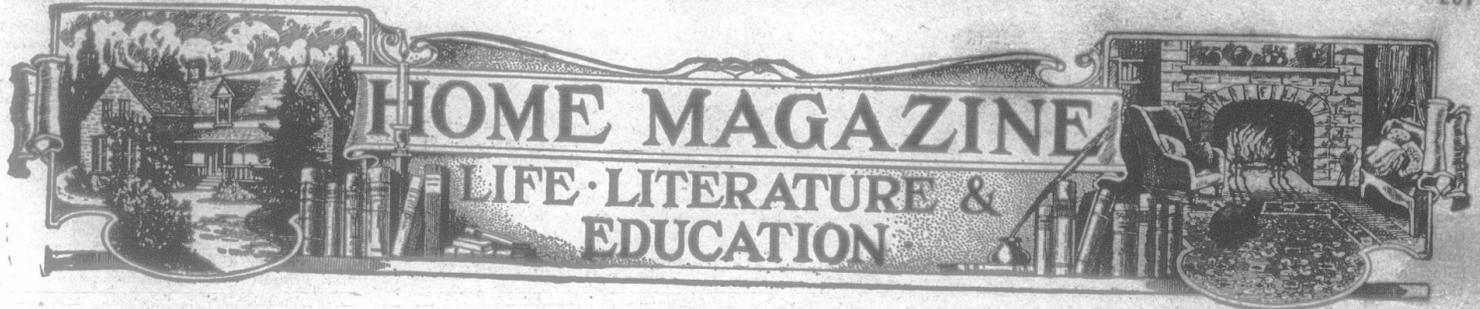
March 29.—Western Ontario Consig-

ment Sale, London, Harry Smith, Hay,

Ont., Manager.

April 19.—James Benning, Williams-

town, Ont.; Ayrshires.



The Plaint of Certain Spectres.

By Thomas Hardy.

A very notable poem on the false judgments of history is contributed by Mr. Thomas Hardy to the Saturday Review. He calls it "The Plaint of Certain Spectres."

"It is not death that harrows us," they
lipped,
"The soundless cell is in itself relief,
For life is an unfenced flower, benumbed,
and nipped
At unawares, and at its best but
brief."

The speakers, sundry-phantoms of men
gone,
Had risen like filmy flames of phosphor
dye,
As if the palest of sheet-lightnings shone
From the sward near me, as from a
nether sky.

And much surprised was I that, spent
and dead,
They should not, like the many, be at
rest,
But stray as apparitions; hence I said,
"Why, having slipped life, hark you
back distressed!"

"We are among the few death sets not
free,
The hurt, misrepresented names, who
come
At each year's brink, and cry to History
"To do them justice, or go past them
dumb."

"We are stript of rights; our shames lie
undressed,
Our deeds in full anatomy are not
shown,
Our words in morsels merely are ex-
pressed
On the Scriptured page, our motives
blurred, unknown."

Then all these shaken ill-writ visitants
sped
Into the vague, and left me musing
there
On fames that well might instance what
they had said,
Until the New Year's dawn strode up
the air.

Browsings Among the Books.

THE WORLD IDEA.

[From "Democracy and the Nations," by J. A. Macdonald. Published by S. B. Gundy Pub. Co., Toronto. The profits of this book are being donated to the Red Cross. Price, \$1.25 net.]

Independence was the great idea in the North America of Washington's day; interdependence is coming to be the greater idea in the North America of our day. Nationalism was the note of the world of yesterday; internationalism will be the keynote of the world of to-morrow.

It is not that old ideas are repudiated; it is rather that they are being outgrown. It is not that national life is decaying; it is rather that world life is beginning to emerge. When the world was a jungle, each tribe counted every other tribe its enemy, each race lived at the expense of other races, each nation thought to come to power by the overthrow of the other nations; but as the world becomes a neighborhood, the fact of mutual dependence overcomes the impulses to tribal war, the law of social love casts out the bondage of racial fear, and the idea of international service sets a new standard of national greatness in the neighborhood life of world nations. Nationalism is not re-

buked, rather it is justified, and comes to its own in the broader international life. The best seeds of national life come to flower and fruit in the world achievements of international service.

These essential principles of world life and world progress are set forth and illustrated in the history of the two great English-speaking groups of nations, the British Empire and the Republic of the United States of America. The unmatched illustration is in North America. The great fraternity of the English-speaking world has made an experiment on the North American continent which is at once the marvel and the inspiration of all the world. This international experiment is the embodiment of North America's World Idea.

North America has achieved a world idea. Indeed, the real distinction of North America is not so much in great things done as in great ideas set free. Among what are called the wonders of the world other nations, on other continents may have a pre-eminence. Things done elsewhere—mere things, eccentricities of nature, triumphs of invention, applications of science, achievements in art and architecture—things done elsewhere may be more widely advertised, and may fill larger space in the world's records. And it may be the things about which Americans themselves make their loudest boasts are but replicas of old-world creations. Other races and other nations labored through the ages, and America entered into their labors. But in one thing North America blazed a new trail, staked a new claim. In one achievement North America stands alone. In the greatest achievement of the United States, in the greatest achievement of Canada, and in the joint international achievement of the United States and Canada, North America gives voice and accent to a world idea, an idea which will yet reconstruct Europe and touch to finer issues the civilization of the world.

Recall the greatest thing done by the United States. It was not a railway

Washington and Jefferson immortal, was the declaration before all the world of the inalienable right of a free people to govern themselves, and the working out of democratic self-government in the growing history of the nation. That is the organizing idea of the United States, and its greatest contribution to the democracy of the world.

Over against that thing done by the United States set the thing done by Canada, the unique achievement embodied in Canada's national history. Canada represents in North America the first successful effort of any colony of any Empire in the world's history to attain national self-government without revolution and without the sacrifice of the historic background of the nation. The thing done by the American colonies through revolution and war in the eighteenth century might easily have been done by the remaining colonies of British North America in the nineteenth century. Canada could have had separation from Britain without striking a blow. Independence would have been hers for the asking. But between 1776 and 1867, the political thinking of the English-speaking world was broadened. The idea of independence in North America took a wider sweep and higher range. Canada came to nationhood, not by the old way of independence and separation, but by the new way of interdependence and the larger alliance. With its national roots struck far back in the thousand years of Britain's history, Canada stands to-day in the world's battle array of free Dominions—Canada, Australia, New Zealand, South Africa, with self-governing Newfoundland from the North Atlantic, and mighty India holding the mystery of the Far East—and back of them all that mother of free nations, never greater than when, with her loyal children from the ends of the earth, and all of them free, she throws herself across the battle-front in Flanders, for the cause of the little people whose only crime was innocence. And that marvel of the world alliance of the

neither nation ever once launched a menacing army or fired a hostile gun. Grasp that idea. Measure that achievement. A thousand miles up the mighty St. Lawrence! A thousand miles along the Great Lakes! A thousand miles across the open prairie! A thousand miles over the world's mightiest mountain ranges! Four thousand miles where nation meets nation, where sovereignty greets sovereignty, where flag salutes flag, but never a fortress, never a battle-ship, never a gun, never a sentry on guard! Four thousand miles of civilized and Christianized internationalism! That is North America's supreme achievement! That is North America's world idea.

Smiles.

MAKING IT ALL RIGHT.

Katherine and Margaret found themselves seated next to each other at a dinner-party and immediately became confidential.

"Molly told me that you told her that secret I told you not to tell her," whispered Margaret.

"Oh, isn't she a mean thing!" gasped Katherine. "Why, I told her not to tell you!"

"Well," returned Margaret, "I told her I wouldn't tell you she told me—so don't tell her I did."—Everybody's.

A boy who had been in trouble more than once for breaking things was taken to the Art Museum by his father. He had learned caution, and, as they entered the hall of classic sculpture, he took one look around and then said hastily to his father: "Say, daddy, things are pretty well busted round here. We'd better get out quick before they say we did it." This is a true story.

"Run up-stairs, Tommy, and bring baby's nightgown," said Tommy's mother.

"Don't want to," said Tommy.

"Oh, Tommy, if you are not kind to your new little sister she'll put on her wings and fly back to heaven."

"Well, let her put on her wings and fly up-stairs for her nightgown."—Sacred Heart Review.

"Evidently that young man I met at your party does not know who I am," remarked Mr. Cumrox to his wife.

"What makes you think so?"

"If he appreciated the extent of my financial influence he would have laughed at my jokes instead of my grammar."—Washington Star.

Tough on the Baby.—A newspaper calls attention to a nursing-bottle advertisement in the following words: "When the baby is done drinking it must be unscrewed and laid in a cool place under a tap. If the baby does not thrive on fresh milk it should be boiled."

Mark Twain was once standing in a crowded street car hanging to a strap. As the car swung round a corner, the strap broke, landing him in the lap of a well-dressed woman. The humorist arose and bowed.

"Madam," said he, "this is the first time the street car company ever conferred a favor on me."

An Irishman got out of the car at a railroad station for refreshments, but the bell rang and the train left before he had finished. "Hould on!" cried Pat, as he ran like a madman after the train. "Hould on, ye murderin' ould steam engine—ye've got a passenger on board that's left behind!"



Cossacks on Duty on the Caucasian Front.

system spanning the continent. It was not a canal uniting the oceans. It was not any of the big things done by the Republic in the great day of its pride and world power. It was rather the achievement of the day of small things. It was the idea set free in Colonial days, at Fayetteville and at Mecklenburg, in Massachusetts and in Virginia, the idea of freedom and self-government that at Philadelphia, in 1776, issued in the Declaration of Independence and in the setting up of the new Republic. That thing, to be sure, was not all great. It had its taint of selfish ambition, posing in the garb of patriotism. It had its spirit of lawlessness talking the language of liberty. But the distinctive thing in that great adventure, the supreme thing of all American effort, the thing which makes the names of

British nations is the vital outcome of what was done in North America in the nineteenth century when the colonies of Canada achieved democratic nationhood without alienation from the motherland, and made possible the international commonwealth the world calls the British Empire.

But North America's world idea is greater than the achievement of either of the North American nations alone. It is the product and the expression of the combined and unified life of the United States and Canada through their marvellous century of international history. That world idea which North America offers to all the continents is a boundary-line between these two proud, high-strung, aggressive nations, four thousand miles from ocean to ocean, but across which in more than a hundred years

up to \$10.50; best wether sheep \$9.50, and ewes \$8 down. Re last week were 19,000 head, as and with 18,640 head for the week and 28,800 head for the same year ago.

Never before in the history of any other yards did calves sell as they did at Buffalo, last week, and Tuesday top brought \$12.50; they made \$12.75; Thursday topped to \$12.50, and Friday, red-hot demand, best veals sold at \$18.50, with some reaching price of \$18.75. Cull grades part of the week went from \$10 and on Friday's market some rowouts reached up to \$11.50, fat calves ranged from \$7 to and the fed calves went from own. Receipts last week were ad, being against 1,886 head for before, and 1,700 head for the ending week a year ago.

Gossip.

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did lot of bulls are listed for of Shorthorns to be held in March 1. Some extra good coming from the well-known herd of W. C. Edwards & and. The matrons of this and some of the richest bred had in any country, and were at an enormous cost. The have been equally as well special mention might be made an son of Prince of Orange dam Flower Girl 13th (imp.). brother topped this sale in 1875. Another very promising

ling is a roan son of Bapton (imp.), and from a Brawth. A junior yearling Marr by the same sire, is also a position, as well as several Some good entries of choice by such noted sires as Bandermander, Superb Sultan, Broad-leader, and others, come from these consignments are smaller. the Ontario Department of the freight charges on single to any point in Ontario will d. For catalogues, apply to Secretary, Guelph.

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—W. J. Cox, Peterboro, Ont.:

—Rettie Bros., Burgessville, Ont.

—Guelph Fat Stock Club sale, J. M. Duff, Secretary.

—T. L. Dunkin, Norwich, Ont.:

—Bruce County Stock Breed- Association Annual Consignment

erton, Ont., N. C. Mackay.

—W. J. Isaac, R. R. 1, Balti- pure-bred stock.

—John Tuck, R. R. 2, Breslau- thorns, sheep and swine.

—Elias Ruby, Tavistock, Ont.:

—East Elgin Breeders' Sale, H. C. Mann, Secretary.

—Oxford District Holstein Club Consignment Sale, at W. E. Thomson, Woodstock.

—Western Ontario Consign- London, Harry Smith, Hay- ger.

—James Benning, Williams- Ayrshires.

Hope's Quiet Hour.

Editor "The Farmer's Advocate":
My Dear Sirs,—I am enclosing a MS., "The Opportunity of the Rural Church." You are doing much for the rehabilitation of the countryside, and I thought you might appreciate the viewpoint of a fellow-laborer, but one who approaches the question from the standpoint of the church. I am, very truly yours,
W. E. M. AITKEN.

The Opportunity of the Rural Church.

W. E. M. Aitken, Ph.D.

One talent that every farmer has is the soil he tills; another, and the really great one, is the air he breathes. For in the country everywhere the Presence of the Universal Spirit speaks to us. The waving branches of the trees speak to us, and the flowers and the fields, the singing brook, and the insect and the bird; every living thing, and things we call inanimate, speak to us of the Presence of God. Look to Jesus for your guide! One night long ago as He and Nicodemus sat on the side of Olivet, the cool breeze, fragrant with far-wafted odors, whispered to them through the foliage and kissed their brows. Jesus made that a parable of the operation of the Holy Spirit.

To put it in the plainest of words, the farmer knows sin and righteousness, faith and sacrifice, regeneration and life, through his everyday experience. He knows how weeds grow; and he knows that they are bad. He knows that good tillage produces a good harvest. He knows that he or his fathers before him cleared the land of trees and stones and stumps, and that he must plant the fields and scatter good seed on the land. When a man takes the very wheat that would satisfy his hunger, and casts it, as it were, upon the waters, he knows faith and sacrifice.

Likewise he knows regeneration and life through his everyday experience. "The ancient moral world was like the ancient whited sepulchre—simple white-wash without, uncleanness within. The modern moral world is like the modern churchyard—elaborate flowers above, and corruption below." But you do not need

to say that to the farmer who is a real farmer; he knows it. He sees it in his own life, he who has long followed the plow. Some would regenerate society with sports and community playdays, and churches may have to make use of such; but the farmer knows, deep down in his heart, that the Gospel message is, "Ye must be born again—of water for cleansing, of the Spirit for the inspiration of a new and holy life."

This is rich soil; properly tilled it will produce a great harvest. This is the soil the rural minister has to cultivate.

The church needs to look to that product of the farm, for its primary task in every age is Evangelism. We pray, Thy kingdom come, Thy will be done on earth—throughout the whole earth. Meantime "it has become increasingly clear that Christianity makes its way and holds its own by reason of the content of its messages and its demonstration of power. . . . In the typical modern contributions to apologetics, ever-increasing stress has been laid upon the consideration that Christianity shines by its own light, and prevails by its own might." So, for the sake of individual, and of the rural community, and of the whole world, it is the task of the rural minister to cultivate that soil, that he may produce in men the Life of the Spirit.

In the old days, days that were so much like these days, a time came when the audience of Jesus Christ was not so much the multitudes as the Twelve; when His method was not so much preaching as teaching; when His subject was not so much the kingdom as Himself, and in particular His death. That is the business of the church to-day, out in the country.

The world, the plain, ordinary work-a-day world, is in need of that product of the farm. A man of the finest perception has said, "We are travelling across the plains. There is no peak in the sky-line of our vision. There is no personality that stirs our emotion, or excites our expectation. We have much cleverness, much energy, much talent; but we have no great men. We are an army without leaders." That was written before the war; it seems clearer to-day than two years ago.

The world is in need of leadership; great world-leaders are natural products of the farm. General Joffre, leader of the armies of France, was born among

the mountains of Roussillon in the Pyrenees, the son—one of eleven children—of a cooper of Rivesaltes. So much from the country was he that his native speech was not French, but a patois. He is described as cautious, self-reliant, indifferent to applause, careless of criticism, a man with a long vision, a calm mind, and a will of iron. That kind of a man may happen, as we say; but he can be produced, too—and his native air is country air.

Another example: "If one were asked to say whose word carried the most weight in the British Parliament to-day, there could, I think, be only one answer. Whether in office or out of office, whether friend or foe, Sir Edward Grey is intrinsically the weightiest speaker of his time. When he sits down in the House of Commons, it is as though discussion had ceased. Other men speak from the Bar; he speaks from the Bench. He does not argue; he delivers a judgment. There is no appeal, and no one asks for an appeal." Now the secret? "Altogether from life is the key to his unique position." "Nature, and not man, is his constant companion." "His one literary enthusiasm is for Him Who took men out 'into the light of things' where Nature is the teacher." Again, that kind of man may happen; but he can also be produced—and his native air is country air.

Where did Jesus Christ get His followers? Out of the city, from the ranks of the Rabbis, from among the Sanhedrin? One man came from that quarter, Nicodemus, that kindly, upright, cautious Rabbi. He came once, and at the end, came again with a hundred pounds of spices to give Jesus a decent burial. No! it was not there, but in Galilee, that Jesus found His followers. Among her fisherfolk He found His disciples, among men kindred in all things to the men the church deals with to-day, out in the country.

I read in a book written some years ago by a man of vision: "Sometimes an outbreak of hostilities will strike the hour for a marshalling of forces, and an advance in full strength. When such a season of special opportunity seems to be drawing on, it behooves the congregation to bestir itself." That hour has now struck.

Give us the young men of the country, clean-limbed, well-groomed, athletic, energetic. Give us their sisters, true, high-spirited. Fill them with the Christian spirit; dedicate them to the Christian ideal; subdue them before the Figure

of the Crucified; inspire them with His love; quicken them by His power, and we have won Canada for Christ, fairest realm within the Empire of Britain, to be one of the Dominions of the King of Kings and Lord of Lords. Canada, yea, the world. This is the Rural Problem. Ravenna, Ont.

For the Needy.

Again I have had the pleasure of "passing on" gifts from our readers. One gift of a dollar was spent on food for a poor, crippled woman. The other gift—of \$1.50—has not yet been spent, but will soon find its destination. With thanks.
HOPE.

News of the Week

The total number of recruits raised in Canada now reaches 240,000.

Old Knox College, Toronto, is to be used as a home for convalescent soldiers.

Lieut.-Col. Hagarty, Toronto, is raising a battalion composed exclusively of teetotalers.

Hon. J. D. Hazen, Minister of Marine, announced that there is an official understanding between Canada and the United States, that the latter shall not be used as a base for attacks on Canada.

Prince Oscar, the Kaiser's fifth son, has been wounded by a shell.

A movement to prohibit the transportation of liquor in interstate commerce is afoot in the United States.

Greece is mobilizing her army, and has recalled all reservists from abroad, but still insists that she is determined to keep out of the war, and that the mobilization is only for purposes of a defence if necessary.

President Wilson, in his recent tour through the United States, and speaking at many points, advocated very seriously immediate "preparedness," particularly in regard to the navy.

Sir William Robertson, now Chief of the Imperial Staff in England, has taken over the active direction of the War, and, henceforth, all orders will be signed by him. Lord Kitchener may go into active service in Egypt.

Gen. Smith-Dorrien has resigned from the command of the British forces in East Africa because of ill-health. He is succeeded by Gen. Jan Christian Smuts, Minister of the Interior and of Defence in the Botha Government.

The United States has decided that the Appam, captured by the Moewe or the Ponga—it is not known which—belongs, as a prize of war, to Germany. The cruiser, that captured her is still at large somewhere on the Atlantic.

The story of the war for the week is chiefly of violent artillery engagements, airship fights, and trenches taken and re-taken along the Western front, especially south of the Sommes, in Artois, and in the vicinity of Ypres and Armentieres, in none of which the Germans have succeeded in making any material gains. Heavy fighting has also occurred along the Riga-Dvinsk front without any definite gain anywhere. During the week a monster Zeppelin was destroyed at Ligne, Belgium, by French aeroplanes, and a German warship was sunk in the Baltic.

At time of going to press, the Austrians are on the point of taking Durazzo, but the Italians and Serbs, assisted by reinforcements from the Allies, are making a stand at Avlona, which will be held at all costs. In May, a march is to be made from that point to re-take Serbia. . . . The threatened attack on Salonika has not taken place, and all seems to be quiet, for the present, along the Aegean.



View from Parliament Hill, Ottawa.

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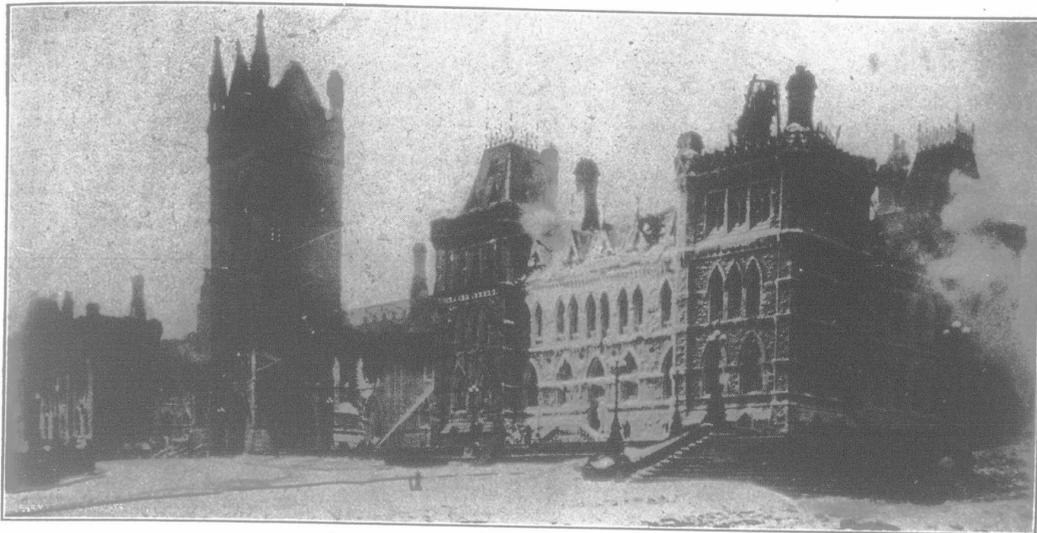
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The Parliament Building, Ottawa, Still Smouldering After the Fire.

The Dollar Chain The Ingle Nook.

A fund maintained by readers of "The Farmer's Advocate and Home Magazine," for (1) Belgian Relief; (2) Soldiers' Comforts; (3) Red Cross Supplies; (4) Serbian Relief.

Contributions from Feb. 4 to Feb. 11 were as follows:

- "Toronto," \$2.00; H. W. Palmer, Shel-land, Ont., \$2.00; "Unknown," \$2.00; Wm. May, Goodwood, Ont., \$5.00; "Way-back," Bellingham, Ont., \$5.00; "A Reader," Springfield, Ont., \$2.00.

Amount previously acknowledged \$2,022.35
Total to Feb. 11th.....\$2,040.35
IF YOU CANNOT GO TO THE FRONT—GIVE.

Kindly address contributions for the "Dollar Chain" to "The Farmer's Advocate and Home Magazine," London, Ont.

Remittances to British Prisoners of War in Turkey.

The Canadian Government has received notice from London that the Secretary of State for Foreign Affairs has been informed by the United States Ambassador, that the Turkish Government desire that in future remittances of money not exceeding five pounds from private persons for British prisoners of war in Turkey, should be despatched to the International Red Cross Committee at Geneva for transmission to the Ottoman Red Crescent Society at Constantinople, by whom payment to the recipients will be effected, and a receipt returned to the International Committee at Geneva.

Letters and parcels should also be sent to the International Red Cross Committee at Geneva for transmission. Such letters and parcels are post free. Money should be remitted by International Money Order, which can be obtained at any post office, and which should be made payable to the International Red Cross Committee at Geneva, and sent on with full name, number and regiment of the prisoner of war to whom the money is to be paid.

Information has also been received from the United States Ambassador that prisoners of war in Turkey are now allowed to write only one letter a week, limited to four lines, and that this regulation applies also to letters addressed to them. Letters of greater length will not be delivered.

BUBBLES.

Life is mostly froth and bubble,
Two things stand like stone.—
Kindness in another's trouble,
Courage in your own.

Though life is made up of mere bubbles,
'Tis better than many a ver,
For while we've a whole lot of troubles,
The most of them never occur.

—Nixon Waterman.

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

CANNAS.

Dear Junia,—Please give directions in your paper how to prepare canna bulbs for planting out. I took up the whole plants, bulbs, leaves, and all, and put them in a dry cellar with a little earth on the roots. I am afraid they have dried up too much.

MRS. JAMES PARK.

The cannas may be started in boxes in the house. Bailey says that if strong effects are desired, it is well to plant the entire "stool" or cluster of rootstocks. Plant out in the garden when danger of frost is over, giving the plants a loose, rich, and moist soil. Cannas may be kept on shelves in a cellar under conditions that will keep common potatoes.

FROM LANKSHIRE LASS.

Dear Junia and All Kind Friends of the Nook,—As my thoughts are with you all so often in gratitude for all the kindness and cheer shown to me through the Ingle Nook, I feel it my duty to try and write this to thank each and all who in any way have remembered me. No one knows the cheer it gives a shut-in to even be asked after in the Nook, as well as by letters, cards, and other ways. So many seem to be thinking of the Lass.

and at Christmas, though not able to open my mail myself, the tears fell over so much kindness. I am so sorry it is impossible to even answer many who kindly sent cards or letters. I would add now what has been in my thoughts often: When my time is no more on earth, I hope some one will at once kindly write to the Nook and tell them, so no one will look for my letters in vain. This time, it seems now I am to stay again a while. I often wonder why, yet feel Jesus knows best for us all, and we have the promise, "As thy days, so shall thy strength be." How many blessings we have along the way. Even to have coal is such a comfort to keep one warm, and how many are cold and sad these times; so many have lads leaving home to help win this war. May Jesus be their help and comfort, and also to those left behind, and may it all soon be over now. How good it is to help the needy along, to relieve their suffering from cold and hunger.

I will add an idea that is a good help to many, as I have used it often, for when the top of a lamp got loose so burner could not be put on, I took the brass rim off, scraped all substance off the inside and cleaned it well, also top of glass where it fastens on. Then take an old, large spoon, put good-sized piece of alum in it, put it on top of stove till alum boils up, then take a knife and put alum, white hot around top of lamp, and put plenty inside of top part, then put it on lamp quickly. Press it on tight, let it stand a while, and lamp will be as good as new.

Now I will close this, and may this be a prosperous and happy New Year to all. With gratitude to all, ever your friend and shut-in.

LANKSHIRE LASS

Wellington Co., Ont.

Our Discussion Corner.

Our readers are responding splendidly to the invitation given for "Our Discussion Corner." The following letters will be read with interest, and, we trust, commented upon in a friendly spirit. Some others are still held over.

THE "BACHELOR" QUESTION.

Dear Junia,—You have asked for a discussion of the subject, "Should Bachelors be Especially Taxed?" And in a discussion many sides are found, and the subject becomes very complex. When does a young man become a bachelor? Does every young man have opportunities of marrying? Does the State possess the right to domineer over any class of citizens' affections? And are the the present tax systems just, adequate, and best suited to concrete our democratic principles? An answer to these questions may help in coming to a solution.

The age at which bachelorhood begins is open to question, but I would say that the start begins when one begins to settle down to a certain routine of life; when one begins to walk within certain well-defined lines. For example, in the country this condition begins when one feels more like toasting ones toes, on cold winter evenings, instead of going with young folk to skate, or dance, or to church. This being the case, some are bachelors at twenty; others do not get to that state till they are twenty years older. For myself, I felt more like a bachelor three years ago than now. If they tax bachelors, when is the tax to begin? Are they going to make allowance for a change of temperament? Or are they going to tax all single men indiscriminately? To my mind, the idea of taxing is preposterous.

The opportunities of marrying are few to most men. All men have a certain ideal for one to measure up to, who is to become their companion for life. It oftentimes takes many years to find one's ideal. Then, after the ideal one is found (which is the easiest part of the process of securing a wife), one has to ingratiate himself into the favor of the young lady, so that he may secure the pleasure of being in her company. That is a tedious process, for a good young lady will be careful whom she associates with. Then the harder part starts of winning, not her regard, nor her company, but her love. This, needless to say, cannot be done quickly, or without much thought, for,

"Young man, you have asked the costliest thing in the world,
A woman's heart, a woman's life, and a woman's wonderful love."

While some may go through this pleasant but tedious process successfully, many are unsuccessful, and by the young lady "are weighed in the balance and found wanting." Also, young ladies have very, very high ideals, and though a man may find his ideal, he may not be his ideal lady's ideal young man, so he has to



The Victoria Memorial Museum, Ottawa, Where the Dominion Parliament is Now Sitting.



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Farmer's Advocate

Your Appearance



We mean your looks, the condition of your skin, hair, scalp, etc. Is it satisfactory? If not, why not? We make a specialty of treating skin troubles of all kinds, and invite your communications. Consultation free by mail. Twenty-four years' experience. Don't go about with a pimply, blotched or discolored face when you can have your trouble cured at home at trifling cost.

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wander in the solitary paths of bachelorhood still. Many young men are single because they have not been able to fulfil the whims of young women. I protest that it is unjust to tax any one because he is in circumstances over which he has no control.

A young man's private relations to the fair sex never have been a matter of State control, and if a man feels that being a bachelor is best suited to make life better for others and himself, then he has a right to continue in that state, unmolested, untaxed, and respected by the community and State.

There are two things that are taxed, that in my humble opinion ought not to be, namely, improvements on land, and a man's personal income. Suffice it to say that ONLY the land should be taxed, and that would do away with so much land speculation, would compel men to improve, and would cause many farms to be divided, for no man could afford to keep land that was unproductive. If this can be done, the thickly-populated districts will be found to be the centers of a grand, intellectual and mutually beneficial society. As our taxation system is to-day, it is making "the rich man richer; the poor man poorer." It is despotic, unjust, and savors of Prussianism. It is absolutely against true Democracy.

For these, and others space will not permit me to mention, I would say: "Let our Government keep their hands off our bachelors, and turn their attention to the serious matter of putting the 'single tax' into operation—not the single person tax, but the 'land tax.'" SUBURBANITE.

Perth Co., Ont.

NEIGHBORHOOD IMPROVEMENT.

Dear Junia and Nookers,—You certainly are obliging! How slow some of us Nookers are, when Junia has to coax us to express our ideas. Thank you so much for your helpful suggestions.

Many times we would just love to visit the "Corner" and add a word, but fail, and why? Are we afraid of our ideas? Have we not the courage of our convictions? Or, is it not that we cannot concentrate on any special theme?

So now, Junia has supplied us, and the difficulty is, which one shall I choose. Oh, Junia, if we were to tell "what our neighborhood needs to improve it" it will simply mean relating a few of our imperfections. Well, even though, to some extent this may be a bit of a confession, let us hope the "checking up" and trying to "see ourselves as others see us," may free us from many a blunder. One of our dear old High School teachers used to tell us when we erred or did untidy things: "Oh, telling tales on your mother; this is what she allows you to do at home?" Then we would blush and mend our ways for the sake of being loyal to home and mother. Was he not tactful? And I hope I may not "tell too many tales" as I try to discuss our community, for really when we are striving to improve our imperfections, are we not moving in the right direction? For how can we know our "need" if we do not know what we have already—good, bad, and indifferent?

Our biggest failing—and it is not the gravest—is indifference. Each one of us is a unit in the whole, and if we were strong enough to show a worthy example, maybe it might help some. But that requires an "exceptional one," and every community is not fortunate enough to have a "leader." There are, in fact, only a few men who can move masses—such is Billy Sunday. But great results can be reached by the silent, though zealous worker. If we hope to help our neighborhood, as individuals, we must first be sociable, as far as we can. It is not always easy to be friendly. In some cases it will be far from agreeable, and may demand some tolerance. Oft times privileges will be abused, but let us exercise tact and wisdom to judge aright, and if our hearts are really attune to our purpose—helping others—we may unconsciously profit, and in spite of the disagreeable things, if we persist, "might not the spiritual unbidden grow up through the common?"

It is so human to cling to those we like, and mingle with the folk who have a kinship of taste and feeling. But to walk in this narrow way will not elevate our neighborhood any, will it? Again,

we must be tolerant. We must meet on common ground, and have just as great an interest and joy in the success of our fellows as in ourselves.

What community has not that menace to society—the gossip. We stand in awe of such a one, and claim he or she is dangerous! But, beware! Who are the tolerant Listeners? Are we not just as guilty in encouraging the poor soul who is not strong enough to refrain? Could we not help him?

Especially at this time, how great are our opportunities for service, and we must conscientiously and prayerfully decide where we can best serve. We often think we are doing well, but is there not a possibility of doing better? We may see our community failing to be sympathetic, or not responding to the most worthy calls. We say, "What can I do?"

It is a question just whether we are wise in telling our fellows they should enlist, but we may, at any rate, present the need. I heard one soldier lad say, "I could not urge any fellow to enlist, for I know too well what it has meant to me to take the step, but the greater the sacrifice the stronger we become." And when the need is presented, intelligently, what man is there who will not respond? But let us not judge too harshly the challengers, for they are vitally interested and can see ahead. We cannot all "enlist," but we can "give."

Sometimes I get so tangled up it is hard to reason sanely. So frequently we hear men say, "We are farmers, and our sons are producers, and doing our bit as well as those at the front." Oh, yes! but the work is a bit more congenial, and there certainly is no sacrifice about it, so when the call comes for help in money, let us respond liberally and graciously. Can you believe it? Some of the collectors, in our district, not far distant (for patriotic work), were asked the most ignorant questions. "Who started the war?" "What are they fighting for?" etc. One bright mind suggested they ask the Kaiser all about it. One of our most respected, or should I say respectable residents, said to us, "The taxes are going to be very high," in a lamentable voice, and he has contributed in no special way to the needs yet. I was so sorry, and said, "What would we not give to redeem those lives we have given and are giving?" Oh, tell me, what is a contribution in money compared with a son, a father, or a brother! Wouldn't we give all we have to be able to keep them safe? But so few look at it that way. Is it not hard to think of so many selfish souls, who have not yet caught the spirit? Many of the poor lads—will give "their all" for our protection, and maybe never return, and those who have been at home—doing their bit, as they say—will be "rich in lands" from the profits. But what satisfaction will they have? "The world is too much with us—late and soon, getting and spending, we lay waste our powers."

The great sorrow and conflict thrust upon us has not reached us yet. We are not the choosers of such a path. We are obliged for liberty and justice to be "up and doing."

Oh, Nookers, please do not condemn me and say I'm pessimistic! Not in any way have I meant to be. Yes; what a great inspiration it is to see so many brave souls—at home and abroad—And we are so thankful for them. But until each individual realizes the stern reality of the sacrifice our nation is making, how can we be serving aright? We are living in a great and awful time, and may we not "Rise on stepping stones of our dead selves to higher things?"

Wishing all much joy—the kind that makes life worth while—in the coming days, sincerely yours,
Peel Co., Ont. "BROWNIE."

AN OPINION ON TWO SUBJECTS.

Dear Junia and Nookers All,—How the dear old Nook is improving! I do so enjoy the letters that I cannot stay away any longer, and since Junia has given us a subject, I just picked up my pen and said I would not put it off any longer. The essays on "The Best Thing in Life" were splendid.

"What has been the greatest influence in my life?" My mother's love, guidance, and sympathy in every trial. How often the thought of my parents' anger

has saved me from taking an erring step. If I feel tempted, there is nothing that saves me more than the thoughts of my mother's love, and what she has done for me in my childhood long before I was old enough to comprehend. A mother does more for her children than they can ever repay, no matter how kind and obedient they are.

I also wish to express my views on whether medical certificates should be required before people are allowed to marry. I say yes, most emphatically. So much misery would be saved for those that come after if only healthy people were allowed to marry. It would be very hard for some people, but how much healthier and stronger the next generation would be! I could name several instances, where marriages have taken place when one or the other was not healthy, especially a family which has a hereditary weakness, and now it is going on and on, more getting it every generation, and I believe the only way that it can be stamped out will be for all those who are affected to remain single. How much pain would have been saved if that one couple had never married. There are so many descendants, too. No doubt there are many such cases as this.

But I will not make my call too long, so wishing all, especially Junia and Langshire Lass, a happy and prosperous 1916, I will bid adieu.

"ROSEBUD."

Ontario Co., Ont.

The Attractive Kitchen.

Dear Ingle Nook Friends,—After roaming about among broad, abstract subjects for a while, nibbling at them in my own small way, I always feel like coming down to something very practical, hence my choice of to-day's subject, "The Attractive Kitchen."

There is perhaps no place where the kitchen is so important as on the farm; in cities, where the fashion of taking many of one's diners at a hotel or restaurant, or obtaining things ready cooked from a delicatessen, seems to be growing in favor, at least among the well-to-do, it does not seem to hold quite as indispensable a place. On the farm, it is at once workshop, food laboratory, and, often, living-room as well, hence everything about it should be a matter of thought and care.

In providing for the farm kitchen, the first question is, of course, its size. This should depend absolutely upon the use that it is to be made of. If there is adjoining it a dining-room long enough for all calls that are to be made upon it, and a living-room that is to be used at all times, the kitchen may very well be quite small, on the order of city kitchens. The most convenient of these is quite narrow, with a long built-in cupboard on one side and the baking cabinet and sink on the other, and the stove at one end. The built-in cupboard, by the way, should be possessed of three divisions: a top one with close wooden doors for stowing away things that are not often used; a central one, with several shelves and glass doors, for the dishes used ordinarily; and a bottom one with wooden doors for such kettles, pots, etc., as one does not wish to hang on the wall. This lower part should be wider than the other part to allow for a ledge on top on which things may be placed. Such a cupboard, with a bake-cabinet opposite, absolutely does away with the need for a pantry, and is much more convenient, and more easily kept clean.

The narrowness of the kitchen will be appreciated by those who have been obliged to walk "half a mile," more or less, at each trip across one of the old-fashioned kind. You see, when baking or washing dishes, it is only necessary to turn around and take a step or two in reaching the cupboard, and the number of steps saved this way in a day is surprising.

But if the kitchen has to serve as dining-room and living-room as well, as some prefer, a different arrangement must be thought out. Then it may be as large as one chooses, but there is no need to make it awkward and hard to work in.

In this case, by all means have the built-in cupboard, the bake-cabinet and the sink, but have them placed at one

has saved me from taking an erring step. If I feel tempted, there is nothing that saves me more than the thoughts of my mother's love, and what she has done for me in my childhood long before I was old enough to comprehend. A mother does more for her children than they can ever repay, no matter how kind and obedient they are.

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The narrowness of the kitchen will be appreciated by those who have been obliged to walk "half a mile," more or less, at each trip across one of the old-fashioned kind. You see, when baking washing dishes, it is only necessary to turn around and take a step or two reaching the cupboard, and the number of steps saved this way in a day is surprising.

But if the kitchen has to serve as dining-room and living-room as well, as we prefer, a different arrangement must be thought out. Then it may be as large as one chooses, but there is no need to make it awkward and hard to walk in.

In this case, by all means have the built-in cupboard, the bake-cabinet and sink, but have them placed at one



McGregor of Ford

RECENTLY ONE OF OUR FRIENDS FROM ACROSS the line was standing on the sidewalk in one of our larger Canadian cities viewing a march past of some of our soldier boys. The Kilties were going by.

"How typically Canadian are the kilties," he remarked. "We on our side of the big pond associate the Highland uniform as much with Canada as with Scotland. Why is it?"

The reply was to the effect that it was because the Scotch had contributed so largely to the settlement and upbuilding of the Dominion and so many Canadians of Scottish ancestry had made themselves worthy of high ranks in the history of Canada.

Among these Canadians of Scotch parentage who have won a place among Canada's great builders of industry we must reckon Gordon M. McGregor, of Ford, Ont.

About the year 1850 Mr. McGregor's grandparents set out from Glasgow, Scotland, to settle in what was-then a new and far away country—Canada.

A few years later we find them located at Sarnia, Ontario, where a son, William, was born.

When still a young man William McGregor took a very active interest in the business and political life of the country and was elected a member of the Dominion Parliament, serving his country and his district well and faithfully for twenty years.

Gordon McGregor about whom this is written was the son of William McGregor and was born at Windsor, Ont. As Gordon McGregor grew to manhood he capably assumed much of the business cares of his father.

William McGregor eventually became interested in the Walkerville Wagon Co., at Walkerville, Ontario, and, shortly after, his son, Gordon McGregor, was made manager of the firm. Here the son began to show that business foresight that has made him one of the prominent figures in the business world of Canada.

About this time an event took place in the carriage and wagon industry that caused the greatest concern. This was the advent and the establishment of the automobile as a practical vehicle.

Some dealers and builders were so alarmed that they thought their business would go to immediate rack and ruin and that the auto would supersede horse-drawn vehicles entirely. Others were cool-headed enough to see the advantages that this new industry afforded and governed themselves accordingly.

Among the latter was Gordon McGregor, who believed that he could successfully enter upon the business of manufacturing automobiles and looked about him for wise methods of doing this.

He got in touch with many manufacturers and looked over many makes of cars. Finally, he decided on one make and effected arrangements for its production in this country. The car he chose was the Ford.

He then tried to induce some of his friends in Canada to invest in the project and encountered all the usual cold, disheartening difficulties attendant upon the organization of a new and untried proposition. If they could but have looked ten or eleven years ahead, he would have had no worries over the organization of a company even double or quadruple the size.

No stock was offered for sale outside of the Dominion until all Canadians had been given an opportunity to subscribe.

Finally, in August 1904, they organized the company with a capital of \$125,000.

Then came the difficulties of manufacture and for three years it was a constant struggle to win success.

But success came and a greater success than the founders ever dreamed of—a success abounding in truly marvelous facts and figures.

And this is the story of Gordon McGregor of Ford, Ontario, and of the establishment of the Ford Motor Company of Canada, Limited.

To-day, half the population of four towns depend upon the Ford Company of Canada for their earnings. These are Ford City, Walkerville, Windsor and Sandwich.

The last census states that the average family consists of five persons. As there are over 3,000 employees in the towns mentioned above whose work is devoted to the manufacture of Ford cars, this official census figure shows that there are over 15,000 people that look to the Ford Company for their support. This does not include the nine cities in Canada in which Ford branches are established, which would add over 3,600 more.

And Ford employees are paid three times as well as the average as shown by government wage reports.

In April, 1915, a time when most Canadian manufacturers were following a policy of retrenchment, the present Ford schedule of wages was adopted by which the company virtually handed to its employees, \$50,000 a month increased wages and reduced the working hours from nine to eight per day.

Surely, this is a great boon to Canadian workmen and their families. It is a boon to Canadian merchants who benefit by the increased purchasing power of all these families. It is a boon to the entire country in time of war when living expenses are higher than ever before.

And these employees have responded in like measure to the Empire's need for her people's support, Ford City alone having made what is probably a record contribution to the Patriotic Fund of \$34 per capita.

More than 300 Ford employees have enlisted for overseas service, and the Company is spending thousands of dollars in moving pictures which are offered free to assist in recruiting work all over the Dominion.

What an immense expression of confidence in the ultimate and unquestionable success of British Arms and the allied cause was this great wage increase!

But it was not the only evidence of the Ford Company's faith in the Empire.

Before the outbreak of hostilities the company decided to reduce the price of the car by \$60. When the war came upon us, the company might well have been pardoned for withholding this reduction for a time. But they never even considered it. The reduction was made the same day war was declared.

And you can realize how real this confidence in the victorious prosperity of Canada was when you consider that the prices of Ford cars are set in accordance with the estimated production for the coming fiscal year, and not by any means are they based on the profits of the preceding year.

\$652,000 has been spent on new buildings in Ford City since the war began.

Over \$1,000,000 has been spent on new buildings in four Canadian cities since war began, making a total expenditure for new buildings of approximately a million and-three quarters.

\$1,000,000 has been spent in new equipment since war began.

900 men have been added to the pay roll since war began. And if there is needed further proof of this company's absolute conviction in the progress and prosperity of the Dominion, it may be found in the fact that another \$60 reduction in the price of the car was made last August—making a total reduction of \$120.00 since war began.

This new price requires an output of 40,000 cars this year. Then, too, the price of Ford parts has been reduced by \$147 per car—a reduction that means a big increased economy to Ford owners.

Such immense expenditures and price reductions as these are of the greatest benefit to the general welfare of the nation under existing conditions. They form one of the greatest possible influences towards boosting the prosperity of Canada.

Remember that all but \$16.88 worth of the material that goes into the construction of a Ford car is bought here in Canada—and it would all be bought here if it were possible to get it.

Truly, the Ford is, after all, a Canadian Car, built by Canadians. Very few Canadian manufacturers are able to show such a support to Canadian industry as this.

The Canadian Ford Company is basing this year's factory production plans on just double the business done last year.

They stake everything on the conviction that Canada is BOUND to prosper. They place all on the belief that Britain and her Allies are BOUND to win.

McGregor of Ford and his Canadian associates may be pardoned for feeling proud of this record.

end of the room near the stove. A large screen may serve as a sort of division-line, partially shutting in this section, and the rest of the room may be arranged as attractively as one chooses.

It is well to have the whole floor well painted, but a square of linoleum may be put in the center where the dining-table stands; a fabric carpet is always out of place in a kitchen. The walls also may be painted, in some soft color, such as a quiet green, tan, or a dull buff, or they may be covered with one of the varnished papers. Either paint or paper, then, may be washed whenever necessary.

For the woodwork, brown is as good a color as any, as it blends with any coloring that may be put on the wall.

A living-room kitchen, needless to say, should be provided with broad, cheerful windows, that will let in plenty of sunlight, the best disinfectant one could have. And they should not be shrouded with curtains; white or green shades, with muslin or scrim sash-length curtains, or even lambrequins across the top, will be all the decoration needed, and will give opportunity for placing plants on the window sills. Plants always do well in a kitchen where gas is not used, and nothing else serves so effectively in giving the whole room the "home" atmosphere. There is something about a bit of green, growing foliage, that appeals to every heart. Truly, in the beginning were the most of us made gardeners.

Above all things, in the living-room kitchen, have plenty of easy-chairs, one for each of the men and each of the women to sit in during long winter evenings. These chairs need not be expensive, but they should be very comfortable, and supplied with cushions with washable covers, buttoned on so that they can be easily removed for laundering. A footstool or two, shoved back against the wall during the day, will be appreciated, and there should certainly be a broad, comfortable couch. A steel-frame couch with a mattress and denim cover, is the best, and costs from ten to twelve dollars, but there should be a separate denim cover that can be laundered whenever necessary.

I think there should be a little book-case in the kitchen, in which one can keep one's favorite books, the books one wants to pick up at any odd moment; and there should be a rack for papers and a shelf for lamps. Another shelf upon which to place a few pieces of willowware, or some of "grandmother's china," and a bowl of flowers, will add greatly to the homelike effect of the room, and the walls may be decorated further with two or three pictures—not gloomy pictures, not glaring chromos, but real pictures. I have told you before that these may be obtained from the "Perry Pictures Co.," Malden, Mass., or Boston, at prices ranging from five cents to a dollar each. Constable's "The Cornfield," is a good picture, suitable for a farm kitchen; so is "The Hay Wain," also by Constable (a famous English artist). Others that I think of on the moment are, "Out for a Sail," Breton's "The Song of the Lark," Troyon's "The Return to the Farm," Herring's "Three Members of a Temperance Society," or many of Landseer's. If you want pictures that will summon before the children thoughts of great men, you might have Pilot's "Columbus on the Deck of the Santa Maria," "Stratford-on-Avon, the Home of Shakespeare" (from a photo), or some of the portraits of eminent people,—Tennyson, Dickens, William Morris, Linnaeus, Raphael, Marconi, Edison, La Salle, Champlain, Jacques Cartier,—I'm afraid this list is badly jumbled chronologically, but it is merely a suggestion, some of my own favorite heroes just as they came into my mind. You'll notice that I've been politic enough to leave out the politicians!—I wouldn't dare suggest in regard to them!

We've spoken nothing of kitchen utensils, probably because we started out by talking about the "attractive" kitchen; yet a kitchen cannot be really and truly attractive unless it is well equipped with the little things that tend to make work easy. These are so very inexpensive, too (thank goodness there are a few things still inexpensive!), that it is a pity to do without them. There should be plenty of kettles and saucepans, with lids, and for these "granite" is quite

satisfactory. Aluminum costs more, but is nicer, as things do not scorch in it so readily if temporarily forgotten. I have been told, however, that one should never buy an aluminum frying-pan, as it is almost impossible to brown things in it.

A double-boiler and a steamer will help to simplify work, and there should certainly be two good big dishpans (one for washing, the other for rinsing the dishes) and a big breadpan with a lid that fits. People who have got used to a bread-mixer say they would not like to be without it, while those possessed of a really good fireless-cooker are equally enthusiastic, especially in hot weather when it is advisable to save both heat and fuel. A good can-opener, a wire pot-cleaner, a good egg-beater, and a small brush for cleaning vegetables, are indispensable; while a little rack upon which to hang a mixing-knife, a slit cake-spoon, a paring-knife, bread-knife, stirring-spoons, and a pair of strong kitchen scissors, will often keep the temper sweet. Among other accessories are a breadboard, an earthen mixing-bowl, and a food-chopper—a great aid in pickling-time, and for making up left-overs into tasty dishes.

In a corner of the outside shed the well-equipped house will also have a washing machine, wringer, dustless mop, dustless duster, and carpet sweeper.

To some of you it may seem very silly to enumerate all these things, and yet it is quite astonishing how many homes are without them,—not because people cannot afford a great many of them, but through thoughtlessness or from never having known how greatly work may be simplified by proper equipment, little things kept always in their place so that time and steps will never be wasted in looking for them.

If any of you wish to add to these suggestions, pay us a visit. We are always glad to hear how the necessary work about the home may be lightened or made more enjoyable. At the Round Table of our Ingle Nook there is room for everyone. JUNIA.

The Beaver Circle

OUR SENIOR BEAVERS.

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

The Call of A Flower.

"Come, little leaf," said the Autumn Wind,
As he blew a furious blast;
"Come, little leaf, be quick, be quick,
For your brothers are falling fast."

"Shall I fall?" asked the leaf of the mother branch,
"Shall I fall to the earth so drear?"
At which the mother branch replied:
"Not yet; 'tis not time, my dear."

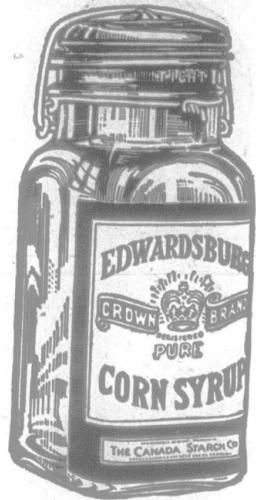
So the little leaf he held on tight,
As tight as he could hold,
Though he feared he could not hold on long,
For the weather was growing cold.

Under the tree where the little leaf hung
Was a flower drooping low.
"Come quick, come quick, little leaf," it said,
And shield me from the snow."

Beneath the tree some children gay
Gathered each golden leaf.
"Come down, come down; 'tis time," they said,
"And hang not there in grief."

"Shall I go now?" asked the leaf once more,
And he glanced at the earth below.
"No," said the mother branch, "hold on tight,
For it is not time to go."

Then he asked the branch if he might fall
To shield the flower from the snow,
And the mother branch answered, "Yes,
You may,
For now it is time to go."



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Three Pounds of Syrup.

In 3 pound Glass Jars

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"Crown Brand" is also sold in 2, 5, 10 and 20 pound tins.

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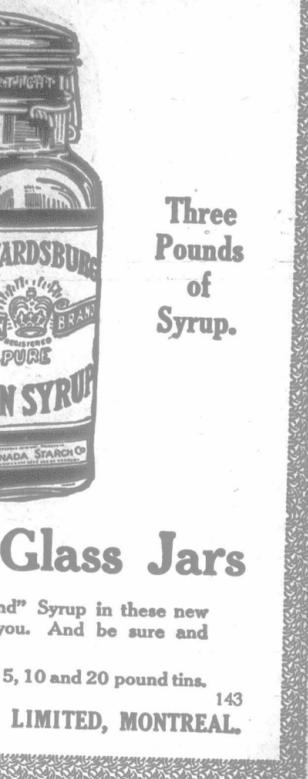
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Northwood, R.R. No. 3, Ontario

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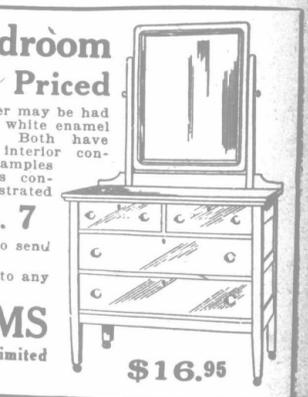
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may be had white enamel. Both have interior compartments concentrated.

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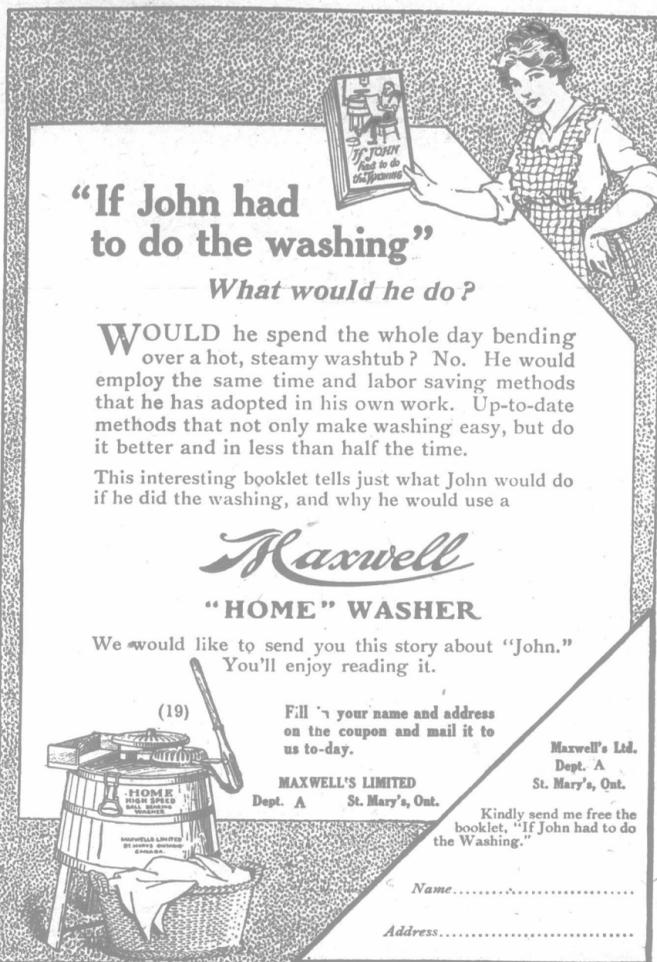
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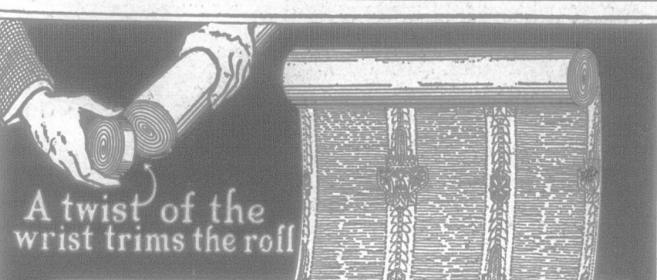
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We ship direct to customers. Our apple trees are extra fine. Write us for prices on your lists for early Spring Planting.—36 years at it. No agents.

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

So he bade good-bye to the mother branch,
And then let go his hold,
And fell, and fell to the earth, down,
down,
Like a glittering leaf of gold.

And he fell right over the little cold flower
And shielded it from the snow,
Until the warm, bright spring days came,
When it was time to grow.

—Horatio Colony, in The Journal of Education.

Funnies.

THE CRUEL SCHOOLMASTER.

An indignant mother wrote thus to the principal of an academy:

Dear Sir,—My son writes me that he has to translate fifty hexameters of Latin a day. I looked "hexameter" up in the dictionary and find it is a poetic verse of six feet. Now, that makes three hundred feet or one hundred yards of poetry for my poor son to translate each day. I think about half a hexameter, or six inches, of this Latin is enough for a boy of his age.

Yours truly, MRS. SMITH.
J. S. J.

"Oh, no; there ain't any favorites in the family!" soliloquized Johnny. "Oh, no! If I bite my fingernails, I catch it. But, if the baby eats his whole foot, they think it's dear."

A Young Patriot.

Nelson B. Armstrong, R. 8, Bowmanville, Ont., has gathered up 75 cents in commissions for getting subscribers for "The Farmer's Advocate," and has very splendidly sent the whole of it to the Dollar Chain to buy comforts for the soldiers. The amount will buy yarn enough to make almost two pairs of warm socks for the cold trenches. Nelson would like to send more. "I have only been around on the way to and from school," he writes, "sometimes only going about a mile out of my way, and then hustling home for chores, and on Saturdays there is always the hen-house to clean out, or something. There are not six within a reasonable distance of here who do not take "The Advocate," but I have the promise of several more in a little while."

Senior Beavers' Letter Box

Dear Puck,—This is the first letter I have ever written to your interesting Circle, but I have been a silent reader for a long time, and I have enjoyed the letters very much.

We live in the country about five and a half miles from Petrolia. The school is about one and one-half miles away, but Daddy drives me into town every Monday morning, and comes after me Friday night. I stay in town all week; also my brother Jack, who goes to High School. I am in Junior IV, and my teacher's name is Miss McCormick.

I enjoyed my Christmas holidays very much. We have lots of snow, and a dandy hill to coast on.

Don't you think this war is terrible? I have no near relatives there, but I feel sorry for the soldiers, yet, if I were a boy, I would go without thinking about it, because I love exciting things, and would love to be in the thickness of the battle.

Hoping the w.-p. b. is out calling when this letter reaches there, I close, with my best wishes to the Beaver Circle.

JOSEPHINE STAPLETON.
Petrolia, Ont. (Age 12.)

Dear Puck and Beavers,—This is my first letter to your charming Circle. We have taken "The Farmer's Advocate" for a long time. I like reading the letters very much. We have a fall fair here every year, and I always take quite a few prizes. We expect to have a children's fair next year.

Some little girl named Eva, from Owen Sound, sent my sisters and me a Christmas card. I think I will send a card to Eva, and as I do not know her other name I will put this address, "Eva, a lover of the Beaver

Circle." I intend to write in the competition. I hope the waste-paper basket will not get this when it arrives. I will close, wishing the Beaver Circle every success.

CORA McINTYRE.
(Age 13, Class Sr. IV.)
Powassan, Ont.

Dear Puck and Beavers,—This is my first letter to your Circle. My father has taken "The Farmer's Advocate" for about three years. I live on a farm of one hundred and fifty acres, about a mile and a half from the town of Durham. I am very fond of reading, and have read quite a few books, such as "Black Beauty," "Try Again," "Only a Farmer Boy," and such books, especially books explaining adventures. I have only one brother, and he is very fond of music, and can play the violin, organ, mouth-organ, and drum.

I go to the Rocky Saugeen School; my teacher's name is Mr. Graham. I will now close, as my letter is getting long, wishing the Circle much success.

MERRON McARTHUR.
(Age 13, Sr. IV.)
R. R. No. 1, Durham, Ont.

Honor Roll.—Hilda Hesp, Roy Tatum, Edna McCrea, Murray Dunkeld.

Riddles.

Why is a clock the dirtiest thing in the kitchen? Ans.—A clock; because it never washes its face.—Sent by Roy Tatum.

If all the women went to China, where would the men go? Ans.—To Pekin.—Sent by Edna McCrea.

Beaver Circle Notes.

Murray Dunkeld (age 12), Claremont, Ont., R. R. 2, wishes some of the Beavers to write to him.

Edith Norrish (age 8), R. 1, Campbellville, Ont., also wishes some of the Beavers to write to her.

OUR JUNIOR BEAVERS.

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

Peekaboo Stories.

PEEPAPEEP.
By Juju.

Did you ever hear of the fairy Peep-peep?

If you have, you have likely wondered how she got such a queer name, so I will tell you all about that.

One night soon after she was born, her mother lay awake, looking at a long beam of moonlight that came slanting into the room, and wondering what she should call her baby fairy. The room, I may tell you, was not one like yours, with a little white bed and white curtains. It was a tiny hollow with ferns all about it, arching over the top to form a roof, and the fairy mother and her baby lay on a bed of moss. The window through which the moonlight came was just a rift in the fern-fronds, and its curtain was a silver gossamer spun by a spider, that floated inward on the breeze.

"I wonder what I shall call my baby," thought the fairy mother.

Just then there came sliding down the moonbeam a beautiful little creature, with hair as silver as the moonbeam itself, dressed in a gown that looked as if it were made of petals of the white trillium.

"I have heard your sweet and loving thoughts about your baby," said the new-comer.

"Oh," said the mother fairy, "I have heard that sweet thoughts bring sweet visitors."

The moonray fairy bowed low. "What do you wish for your baby?" asked she. "Put your wish into words and perhaps I can help you."

"Why,—I wish—I wish," replied the mother fairy, "that my baby shall see all the wonder of the beautiful green world. So she shall be good, because she will be too much lost in love and wonder to be selfish. And she will never be lonely, because she will be always in-

interested, and will find goodness everywhere."
"Be it as you say," said the moonray fairy, "and call her name Peepapeep."

"Peepapeep?" repeated the mother, but the moonray fairy said nothing at all, and just then a bit of cloud floated over the moon and shut off the long ladder of silver light. "Oh, I see," whispered the mother, "she shall be called Peepapeep because she will peep about everywhere, getting glimpses of things that the rest of us may not perceive."

And so it was, for as Peepapeep grew up she peeped beneath the surface of the ground in the spring and saw the roots growing downward and the little stems shooting upward; and she listened at the springs and heard the water gurgling up through the soil and crevices in the rocks; and she heard the sap mounting up through the trunks of the trees, and saw the petals of the flowers unfolding. When the mists settled in the valleys, she saw whence they came, and when the rainbow hung in the sky she followed the beams of color—red, orange, yellow, green, violet, and blue—and knew why they were there. And she looked into the hearts of men and saw why they were glad, or angry, or sorry; and into the hearts of little children, and knew why laughter came to their lips.

Always she wondered, and always she saw that beautiful things were even more beautiful than others saw them, and that ugly things were not so ugly after all.

Often Peepapeep comes to you, children. Sometimes she is speaking through the voice of your mother or teacher, and sometimes her eyes look through yours and make you see things that you never saw before. Sometimes, too, Peepapeep comes to you as you read your books or papers. But always, when she draws near, you feel as if you have found another new eye, for you see and know something that you never saw or knew before.

Junior Beavers' Letter Box

Dear Puck and Beavers,—As my sister wrote to your Circle some time ago, I thought I would write and tell you about my pet kitten. I call her Tiger. She is very cunning. As soon as she hears us open the door she will run to meet us, and jump upon the manger until we give her some milk. If I tell her to lie down or sit up she will do it. My teacher's name is Mr. Cockrane. Well, as my letter is getting rather long, I will close and leave room for the other Beavers. I remain your little Beaver.
FLORENCE CAIN.
Queensville, Ont. (Bk. Jr. II.)

Dear Puck and Beavers,—I saw my last two letters in print, so I thought I would write again. I have two kittens, and they are very playful. They are both tigers; one is a little lighter than the other. At school we are having a concert. I am in the dairy-maid drill. There is another drill, the flag drill; also two other things with one girl in each.

I have been head in the marks for the past three months. We have pictures of birds, and we get one for being head each month.

Riddle.—Old Mother Twicherland goes through a gap, and leaves part of her tail in the trap. The answer is a needle and thread. This riddle was in a few weeks ago, and I thought I would write and give the answer.

ANNIE McLEAN (age 9, Jr. II).
Badnoch, Ont.

Dear Puck,—Some of my schoolmates and I made some boxes of candy and were going to send them to you, but the Winchester branch of the Women's Canadian Club were sending a Christmas box to the soldiers, and we all preferred to have our box go to the soldiers in the trenches, as that was where they were sending it, rather than those in the hospital's. Hope you will not mind. Wishing the Beaver Circle every success I will close.

JEAN ANDERSON (age 11).
Winchester, Ont.

We are glad you sent your boxes of candy straight to the trenches, Jean. The soldiers there would be very much pleased to get them.

Dear Puck and Beavers,—This is my first letter to your charming Circle. I live on a farm of forty acres. My parents and my two sisters came from Switzerland, but I was born in Canada. They like to read "Helen's Diary." My father is a butcher, and goes to Stratford to the market every Saturday. We have hard subjects to learn. For pets, I have three kittens and a dog. The kittens' names are Pearley, Beauty, and Trix. The dog's name is Sport. As my letter is getting long I must close, wishing all the Beavers a Happy New Year.
AMELIA SCHINDLER.
(Age 8, Sr. II).

R. R. No. 2, Tavistock, Ont.
Honor Roll.—Phobe Lymburner, Dorothy McKay (P. E. I.), Vera Dunkeld, Edith Norrish, Isabel Bradish.

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At a small cost by using our Attachable outfit. FITS ANY BICYCLE. Easily attached. No special tools required. Write today for our FREE BOOK describing the SHAW Bicycle Motor Attachment. Motorcycles, all makes, new and second-hand, \$35 and up.
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One hundred and eighty acre farm, clay loam, living water, new basement barn, (40 x 80), metal roof, basement cow stable, stock, 40 head, basement hog pen, 50 hogs, implement house (frame), comfortable cottage dwelling, within 2 1/2 miles of Springfield, 6 miles of Aylmer, good neighborhood. If sold at once, \$9,000.

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Live stock Labels for cattle, sheep and hogs, manufactured by the Ketchum Manufacturing Co.
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Insure your crops with a Spramotor
It isn't a SPRAMOTOR unless we made it

YOU find it good business to insure your life, your health, your home, then why not insure your crops upon which your livelihood depends. A few minutes' work with a SPRAMOTOR at suitable intervals will rid your crops of fungus diseases, and assure their arriving at maturity in that hard, healthful condition that secures first-grade prices. We have SPRAMOTORS adapted for every kind of spraying in every part of the world. Let us quote you prices and terms to meet your own special needs. Meanwhile write for a copy of our booklet, which describes the various styles of SPRAMOTORS and gives valuable information about the treatment of crop diseases.

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Makes Fine Bread

EVERYONE who bakes bread should know about Cream of the West Flour. It is without a peer as a bread flour. With every four 98 lb. bags of Cream of the West Flour and our other guaranteed flours we give an interesting novel or cook book free. Make out your order now.

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the hard wheat flour guaranteed for bread

GUARANTEED FLOURS

	Per 98-lb. bag.
Cream of the West Flour (for bread)	\$3.85
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	Per 100-lb. bag.
"Bullrush" Bran	\$1.35
"Bullrush" Middlings	1.40
Extra White Middlings	1.55
"Tower" Feed Flour	1.75
Whole Manitoba Oats	2.00
"Bullrush" Crushed Oats	2.05
Sunset Crushed Oats	1.80
Manitoba Feed Barley	1.80
Barley Meal	1.85
Geneva Feed (crushed corn, oats and barley)	1.90
Oil Cake Meal (old process, ground fine or nutted)	2.20
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Prices on Ton Lots: We cannot make any reduction on above prices, even if you purchase five or ten tons. The only reduction from the above prices would be on carload orders.

Terms Cash With Order: Orders may be assorted as desired. On shipments up to five bags, buyer pays freight charges. On shipments over five bags we will prepay freight to any station in Ontario, east of Sudbury and south of North Bay. West of Sudbury and New Ontario, add 15 cents per bag. Prices are subject to market changes.

LIST OF BOOKS

- Tale of Two Cities, by Dickens.
- David Copperfield, by Dickens.
- Oliver Twist, by Dickens.
- The Talisman, by Scott.
- Waverley, by Scott.
- Last Days of Pompeii, by Lytton.
- Last of the Barons, by Lytton.
- Three Musketeers, by Dumas.
- Vanity Fair, by Thackeray.
- Cranford, by Gaskell.
- The Woman in White, by Collins.
- The Pathfinder, by Cooper.
- Never Too Late to Mend, by Reade.
- The Scarlet Letter, by Hawthorne.
- Poems, by Longfellow.
- Poems, by Tennyson.
- Airship Andy, by Webster.
- Tom Fairfield at Sea, by Chapman.
- Ruth Fielding at Snow Camp, by A. B. Emerson.

Ye Olde Miller's Household Book.—Over 1,000 tested recipes, and large medical section. Enclose 10 cents to pay postage and packing on this book. No postage asked for on other books. No book forwarded unless an order for four or more bags of flour is received.

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We don't ask you to have used light in your oven pay trash may return it perfectly satisfied every possible loss a cent. We that it makes as like a candle, or acetylene. L old oil lamp, and 33 leading

BURNS 70 Ho common Coal O than twice as n wick open flame noise, simple, explode. Seven enjoying this p nearest to sun

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O. A. C

1200 bushels of grown from sele year ago, last y orders. Sample

Ed

R. R. No. 1

MAPLE LEAF OIL CAKE MEAL WRITE TO THE CANADAL TORONTO

Please mention

Fresh and Refreshing "SALADA"

is composed of clean, whole young leaves. Picked right, blended right and packed right. It brings the fragrance of an Eastern garden to your table. **BLACK, MIXED OR GREEN**

NEW COAL OIL LIGHT

Beats Electric or Gasoline

MEN WITH RIGS OR AUTOS MAKE \$300 A MONTH

10 DAYS FREE
Send No Money

We don't ask you to pay a cent until you have used this wonderful modern light in your own home ten days—we even pay transportation charges. You may return it at our expense if not perfectly satisfied after putting it to every possible test 10 nights. You can't lose a cent. We want to prove to you that it makes an ordinary oil lamp look like a candle; beats electric, gasoline or acetylene. Lights and in put out like an oil lamp. Tests by Government and 33 leading Universities show it



No Money Needed
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Without any sales experience, yes even without capital, you can make a big success by placing the Aladdin on trial. If you haven't capital we will help you with our liberal credit plan. Every home wants and needs this wonderful light, that from half the usual amount of oil produces the brightest, mellowest light obtainable. To sell the Aladdin is a simple matter of getting the light into people's hands. After a trial nobody wants to go back to old feeble lighting methods. Hundreds of men are making \$100 to \$300 a month. Here are two letters just like thousands we receive:

"Out of eight calls I sold six. Then ordered in four dozen lots and sold five lamps a day. My patrons all say they are fine after using them a year."—H. B. Stewart.

"Between Jan. 2 and Feb. 30 I sold about 275 lamps. I never saw anything that would sell equal to it."—Charlie Conrad.

BURNS 70 Hours on ONE GALLON common Coal Oil (kerosene), and gives more than twice as much light as the best round wick open flame lamps. No odor, smoke or noise, simple, clean, no pressure, won't explode. Several million people already enjoying this powerful, white steady light, nearest to sunlight. It's GUARANTEED.

Get One FREE We want one user in each locality to whom we can refer customers. Be the first and get our special introductory offer under which you get your own lamp FREE for showing it to a few neighbors and sending in their orders. Write quick for beautifully illustrated FREE Book and get full particulars. Address nearest office

Aladdin
MANTLE LAMP
Sample Sent Prepaid—10 Days FREE to responsible men. Tell us what territory you prefer, whether you have a rig or auto so you can work in country, how long you have lived in the community, etc., so we can give you full information, agency terms, credit plan and sample lamp for free trial.

MANTLE LAMP COMPANY, 1308 Aladdin Building
Largest Coal Oil Mantle Lamp House in the World
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HUNT'S DIAMOND FLOUR

Established 1854

Used by women of experience and discrimination for 60 years. Their success in baking is due to our special blend that is guaranteed to be "Always the same."

Good Grocers Sell Hunt's. 1673

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LET THE HINMAN MILK YOUR COWS \$50.00 per unit.

It is the best hired man. It is used on official test work. Write for Booklet H.

H. F. BAILEY & SON, Galt, Ontario
Sole Manufacturers for Canada

O. A. C. No. 72 Oats

1200 bushels of good clean seed true to name grown from selected seed from first prize field a year ago, last year had only half enough to fill orders. Samples and price on application.

Edgar Broderick
R. R. No. 1 Exter, Ont.

Contains over 35% protein
Contains over 33% carbohydrate
Keeps all live stock healthy if fed daily

HMAPLE LEAF OIL CAKE MEAL

WRITE TO DAY FOR FREE SAMPLE & PRICES
THE CANADA LINDSEED OIL MILLS, LTD.
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BOTH FOR \$13.90

130 Egg Incubator
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BOTH FOR \$13.90 Freight and Duty PAID

If ordered together we send both machines for only \$13.90 and we pay all freight and duty charges to any R. R. station in Canada. We have branch warehouses in Winnipeg, Man. and Toronto, Ont. Orders shipped from nearest warehouse to your R. R. station. Hot water, double walls, dead air space between, double glass doors, copper tanks and boilers, self-regulating. Nursery under egg tray. Especially adapted to Canadian climate. Incubator and Brooder shipped complete with thermometers, lamps, egg testers—ready to use when you get them. Ten year guarantee—30 days trial. Incubators finished in natural colors showing the high grade California Redwood lumber used—not painted to cover inferior material. If you will compare our machines with others, we feel sure of your order. Don't buy until you do this—you'll save money—it pays to investigate before you buy. Remember our price of \$13.90 is for both Incubator and Brooder and covers freight and duty charges. Send for FREE catalogue today, or send in your order and save time.

WISCONSIN INCUBATOR CO. Box 228, RACINE, WISCONSIN, U. S. A.

Our Serial Story "THE CHAPERON."

By C. N. and A. M. Williamson.
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RONALD LESTER STARR'S POINT OF VIEW.

(Continued.)
I felt, when I waked up on the morning of butter market-day at Middelburg, as if I had not slept at all, but had listened throughout the night to the sweet, the incredibly sweet chimes that floated like perfume in the air. Yet I suppose I must have slept, for the bells had sometimes stopped playing their one melodious tune, to tingle in my dreams. "One for you, and one for you, but never, never one for me?"

The hotel is a nice hotel, and there is a garden. After breakfast, I was so tired of brotherliness, of beaming at happy couples, and hearing plans about weddings, that instead of going forth to see the famous Thursday Middelburg sights, at which the world comes from afar to gaze, I slipped away and hid in the garden.

Phyllis and Robert were out together. Rudolph and Nell were out together. Both parties conscientiously believed that they were out for sight-seeing; that their object was to behold matrons and maidens in white caps, quaint fobus, meek, straight bodices, and swelling skirts; to admire pretty faces, with tinkling gold ornaments at their temples; to stare at young arms, red under incredibly tight short sleeves, as they bore baskets of eggs or pats of butter to market. How well I knew the whole scene from photographs—the bell-like figures of the women; the booths in the big market square; and the cool arcades of the butter-market. How well I knew, too, that neither Phyllis and Robert, nor Rudolph and Nell, would see anything at all, or remember it, if by accident they did see aught save each other.

"This," I said to myself, "is the end. We may go back to Rotterdam together, if we like. But everything's as much changed as if it were another party. And this, this is what I've slaved for—fibbed for—plotted for! 'Giving agreeable girls away!' 'Faugh!' I felt as much injured as if I were a misunderstood saint, though, when one comes to look at it, perhaps I have not always played precisely the part of saint. While I lolled gloomily on an extremely uncomfortable seat, not meant for lolling, I heard a faint rustling in the grass behind me, and Tibe appeared, to lay his head, in a matter-of-course way, upon my knee.

"Where's your mistress?" I asked mechanically. "Have you changed, too, like all the rest, and left her alone?"
"Here I am," answered the L.C.P., as if the question had been addressed to her. "I thought you'd be in the garden, so I came to find you. Why don't you go out and see things?"
"Why don't you?" I echoed.
"Because I didn't like to feel that you were all by yourself," she answered.
"You needn't have troubled about me," I said. "Nobody else does."
She laughed that quaint, quiet little laugh, which suits her. "That's different. They're engaged to each other—all the rest of them. I'm engaged—by you."
"Don't let that engagement keep you from amusing yourself," I said. "The bargain's off now. I hired an aunt to further my interests. Every one else's have been furthered except mine."
"That's not my fault, is it?"
"I know it isn't," I assured her. "Don't think I'm finding fault with you. On the contrary, you're really a marvelous being. But Othello's occupation's gone."

HIGH-CLASS Stock and Implements FOR SALE

One stallion, Baron Murray Imp. [18821] (16464), son of Baron's Pride, 5 years old. One mare, Baroness Insch Imp. [20270] (23247), 7 years old; Sire Casabianca (10523); Dam Insch Maggie [18160] (19897). One mare, Miss Diplomat Imp. [26239] (28191), 6 years old; Sire Diploma (13442); Dam Tibbie Dickson (28176). One filly, Queen Maggie Insch [30352], 3 years old; Sire Black Ivory Imp.; Dam Baroness Insch. One filly, Lady Princess [32015], 2 years old; Dam Baroness Insch; Sire Baron Murray. One filly, Jean Ivory [32014], 2 years old; Dam Miss Diplomat Imp.; Sire Black Ivory Imp. One filly, Kitty Baron [35826], 1 year old; Dam Baroness Insch Imp.; Sire Baron Murray. One filly, Clara Diplomat [35825], 1 year old; Dam Miss Diplomat Imp.; Sire Baron Murray. For sale on

Friday, February 25th, 1916

Lot 12, 13 Con., North Monaghan, half mile west of City of Peterboro.

W. J. COX, Peterboro, Ont.

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All the latest and best funny jokes, and stories on the FORD automobile. Hundreds of them and all good ones. Also JITNEY jokes, Moving Picture, and Stage jokes. Laugh till you snore. A neat colored covered book by mail for only TEN CENTS.

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or stuttering overcome positively. Our natural methods permanently restore natural speech. Graduate pupils everywhere. Write for free advice and literature.

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The Perfect Piano for the Home.

WILLIAMS

The choice of the World's Great Artists

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MEMORIAL BELLS A SPECIALTY
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C. C. HOEBAKER, Box 950 Freeport, Ill.

O. A. C. 72 OATS

Best by test, good germination. Send for sample. 80c. per bus., bags free over 10 bus.

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Per 98-lb.
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WATERPROOF ECONOMICAL ALWAYS DRESSY
NO EXPENSE FOR LAUNDRY BILLS
DULL FINISH, JUST LIKE BEST LINEN

AT YOUR DEALER'S, OR DIRECT, \$25c

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CREAM

Where are you shipping now? And what are you getting for your cream?

We want more individual shippers and more men to gather cream for us.

Write for our proposition.

Silverwoods Limited
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We pay express charges and furnish cans. Remit promptly. Take all you can make. Write us.

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Sarnia Creamery

Pays express, furnishes cans and remits weekly

Pay Highest Price.

Write for particulars.

Sarnia Creamery Co., Ltd.
Sarnia, Ont.

CREAM Mr. Shipper, Attention!

Reasons why you should send your cream to us:

1. We aim to pay the highest prices.
2. We give you a square deal.
3. We have the largest market in Ontario.
4. We are prompt in making remittances.

The market indicates a gradual advance. Act now. Write us for further particulars.

THE TORONTO CREAMERY CO. LIMITED
9 Church Street, Toronto, Ont.

"1900" Gravity Washer

Sent free for one month's trial. Write for particulars.

"1900" WASHER COMPANY
357 Yonge Street Toronto, Ont.
(Factory 79-81 Portland St., Toronto)

London Engine Supplies Co., Limited.

Our L. E. S. Water Works System will give you the comfort of High Pressure Water System for your home or about the farm. Refer to the Christmas Number for details.

Perfectly Legal Will for 35c.

Use a BAX Legal Will Form and make your will at home. You can do it as well as your lawyer, and just as binding. These wills cannot be broken if you follow our instructions. You do not spread your affairs over the whole township. You sit down and fill in the blanks, as shown by the sample will accompanying each blank. Don't delay. Do it now. Sold by druggists and stationers, 35c., or by mail (3 for \$1) to

BAX WILL FORM CO.
Room 191B 257 College Street, Toronto



For Sale—Everything from an apple tree to a strawberry plant, shade, nut, ornamental and evergreen trees, ornamental shrubs and vines, roses, hardy flowering plants, bulbs, asparagus, guaranteed stock at reasonable prices, catalog free. (Silver black foxes.)

DOWNHAM BROS.
Box 1, Strathroy, Ont.

Rack-cured Seed Corn—All varieties. Write us before placing your order for Seed Corn. We have quantity and quality. Our Seed Corn is all hand-selected and thoroughly rack-cured.

ST. JOACHIM CORN GROWERS' CLUB
Box No. 4 St. Joachim, Ont.

"Yes," said she. "For both of us. I retire from aunthood, you retire from nephewhood, with mutual respect. Is that it?"

"I suppose so," I gloomily replied. "Yet I'm loth to part with you, somehow. You and Tibe are all I have left in the world. But now I must lose you both."

"You don't need an aunt," she said.

"No, but I need some one, I don't know exactly who. Robert has snatched one of my loves, Rudolph the other. What am I to do?"

"Come to the house and into my sitting-room, and let's talk it over," she suggested invitingly.

I obeyed.

There were flowers in her sitting-room. There always are. The scent of late roses was sad, yet soothing.

Excuse me a minute. I'm going into the next room to make myself pretty, before we begin our talk; but I won't be long, and Tibe shall keep you company," said the L.C.P.

"You're well enough as you are," I said.

But she went, smiling; and I hardly missed her, I was so busy with my own thoughts.

One for you, and one for you, but never, never one for me?

I must have hummed the words aloud, for her voice answered me, at the door.

"Never's a long word, isn't it?"

I looked up.

A neat little figure stood on the threshold between the two rooms, the same neat little figure I had seen constantly during the past eight weeks. But it was not the same face. She had said, lightly, that she was going to "make herself pretty," and she had. She had performed a miracle. Or else I was asleep and dreaming.

The gray hair, folded in wings, was gone; the blue glasses were gone; the big bow under the chin was gone. A pretty young woman was smiling at me with the pretty little mouth I knew; but I did not know the bright auburn hair, or the beautiful brown eyes that threw me an amazing challenge.

"Good heavens!" I exclaimed.

"You told me you didn't want your aunt any more," said she.

"Who are you?" I asked.

"Don't you remember? I'm Mary Milton. If you'd lived in your own country, instead of gadding about in foreign ones, you'd know who Mary Milton is without asking—at least, you would if you ever read The New York Meteor."

"I suppose this is a dream, and that I shall wake up," said I. "I slept very badly last night."

"Don't call for help under the impression that it's a nightmare," said my late aunt, twinkling.

"I have the impression that it's a vision," I answered. "But if you don't explain yourself instantly, I shall die in the dream—of heart failure."

"There's no great mystery," said Miss Milton. "I didn't particularly want to disguise myself, but you advertised for an aunt, and as it's difficult for a girl to make herself look middle-aged, I had to look old. That's all, except that your advertisement came in very handy, because—as you'd know if you were a patriotic American—Mary Milton's an enterprising and rather celebrated young journalist, making it her business to go round the world for her paper without spending a penny of her own. That was the understanding on which The Meteor started and 'loomed' me; for it was my own idea. I wanted to see things, and I hadn't money enough—so I went to call on the editor, and—I talked to him, till he was quite fired with the project. The Meteor has given me a good send-off, and I've given it good copy. My adventures—as they look in print—have been sensational, and, I believe, popular. I've been at it for two years, and all America has read me, if you haven't. I've done all the countries of Europe, now. Holland was the last, and I seemed stuck on the threshold till I saw your advertisement. It couldn't have

CALDWELL'S

If stock or poultry are not doing as well as you think they should, turn to

CALDWELL'S STANDARD FEEDS

- "Caldwell's" Molasses Meal
- "Caldwell's" Molasses Horse Feed
- "Caldwell's" Alfalfa and Molasses Horse Feed
- "Caldwell's" Molasses Dairy Meal
- "Caldwell's" Dry Dairy Meal
- "Caldwell's" Cream Substitute Calf Meal
- "Caldwell's" Poultry Laying Meal
- "Caldwell's" Poultry Scratch Feed
- "Caldwell's" Chick Feed
- "Caldwell's" Growing Mash
- "Caldwell's" Developing Feed

Write for descriptive matter on any of these tested feeds. It pays to use Caldwell's. If your dealer hasn't them, get in touch with us.

The Caldwell Feed & Cereal Company, Limited
Dundas Ontario

STANDARD FEEDS

DISPERSION SALE OF Shorthorns

As I am retiring from active farming, I will sell, positively without reserve, on **WEDNESDAY, MARCH 8, 1916**

my entire herd of Shorthorns, consisting of 23 head—20 females and 3 bulls (2 yearlings and 1 two-year-old). There will also be included in the sale 20 head of well-bred grade steers and heifers.

One Clydesdale gelding, rising 5 years, by Lord Charming; one Clydesdale filly, rising 3 years, by Lord Charming; one good driver, 8 years old. 2 Yorkshire sows in pig, and 27 pigs from 3 months to 5½ months old. 10 Leicester sheep in lamb.

Mosborough, G. T. R., is half a mile from farm. Trains arrive from west 10.15 a. m., depart 6 p. m.; from east 11.20 a. m., depart 6.11 p. m.

TERMS: Twelve months' credit on endorsed notes; 4 per cent. off for cash. Certificates on day of sale.

JOHN TUCK, R. R. No. 2, Breslau, Ontario

High Yielding SEED CORN

Offered by the Growers. Canada's Large Seed Farm
1,000 Acres Devoted to the Growing of High-Yielding Seed

Our seed corn is grown from selected seed, bred, selected and developed, true to type and to yield. Harvested when mature. Cured in a drying-house built exclusively for the purpose—each ear cured separately. Tested before shipment. Guaranteed as to variety and germination. Write for circular.

ESSEX COUNTY SEED FARMS, LIMITED
(Growers, not Dealers)

AMHERSTBURG, ONTARIO
G. R. COTTRELLE, President A. McKENNEY, B.S.A., Superintendent



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Send for our free 1916 Book of "QUALITY LINE"

Vehicles and Harness

22nd year of selling DIRECT to the USER.

Our Catalogue will help you to choose just the Vehicle and Harness you require, and save you money. It describes and pictures many styles, gives prices, Freight prepaid, and fully explains our method of selling direct and saving you the middleman's profit. Remember, we pay the freight in Ontario and Eastern Canada. The Catalogue is Free for the asking. Send for it to-day.

INTERNATIONAL CARRIAGE CO.

Dept. "A" Brighton, Ontario

FEBRUARY

Advertisement heading, situations, terms—Each initial two words. Cash must advertise.

EXPERIENCE as manager. References generations. Ontario.

FOR SALE—In Huron payment down.

FOR SALE—Yarmouth brick house, factory, che and telephone and in first class by March 20. Apply to: J. O. Ontario.

FATHER situation. Box W, Farm.

FOR SALE—County. Dally mail a Splendid etc. Clay loam \$7,500, two Fergus, Ont.

FOR SALE—clay loam good building London, Ont.

WANTED—man, H. Woodstock, Ont.

WANTED—forty y farm; good wanted. Ap. Ont.

WANTED—married free house, ga boy who can Lake, Ont.

WANTED—farm w ence work in Woodville.

Wanted— all kinds of sh have them ta.

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BARGAIN Fully equip Cost \$350; u WM.

BEGINNER in arithm can understand ence College.

PAT FETHERSTO Solicitors—TH Royal Bank Ottawa, and

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Timekeeper LONDON NONE-S

If not satisfi expense and m nished. Don't delay, giving free del R.R. No. 1, C The Ro

Brand B Guarantees for crea W Reference

WELL'S
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Molasses Meal
Molasses Horse Feed
Molasses Dairy Meal
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Poultry Laying Meal
Poultry Scratch Feed
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on any of these tested feeds. It pays
hasn't them, get in touch with us.
Cereal Company, Limited
Ontario

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ON SALE OF
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ng, I will sell, positively without reserve, on
MARCH 8, 1916
isting of 23 head—20 females and 3 bulls
There will also be included in the sale
grade steers and heifers.
years, by Lord Charming; one Clydesdale
arming; one good driver, 8 years old.
pigs from 3 months to 5½ months old.
er sheep in lamb.
le from farm. Trains arrive from west
om east 11.20 a. m., depart 6.11 p. m.
n endorsed notes; 4 per cent. off for cash.
on day of sale.
No. 2, Breslau, Ontario

ED CORN
Canada's Large Seed Farm
Growing of High-Yielding Seed
seed, bred, selected and developed, true to
mature. Cured in a drying-house built
r cured separately. Tested before ship-
germination. Write for circular.
ED FARMS, LIMITED
(not Dealers)
URG, ONTARIO
A. MCKENNEY, B.S.A., Superintendent

Direct and Save the Middleman's Profit
d for our free 1916 Book of "QUALITY LINE"
ehicles and Harness
22nd year of selling DIRECT to the USER.
e Vehicle and Harness you require, and save you
yles, gives prices, Freight prepaid, and fully ex-
you the middleman's profit. Remember, we pay the
atalogue is Free for the asking. Send for it to-day.
L CARRIAGE CO.
Brighton, Ontario

WANTS & FOR SALE

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.

EXPERIENCED farmer and son want positions as manager and help—yearly engagements. References can be furnished. Canadian for two generations. Box F, Farmer's Advocate, London, Ontario.

FOR sale—15 acres dairy, fruit and poultry farm in Huron county. Good buildings—small payment down. Box B, Farmer's Advocate, London.

FOR sale Farm of 100 acres. Lot 17, Con. 13, Yarmouth. New bank barn and stables, good brick house. Close to church, school, powder-milk factory, cheese factory and station. Rural mail and telephone on road. Well fenced and drained and in first class state of cultivation. If not sold by March 20, will be leased for a term of years. Apply to: John M. McKellar R.R. No. 3, Belmont, Ontario.

FATHER and son, experienced farm hands, wish situation—both good milkers; free in April. Box W, Farmer's Advocate, London, Ont.

FOR Sale—100 acres more or less in Wellington County, close to Fergus on county road. Daily mail and telephone. Bank barn 70' x 76'. Splendid stone house. Running water at barn. Clay loam soil, has never been rented. Price \$7,500, two thousand cash. Wm. Barnett, Fergus, Ont.

FOR SALE—First-class dairy farm, 150 acres, clay loam, 4 miles east city on Hamilton road; good buildings. Apply F. E. Sage, 576 King street, London, Ont. Phone 1881.

WANTED by married man, April 1st, as herds- man, Holstein preferred, can take full control. Apply: Gladwish, care of Mr. Schill, Woodstock, Ontario.

WANTED at once—A Scotchman, single, about forty years old, to work by year on stock farm; good with Shorthorn cattle. State wages wanted. Apply at once. Allen J. Fox, Harrow, Ont.

WANTED—Three experienced farm hands, married, yearly engagement. \$34 per month, free house, garden lot and summer wood. Also one boy who can milk. Apply: Box 395, Niagara-on-Lake, Ont.

WANTED—2 first-class single men for general farm work, good wages and board. Commence work immediately. Wm. Manning & Sons, Woodville.

Wanted—Custom Tanning. Horse hides and cattle hides for robes and coats. Also all kinds of skins and furs. Send them to me and have them tanned soft and pliable. Address: B. F. BELL, Delhi, Ont.

J. VICAR MUNRO, Architect
Designs Churches, Homes and Schools. Reasonable charges—no extras.
54 Bank of Toronto, London, Canada

BARGAIN: GRIMM MAPLE SYRUP
EVAPORATOR
Fully equipped; five hundred pails with covers. Cost \$350; used three seasons; price \$175 cash. WM. BARNET, FERGUS, ONTARIO

BEGINNER'S COURSE—Starts you at the first in arithmetic, grammar, etc. So plain anyone can understand. Write: Canadian Correspondence College, Limited, Dept. EE, Toronto, Can.

PATENTS AND LEGAL
FETHERSTONHAUGH & CO., PATENTS
Solicitors—The Old Established Firm, Head Office, Royal Bank Building, Toronto, and 5 Elgin St., Ottawa, and other principal cities.

WANTED: HERDSMAN
for one of the best Shorthorn herds in Ontario. Must be competent and careful, age not over 35 preferred and married. Apply Box 18, Farmer's Advocate, London, Ont.

Girls Wanted
in biscuit and candy departments. New factory, fresh air, rooms well lit. Hot dinner served at cost. Pay at start 12c. per hour, 49½ hours per week, Saturday afternoons off. Apply—
Timekeeper, McCormick's Mfg. Co. LONDON ONTARIO

NONE-SUCH SEED CORN
Our Guarantee
If not satisfied in ten days, return corn at our expense and money will be refunded. Bags furnished.
Don't delay. Write at once for our price list giving free delivery offer.
R.R. No. 1, Cottam, Ont. JACKSON BROS.
The Roselands and Alfalfadale Farms

Brant Creamery
Brantford, Ontario
Guarantees to you a high-priced market for cream every day of the year.
Write for our book.
Reference: Bank of Nova Scotia

suited better—except for the blue glasses and the wig. But one can't have everything as one likes it. I've enjoyed the tour immensely, thanks to you; and so have the readers of The Meteor. I'm afraid I've teased you a good deal, and spent a lot of your pennies; but it was fun! And you shall have your presents all back—every one of them. Heaps of money will be waiting for me from my paper when I get home to New York. They're delighted with my work; and then I intend to send you a check for all that you've paid me to be your aunt. I would rather, really; and only keep one little thing to remember you by, perhaps—and our days together.

"Did you always send back the money spent by persons you hypnotized to conduct you through the different countries?"

"No. That was different. I—don't exactly know why, but it was. And you needn't look at me so queerly. I've never done anything to be ashamed of."

"I'd knock the person down who suggested that you had," said I. "I was looking at you because I was thinking you more marvelous than ever. You hypnotized me. You hypnotize everybody. I suppose you hypnotized the editor into giving you your job?"

"Perhaps I did," she laughed. "Often I can get people to do things for me—big things—if I want them to very much."

"You could get me to do anything!" I exclaimed. "You're a witch, and what's more, I believe you're a beauty. Great Scott! How you grow on one! Can this be why—because you are You—that in my heart of hearts I don't care a rap if Nell and Phyllis are engaged to others? I wonder if my instinct saw under the gray hair and blue glasses? Look here, are you Miss or Mrs. Mary Milton? and if you're Mrs., are you a widow, grass, or otherwise?"

She laughed. "Why, how old do you take me to be? As an aunt, my official age was over forty. But Miss Mary Milton isn't much more than half Lady MacNairne's age. It's as good to throw off the years as the wig and the spectacles. I'm only twenty-three. I haven't had time to marry yet, thank goodness!"

"Thank goodness!" I echoed. "And thank goodness for You as you are. You seem to me perfect."

"But I should never have done like this, for an aunt."

"Certainly not. But to think I should have been wasting you all this time as a mere aunt!"

"I wasn't wasted. I saved you lots of things—if I didn't save you money. Really, I did earn my salary—though you often thought me officious."

"Never!"

"Not when I kept you from proposing to Nell Van Buren?"

"That was a blessing in disguise."

"Like myself. But truly, I only did it to spare you humiliation in the end. I knew all along that she was in love with Rudolph Brederode—though perhaps she wouldn't have found it out so soon if it hadn't been for me."

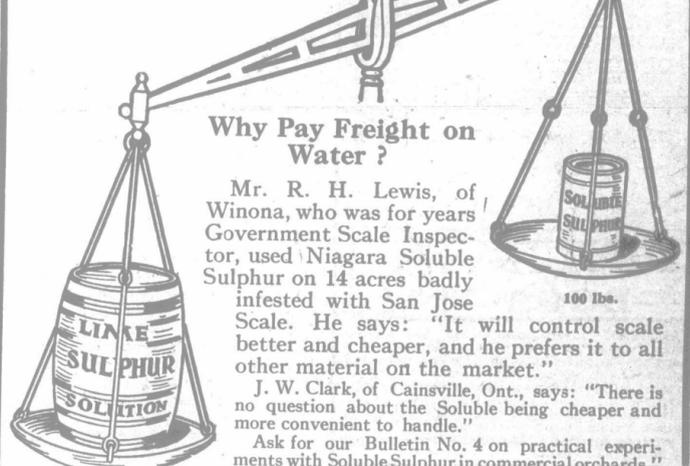
"You've been our good genius all round," said I. "And I owe you —"

"Now, don't offer me more rewards! It was fun wheedling things from you at first; but bribes have been getting on my nerves lately. The play was played out."

"Let's pretend it was only a curtain-raiser," I suggested. "I'd like you to be 'on' in the next piece, in the leading part. Mary Milton! What a delicious name! And you're delicious! It's a great comfort to understand why I was never really in love with either of those Angels. You are not an angel—but I'm going to be madly in love with you. I feel it coming on. I shall adore you."

SOLUBLE SULPHUR

The Sulphur Spray in Powder Form, Fungicide and Insecticide



Why Pay Freight on Water?

Mr. R. H. Lewis, of Winona, who was for years Government Scale Inspector, used Niagara Soluble Sulphur on 14 acres badly infested with San Jose Scale. He says: "It will control scale better and cheaper, and he prefers it to all other material on the market."
J. W. Clark, of Cainsville, Ont., says: "There is no question about the Soluble being cheaper and more convenient to handle."
Ask for our Bulletin No. 4 on practical experiments with Soluble Sulphur in commercial orchards."

Niagara Soluble Sulphur

Dissolves immediately in hot or cold water contains no sediment, keeps indefinitely, does not freeze, and sticks like paint. It's cheaper, easier to handle, no leakage or loss. Easy to mix and apply, no clogging of nozzles. 100 lbs. Soluble Sulphur make more spray than a 600 lb. barrel of Solution.
It saves freight and storage, as it is conveniently packed in cans of 100, 50, 25 and 10 lbs. Works quicker and better than Solution. Gives a perfect control of San Jose and other fungous diseases.

ARSENATE OF LEAD Swift's and Niagara Brand guaranteed, highest grade—15% arsenic oxide. Mixes easiest and stays mixed.
NIAGARA LIME SULPHUR Was highest in Baume test. Clear and uniform at all times—the pioneer solution.
DUST SPRAYS Finest ground sulphur, powdered—arsenate of Lead.

Wherever fruit excels, Niagara Spray is used. Let us quote you on requirements.

The Niagara Brand Spray Co., Limited
Burlington, Ontario

"Preparedness"
UNCLE SAM'S newspaper press is ringing an alarm in the ears of millions of readers on the necessity of being prepared as a nation for aggression on the part of European powers. Preparedness is the word of the hour. The nations have learned their lesson and learned it thoroughly, and at great cost. No nation will be allowed in future to take any other nation by surprise.
Our home life demands for its security the same policy of Preparedness. The three enemies that threaten our homes are Wastefulness, Old Age and Death. Adequate protection against wastefulness is secured by means of Mutual Life Endowment policies which compel saving; adequate provision against the needs of old age can be secured by the same means; while protection for the family in case death should come, is amply secured by Mutual Life or Limited Life Policies.
Our aim is to provide the largest amount of protection at the lowest possible cost.
The Mutual Life Assurance Company of Canada
Waterloo, Ontario

BOTH FOR
18.95
 Buys 140 Egg
 when ordered together
140 Egg
 Incubator.
 Freight Paid

The Big 140-Egg Hot Water Heater and Heavy Lamp Heated Brooder will start you in the poultry business and set you quick cash returns. We have made the price so there will be no big cash outlay to start. Opportunities for poultry raising grow better every day. There never was a better time to start or improve your present flock. Let this **PRIME CITY** outfit do the hatching and brooding for you. You'll save hours of work each day, and make the business a beautiful pleasure.

It's a heating white glass metal covered heater, with copper hot water heating system, self ventilating, automatic regulator, durable lamp and entirely built throughout. The brooder is made of No. 1 lumber, closely built and works perfectly. Remember you get both the heater and brooder complete ready to use for only \$18.95. Quick shipment from 25 Ave. from 1914. It is not sold any other place.

140 Chick Brooder.
 Send your order to-day and get started early. Full details on request. Write at once to
Brett Mfg. Co. Ltd.
 94 E. in St. TORONTO

POULTRY AND EGGS

Condensed advertisements will be inserted under this heading at 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 for any advertisement under this heading. Parties having good pure-bred poultry and eggs for sale will find plenty of customers by using our advertising columns. No advertisements inserted for less than 50 cents.

BRED-TO-LAY O. A. C. strain—Barred Rock cockerels, one-fifty each; fine birds. Orville J. Bond, Paris, Ont.

BRAMA, Partridge Rock Cockerels, \$2.00. Black Spanish, White Leghorn Cockerels, \$1.50. Trio of White Leghorns and Partridge Rocks (one male, two females) \$5.00. John Annesser, Tilbury, Ont.

CLARKS Famous Orpingtons—75 choice vigorous Buff and White Orpington cockerels and yearlings, 100 pullets and yearlings. Bred from best exhibition and laying strains in Canada. Males \$3 \$4, \$5; females \$1.50, \$2, \$3 each. Choice breeding pen 5 birds \$10 to \$15. Best general purpose fow bred, unexcelled for table, layers and mothers Order from oldest and largest breeder in Canada Satisfaction guaranteed. Eggs shipped in season Catalogue free. J. W. Clark, Cedar Row Farm Cainsville, Ont.

FOR sale—Mammoth Bronze Turkeys. Bred from Bell's Tom, "Sensation". John Black, Glanworth, R.R. No. 2.

FIFTEEN Barred Rock Pullets, several pure bred and laying; also a few choice White Wyandotte Cockerels in splendid condition most sell to make room; will sacrifice. E. Akerman, Bainsville, Ont.

FOR SALE—White Holland Turkeys, White China and African geese, Cayuga, Indian Runner and Muscovy ducks, 25 firsts at Ottawa. Grand quality, be quick. E. S. Baker, Springfield Farm Guelph.

HIGH Grade Barred Rock cockerels and Pekin ducks. Drakes all sold. Correspondence invited. Prices right. Leslie Kerns, Freeman, Ont.

LOOK! Eggs from our winning Single-Comb Brown Leghorns and Houdans, \$1.25 to \$3.00. Also few cockerels. Thomas Eyles, Cameron Ont.

MAMMOTH Bronze Turkeys bred from prize stock. R. G. Rose Glanworth, Ont.

REGAL White Wyandottes, Champion winners, our New York State Fair, ten years in succession. Big, vigorous, snow-white cockerels, \$2, \$3 and \$5, each bred from heavy laying females. Pullets, \$2 and \$3 each. Eggs \$3 per setting. Satisfaction guaranteed. Send for catalogue. John S. Martin, Drawer F, Port Dover, Canada.

WANT to know where I can procure pair peafowls, state price. Box G, Farmer's Advocate, London.

WHITE Wyandottes, (Martin strain) Prize-win- ners. Dunc. McTavish, Chesley, Ont.

OR 5 pairs Muscovy Ducks for sale. Apply Tancock, King St., London, Ont.

\$7.00 for this Collins Natural Incubator. Hatches biggest percentage of eggs. Money back if you don't like it. Write today for catalogue. C. W. Collins, 417 Symington Ave., Toronto.



FREE to Stockmen and Poultrymen, our 80-page illustrated booklet on feeding; how to construct a house which will accommodate 100 hens; gives dimensions and measurements of every piece of lumber required. Deals with the common diseases of stock and poultry and the remedies. Tells how to cure roup in four days. Contains full information about Royal Purple Stock and Poultry Foods and Remedies.

THE W. A. JENKINS MFG. COMPANY London, Canada

Seed Corn Wis. No. 7
 Our seed was picked from standing stalk, carefully selected, and thoroughly dried in a dryer, (a building built for that purpose). This method of drying insures the buyer of a fine crop of corn next fall. Owing to the scarcity of a fine crop of corn next fall, the farmer ought to get his order in early. Our supply is limited. Write at once for prices.

R.R. No. 2, THE POTTER FARM, Essex, Ont.
Choice Seeds, Alsike at \$10, O. A. C. No. 21 Barley at 80 cts. New bags 25, samples sent.

A. Bingle, Grimsby, Ont.
 Please mention "The Farmer's Advocate."

m. Their looks of radiant new happiness changed to surprise at sight of my companion. In spite of the dress nobody recognized the pretty girl with the wonderful eyes and crisp masses of sparkling auburn hair.

Yesterday I would have sacrificed anything, up to Tibe himself, to avoid explanations, but now I enjoy them.

Everybody laughed and exclaimed (except Robert), and Brederode helped me out so nobly that I would have given him Neil with my own hand if she had not already made him that present.

"It's like one of Nell's stories," cried Phyllis. "Only she used to love to make hers end sadly."

"I should have died if this had ended sadly," Nell said frankly, holding out both hands to Brederode, with a lovely look in her eyes.

"So should I, I'm sure," said Phyllis. "Oh, isn't it glorious that we all adore each other so!"

"Do we?" I asked the Meteor lady. She smiled. "I suppose it would be a pity to make a jarring note in the chorus."

While she was in that mood I took out the ruby ring which she had said ought to be an engagement ring.

"With this ring I thee—"
 "No!"
 "Engage thee as my perpetual chapron."

This time she did not draw back her hand. And I kissed it as I slipped on the ruby.

[The end.]

Gossip.

Catalogues of the Guelph Winter Fair, held December 3 to 9, 1915, have been marked, showing the prize won by the many entries. Since the breeding of each animal is also contained therein, the book is of considerable merit as a record of the Fair. Copies of this marked catalogue may be procured at 25 cents each, or three for 50 cents, by requesting same from R. W. Wade, Parliament Buildings, Toronto.

T. L. DUNKIN'S HOLSTEIN SALE.

T. L. Dunkin, of Norwich, Ont., has sold his farm, and on Wednesday, March 1, will sell by auction his entire herd of 60 Holsteins. The farm is two miles west of Norwich, and conveyances will meet all morning trains on the day of sale. This is one of the noted herds of Oxford county, as well as one of the strongest. Mr. Dunkin was always very particular in selecting his stock bulls, and it will be seen on perusal of the catalogue, which will be mailed on application, that much of the best blood the breed has ever known in Canada is strongly infused in the entire offering. All told, there will be 60 head on sale, 51 females and 9 bulls, including the two-year-old grandson of the great cow, May Echo Sylvia. The balance of the young bulls are nearly all of breeding age. In next week's issue a few notes relative to the breeding, records, and official backing of the offering will be given, but for full particulars write Mr. Dunkin for a catalogue.

RETTIE BROS.' SALE.

On the last day of February, Rettie Bros., of Burgessville, Ont., will hold a dispersion sale, and by auction will dispose of 53 head of pure-bred Holstein cattle, which comprises the entire herd. For twenty-two years Rettie Bros. have been breeding Holsteins, and during that time they have devoted special attention to developing a strain of heavy-producing, high-testing individuals of the true Holstein type. The herd consists of 9 head over five years; 5 four-year-olds, 9 three-year-olds, 9 two-year-olds, 5 yearlings, and 14 under one year. Five of the cows made a good showing at the Guelph dairy test last year. The young things are sired by bulls whose dams have records of over 30 lbs. butter in 7 days. There will be some grand opportunities to purchase young stock at a fair price at Rettie Bros.' sale. Catalogues give all information, and will be mailed upon request. The morning train from the south will be met at Burgessville, and the 11.30 train at Norwich and Burgessville. See the advertisement in this issue.

KEITH'S SEEDS
 THE FARMER'S SEEDSMAN SEEDS FIFTY YEARS SERVICE
 1866 1916
 Save money and buy your Seeds NOW.
 We pay railway freight on all orders of \$25 or over in Ontario and Quebec.
 [Our Golden Jubilee Catalogue is now ready. Write for one to-day. It is FREE.]

GOV'T. STANDARD	Bus.	SEED CORN.	Bags Free.
No. 1 Red Clover.....	\$17.00	1914 and 1915 growth.....	Per bus. (70 lbs.)
No. 2 ".....	16.00	Wisconsin No. 7 (on cob).....	\$1.75
No. 1 Alsike.....	13.00	Golden Glow.....	1.75
No. 2 ".....	12.00	Bailey.....	1.75
No. 1 Timothy.....	5.90	Learning.....	1.75
(Almost extra No. 1 for purity)		White Cap.....	1.75
No. 1 Timothy.....	\$ 5.65	Longfellow.....	1.90
No. 2 ".....	5.25	N. Dakota.....	1.90
Allow 30c. for each cotton bag required—Clover and Timothy.		Compton.....	1.90
O. A. C. No. 72 Oats.....	85c. per bush.		
O. A. C. No. 3 Oats.....	\$2.00		

We have small quantity of Grimm or Variegated Alfalfa. Write for prices.

GEO. KEITH & SONS SEEDS 124 KING ST. E TORONTO

This Year Grow Bigger Crops

MAKE up your mind that you will make each acre yield a bumper crop this year. Fertilize more thoroughly than you have ever done before.

Harab-Davies FERTILIZERS

are strictly high-grade. They have proved their worth and are recommended by progressive Canadian farmers from the Atlantic to the Pacific. They are thoroughly mixed, well balanced, complete in every way.

Following are the principal lines for 1916:

Guaranteed Analysis

Ammonia	Available Phos. Acid	Potash	Ammonia	Available Phos. Acid	Potash
2	10	0	3	10	1
3	10	0	4	9	1
4	10	0	0	10	2
5	12	0	2	9	2
0	12	1	3	7	2
1	12	1	1	8	3
2	10	1	2	7	3

Our 1916 Fertilizer Folder contains complete particulars about Harab-Davies Fertilizers.

WRITE FOR IT.

The Ontario Fertilizers, Limited
 West Toronto, Ontario

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SEEDS FIFTY YEARS SERVICE

1916

Buy your seeds now.

Write for prices.

124 KING ST. E. TORONTO

Questions and Answers.

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

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

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

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

Miscellaneous.

Homes for Boys.

Please publish in your paper names and addresses of two good homes where I could procure a boy of about 13 or 14 years of age. G. M.

Ans.—Address The Barnardo Home for Boys, Toronto, or J. J. Kelson, Superintendent of the Children's Shelter, Toronto.

Swamp Land.

I have a piece of swamp land which fails to produce. The muck is about one foot deep. Have given it thorough cultivation, but never applied barnyard manure or commercial fertilizer. What should I apply, or where shall I send a sample for analysis to see what it requires? S. A. L.

Ans.—The cause of many muck soils being unproductive is due to the permanent water level being too near the surface, too much acidity, or lack of essential plant requirements. A system of drainage may be of advantage. Where the soil is acid, which may be determined by applying the acid test as outlined in an article by Prof. Harcourt in our Jan 13 issue, page 46, an application of lime may be all that is required. Farmyard manure has been found in nearly all cases to greatly improve muck soils, enabling them to give large yields. If in doubt, as to actual requirements of soil, send a sample to Prof. R. Harcourt, Department of Chemistry, Ontario Agricultural College, Guelph, or to Dr. Frank Shutt, Experimental Farm, Ottawa.

Another Lice Remedy.

Editor "The Farmer's Advocate": I have noticed a number of enquiries about how to kill lice on cattle. I will give you a remedy I have used for a number of years, which has proved entirely satisfactory.

Dissolve one pound of hard soap in a gallon of soft water, then add one quart of coal oil. Stir the mixture until the coal oil is thoroughly incorporated with the water, then add three gallons more water, and put in one ounce of crude carbolic acid if you have it, but the acid is not absolutely necessary. Apply with a brush or cloth, and repeat in a week or ten days, which makes a thorough job. T. H. McMAHON.

Simcoe Co., Ont.

Gossip.

Attention is directed to the advertisement of the Thorncliffe Stock Farm, this issue. Twenty Clydesdale brood mares and fillies are to be sold. They are imported and Canadian-bred, and many have been prizewinners at Canadian shows. The entire lot will be sold at a reasonable price.

Ira Nichols, Woodstock, Ont., writes "The Farmer's Advocate" that his two-year-old Jersey heifer, Oxford Silver Belle 4329, is still milking 40 lbs. daily. At the Winter Fair, Guelph, 1915, she gave 113.2 lbs. of milk testing 4.6-per-cent. fat in 3 days, after being 142 days in milk. Her total score was 171.843 points.

W. H. and J. S. Hunter, Orangeville, Ont., extensive breeders of Hereford cattle, have the following to say regarding recent business: "We report the following sales, and nearly all buyers mentioned 'The Advocate' when writing: To Selby Car, Allandale, a good senior bull calf; to Jas. McCullough, Kenilworth, two senior yearling heifers; to W. May, Orangeville, a junior heifer calf; to L. McFaul, Alton, a good breeding cow; to W. J. McKee, our good junior bull calf McGuire. This was one of the best calves we ever bred. To M. De-Rosie, of Sherbrooke, a senior bull calf; to Mr. Copeland, of Harriston, a yearling bull and a young cow."

This Valuable Book FREE!

Do Not Delay Write for it to-day

Also ask for our catalogues illustrating a complete line of

Hay Carriers, Litter Carriers, Steel Stalls, Stanchions, Pens and Mangers, Horse Stable Equipment and Barn Door Hangers

LOUDEN BARN PLANS

112 pages of valuable information for the man who intends to build or remodel a barn.

18 pages of general instruction on barn construction.

78 pages of barn plans and designs.

6 pages on ventilation.

10 pages on barn equipment.

Do not fail to get this book of reference and instruction on barn construction.

Write to:

LOUDEN MACHINERY CO.
212 Grimes Street, GUELPH, ONT.

BRANCHES:
WINNIPEG, MAN. ST. JOHN, N.B.
VANCOUVER, B.C.



Grow Crops

that you will make each crop this year. Fertilize have ever done before.

ab-ies FERTILIZERS

they have proved their value by progressive Canadian Atlantic to the Pacific. well balanced, complete

pal lines for 1916:

Analysis

	Available Phos. Acid	Potash
3	10	1
4	9	1
0	10	2
2	9	2
3	7	2
1	8	3
2	7	3

der contains complete Fertilizers.

R IT.

ilizers, Limited Ontario

Absolute Dispersion Sale Holsteins! Holsteins!

Having sold my farm, Shadelawn, two miles west of the Village of Norwich, I will, on

Wednesday, March 1st, 1916

Sell by auction, at the farm, my entire herd of 60 richly-bred and high-testing Holsteins—51 females and 9 bulls, including a 2-year-old grandson of May Echo Sylvia. This herd is the result of many years breeding from such sires as the famous show bull, Count Mercena Posch, with 25 A. R. O. dams, a son of the former Canadian champion, Mercena 3rd, 27.63 lbs. Following him was Prime Abbekerk Pauline, with 14 A. R. O. dams, a son of the renowned cow, Tidy Abbekerk, 27.27 lbs., and also a former Canadian champion. Then was used a son of his, with 12 A. R. O. dams, and out of a 25.23-lb. dam. Then came May Echo Sylvia's Gerben, a son of the great May Echo Sylvia, his dam, grandam and great grandam have 7-day milk records of over 700 lbs. each. The younger things of the herd are the get of a son of his out of a 25-lb. dam. Very many of the females in milk are in the official records, and have official backing for generations. All will be in extra nice condition and all will positively be sold.

TERMS—Cash or 6 months on bankable paper, with 6 per cent. Catalogues on application to

MOORE & DEAN T. L. Dunkin, Norwich, Ont.
Auctioneers

Remember, this sale will be the day following the big Dispersion Sale of James Rettie, at Burgessville, Ont.



Toronto Showrooms: 50 Adelaide Street West

WE are probably the only brick-making plant in this country whose production is large enough to warrant operating winter and summer for a period of over 25 years. As a result we always have large stocks on hand and can assure you of prompt deliveries and courteous service. The service we render you is only equalled by the high quality of our product.

Prices will not be lower. Catalogue free on request.

The Milton Pressed Brick Co., Limited Dept. B, Milton, Ont.

MILTON BRICK

N. B. Seed Potatoes

Car lots at lowest prices. Stock guaranteed free from disease. Irish Cobblers, Delawares, Ohio's Martin and other varieties. Write:

HATFIELD & SCOTT
Growers and Shippers
Hartland New Brunswick

Grimm Alfalfa

Produces plants with large branching roots which resist winter conditions. Leafier, outyields other varieties and is of better feeding value.

Booklet, "How I Discovered the Grimm Alfalfa", and sample free. Will also send testimonials from patrons in your locality.

A. B. LYMAN, Grimm Alfalfa Introducer, Alfalfadales Farm, Excelsior, Minn.

CLOVER SEED

Our Alsike, Timothy, Red Clover, etc., will compare favorably with anything on the Canadian market. Send for price list.

"Purity Our Pride" 1887-1916

S. F. M. O'FLYNN & SON, Shelburne, Ont. Dufferin County

Marquis Spring Wheat

We have a quantity of Ontario-grown Marquis Seed Wheat. This wheat captured the International prizes the last three years. We obtained seed through advice from Prof. Zavits. It has given excellent results both separate and with oats, both ripening together. Price \$1.75 bus., Clinton; bags extra. Write for sample.

J. R. & F. MIDDLETON, Chinton, Ontario

"Facts About Sweet Clover"

This is the title of a booklet on sweet clover, a crop, the value of which is not as well known as it should be. Get the history of the plant, methods of seeding, curing and harvesting, its value as a feed and fertilizer in this treatise written by a man of experience. Price 25c. per copy. Send for it. Also a limited quantity of seed for sale.

WM. LINTON, Aurora, Ontario
O.A.C. 72, and reg. Banner oats, and O.A.C. 21 Barley for sale. Out of 1st prize standing crop and grown from 1st prize seed. GEO. D. FLETCHER, R. R. 1, Erin, Ont.

High-grade Fertilizers Are Best Values

The average cost of Nitrogen in 600 samples of "complete" fertilizers was 66% higher than the cost of Nitrogen in

Nitrate of Soda

Are you one of many paying high prices for low-grade goods?

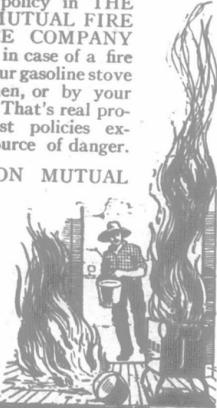
Send Post Card for Attractive, Money-saving Books

WILLIAM S. MYERS, Director
28 Madison Avenue, New York City

Do You Realize the Dangers of Gasoline?

A farmer's policy in THE LONDON MUTUAL FIRE INSURANCE COMPANY protects you in case of a fire caused by your gasoline stove in the kitchen, or by your automobile. That's real protection. Most policies exclude this source of danger.

The LONDON MUTUAL policy is the most liberal in every way. Write for particulars at once—you need the protection at the exceptionally low rates we offer.



**LONDON MUTUAL
FIRE INSURANCE
COMPANY**
F. D. WILLIAMS, MANAGING DIRECTOR
HEAD OFFICE - 33 SCOTT ST. TORONTO.

Porter's Seed Potatoes

Will give you bigger crops of better quality potatoes than ordinary seed stock. Grown in the choicest districts of Canada's banner potato Province—New Brunswick—under scientific methods of culture and harvesting, hand-selected with as much care and skill as trained human intelligence can offer, and sold only in bags with the trade mark.

"Porter's Seed Potatoes" on every bag. It pays to buy the best.
PORTER-MANZER, LIMITED
Perth, N. B.
Ontario Sales Office:
A. Mallinson, 43 Victoria St., Toronto

WALKER SONS Essex Farm Seed Corn

Golden Glow; Wisconsin No. 7;
Bailey White Cap Yellow Dent;
Longfellow.

We sell none but first class seed.

Owing to the scarcity of good seed this year old and prospective customers should order without delay.

Walker Sons, Walkerville, Ont.

Calf Meal is the latest addition to the PURINA FAMILY. Like the other feeds bearing this name,

PURINA CALF MEAL

is guaranteed highest quality. In checker-board bags only. Write us for full information, giving your dealer's name.

THE CHISHOLM MILLING CO., LIMITED
Toronto, Ont.

Questions and Answers. Miscellaneous.

Force Pump—Alsike for Seed.

1. What size force pump would be required to put water into a house at a distance of 125 feet, the house being 35 feet higher than the water?
2. What size pipe would be required for winter time?
3. What size hose would be required for summer?
4. What would this pump likely cost?
5. What grains would you advise feeding in combination with fall rye?
6. Would it be best to feed rye to growing cattle or pigs?
7. How many pounds of alsike clover seed should be sown per acre for seed, on a brown-clay soil?
8. Would a light shaking of lime over potatoes tend to save them from rotting?

Ans.—1. The ordinary force pump should be sufficient, with the sucker placed not more than 25 feet from the water.

2. It would not be wise to use less than 1½-inch pipe. Pumping would be easier if a larger pipe was used.

3. If the hose is to be used for watering lawns or washing buggies, ½-inch or ¾-inch hose would be satisfactory.

4. It would be best to consult your local dealer, or write some manufacturer of pumps, to secure prices.

5. Oats and rye in equal proportions would be a good combination.

6. Rye, fed in combination with oats, would be suitable for either cattle or pigs. For feeding hogs, rye is considered equal to barley, but not quite as valuable as corn.

7. From 6 to 8 lbs. per acre.

8. Lime, or land-plaster, is frequently used on freshly-cut potatoes for seed, with favorable results. If applied to potatoes in storage, it tends to keep them dry, which might prevent rot to some extent.

Weight and Cubical Content of Concrete—Gains and Losses of Steers on Grass.

1. How many cubic feet would an aggregate of 1 cubic foot of cement, 3 cubic feet of sand, and 5 cubic feet of stone, with necessary water, make up to, when laid in a wall?

2. What is the cubical content of an 87½-lb. bag of cement?

3. How many pounds should a fat steer, weighing, say, 1,200 lbs., lose after being turned on to good pasture in the spring?

4. What should be his final weight, after being on such pasture two months? (a) Without grain in addition to pasture. (b) With 3 lbs. grain added per day.

Ans.—1. A mixture where the cement fills the "voids" between the particles of sand and the combination of sand and cement fills the "voids" between the pieces of stone is considered ideal, but is not very often attained. Such a mixture will increase only slightly on the cubic contents of the stone used. In the case in question, the cement might not quite fill the "voids" in the sand, but it is possible that the amount of sand is rather large for the amount of stone, and it might more than fill the "voids" between the stone particles, and thus give a slight increase over 5 cubic feet of concrete.

2. A bag of cement is supposed to contain 1 cubic foot, and a bag of cement will average about 90 pounds, bag and all.

3. It will depend upon his preparation for being turned to pasture. If the steer were housed in a cool stable, and fed plenty of silage before going out, he might lose less than 50 pounds, or the loss might amount to 75 pounds or more in special cases. It would not be a loss in flesh in every case, and the steer would soon recover the original weight.

4. (a) From 1½ to 2 lbs. gain per day, without grain, is considered fair results. (b) Three pounds of gain per day on grass, with grain in addition, is considered satisfactory when about 4 lbs. of grain per day are fed. Three pounds of gain per day would probably give somewhat similar results.

The Dominion Bank The Dominion's Silo

Both safe, handsome, and permanent — one guarding the savings of its depositors, the other, feeding profits of Canadian dairymen—for that's what the Natco Imperishable Silo does. Built of enduring Natco hollow vitrified clay tile, it will last till the Great War is ancient history—a yearly source of profit. First cost is the only cost of this most economical of all silos. This year erect a

Natco Imperishable Silo

"The Silo That Lasts For Generations"

A perfect preserver of sweet, succulent silage, in all weathers—a guarantee of contented, well-fed cows and full pails of milk. Its salt-glazed hollow tile are impervious to air and moisture. Weatherproof, decayproof, vermin-proof and fireproof. Reinforced by bands of steel, laid in the mortar, within the tile. Stands permanent under severest wind or silage pressure. A handsome silo. Economical. Convenient. No adjusting, repairs or painting. Just the silo for the Canadian dairy farm.

Our new silo catalog fully describes the Natco Imperishable silo. Send for it. Write, also, for our helpful new book, "Natco On The Farm." Describes in detail the use of Natco Hollow Tile in all types of farm buildings. Accurately illustrated. First get these books then build.

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THE TRANSCONTINENTAL

New Route
to

Western Canada TORONTO—WINNIPEG

[Via North Bay, Cobalt and Cochrane

Lv. TORONTO 10.45 p. m.

Tuesday, Thursday and Saturday

Ar. WINNIPEG 3.50 p. m.

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Connecting at Winnipeg with G.T.P. train leaving 6.00 p. m. daily for Regina, Saskatoon, Edmonton and intermediate points. Through Tickets to

Prince George, Prince Rupert, Alaska, Vancouver, Victoria, Seattle and San Francisco.

Splendid roadbed and the best of everything. Timetables and all information from any Grand Trunk, Can. Govt. Rys., or T. & N. O. Railway Agent

CANADIAN PACIFIC

For WINNIPEG and VANCOUVER

LEAVE TORONTO 6.40 P.M.

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VIA THE TRANSCANADA

CONNECTING TRAIN LEAVES LONDON 1.20 P.M.

Through equipment, including Electric Lighted Compartment Observation Car, Standard and Tourist Sleepers, Dining Car, First-class Coaches.

"The frequent C. P. R. Service passing through the Business Centre of each City is an asset to the Traveller."

Particulars from Canadian Pacific Ticket Agent, or write W. B. Howard, D.P.A., Toronto.

Questions and Answers. Miscellaneous.

Bull Affected with Contagious Abortion.

I have a bull about 18 months old, in good condition, which proved sure for a while, but since a certain cow was brought to him no cows that he has served have got in calf. They all come back again in from four to six weeks' time. Did the cow in question have contagious abortion? If so, is there any way of syringing the sheath to prevent spreading the disease? What disinfectant should be used, and how long before he could be used to breed other cows without damage of spreading the contagion? SUBSCRIBER.

Ans.—It is possible that the bull has become affected with contagious abortion, but it would be difficult to indicate any particular cow as the one guilty of spreading the contagion. It also appears strange that some of the cows served by him do not conceive, and perhaps abort at a later date. There is a possibility that, from some reason or other, he is no longer sure. In these columns, under the heading "Abortion," the matter is discussed, and this question, we believe, is answered.

Abortion.

Two-year-old heifer aborted the first of December, having been with calf over six months. At first I thought it might be contagious, but since then none of the rest of the herd have aborted, and all are supposed to freshen in the spring. However, I do not think it was caused by an accident, as the cattle were not out for a week or more before the abortion. Is it possible there might have been something in the feed to cause it? I would like to have this heifer (a pure-bred) freshen again in the fall if possible. She showed oestrus two months after aborting. May say there has been practically no discharge since cleaning. Do you think it advisable to breed this heifer to the stock bull? Could one disinfect both bull and cow so as to avoid any possible danger from spreading the disease, providing it was contagious? If so, please state what to use, and the best way of applying the same. N. M. A.

Ans.—The abortion may have been caused by some unknown accident. Feeding hay that contained "Ergot" might cause "Ergotism," which is a form of abortion. Contagious abortion is a stubborn disease to combat. The usual treatment is to isolate all aborted cows, burn all fetuses and afterbirths, and take great care that the infection is not conveyed from diseased to healthy animals by attendants or stable utensils. By systematic disinfection of the genitalia immediately following abortion or premature birth, the affected animals may be guarded against future sterility and abortion. It is considered important that the vagina of heifers and cows shall be systematically disinfected for a period before and after breeding until conception is assured. It is equally important that the genital organs of breeding bulls be kept clean by regular disinfection, including washing immediately prior to and after service. A disinfectant that is frequently used for flushing out the wombs of cows is a solution of corrosive sublimate 30 grains to a gallon of water, and heat to about 100 degrees Fahr. each time before using. Use daily until the opening to the womb is about closed, then inject a little into the vagina once daily until any discharge ceases. Disinfect the tail and hind quarters of all pregnant cows once daily. It is recommended not to breed an aborted cow again for six months. By using a stock bull, that is known to be free from the disease, on a cow that has aborted, there is danger of spreading the disease through the herd. Where a bull has been bred to a diseased cow, it would be better not to use him again for some months, and in the meantime disinfect the sheath daily with the same material as used on the cows.

Messrs. Geo. Amos & Sons, Moffat, Ont., are making a change in their advertisement of Shorthorns in this issue, and announce a special offering to make room for additions to herd.



Quick, March!

—to the nearest Columbia dealer's, to hear these two heart-stirring battle songs

—full of the thrill and swing of victory. Sung on a Columbia Record—as they have never been rendered before.

"We'll Never Let the Old Flag Fall" and "Good Luck to the Boys of the Allies"

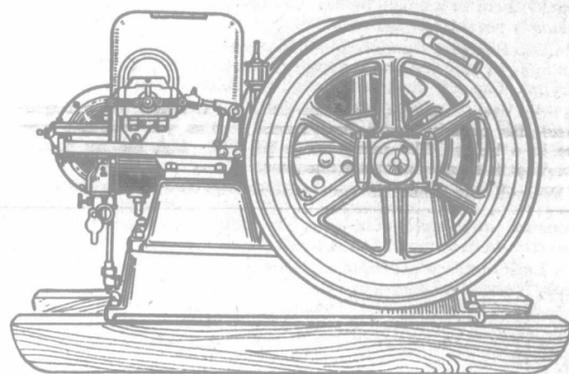
Sung by a splendid Canadian artist, Mr. Herbert Stuart with wonderful fire, feeling and swing. Quartette and orchestra accompaniment, with drum and bugle effects. This Columbia Record provides two magnificent recruiting songs. Hear it and learn the words and air. No. R2300, price 85c

Your nearest Columbia dealer is waiting to play it for you. He has a full Columbia list of Records for you too.

Columbia Graphophone Company Canadian Factory Headquarters—365-7 Sorauren Avenue, Toronto, Ont.

Columbia

The PAGE commands the attention of all shrewd farm owners



From neighbor to neighbor, the news of Page Engine superiority is travelling fast. Every time we install one of them we stand a good chance of getting other orders from that same neighborhood. The owner of a Page cannot help but be a salesman for this engine—his enthusiasm will not allow him to keep silent about its merits.

You, too, when you buy a Page, will find the news too good to keep—you'll be telling YOUR neighbors of its remarkable strength and simplicity—its day-in and day-out satisfaction.

Remember, we do not ask more for this better engine—we ask less than you would pay for other engines that do not begin to compare with the Page. By large production, and by selling direct to you, we've got the price down so low per h.-p. that no other engine concern has yet been able to compete with it.

And we will take it back as freely as we sell it to you, and return the full purchase price, if you can find it otherwise than claimed after a thirty-day trial. That's the way we prove our confidence in it.

For full particulars, write to.

Compare these prices with the prices quoted by other engine houses:

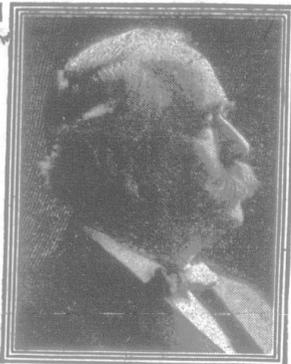
1 1/2 h.-p.	\$ 46.50
3 h.-p.	68.00
5 h.-p.	113.50
6 h.-p.	168.00

FARM POWER INFORMATION BUREAU

THE PAGE WIRE FENCE COMPANY LIMITED.

1143 King Street West

TORONTO



"Velvet" For Dairymen

West Chester, Pa.

February 3rd, 1916.

Mr. Dairyman:

We have a wonderful new invention and I want to tell you about it myself. It is a source of new profit for dairymen without added expense which I call "velvet," for it is all profit.

Thirty-five years, longest in America, the Sharples plant has been devoted exclusively to the Cream Separator.

Its inventors produced the first cream over-flow bowl with its superior quality of smooth even cream, the first directly driven steam Separator, saving power, fuel and wear, the first and only tubular bowl with its doubled skimming force and efficiency and extreme simplicity, the bottom feed, the hanging tubular bowl, all making for convenience, durability, economy of maintenance and operation.

Now we have made another great invention, greatest of all as a profit producer, though so simple that it seems we should have had it long ago.

Thousands of carefully made observations by competent investigators, government officials and scientific men have proven beyond question that 95% of all the hand driven cream separators in America are turned below regulation speed, below the speed marked on the handle, a great part of the time and every hand separator is under-speeded some of the time.

No matter which separator, whose make, or what it is capable of doing when turned at full speed, it will lose cream and a lot of it, when the speed is allowed to drop even for a moment, and with the cream goes the profit.

THE NEW SHARPLES SUCTION FEED

Separator will stop this loss, aggregating millions of dollars annually to America's dairymen—stop it at once and forever.

No matter if you turn this Separator at widely varying speeds, fast or slow, it skims equally clean—no cream will be lost. The bowl drinks its milk supply as it needs it, always in exact proportion to the separating force within the bowl. At slower speeds it drinks less, at faster speeds more, but always just the right amount for clean skimming.

A thousand of these machines are in regular daily use; we demonstrated them to a finish before announcing them; it is the Sharples way—absolute perfection before sale.

The Sharples Suction Feed Separator has several very important advantages in addition to its certainty of clean skimming at any speed. The varying of speed does not change the thickness of cream; fast turning increases the capacity much above normal, just as you whip up a horse, when in a hurry. The supply can is but knee high and the machine throughout is simpler and better than ever.

We sell our Separators now, as always, subject to free trial by the buyer; but a stronger guarantee than any trial is the unbroken record of the growth of this business from the small beginning of 35 years ago to its immense proportions of to-day. It could not grow so except by the unbroken rule of complete satisfaction to customers.

Lack of space prevents explaining more fully; but send today for new book, "Velvet for Dairymen," that tells all about this money-saving invention.

Sincerely yours,

O. M. Sharples
President,

The Sharples Separator Co.

Also Mechanical Milkers and Gasoline Engines

Toronto

Canada

O. A. C. No. 72 OATS

Improved seed, clean and pure. Heavy yielder \$1.00 per bushel. Bags free.

R. H. CROSBY,

Mackham, Ont.

Morrison Tamworths and Shorthorns, bred from the prizewinning herds of England. Choice Tamworths, both sexes, all ages 150 head to choose from. Choice Shorthorns, 3 extra fine red roan bull calves, 8 nice, old, dandies; also cows and heifers of the deep milking strain. Chas. Currie, Morrison,

Questions and Answers. Miscellaneous.

Sore Eyes in Chickens.

1. A number of my hens are affected with sore eyes. In a short time they go blind. I am destroying them as soon as I see them affected, and I have also disinfected their house. Please recommend a treatment for the disease.

2. Are they fit for market when first affected? They are in good flesh.

R. R.

Ans.—1. This is probably a case of roup, or contagious catarrh. The first symptoms are similar to those of an ordinary cold, such as running at the nostrils and sneezing. Definite evidence of roup is the offensive odor detected in opening the bird's mouth. The disease often attacks the eyes, and they become inflamed and swollen. A tumor containing yellowish, cheesy matter, often develops when the disease gains a foothold. The course of the disease may extend over several weeks or months, or it may terminate fatally in a comparatively short time. Unfortunately, there has been no satisfactory treatment yet discovered for this disease. The poultryman should, however, isolate affected birds at once, and those showing any suspicious symptoms. If treatment is to be tried, the bird should be taken in hand promptly, and the mouth and nostrils should be washed with five-per-cent. carbolic acid, with fifty-per-cent. hydrogen peroxide, or with two-per-cent. permanganate of potash. Dipping the fowl's head for a few seconds in the disinfectant is sometimes recommended, but great care should be taken when so doing, and it should only be attempted when permanganate of potash is used.

2. The affected birds should be killed and burned. They should not be put on the market.

Bringing Water from Well to Stable.

I am preparing to bring the water from a well, 36 feet north of my barn, through the stables to a milk or separating room, then elevated 12 feet into a tank above with a pump driven by a gasoline engine. The top of the water in the well is never more than 6 feet below the level of the stable floor. It will require about 110 feet of pipe to connect well with the pump, and six right-angle elbows to make the necessary turns. There would be no objection to laying the pipes along on top the cement floor, except that in one place it would be necessary for them to cross a walk and this would constitute a nuisance. The pipes could be run up to the ceiling where they enter the basement, and continue along to the pump room, where they could be brought down to connect with the pump.

1. Considering the length of pipes, the number of turns, and with a lift of 18 feet, will this plan work out satisfactorily?

2. If so, what size pipes would you recommend?

3. Should the pipes be overhead, or on the floor?

4. Would a rotary pump do the work satisfactorily?

G. W. M.

Ans.—1. There appears no reason why the water could not be brought from the well to the tank satisfactorily as suggested in this query.

2. It would not be advisable to use anything smaller than a 1½-inch pipe. If it were to be pumped by hand, 1½-inch would be better, as it would be easier pumping it. However, with a gasoline engine, this feature is not so important.

3. It seems too bad that the pipes could not be laid under ground, and brought up through the floor at some convenient spot where they would connect with the tank above. However, it is common practice to lay them on the floor. Possibly the pipes carried along overhead would be more accessible if it were necessary at any time to make repairs. Both methods are used, and the plan of the stable would have to be taken into consideration before any satisfactory conclusion could be arrived at.

4. A rotary pump would no doubt do the work satisfactorily. There is only a lift of 18 feet, which any pump should handle, but, of course, with six turns in the pipe there would be considerable friction. However, an ordinary pump, as commonly used for this work, should prove quite efficient.

The Best Seed Is The Cheapest

	Bush.	
Red Clover, Special No. 1.....	\$17.00	
" " No. 1.....	16.50	
Alsike, No. 1.....	14.00	
" " No. 2.....	12.50	
Lucerne or Alfalfa, Montana-grown.....	16.00	
Timothy, No. 2.....	5.50	
(Grades No. 1 for Purity)		

Bags extra, 25c. each. We pay freight on orders of \$25 or over.

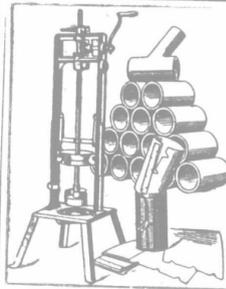
You might beat our price, but not our quality.

Potato Special—Early Irish Cobblers for future shipment, \$2.60 per bag of 90 lbs., ex-warehouse.

Order now. Terms cash with order. No goods sent C.O.D.

HEWER SEED CO.

90 Macdonnell Street East
Guelph - Ontario
Samples sent if desired.



Make Your Own Tile

Cost \$4.00 to \$6.00 per 1,000

Hand or Power

Send for catalogue.

Farmers' Cement Tile Machine Co.
Walkerville, Ont.



MAIL CONTRACT

SEALED TENDERS, addressed to the Postmaster General, will be received at Ottawa until Noon, on Friday, the 17th March, 1916, for the conveyance of His Majesty's Mails on a proposed Contract for four years, six times per week, over London No. 6 Rural Route, from the 1st of July, next.

Printed notices containing further information as to conditions of proposed Contract may be seen and blank forms of Tender may be obtained at the Post Offices of London and all its sub offices, and at the office of the Post Office Inspector, London. Post Office Department, Canada. Mail Service Branch, Ottawa. 4th February, 1916. G. C. ANDERSON, Superintendent.

GRAND TRUNK RAILWAY SYSTEM

Winter Resorts

SPECIAL ROUND TRIP FARES
Long Limit—Stoppers

Asheville and Hot Springs, N. C.; Charleston, S. C.; Nassau, N. P.; Hot Springs, Ark.; French Lick Springs, Ind.; Jacksonville and all Florida points; Havana, Cuba and New Orleans, La., via New York and rail (or steamer, according to destination), or via Buffalo, Detroit or Chicago.

Bermuda and West Indies

Other Health Resorts:

Mount Clemens, Mich.; Battle Creek, Mich.; St. Catharines, Welland County, Ont.; Preston Springs, Ont.

Further particulars on application to Grand Trunk agents.

SPRUCE LODGE STOCK FARM

Shorthorns & Leicesters

Three young bulls from 9 to 12 months old. Also several choice heifers all sired by the Butterfly bull, Roan Chief, Imported =60865=.

W. A. Douglas, Caledonia, Ont.

Strawberries, seed potatoes, etc.—50 berries, including Fall-bearing. St. Regis, Ever-bearing and other raspberries. Blackberries, currants, gooseberries, grapes, asparagus. Cobble and Green Mountain potatoes. Catalogue free. H. L. McCONNELL & SON, Fort Burwell, Ont.

Please mention "The Farmer's Advocate."

The Best Seed Is The Cheapest

Red Clover, Special No. 1.....	Bush.	\$17.00
" " No. 1.....		16.50
Alsike, No. 1.....		14.00
" " No. 2.....		12.50
Lucerne or Alfalfa, Montana-grown.....		16.00
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(Grades No. 1 for Purity)		

Bags extra, 25c. each. We pay freight on orders of \$25 or over.

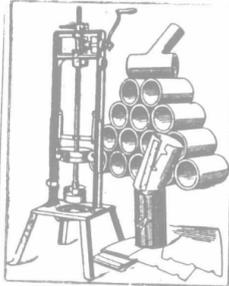
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Potato Special—Early Irish Cobblers for future shipment, \$2.60 per bag of 90 lbs., ex-warehouse.

Order now. Terms cash with order. No goods sent C.O.D.

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SPECIAL ROUND TRIP FARES
Long Limit—Stoppers
Asheville and Hot Springs, N. C.; Charleston, S. C.; Nassau, N. P.; Hot Springs, Ark.; French Lick Springs, Ind.; Jacksonville and all Florida points; Havana, Cuba and New Orleans, La., via New York and rail (or steamer, according to destination), or via Buffalo, Detroit or Chicago.

Bermuda and West Indies

Other Health Resorts:
Mount Clemens, Mich.; Battle Creek, Mich.; St. Catharines, Welland County, Ont.; Preston Springs, Ont.
Further particulars on application to Grand Trunk agents.

SPRUCE LODGE STOCK FARM

Shorthorns & Leicesters

Three young bulls from 9 to 12 months old. Also several choice heifers all sired by the Butterfly bull, Roan Chief, Imported =60865=.

W. A. Douglas, Caledonia, Ont.

Strawberries, seed potatoes, etc.—50 berries, including Fall-bearing, St. Regis, Ever-bearing and other raspberries. Blackberries, currants, gooseberries, grapes, asparagus. Cobblers and Green Mountain potatoes. Catalogue free.
H. L. MCCONNELL & SON, Port Burwell, Ont.

Please mention "The Farmer's Advocate."

Barn Roofing

Fire, Lightning
Rust and Storm Proof
Durable and Ornamental

Let us know the size of any roof you are thinking of covering and we will make you an interesting offer.

Metallic Roofing Co.
Limited
MANUFACTURERS
TORONTO and WINNIPEG



Deep Seedbeds Properly Prepared

—That's what you get when you use the deep-cutting, double-turning, leveling and compacting

"Acme" Pulverizing Harrow
"The coulters do the work"—you should see them mix the soil, cut clods, weeds and trash and make the whole into a firm yet mellow seed-bed several inches deep. The "Acme" is simple, durable and easy to pull. Sizes 8 ft. to 17 1/2 ft. wide. Thousands in use. Send for booklet now.

No. 23. 6 1/2 ft. wide
The Bateman-Wilkinson Co.
Limited
500 Symington Avenue Toronto, Ont.

Steel Rails

for Reinforcing Bridges and Barn Driveways
CUT ANY LENGTH

JNO. J. GARTSHORE
58 Front Street, West Toronto

Use Agricultural Lime

Manufactured by
Beachville White Lime Co.
Limited
Beachville, Ontario

Our lime stone is highest grade in Canada.

Percheron Stallion for Sale

Am now offering for sale the black imported Percheron stallion, Mardi, (No. 4441) (109091); is rising 4 years and has done a very successful season in 1915. He was a winner in France as a two-year-old.

TERMS CASH.
WM. M. ATCHESON
Owen Sound or Bognor P.O.
Meaford Station. Grey County, Ont.

FOR SALE Imported Percheron Stallion

Five years old, dark dappled grey, kind and quiet in the stable and in harness. Sure foal getter. Enrolled. Inspected and approved. Form one Registered in French and Canadian Stud Books. Apply to
J. F. PLAYTER, Newmarket, Ont.

For Sale IMPORTED PERCHERON STALLION dark grey, foaled 1908, Sound and sure.
GEORGE KEYS
Box 47 Wolfe Island [Ontario

Questions and Answers. Miscellaneous.

Motor Bicycle.

1. Is it necessary to have a license for an ordinary bicycle fitted with an engine?
2. If so, what does it cost per year?
3. Is there any particular age required?
4. Would you advise me using the Shaw motor advertised in your paper?

Ontario. SUBSCRIBER
Ans.—1. Yes.
2. \$3.
3. Eighteen years, at least.
4. Yes.

Silage for Horses.

Does feeding silage to work-horses or colts, affect their teeth or gums in any way? Some people claim the acid has a detrimental effect. J. S.
Ans.—We have no knowledge of good, sweet, well-matured silage, carefully fed, having a detrimental effect on horses. Fatal results have been reported, however, with silage-fed horses. In one case the veterinarian pronounced it cerebral meningitis, and the animal showed a paralyzed condition and much weakness. From four days to a week seems to be the time required for the disease to run its course and cause death to the patient. In all cases where trouble has resulted from feeding silage, the silage was immature or mouldy and overheated.

Injurious Municipal Drainage.

1. I own two hundred acres of practically high land, through which a natural drain runs to a river. The township has constructed several government drains, draining about 4,000 acres of low and marshy land, also widened and deepened the said outlet through my farm to about 10 feet wide and from 2 to 5 feet deep. The freshet in the spring when snow and ice is in it makes it overflow and make washouts, there being about 18 feet of a fall in 270 rods. Have I any redress from the municipality?

2. The bridge that spans the said outlet in my farm is unsafe and not large enough. Can I compel the municipality to erect a new one?
Ontario.

Ans.—1 and 2. You certainly ought to have some redress, but we fear that it may be too late for you to take effective legal steps to compel same. Anyway, before commencing any legal proceedings you ought to lay the whole matter before the Council, and see what relief may be obtained in that way.

Gossip.

The sale of pure-bred stock listed for March 10, and to be held by W. J. Isaac, Baltimore, Ont., will be held on March 8, instead of on March 10, as previously stated in the list of sale dates claimed.

A. A. Colwill, Newcastle, Ont., informs us that he has sold the two Shorthorn bulls recently advertised, and has also made many other sales of Shorthorns and Tamworths. Look up his change of advertisement in this issue.

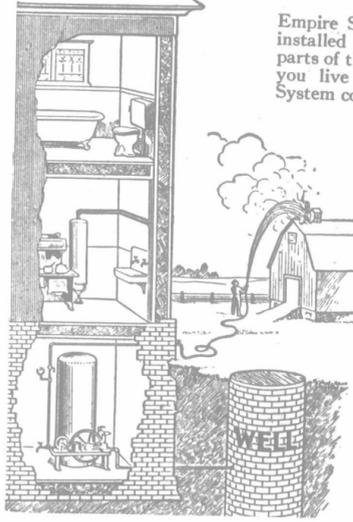
William M. Atcheson, Bognor, Ont., writes "The Farmer's Advocate" that the Percheron stallion, which he is offering for sale through these columns, is the best all-round horse he has ever owned, and he has been eleven years in the business. The results from this animal have been highly satisfactory, and he is willing to take any prospective purchaser over his route in order that he may see the get of the horse.

John Elder, Hensall, Ont., reports sales of Shorthorns as follows: One cow and calf to J. F. Werden & Son, Picton, Ont.; a good bull, 15 months old, to F. Wood, Sarnia, Ont.; an excellent roan bull, 12 months, to Stanley Carter, Londesborough, Ont.; two young cows to Wm. Rutherford, Lucknow, Ont., and five yearling heifers to Russell Warner, Dashwood, Ont. He also reports that buyers of his seed grain last year had excellent results, and are renewing orders for this year. See his advertisements in this issue.

Your Farm Home Can Easily Have One of These Systems

All the comforts and conveniences of a modern bathroom! Plenty of running hot and cold water in the kitchen! Water in the barn and outbuildings! Running water always ready for every farm need—this is all made easily possible for YOU through the

Empire WATER SUPPLY System



Empire Systems have been successfully installed in many country houses in all parts of the Dominion. No matter where you live we can send you an Empire System complete, ready to set up.

Outfit Consists of:

White enamel bathtub, closet with tank, lavatory, with fittings, hot water boiler for kitchen range, pneumatic pressure storage tank and system, all piping and fixtures necessary. Price of outfit complete

\$225

We have other systems with additional fixtures at slightly higher prices. Send for our free booklet, describing different systems. Write us your needs, and we will give you full particulars and prices on a system suited to your requirements. Don't put up with the old, unhealthy, inconvenient outdoor cess-pool any longer. Write us to-day.

Empire Mfg. Co.
Limited
East London, Ont.

Sydney Basic Slag

Is the Greatest
Clover-producing
Fertilizer Obtainable

By growing clover you build up the fertility of your farm. Ask any man from the Old Country what BASIC SLAG has done for the farmers there. Try BASIC SLAG for yourself this season. It costs \$20 per ton, which is better value than you can get in any other fertilizer.

Write us at once.

The Cross Fertilizer Co.
LIMITED
Sydney, Nova Scotia

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

THE BEST LINIMENT
OR PAIN KILLER FOR THE HUMAN BODY

**Gombault's
Caustic Balsam**
IT HAS NO EQUAL

For the Human Body—It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Blisters, Corns, Boils, Corns and Bunions. CAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

Perfectly Safe and Reliable Remedy for
Sore Throat
Chest Cold
Backache
Neuralgia
Sprains
Strains
Lumbago
Diphtheria
Sore Lungs
Rheumatism
and all Stiff Joints

REMOVED THE SORENESS—STRENGTHENS MUSCLES
Cornhill, Tex.—"One bottle Gombault's Balsam did my rheumatism more good than \$120.00 paid in doctor's bills."
OTTO A. BRYER.
Price \$1.50 per bottle. Sold by druggists, or sent by express prepaid. Write for booklet R. The LAWRENCE-WILLIAMS COMPANY, Toronto, Can.

Fistula and Poll Evil

Any person, however inexperienced, can readily cure either disease with FLEMING'S 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 Fleming's Vest Pocket Veterinary Advisor. Write us for a free copy. Ninety-six pages, covering more than a hundred veterinary subjects. Durable bound, indexed and illustrated. Fleming Bros. Chemists, 75 Church Street, Toronto, Ont.

For Sale: Registered Clydesdale Stallion Rising 4 years
Lothian Treasurer (15360)
Bright bay, four white feet and white face; weighs 1,800 lbs., and quality from the ground up; has proved himself very sure on a limited number of mares served this season.

Dam: Queen of the Roses.....Craignair
Sire: The Treasurer
Queen of the Clydes.....The Treasurer
Net Derby.....Crowsall's Grandson
Maggie McNeillage.....Lord Derby
Polly of Humber.....McNeillage
Lill.....Nelson
Lucy of Castlemore.....Prince of Kilblain
Nellie.....Lord Derby

(Dams all registered)
Just in Time
Old England
Cumberland

The above sires are all imported and registered.

Apply to: **DAVID CORDINGLEY** Streetsville, Ont.
R.R. No. 2

BITTER LICK
MEDICATED
Salt Brick
Great Conditioner & Worm Destroyer—
Bitter Lick is a compressed salt brick, medicated with roots, herbs, etc. In such proportion as will keep horses in excellent condition and free from worms. Bitter Lick keeps the appetite keen; all horses like it; tones the digestion and prevents colic. It has no cheap filler and takes the place of worm and condition powders, etc., keeps horses healthy for only one cent a week.

Ask your dealer or write for booklet to STEELE BRIGGS SEED CO., Winnipeg, Man. or WM. COOPER & NEPHEWS, Toronto, Ont.

Dr. Page's English Spavin Cure
Cures the lameness from Bone-Spavins, Side-Bones, Ringbones, Curbs, Splints, etc., and absorbs the bunched hair, absorbs Capped Hocks, Bog-spavins thick pastern joints, cures lameness in tendons, most powerful absorbent known, guaranteed, or money refunded. Mailed to any address, price \$1.00. Canadian Agents: J. A. JOHNSTON & CO., Druggists, 171 King St. East, Toronto, Ont.

Questions and Answers.
Veterinary.

Stiff Neck.
Heifer got hurt by a hoe last fall, but the wound healed all right. Three weeks ago her foot swelled, but I treated it and it got all right. Now she has a stiff neck, and cannot get her head down to the bottom of manger.

S. C. & SON.
Ans.—This heifer appears to be having more than her share of trouble. The symptoms indicate rheumatic trouble in the neck. Give her a laxative of 1½ pints raw linseed oil, and follow up with 2 drams of salicylic acid three times daily. Bathe the muscles on each side of the neck well three times daily with hot water, and after bathing rub well with hot camphorated oil. V.

Leg Swells—Tumors.
1. Last fall my horse's fetlock joint swelled. The swelling disappears on exercise, but reappears when standing.
2. Pig has a marble-like lump below his left eye, and another at the base of the left ear. W. B.

Ans.—1. Get a liniment made of ½ ounce tincture of iodine, ½ ounce gum camphor, 4 ounces extract witch-hazel, 2 ounces tincture of arnica, and alcohol to make a pint. Rub the joint well with this twice daily, and when he is standing in the stable keep on a bandage with slight pressure.
2. These are little tumors. They can be carefully dissected out, but it is probable they will do no harm if left alone. V.

Miscellaneous.

Feeding Calf.
Is it an advantage or a disadvantage to let a heifer calf suck a cow, or should same be pail fed? W. G. B.

Ans.—It all depends upon the conditions. Calves of the dairy breeds, and of milking Shorthorns, are not generally allowed to suck unless they are being vealed for some reason. Calves of the beef breeds being raised for fancy breeding animals are generally allowed to nurse.

The Time to Act.

The old saying has it, "There is no time like the present." That this applies with telling force to the selection of good dairy cows, will be admitted by every thoughtful dairyman. Selection may be made on the evidence of certain well-known external indications of good-milking qualities, with special attention paid to the udder, loin, skin, barrel, etc. But no matter how skilled the expert judge of dairy "quality" in a cow may be, he is not infallible as to the amount of hard cash that any one cow in the herd will earn in a year. He may be, the ordinary dairy farmer, too, may be considerably mistaken in his judgment. One system will give him accurate results—that of selection of dairy records. It is easy to weigh and sample; it is easy to add up a few figures for each cow; it is easy to compare such totals, and it is eminently satisfactory to know for certain which cows are best to keep and breed from.

Now is the time to act; prepare to keep records all season (Write the Dairy Division, Ottawa, for free milk-record forms), either three times per month, or daily. You will never regret it. C. F. W., Ottawa.

Trade Topic.

Slips of speech and slips of type are, unhappily, all but universal, and naturally some occasionally stray into "The Farmer's Advocate," like those on page 92 of the January 20th issue, when the name of General Manager John Aird, of the Bank of Commerce, was terminated with an "e," and, farther along, as though to make the affairs of the bank appear even more rosy than they were, a 2-per-cent. bonus, in addition to dividends, was increased to 20 per cent.

Winter Food Comes High
See that every bushel of feed is turned to profit by keeping all animals in prime condition with
Pratt's Animal Regulator
25c., 50c. packages and up.
Acts gently on the digestive organs, tones up the liver and sharpens the appetite.
Pratt Food Co. of Canada, Ltd.
68G Claremont St., Toronto. 41



FOR SALE—20 IMPORTED AND CANADIAN-BRED
Clydesdale Brood Mares
Fillies and Yearlings
Many prizewinners at Canadian shows. Entire lot will be sold at a reasonable price.
THORNCLIFFE STOCK FARM
244 Don Mills Road TORONTO

Imported Registered Stallions and Mares
In Percherons we have our very best to offer: Blacks and Grays, 3 to 5 years old. Belgians and Clydesdale Stallions: right type and quality. These have all been tested in the stud, and guaranteed good foal getters. Mares from 2 to 5 years old, Percheron, Clydesdale and standard-bred, these are over 3 years old, all safe in foal. If you want a Champion Stallion or Mare, come along and we will sell for less money than any other man in the business, and terms to suit.
Grenville is situated midway between Ottawa and Montreal, on the C. P. R., C.N.R. and G.T.R. Two trains daily each way.
J. E. ARNOLD GRENVILLE QUE.

High-Class Clydesdale Mares and Fillies
We have a big selection of Imp. Clyde. Mares and Fillies and others from Imp. Sire and Dam. Buy now, for another year will see them away up in price. We have always a big selection of stallions.
SMITH & RICHARDSON
Columbus, Ont., Myrtle, Brooklin and Oshawa Stations

Percherons and Holsteins
We have Percheron Stallions from yearlings up, 1st prize winners at Toronto, also mares and fillies from yearlings up, quality and type unsurpassed. In Holsteins we have for sale, cows, heifers and young bulls, come and make your selection.
W. G. HILL & SON, Queensville, Ontario, P.O. and Station. Toronto and York Radial Line

IMP. CLYDESDALES IMP.
Breeding Unsurpassed
Strengthened by my Nov. importation I can now supply Clyde stallions with the big size required, the finest kind of quality and the most popular breeding. Also Clyde mares and one right choice French coach stallion.
JAMES TORRANCE, Markham, Ont.

IMP. CLYDESDALES IMP.
Up to a Ton in Weight
If you are looking for a ton stallion on faultless underpinning, bred to produce the big high-priced horses, come and see what I have, there are none better and none priced easier.
W. M. COLQUHOUN, MITCHELL, ONT.

Clydesdale Stallions and Mares
We are now offering for sale a number of extra good stallions, and mares in foal. Write or call on
JOHN A. BOAG & SON, Queensville, Ontario.

Rosedale Stock Farm
We are offering for sale one three-year-old Shire stallion, one imported 3-year-old Hackney stallion and one Hackney pony horse foal, all first prize winners at Canadian National Exhibition, Toronto, and at Winter Fair, Guelph, in 1915. The Shire stallion also being champion at both fairs. Also one two-year-old Hackney pony gelding, a Toronto winner.
J. M. Gardhouse, Weston, Ont. G.T.R., C.P.R. and Electric Lines. Long-distance Telephone.

Elm Park Aberdeen-Angus
Our herd has won more prizes since 1893 than any herd in Canada, and in 1915 we won more money than any competitor from Toronto and London to Edmonton, at all fairs except Brandon, proving that our herd continues to keep up the high average quality. Bulls and females for sale.
JAMES BOWMAN, Elm Park, Guelph, Ont.

The Maples Herefords
Having sold all our older bulls we are now offering an excellent bunch from 8 months up and a great sire. Correspondence solicited. Phone 18.
W. H. & J. S. HUNTER Orangeville, Ontario

ORCHARD GROVE HEREFORDS
Have several young bulls and heifers for sale. Satisfaction guaranteed.
L. O. CLIFFORD, Oshawa, Ont.

WOODLAND HORSES AND BROWN SWISS CATTLE
We are now offering for sale the Clydesdale Stallions, Lord Charming, Imp. [2264]. Barons Charm, Imp. [2238]. The Hackney Stallion, Warwick Model, Imp. 304. Two registered Clyde. Mares, High-class Shetland Ponies, and Brown Swiss bulls of serviceable age.
RALPH BALLAGH & SON, Guelph, Ont.

Walnut-Grove Shorthorns
Sired by the great sire Trout Creek Wonder and out of Imp. cows and their daughters of pure Scotch breeding and others Scotch topped. For sale are several extra nice young bulls and a few heifers. Let us know your wants.
DUNCAN BROWN & SONS, R. M. D. Shedden, Ont., P. M. & M. C. R.

Pioneer Farm Holstein Herd
Offers a handsome bull 14 months old, ¾ white, from Duchess Aggie Wayne Mechthilde, at 1 yr. 11 mths. 2 dys. 16,878 lbs. butter in 7 dys., and 16,700 lbs. milk in 1 yr. in R.O.P. Another from a 20,000 lbs. cow, also other bulls of like breeding all sired by Canary Hartog whose 3 nearest dams average 30 lbs. butter in 7 dys. and 108 lbs. milk in one day. Write for prices or come and see them.
Walburn Rivers. R. R. No. 5, Ingersoll. Phone No. 343 L., Ingersoll Independent.

Pleasant Valley Farm Shorthorns
For Sale—9 bulls of serviceable age We can interest you in a real good bull at a right price, for headers or use on grade herds. Some sired by (Imp.) Loyal Scot, also females. Write us before buying.
GEO. AMOS & SONS, Moffat, Ont. Stn. C.P.R. 11 miles east of Guelph.

Comes High
 Every bushel of
 food to profit by
 animals in
 ration with
**Animal
 Regulator**
 saves and up-
 grades digestive or-
 gans of the liver and
 appetite.
 Canada, Ltd.
 Toronto, Ont.

ED AND CANADIAN-BRED
Brood Mares
Yearlings
 Shows. Entire lot will be
 reasonable price.
STOCK FARM
 TORONTO

Stallions and Mares
 Belghians and Grays, 3 to 5 years old. Belgians and
 Grays have all been tested in the stud, and guaranteed
 to produce. Clydesdale and standard-bred, these are
 champion Stallion or Mare, come along and we will
 show, and terms to suit.
 Montreal, on the C. P. R., C.N.R. and G.T.R.
GRENVILLE QUE.

We have a big selection of Imp.
 Clyde. Mares and Fillies and others
 from Imp. Sire and Dam. Buy
 now, for another year will see them
 away up in price. We have always

RICHARDSON
 Myrtle, Brooklin and Oshawa Stations

We have Percheron Stallions from yearlings up.
 1st prize winners at Toronto, also mares and
 fillies from yearlings up, quality and type
 heifers and young bulls, come and make your
 selection, Ontario, P.O. and Station.
 York Radial Line

DALES IMP. Breeding
 Unsurpassed
 Apply Clyde stallions with the big size required, the
 best. Also Clyde mares and one right choice French
 Markham, Ont.

DALES Imp. Character
 & quality
 Derpining, bred to produce the big high-priced
 better and none priced easier.
 MITCHELL, ONT.

Mares We are now offering for sale
 a number of extra good
 on
 N. A. BOAG & SON, Queensville, Ontario.

Offering for sale one three-year-old Shire stallion,
 and 3-year-old Hackney stallion and one Hackney
 National Exhibition, Toronto, and at Winter Fair,
 champion at both fairs. Also one two-year-old
 and Electric Lines. Long-Distance Telephone.

Our herd has won more prizes since 1893 than
 any herd in Canada, and in 1915 we won more
 on to Edmonton, at all fairs except Brandon.
 average quality. Bulls and females for sale.
MES BOWMAN, Elm Park, Guelph, Ont.

Having sold all our older bulls we are now
 offering an excellent bunch from 8 months
 and show and breeding bull, Superior Lad. He is
 solicited. Phone 15.
 Orangeville, Ontario

VE HEREFORDS
 for sale. Satisfaction guaranteed.
 Oshawa, Ont.

BROWN SWISS CATTLE
 Lord Charming, Imp. [2264]. Barons Char-
 mel, Imp. 304. Two registered Clyde. Mares
 serviceable age.
 The Old Sorby Farm

Sired by the great sire Trout Creek
 Wonder and out of Imp. cows and
 their daughters of pure Scotch
 for sale are several extra nice young bulls and
 cows.
 M. D. Shedden, Ont., P. M. & M. C. E.

a handsome bull 14 months old, 3/4 white, from
 ss Aggie Wayne Mechthilde, at 1 yr. 11 mths.
 in 1 yr. in R.O.P. Another from a 20,000 lb.
 by Hartog whose 3 nearest dams average 30 lbs.
 for prices or come and see them.
 Phone No. 343 L., Ingersoll Independent.

Shorthorns
 For Sale—9 bulls of serviceable age
 We can interest you in a real good
 bull at a right price, for her-
 royal Scot, also females. Write us before buying.
 Stn. C.P.R. 11 miles east of Guelph.



THIS ACTUALLY HAPPENED
 Here's positive
 proof of the strength
 of Peerless Fencing. This
 actually happened. We don't ask
 you to take our word for it. Read what
 the owner says. Here's his letter—
 Dear Sirs: I am writing a testimonial as to the strength
 of your Peerless Junior Chicken Fencing. Mine is four feet high.
 It turned two horses, each weighing 1400 pounds. They ran full tilt
 into the fencing about 2 rods from each other at the same time. The result
 was that they turned a somersault over the fence, alighting on their heads and necks,
 scratching them up some, but the fence remained intact. Yours truly,
 Joe Boothroyd, Surrey Center, B. C.

Think of it! A dead weight of nearly a ton and a half coming with violent force against our
 poultry fencing—not field fencing—and yet
Our PEERLESS Junior Poultry Fencing Held
 What greater test can you ask? We build it stronger than is necessary under ordinary circum-
 stances. We build it of Open Hearth steel wire with all the impurities burned out and all the
 strength and toughness left in. Well galvanized. Every intersection is locked together with a
 Peerless Lock. Top and bottom wires of Peerless Poultry Fencing are heavy—extra strong. Con-
 sequently, fewer posts are required. Peerless fencing can't sag—can't get out of shape—can't help
 giving absolute satisfaction.
 Catalog giving details on request. Describes our poultry, farm and ornamental fencing,
 also Peerless farm gates.
**Agencies almost everywhere. Agents wanted in all
 unassigned territory.**

The Banwell-Hoxie Wire Fence Co., Ltd.
 Winnipeg, Manitoba
 Hamilton, Ont.

Escana Farm Shorthorns
 For Sale—15 bulls 8 to 14 months old, several of them prize-winners at Toronto and London, sired by
 the noted Imported bulls, Right Sort and Raphael. Also for sale—20 heifers and cows of choice
 breeding and quality for show or foundation purposes. State your wants and we will send copy of
 pedigree and prices. Mail orders a specialty, satisfaction guaranteed.
MITCHELL BROS. Burlington P.O., Ontario
 Jos. McCrudden, Manager. Farm 1/4 mile from Burlington Jct.

20 Imported Bulls
 These imported bulls, along with 10 home bred bulls may now be seen at our farms.
 There are some choice ones among them. We also imported four cows and a heifer,
 all of which are forward in calf. An invitation is extended to anyone interested in this
 class of stock to visit us at any time. Correspondence will receive our most
 careful attention.
Burlington Jct., G. T. R. J. A. & H. M. PETTIT,
 Burlington Phone or Telegraph Freeman, Ont.

MAPLE SHADE FARM SHORTHORNS
 The products of this herd have been in very strong demand. There's a reason.
 Can always supply a good young bull at a price which will make him
 well worth the money. Not many females for sale but
 can show a few which should interest you.
W. A. DRYDEN, Maple Shade Farm, Brooklin, Ont.
 Brooklin, G. T. R. C. N. R., Myrtle, C. P. R.

The Salem Shorthorns
 One of the largest collections of Scotch
 Shorthorns in America. Can suit you
 in either sex, at prices you can afford
 to pay.
J. A. WATT, ELORA, ONT.

Meadow Lawn Shorthorns We are offering a select lot of Scotch bulls and heifers,
 from 10 to 18 months old, from the Claret Wimples
 Marth, Roan Lady families. Sired by Proud Monarch No. 78792 by Blood Royal (imp.) You
 are invited to inspect this offering. Bell telephone. G.T.R. and C.R.R.
F. W. EWING, R. R. [No] 1, Elora, Ontario

IRVINEDALE SHORTHORNS
 Bulls and heifers of the very best quality. Sired by Gainford Select
 (One of the great sons of the celebrated Gainford Marquis).
JOHN WATT & SON, R. R. No. 3, Elora, Ont.

Northlynd R. O. P. Shorthorns and Jerseys
 For Sale—Our noted sire of big milkers, St. Clair—84578—a Clara bred son of Waverly. Several
 of his sons out of R.O.P. dams; also Shorthorns and Jersey females. Official records are our specialty.
G. A. JACKSON, DOWNSVIEW P.O., ONTARIO, WESTON STATION.

Maple Grange Shorthorns Pure Scotch and
 Scotch-topped.
 passed. A nice selection in young bulls, and a limited number of thick, mossy heifers.
R. J. DOYLE, Owen Sound, Ontario

Shorthorns
 Pure Scotch and Scotch topped—Booth. Also five (5)
 young bulls from ten to twenty months old, of the
 low down, thick kind, good colors—reds and roans.
 Prices reasonable.
G. E. Morden & Son, Oakville, Ontario

Shorthorns
 Have still left one bull (15 months) by Sittytown Victor (Imp): two
 spring bull calves by Newton Sort—93019—; a few young cows; and
 a few heifers among which is a junior yearling show proposition.
 Come and see them.
Wm. D. Dyer, R. R. No. 3, Oshawa, Ontario. 2 1/2 miles from Brooklin, G.T.R.
 4 miles from Myrtle, C. P. R.

Willowbank Stock Farm Shorthorn Herd Established 1855.
 This large and old
 established herd has at the head the two great bulls: Imported Roan Chief—60865—a Butterfly
 and the prize-winning bull, Browndale—80112—a Mina. An extra good lot of young stock to offer
 of either sex. Splendid condition. Good families of both milking strain and beef.
James Douglas, Caledonia, Ont.

Questions and Answers.
 Miscellaneous.

Absence of Milk.
 Grade Jersey heifer freshened for the
 first time Oct. 25, 1914. Before the
 second calving, Dec. 12, 1915, she was
 dried of three weeks, and after calving
 there was no milk, and she is now giv-
 ing only about a quart at a milking.
 Will she probably become normal at
 next calving, as she was previously a
 heavy milker, giving eight quarts at
 each milking after first calf? C. S.

Ans.—Agalactia, or absence of milk,
 often occurs without appreciable cause,
 but since your heifer has partially come
 to her milk, we would expect her to in-
 crease her flow, particularly when grass
 comes. Feed her judiciously. Give her
 at least two months' rest between this
 and her next lactation period, and she
 should come all right.

Breach of Promise.
 My son has been keeping company with
 a young lady for ten years. He had
 not given her an engagement ring, but
 he had let her understand he intended to
 marry her. Now, very much to my
 sorrow, they had a little quarrel and he
 is going with another girl. Can she
 sue him for breach of promise? She
 has kept all his presents and letters.
AN ANXIOUS FATHER.

Ans.—If your son and the young lady
 kept company for ten years, they should
 each be old enough and know enough of
 the other to conclude whether or not
 they should marry. If they have decid-
 ed that it is better that they should
 not, why, it will be certainly much bet-
 ter for them not to. If no promises
 have been made, the grounds for breach
 of promise suit are slim.

Paying According to Fat.
 What is the proper way to figure the
 following example: Farmer No. 1
 brings 4,716 lbs. of milk which tests 4-
 per-cent. fat. No. 2 brings 5,101 lbs.
 testing 3.9-per-cent. fat. No. 3 brings
 5,545 lbs. testing 3.5-per-cent. fat. Total
 weight of cheese sold, 1,500 lbs., at 12¢
 per pound. The cheesemaker receives
 1¢. per pound of cheese. Patrons pay,
 say, \$2.50 freight. W. S.

Ans.—Figure the value of the cheese,
 then deduct all expenses so as to arrive
 at the amount of money to be divided
 among the patrons. The number of
 pounds of fat delivered by each patron
 would have to be figured as follows:
 Farmer No. 1, 4,716 lbs. of milk testing
 4-per-cent. fat=4,716x4÷100=188.64 lbs.
 Having found the total number of pounds
 of fat delivered by the patrons, divide
 the weight into the net returns received
 for the cheese, this will give the value
 of one pound of fat. To determine the
 money each patron is to receive, multi-
 ply the pounds of fat delivered by the
 value per pound.

Lath and Plaster.

1. How much material would it take
 to plaster 200 square yards, using an
 asbestos mixture? What is used with
 the asbestos, and what proportion would
 be best?

2. How much lath would it take for
 200 square yards? What distance apart
 should the lath be put? Is pine lath
 the best?

3. Would the plaster be injured if
 touched with frost before it was dry?

4. What thickness would the lath and
 plaster add to the wall? A. B.

Ans.—1. For one-quarter inch thick-
 ness of plaster on 200 square yards,
 about one and one-half tons of asbestos
 and about 100 lbs. of lime will be re-
 quired. When the coat of plaster is one-
 half an inch thick, two tons of asbestos
 is used. Ten pounds of lime is mixed
 with every 300 lbs. of asbestos. The
 lime is slaked and the asbestos mixed
 with the lime water. Some builders
 prefer adding one-half load of sand and
 a little more lime with every ton of
 asbestos.

Columbia Batteries
The Cell that Rings the Bell
 To ring the bell to dinner—to call
 someone to the phone—for every kind
 of signal, use COLUMBIAS. They're
 the cells that ring the bells *unfailingly*
 —and run engines, autos, phones, trac-
 tors; make lanterns blaze; set off
 blasts! The world over, "Columbia" is
 the other name for RELIABILITY.
 Canadian
 National Carbon Co.,
 Limited
 99 Paton Rd., Toronto
 Faberstock spring-clip bind-
 ing posts, no extra charge.
 Make connecting cells an
 easy job.

1st Prize
Butter

Prize butter
 is made with
Windsor
Dairy Salt
 (Made in Canada) 156

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DESIGNS
 PROCURED IN ALL COUNTRIES
 Special attention given to
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 Pamphlet sent free on application.

Ridout & Maybee
 CROWN LIFE BUILDING, TORONTO, ONT.

ALLOWAY LODGE STOCK FARM
Angus, Southdowns, Collies

Special this month:
Southdown Prize Rams
ROBT. McEWEN, R.R. 4, London Ont.

Springfield Aberdeen - Angus
 Choice young bulls of serviceable age.
 Females all ages for sale.
**Kenneth C. Quarrie, R. R. No. 5, Belwood,
 Co. Wellington, Ontario. Bell Phone**

REGISTERED HEREFORDS FOR SALE
 Have two good bulls and a few females of good
 breeding at very moderate prices. Write, or better,
 come and see them. E. W. Gorlaine, Lake View
 Farm, Demorestville, Ont.

Tweedhill - Aberdeen-Angus. Choice
 young bulls of serviceable age;
 also females. If you want anything in this line
 write—
**James Sharp, R. R. 1, Terra Cotta, Ontario
 Cheltenham, C.P.R. & G.T.R.**

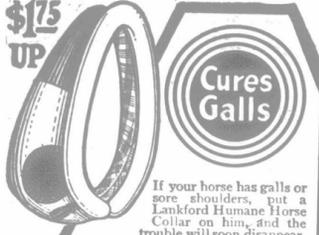
The Glengore Angus
 Some choice bulls, from 7 to 15 months, for sale.
 For particulars write—
GEO. DAVIS & SONS, R.R. No. 1, Erin, Ont.

**Beaver Hill Aberdeen-Angus—Bulls fit for
 service. Females all ages. Cows
 with calves at foot. Prices reasonable.**
**ALEX. MCKINNEY, R.R. No. 1, Erin, Ontario
 Cheltenham, G. T. R. Erin, C. P. R.**

ANGUS BULLS 4 young Aberdeen-
 Angus bulls, well
 bred, from 4 to 10 months old. Reasonable price
 for quick sale—also heifers.
M. G. RANSFORD, Clinton, Ontario

Please mention "The Farmer's Advocate."

\$1.75 UP



Cures Galls

If your horse has galls or sore shoulders, put a Lankford Humane Horse Collar on him, and the trouble will soon disappear.

The Lankford HUMANE HORSE COLLAR

acts as collar and pad combined. It is stuffed with the purest, cleanest of medicated cotton, which will not pack or harden. It protects the horses' necks from irritation.

Distributes Load Efficiently
The Lankford Collar fits any horse's neck because it is adjustable, automatically distributing the load evenly, making for easy draft and correct line of draft. We guarantee that the use of this collar will effect a cure without the use of medicine.

Over 12,000,000 Sold
Lankford Collars are universally used, and give thorough satisfaction. Write for printed matter describing them thoroughly. A dealer near you sells them. Ask your dealer.

POWERS MFG. CO.
Dept. 55 Waterloo, Ia.

This Trade-Mark protects you when buying horse collars.

Provincial Sale of
Pure-bred Stock
(MALES)

The Annual Provincial Sale, under the auspices of the Ontario Department of Agriculture and the management of the Guelph Fat Stock Club, will be held in the Winter Fair Buildings, GUELPH, on

Wednesday, March 1st, 1916

At this sale will be offered a number of choice animals, all Shorthorns. For catalogues and further information, apply to:

C. L. NELLES, J. M. DUFF,
President. Secretary.

Shorthorns—high class young bulls from 7 to 18 months, 15 young cows and heifers, straight, smooth big kinds of choicest breeding including several families that have produced dairy test winners. I never was in a better position to supply you with a good young bull at a more reasonable price. Write me or come and see them.

Stewart M. Graham
Long distance Phone, Lindsay, Ont.

SHORTHORNS
Three bulls, 11 months, a number of younger cows with their calves, cows in calf and yearling heifers for sale. Good individuals. Good Pedigrees. Inspection solicited.

J. T. GIBSON, DENFIELD, ONT

FLETCHER'S SHORTHORNS
Our herd of pure Scotch Shorthorns are mostly direct from imp. stock. Three very choice bulls for sale, also females. GEO. D. FLETCHER, R. R. 1, Erin, Ont. L.-D. Phone, Erin Sta. C.P.R.

Shorthorns for sale; a few bulls one year and over, reds and roans. Choice quality with first-class pedigree. Write for particulars at once. N. A. McFarlane, R. No. 2, Dutton, Ont. Elgin Co.

For Sale The Imp. Shorthorn bull Bandsman #73729. Also 2 young bulls, a Princess Royal, and a Fair Maid.

WM. GRAINGER & SON, R.R. No. 1, Auburn, Ont. Blyth Phone 3810.

Shorthorns—bulls, females, reds, roans, size quality. Breeding milkers over 60 years. Cows milking 50 lbs. a day. Big, fleshy cows that will nurse calves right. Prices easy, write: **Thomas Graham, R. R. 3, Port Perry, Ont.**

Burnfoot Stock Farm, Caledonia, Ont. Breeders of heavy milking dual-purpose Shorthorns. We offer now a handsome roan bull, calved Aug. 13, 1915, out of Jean's Lassie, the champion 2-year-old in the R.O.P., and sire as good. S.A. Moore, Prop., Caledonia, Ont.

Shorthorn Bulls and Heifers—Have eight bulls and ten heifers, from eight to twenty months, for sale. The best of breeding and prices moderate. Write me your wants before you buy. Oshawa, Bell phone. C. E. BAIN, Woodbine Stock Farm, Taunton, Ont.

Shorthorns—"Pail Fillers"—Our Shorthorns are bred and developed for big milk production. If you want a stock bull bred that way, we have several; also Clyde, stallion rising 3, won 2nd at Guelph, the other day in a big class. P. Christie & Son, Manchester, Ont.

Shorthorns and Swine—Have some choice young bulls for sale; also cows and heifers of show material, some with calves at foot. Also choice Yorkshire sows.

ANDREW GROFF, R.R. No. 1, ELORA, ONT.

Questions and Answers.
Miscellaneous.

Mineral.

What is the mineral enclosed under separate cover?

Ans.—This material is simply broken granite, and contains particles of quartz and mica. It has no particular commercial value. R. H.

Three-Horse Hitch.

Please advise on how to hitch a three-horse team to a walking plow, so that one horse may walk in the furrow and the other two on the land without having to hitch too close to the outside of the clevice? W. O.

Ans.—By using a long head clevice on the plow, and then hitching to the outside, the plow should work all right. We do not know of a device whereby hitching well to the land side can be avoided.

Farm Boundaries.

What is the law in regard to line fences, under the following conditions: A and B are neighbors, and there is a line fence put up just about where both parties thought the line was, but upon having a survey made, the line fence turns out to be two or three rods on B's property. Does this give A a title of possession to the strip of land, provided he has held it for ten years, or is it still subject to adjustment after the survey is made? A. B. C.

Ans.—A has title. Simcoe Co., Ontario.

Sale of Hog.

I sold a heavy hog to drover in good condition, delivered to him in yard at station. He accepted and paid me. A few days afterwards, drover comes to me with certificate from inspector at Montreal stock yards of condemnation of this hog through bruises (unit for human use) and demands return of money. Drover now takes action. Can he collect, hog not being diseased in any way? SUBSCRIBER.

Ontario.
Ans.—We do not see that he is legally in a position to do so.

Notice to Quit.

A has had a farm rented from B for twelve or fifteen years, just from year to year. No lease drawn at any time, but the price has been changed twice.

1. Now, if B wishes to take the farm away from A, does he have to give A any notice?

2. If so, how long? CONSTANT READER

Ontario.
Ans.—Yes.

2. Half a year's notice—the half-year of the notice to end with the then current year of the tenancy.

Packing Butter—Frozen Potatoes.

1. Will you kindly tell me how to put up butter so it will keep for six months?

2. Seed potatoes froze in root-house. Can anything be done so that they can be used? H. C. C.

Ans.—1. Butter, to be put in storage, will keep better if made from pasteurized cream. If boxes are used for packing the butter in, they should be soaked in brine and then scalded. This tends to prevent moulds starting to grow on the inside of the box. After a thorough working, the butter is packed in the box. If any quantity is to be stored, it would be best to place in a cold-storage where the temperature can be controlled. For a small quantity of butter, it may be packed in a clean, well-glazed crock, which has been scalded two or three times with boiling salt water. Butter should be firmly packed in the crock and covered with parchment paper, then a layer of salt moistened with water to form a paste. The cover should be tied down with several thicknesses of clean paper. Keep in a cool place where the temperature does not vary.

Good results are got by packing the butter in a crock and covering with a strong brine.

2. Frosted potatoes would be useless for seed.

Dollars in Ditches for You

Every undrained farm in your county means possible profit for you. You can make \$10 to \$15 a day without more effort than ordinary farm work requires.

You can cut tile ditches at an average cost of 5c to 7c a rod, including liberal wages for yourself. Your neighbor will pay more than this, giving you a big profit. The

"A Perfect Trench at One Cut"
BUCKEYE
Traction Ditcher

Works perfectly and economically in any soil, leaving the trench ready for the tile. The trench will be absolutely to grade with smooth, true, vertical sides and the finely pulverized excavated dirt deposited to one side convenient for backfilling. Hundreds of these machines are in actual operation today, all giving satisfaction. You, too, can make big money easily with the Buckeye.

Read What These Men Have Done in Their Own Counties

Macksburg, Iowa.
An enclosing photo of machine at work digging 3-ft. deep at the rate of 16 rods per hour. We average about 100 rods a day, 3-ft. deep, for which we receive 25c per rod, at the expense of about \$5.00 per day, or 5c per rod, which would leave us \$20.00, which is pretty good interest on amount invested.
DAVIS & MACUMBER.

Riga, Mich.
I am sending you a record my ditcher made in 115 days. My total expenses—gas, repairs and labor were \$436.35 with my time figured nothing. I dug 13,312 rods of ditch and the work came to \$2,945.26 so that left me for my work \$2,508.91 and my machine was just as good when I got through as when I got it.
JOHN GOLL, Jr.

Write for Special FREE Book of Facts

It tells all about the Buckeye Traction Ditcher and contains letters from men who have made money with this machine. Describe your soil conditions and size ditches you wish to cut. We will gladly outline the machine and equipment best adapted and most profitable. Our Service Department will help you build up a steady paying, beautiful contract tile drainage business. This advice and assistance free. Write us today.

The Buckeye Traction Ditcher Co., 202 Crystal Ave., Findlay, Ohio

THE AULD HERD

Two good young bulls for sale, one fourteen and one seventeen months old, also a couple younger. Intending purchasers met at station on request.

A. F. & G. Auld, R. R. 2, Guelph, Ont.

Robert Miller Still Pays the Freight—And he is offering in Shorthorns some of the best some younger still; heifers fit for service and heifers that can be produced. Young bulls fit for service, Scotch families, and some of them from great milk-producing families. They are in good condition and made right, just what you want to make a proper foundation for a good herd, and suitable to improve any herd in the land. They will be priced so that you can afford to buy, if you will tell me what you want. Our business has been established 79 years, and still it grows. There is a reason.
ROBERT MILLER, Stouffville, Ontario

Spruce Glen Shorthorns When in want of Shorthorns visit our herd. We have 70 head to select from. Minat. James, Miss Ramsdens, Florences, Emlys, etc. Many of them one and two-year-old heifers. Also several young bulls of breeding age—level, thick, mellow fellows, and bred just right.
JAMES McPHERSON & SONS, DUNDALK, ONT.

SHORTHORNS OF SHOW-RING QUALITY We have this year the best lot of young bulls we ever bred ring calibre.
from the famous sire, Mildreds Royal, Sr. Calves, Matchless and Emmelines, they are all of show-GEO. GIER & SON, R.M.D. WALDEMAR, ONT., P.O. AND STATION

SHORTHORNS and SHROPSHIRE T. L. MERCER, Markdale, Ontario
With 125 head to select from, we can supply young cows in calf, heifers from calves up and young bulls from 9 to 18 mos. of age, richly bred and well fleshed. In Shropshires we have a large number of ram and ewe lambs by a Toronto 1st prize ram high-class lot.

Shorthorns RICH IN BREEDING, HIGH IN QUALITY
My herd of Scotch and Scotch-topped Shorthorns was never stronger in number nor in quality than now. I have the most fashionable blood of the choice Yorkshires, both sexes. A. J. Howden, Myrtle, C.P.R.; Brooklin, G.T.R.; Columbus, R.M.D.

Spring Valley Shorthorns Herd headed by the two great breeding bulls, Newton Ringleader (imp.) 73783, and Nesparel Ramsden 83422. Can supply a few of either sex.
KYLE BROS. Drumbo, Ont. Phone and Telegraph Via A7

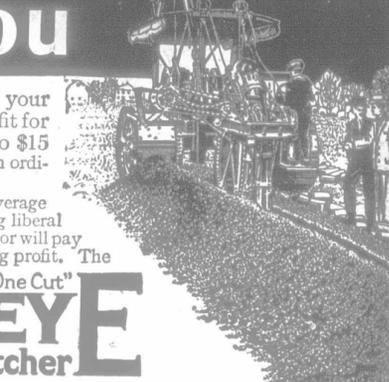
GLENGOW SHORTHORNS AND COTSWOLDS
Pure Scotch in breeding, we have an exceptionally choice lot of bulls for this season's trade, ranging in age from 8 to 15 months; big mellow fellows and bred in the purple. Also Ram and Ewe lambs of first quality.
Wm. Smith & Son, Columbus, Ont. Myrtle C.P.R., Brooklin, G.T.R., Oshawa, C.N.R.

OAKLAND SHORTHORNS 67 males and females (milk strains) grand choice of bulls from \$125 to \$175. Young cows and heifers from \$100 to \$200, nearly all sired by one of Ontario's best bulls (still at head of herd). All good individuals. Write or come and see.
JOHN ELDER & SONS, HENSALL, ONT.

"Maple Hall Farm" Shorthorns—Three choice young bulls, eight ones and some young cows with calves at foot. Two-year-old heifers and younger ones.
D. BIRRELL & SON, Claremont, Ont.
Stations: Greenham, C. N. R., Claremont, C. P. R., Pickering, G. T. R.

SHORTHORNS AND CLYDESDALES
10 Bulls serviceable age, all good ones (some herd headers) and are offering females of all ages. Have a choice lot of heifers bred to Clansman #87809; also four choice fillies all from imported stock.
A. B. & T. W. DOUGLAS Long-Distance Phone STRATHROY, ONTARIO

Work in Ditches



your fit for \$15...
average liberal...
one Cut...
EYE
cher

Have Done in Their Own Counties

Riga, Mich.
I am sending you a record my ditcher made in 115 days. My total expenses—gas, repairs and labor were \$436.35 with my time figured nothing. I dug 13,312 rods of ditch and the work came to \$2,945.26 so that left me for my work \$2,508.91 and my machine was just as good when I got through as when I got it.
JOHN GOLL, JR.

FREE Book of Facts

Ditcher and contains letters from men who have visited our herd. We have 70 head to select from. Minus, and younger, and some in calf. They are of the best foundation for a good herd, and suitable to improve your stock. Write us today.

Co., 202 Crystal Ave., Findlay, Ohio

OLD HERD

fourteen and one seventeen months old, also purchasers met at station on request.

R. R. 2, Guelph, Ont.

And he is offering in Shortorns some of the best that can be produced. Young bulls fit for service, and younger, and some in calf. They are of the best foundation for a good herd, and suitable to improve your stock. Write us today.

ORTHORNS

When in want of Shortorns visit our herd. We have 70 head to select from. Minus, etc. Many of them one and two-year-old heifers. Also black, mellow fellows, and bred just right.

W-RING QUALITY

We have the best lot of young bulls we ever bred. Matchless and Emmelines, they are all of show quality.

PROPSHIRE

supply young cows in calf, heifers from calves up and bred and well fleshed.

ORTHORNS

My herd of Scotch and Scotch-topped Shortorns was never stronger in number nor in quality than now. I have the most fashionable blood of the milking blood strains. Visit the herd. Also some right Myrtle, C.P.R.; Brooklin, G.T.R.; Columbus, R.M.D.

ORTHORNS AND COTSWOLDS

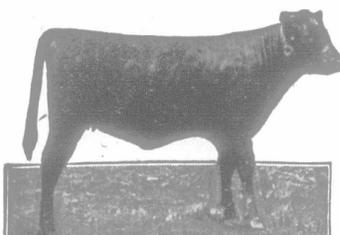
Have an exceptionally choice lot of bulls for this season's sale. 5 months; big mellow fellows and bred in the purple quality.

ORTHORNS

Three choice young bulls, eight to twelve months old; also younger ones.

AND CLYDESDALES

Well bred 6 mos. old bull from good producing stock. A bargain for quick sale.



Raised Without Milk!

Her name is "Daisy" and her owner, W. A. Riddle, of Chapin, Iowa, raised her on Blatchford's Calf Meal, which costs less than half as much as milk.

Blatchford's Calf Meal

A useful preventive of scouring. Calves raised "The Blatchford Way" are heavier, bigger-boned and healthier. Known as the complete milk substitute since the year 1875. Sold by your dealer or direct from the manufacturer.

Blatchford's Pig Meal

Insures rapid, sturdy growth of young pigs at weaning time. Prevents scab. See Actual Figures—based on results—that show you how to increase your calf profits. Write today.

Steele Briggs Seed Co., Dept. 88, Toronto, Ont.

PLEASURE CRUISES BY R.M.S.P. TO WEST INDIES

FORTNIGHTLY SAILINGS By Twin-Screw Mail Steamers.

SPECIAL FACILITIES FOR TOURISTS.

Next sailing from HALIFAX: R.M.S.P. "Canauc" Feb. 25, 1916.

APPLY TO The Royal Mail Steam Packet Co., 67-69, Granville Street, HALIFAX (N.S.) OR TO THE LOCAL TICKET AGENCIES.

Cotton Seed Meal

LINSEED MEAL AND FLAX SEED H. Fraleigh, Box 1, Forest, Ont.

Walnut Grove Holstein

Herd headed by May Echo Champion, full brother of May Echo Sylvia, who made 36 lbs. butter in seven days. Females for sale from one year old upwards. Prices right for quick sale.

Holsteins, Yorkshires and Cotswolds

Minster Farm makes a special offering of bulls any age (particularly serviceable age) from R. O. P. dams with records up to 15,016 lbs. milk 1 yr. for 3 yr. olds. Also sows of both sexes. For full particulars write.

HOLSTEINS

Two bulls over a year old, three more fit for service. Two grandsons of "Rag Apple Korndyke 8th" (May), and several sons of "King Segis Pontiac Duplicate," one of the best.

HOLSTEIN BULL

A grand show individual, fit for immediate heavy service, 13 months old. Sire, Ourvilla Sir Teake Colantha. Dam just finished record of over 23 lbs. at 4 years; average test 4%. Price right for immediate sale. Apply

BULLS, BULLS.

We have several young Holstein Bulls for sale, just ready for service. Sired by the Great Bull, King Segis Pontiac Duplicate, and our Junior Herd Bull, Pontiac Hengerveld Pieterje and from High Testing Dams. Prices low for the quality. Write and get them. Manchester, G.T.R. and Myrtle, C.P.R. stations. Bell Phone.

HOLSTEIN BULL

Well bred 6 mos. old bull from good producing stock. A bargain for quick sale.

HOLSTEIN BULL

Well bred 6 mos. old bull from good producing stock. A bargain for quick sale.

Questions and Answers. Miscellaneous.

Silage for Cows.

What size of silo will hold enough silage for nine cows for nine months in the year? W. J. B.

Ans.—Feeding about 30 lbs. of silage per day, a silo 10 feet in diameter and 30 feet high would hold sufficient silage.

Tanning Skins.

Will you please tell me, through your paper, if it is necessary to tan muskrat skins before having them made up into a waistcoat, or for lining a coat (I am curing them with a little saltpetre and salt), and if so, would you kindly publish a recipe, and any other hints which you think would help? A. W. C.

Ans.—1. The skins should be tanned and as it is the intention to wear them, we would advise having the work done at a tannery, where, with the proper facilities, a better job can be obtained than by home tanning. If it is decided to tan the skins at home, the following recipe may be of value. Stretch the skin smoothly and tightly upon a board, hair side down, then scrape off the loose flesh and fat with a blunt knife, and work in chalk freely, with plenty of hard rubbing. When the chalk begins to powder and fall off, remove the skin from the board and rub in plenty of powdered alum. Wrap it up closely and keep in a dry place for a few days. By this means it will be made pliable, and will retain the hair.

Bone Spavin—Cotton Seed And Oil Cake.

1. Mare has bone spavin, so my veterinarian says. What is best cure? Are the blisters or liniments advertised in your paper good for it, or should it be fired? Is not lame when walking.

2. I want to fatten a cow. Which is the better, cotton-seed meal or oil cake? Also, how often should they be fed, and in what quantities?

3. Have a locust hedge around vegetable garden. Nothing does well much nearer than twenty feet. Do you think strawberries would thrive if ground was well manured? J. F. W.

Ans.—1. If the mare does not show lameness, it would possibly be wise not to treat the spavin. If lameness is present, fire and blister, or relief may be given by applying some liniment as advertised in these columns.

2. Either cotton-seed meal or oil cake is good for fattening animals. Two pounds of cotton-seed meal per day is all that it is advisable to feed, and care must be taken in commencing to feed it. Oil cake may be fed in larger quantities.

3. It is doubtful whether strawberries would do well anywhere near a locust hedge.

Farm Fixtures.

1. Can a sink, with water-spout through wall to carry water away, be removed? Also shelves in pantry and closets, or anything left around farm that former owner left and did not make special mention of retaining. No special mention made in deed.

2. Has former owner authority to come on to the farm without permission and go through buildings with the excuse of gathering up articles they left, having already left farm without saying whether they wanted the stuff or not? It is not for value of stuff they have, but present owner has stuff all through said buildings.

3. If writing to a Judge of the County Court, how would you address his letters?

4. Lumber and shingles were bought by former owner to repair floors and roof of house, but not used before place was sold, and not mentioned at time of sale. Can former owner come and take said lumber and shingles and sell them to third party? J. W. A.

Ans.—1. No, as to sink and shelves; also as to the other things, if time for vendor's giving up possession of the farm to the purchaser has passed.

2 and 4. No, provided it is past the time agreed upon for his giving up possession.

3. To: His Honor Judge

DISPERSION SALE

of the entire herd of pure bred

Holstein Cattle

comprising 53 head to be held at the farm three miles north from Norwich and two miles east from Burgessville, Oxford County, Ont., on

Tuesday, Feb. 29th, 1916, at 1 sharp

For 22 years we have been breeding Holsteins during which time we have devoted special attention to developing a strain of heavy producing, high testing individuals of the true Holstein type. The herd consists of nine head over 5 years old, five 4 year olds, nine 3 year olds; nine 2 year olds, five yearlings, fourteen under 1 year. Five of these cows were at Guelph dairy test this year and made a good showing with heavy production. The last two years crop of calves are from bulls whose dams have records of over 30 lbs. butter in 7 days, and many from cows with Official records up to 25 lbs. in 7 days.

The young stock affords a great opportunity of getting the very best of breeding at your own price, daughter and grand-daughters of the champion cows at Guelph milk test, 1911 and former years.

TERMS.—Cash, or 6 months on approved security at 6% per annum. Catalogues give all information. Morning train from south will be met at Burgessville. 11.30 Train at Norwich and Burgessville.

Moore & Dean, Auctioneers
Rettie Bros. R. R. 1, Burgessville, Ont.

KING SEGIS PONTIAC PAUL 15940

WE have for sale a few sons of the above bull, ready for service, and whose dams are large heavy-producing cows. Here is an opportunity to get the blood of KING SEGIS and KING OF THE PONTIACS at reasonable prices. Correspondence solicited.

Also Berkshire and Yorkshire Swine
LARKIN FARMS Queenston Ontario

CHOICE HOLSTEIN-FRIESIANS

Herd headed by Lakeview Dutchland Heng. 2nd. 1st prize 2-year-old C. N. E. 1915. His sire's full sister world's champ, as junior 3-year-old with 22,645 lbs. milk in yearly record. Junior Herd sire Pieterje Ormsby Beauty. His dam's breeding produced Duchess Heng, Korndyke 1129.4 lbs. butter, world's record at 3 years. His sire has 3 generations of over 30-lb. cows at his back. Write for extended pedigrees and prices of bulls for sale.

OAK PARK STOCK FARM

W. G. Bailey, R. R. No. 4, Paris, Ont. Can.

LYNDEN FARM HOLSTEINS

Offers choice bulls with 20,000-lb. breeding, including Pontiac Korndyke Plus, 2 years old, out of Plus Pontiac Artis, 20,900 lbs. milk, 985 lbs. butter, champion 3-year-old of Canada in R.O.P. test, and sired by Inka Sylvia Beets Pouch, the sire of May Echo Sylvia, champion milk cow of the world for 120 days, and the only bull in Canada with two 33-lb. daughters. Also the champion yearling bull at Guelph, by the same sire, and another yearling with four 20,000 dams in his pedigree. Also a few richly-bred young lambs.

S. LEMON & SONS, Lynden, Ont.

HOLSTEIN CATTLE

Canary Mercedes Pieterje Hartog 7th heads our herd. His dam gave 116 lbs. milk in one day and 6,197 in sixty days and made 34.90 lbs. butter in 7 days. There are more cows in our herd giving over one hundred lbs. of milk a day than any other in Ontario. We have both bulls and heifers for sale.

D. C. FLATT & SON, R. R. No. 2, HAMILTON, ONTARIO

Long-Distance Telephone

QUALITY AND PRODUCTION are combined in the dams of the young bulls for sale; dams average from 25 to 31 lbs. butter in 7 days. Also females of all ages for sale.

M. L. HALEY SPRINGFORD, ONT. M. H. HALEY

Clover Bar Holsteins

My special offering just now are some choice young bulls out of official record dams and sired by Count Mercedes Ormsby, whose dam has 3-30 lb. sister, and a 24 lb. 4-year-old and a 21.06 lb. 3-year-old daughters, and his sire was the great Sir Admiral Ormsby. Also a few females.

Evergreen Stock Farm—REGISTERED HOLSTEINS

Present offering; Several bull and heifer calves, also a few yearling heifers bred and ready to breed. Write for prices and descriptions Bell 'phone.

Lakeview Stock Farm

BRONTE, ONT. BREEDERS OF HIGH TESTING HOLSTEIN-FRIESIAN CATTLE OFFER FOR SALE A FOUNDATION HERD consisting of 1 male and 3 females all bred in the purple and backed by officially tested dams Terms to suit purchasers. T. A. DAWSON, Manager

HOSPITAL FOR INSANE, Hamilton, Ont.

For Sale—Holstein Bulls, varying in age from 1 to 11 months, from Record of Performance or Record of Merit dams and the grand bulls Sir Korndyke Wayne Dekol, grandson of Pontiac Korndyke, or Lakeview Dutchland Le Strange, a grandson of Count Hengerveld Fayne Dekol. Prices right. APPLY TO SUPERINTENDENT.

QUEEN CITY HOLSTEINS

Present Offering is 10 young bulls, from 6 to 14 months of age, the records of whose dams, sires dam and her full sister, range from 28 to 32 lbs. They are sons of King Lyons Hengerveld Segis.

Ourvilla Holstein Herd

If you are starting a herd, or wanting to improve one, look at these young sires for sale, from Homestead Susie Colantha, at three years 26.50; Ourvilla Susie Abbecker, at three years 26.02; Ourvilla Calamity Ormsby, 22.14 at three years; Homestead Helton Abbecker, at three years 23.51, and a few others. Also come and make selection in choice females from our herd of 100 head.

Dumfries Farm Holsteins

Think this over, we have 175 head of Holsteins, 50 cows milking, 25 heifers due to calve in the fall and 60 heifers from calves up to 2 yrs. as well as a dozen yearling bulls, and anything you may select for sale. Breeding and individuality the very best.

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Its high proportion of Protein (guaranteed 19% to 20%) and of Fat (guaranteed 8% to 9%) make Gardiner's the most valuable Calf Meal on the market. Calves, young colts, lambs and little pigs thrive on it splendidly for the first few months after weaning.

Put up in 25, 50 and 100 lb. bags. If your dealer doesn't handle it, write us for prices and information about Gardiner's other products—Ovatum, Pig Meal, Sac-a-fat and Ontario Feeders' Cotton Seed Meal. 3

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Feed Specialists, SARNIA, Ont.

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Bowl a sanitary marvel, easily cleaned. Different from picture which illustrates our large capacity machines. Shipments made promptly from **Winnipeg, Man., Toronto, Ont., and St. John, N.B.** Whether dairy is large or small, write for handsome free catalog. Address: **AMERICAN SEPARATOR CO., Box 3200, Balnebridge, N. Y.**

For Sale—two Jersey bulls, grandson's Fairy Glen's Raleigh dam of one, Junior Champion, Toronto, 1915. Several Berkshire pigs from prize-winners at Toronto and Guelph.
IRA NICHOLS, Woodstock, Ont.

Mention Advocate.

Questions and Answers. Miscellaneous.

Use of Cow.

A hired with B for twelve months, and in addition to cash and a free house, was to have the use of a cow, along with other privileges. About two months after A hired, B had cow back, saying he did not bargain for the use of a cow, but he allowed one quart of milk per day. A has proofs that B enquired of A's former employer as to what cash and privileges A was receiving while working with him two years, saying he would give just the same, and A hired with B on those conditions. Needless to say, this has made a great deal of difference to A's money, as A would not have thought of hiring at that price without the use of a cow. Can A claim from B for the use of the cow, after taking the price of the milk out?

Ontario.

Ans.—Yes.

Crop For Hay—Money for Silo, Etc.

1. As I am short of hay ground for next year, would a mixture of oats and peas, seeded to sweet clover, make a satisfactory crop to cut for hay?

2. Is it probable that the sweet clover would grow up high enough in the grain to have a good mixture of it in the hay?

3. Will second crop of sweet clover produce seed?

4. I have just got my farm paid for and have a very little bank account. Will it pay to borrow money at 7 per cent. to build a silo? Silo is to be large, and will cost over \$300.

5. How does the cork brick flooring compare with concrete in regard to durability? Is it everlasting, or will it wear out in time?

Ans.—1. We would not advise sowing the sweet clover in such a mixture. Oats and peas—three of the former to one of the latter, should do well.

2. It might. You could try it, but we would not expect it to catch well in a mixture of oats and peas thick enough for hay.

3. Yes.

4. Under certain conditions it should. You should be able to get money cheaper than 7 per cent.

5. Both are good wearers, and practically everlasting.

Tubercular Bulls—Grafting—Killing Horns.

1. Are the calves sired by a tubercular bull of any use, or would it be best to destroy them, the bull being pure-bred?

2. What do you apply to stop the growth of horns on calves?

3. At what age do you apply it?

4. How much would be the difference in the weight of beef cattle if weighed at home or driven three miles to be weighed?

5. What is the proper time of year to do grafting on apple trees?

6. Are there any apple trees that are immune from the attack of the San Jose scale? If so, what are they?

7. Would a tank of water 12 inches above the level of a water-bowl 52 feet away, force the water that far?

8. Would it have force enough for 32 water-bowls?

J. M.
Ans.—1. Providing the cows are free from the disease, there is no need for separating the calves from their dams.

If the cows are diseased, the calves should be removed as soon as dropped, and fed milk from cows that are known to be free from the disease. Calves from a tubercular bull would not likely be affected when dropped. They might be weak, however, and more subject to the disease.

2. Apply caustic potash.

3. When the calf is from one to three weeks old.

4. We cannot say definitely what the difference in weight would be. It would depend on the weight of cattle, how they were fed previous to being taken from the stable, and how fast they were driven.

5. Soon after the sap commences to rise in the tree, but before there is too much growth.

6. We do not know of any.

7. Yes. Water will seek its own level.

8. Yes.



Use Massey-Harris Plows for your Spring Plowing

THERE are many reasons why you should use a **Massey-Harris Plow**—reasons which it is worth your while to consider, because they mean much to you in the way of making your farming operations yield the best possible returns.

In the first place, owing to their excellent scouring qualities, you can often get on the land and start plowing several days earlier than with other Plows. This is an important matter, especially in the North-West, where a few days' delay may mean the loss of a crop.

The shape of a Plow is a point which must be carefully considered. **Massey-Harris Plows** have given satisfaction to three generations in this respect. They turn perfect furrows, putting the ground in the best possible condition for the work which follows.

Massey-Harris Plows are light draft and easy to handle—they are popular with both man and beast.

Durability is a strong point in connection with these Plows—the improved methods of tempering the Steel Mouldboards and Shares and of hardening Cast Shares, together with careful erecting and rigid inspection of all plows, combine to produce a line of Plows which look well, work well and wear well.

Massey-Harris Co., Limited.

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— Agencies Everywhere —



Humeshaugh Ayrshires We have several February, March and April, 1915, bull calves, bred from some of our best imported and home-bred females, which we offer at good value for quick sale. **Alex. Hume & Co., Campbellford, Ont., R.No.3.**

Stonehouse Ayrshires Are a combination of show-yard and utility type seldom seen in any one herd. A few choice young males and females for sale. Write or phone your wants to Stonehouse before purchasing elsewhere.

Gladden Hill Ayrshires Present Offering: Our stock bull, Tam O'Menie = 35101 = dam, Dewdrop of Menie = 25875 =, R. O. P. test 9.783 lbs. milk, 401 lbs. butter-fat as a 3-year-old. This bull stood 3rd at Toronto this year. Also young bulls from record cows, and females of all ages.

Laurie Bros., R. R. No. 1, Agincourt, Ont.

Glenhurst Ayrshires For 50 years I have been breeding the great Flos tribe of Ayrshires, dozens of them have been 60-lb cows; I have lots of them get 60 lbs. a day on twice a day milking. Young bulls 1 to 10 months of age, females all ages. If this kind of production appeals to you write me.

James Benning, Williamstown, Ont.

Jerseys, Shropshires, Tamworths We are offering now for the first time a limited number of high-class and richly bred heifers and young bulls. Shearling ewes. Ram and Ewe lambs by Imp. Sire. Tamworths both sexes from breeding age down, our entire offering is high-class and prices no higher than the other fellow.

J. B. COWIESON & SONS, Queensville, Ont., Toronto and York Radial.

Brampton Jerseys We are busy. Sales were never more abundant. Our cows on yearly test never did better. We have some bulls for sale from Record of Performance cow.

These bulls are fit for any show-ring.

B. H. BULL & SON, BRAMPTON, ONTARIO

THE WOODVIEW FARM JERSEYS CANADA'S MOST BEAUTIFUL JERSEY HERD Half the herd imported from the Island of Jersey. Several cows in the Record of Merit, and others now under official test. Some very choice stock for sale. When writing, state distinctly what you desire, or, better still, come and see them. Farm just outside city limits. We work our show cows and show our work cows.

LONDON, ONTARIO John Pringle, Proprietor

SUMMER HILL OXFORDS

Flock established many years ago on Summer Hill Stock Farm by the late Peter Arkell, now owned by his son, Peter Arkell. Rams and ewes in any quantity for sale, all recorded. Positively no grades registered as pure-breeds; also no grades handled except by order.

Peter Arkell & Co., P.O. Box 454, Teeswater, Ont. C.P.R. Sta.



Harris Plows Spring Plowing

Reasons why you should use a Harris Plow—reasons which it is worth knowing because they mean much to you in your farming operations and returns.

Coming to their excellent scouring and getting on the land and starting earlier than with other Plows. Better, especially in the North—delay may mean the loss of a

point which must be made. Massey-Harris Plows have given operations in this respect. They are better than the ground in the best work which follows.

are light draft and easy to use with both man and beast.

ing point in connection with the best methods of tempering the shares and of hardening Cast Iron to produce a line of work well and wear well.

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We have several February, March and April, 1915, bull calves, bred from some of our best imported and home-bred

Are a combination of show-yard and utility type seldom seen in any one herd. A few choice young males and females for sale. Write or phone your wants to Stonehouse before purchasing elsewhere.

Offering: Our stock bull, Tam O'Menie = 35101 = Dewdrop of Menie = 25875 =, R. O. P. test 9.750 milk, 401 lbs. butter-fat as a 3-year-old. This bull from record cows, and females of all ages.

E BROS., R. R. No. 1, Agincourt, Ont.

For 50 years I have been breeding the great Flos tribe of Ayrshires, dozens of them have get 60 lbs. a day on twice a day milking. Young ones Benning, Williamstown, Ont.

We are offering now for the first time a limited number of high-class and richly bred fawn we lambs by Imp. Sire. Tamworths both sexes in-class and prices no higher than the other fellow. Hill, Ont., Toronto and York Radial.

We are busy. Sales were never more abundant. Our cows yearly test never did better. We have some bulls for sale from Record of Performance cows. These bulls are fit for any show-ring.

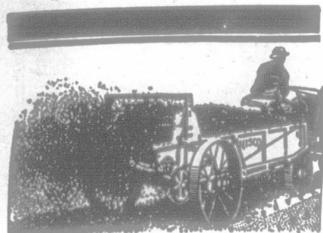
BRAMPTON, ONTARIO

MOST BEAUTIFUL JERSEY HERD bred from the Island of Jersey. Several cows in and others now under official test. Some very strong. When writing, state distinctly what you want, come and see them. Farm just outside city of show cows and show our work cows.

OXFORDS

Summer Hill Stock Farm by the late Peter Arkell. Rams and ewes in any quantity no grades registered as pure-bred handled except by order.

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It puts farmyard manure in an entirely new light. In its six chapters there is not an uninteresting paragraph and every suggestion is practical. It shows the losses of the manure pile and of ordinary methods of spreading.

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Please mention "The Farmer's Advocate."

Questions and Answers. Miscellaneous.

Books on Fruit.
Will you please tell me, through your paper, what are the best books published on fruit and vegetable growing, and where they may be procured?
J. G. O.

Ans.—The Pruning Book, by Bailey, \$1.60; Popular Fruit Growing, by Prof. Greer, \$1.10; The Small Fruit Culturist, by Fuller, \$1.05; Principles of Fruit Growing, by Bailey, \$1.90; Vegetable Gardening, by Green, \$1.10; How to Grow Vegetables, by French, \$1.85. These books may be secured through this office for the prices mentioned, postpaid.

Corn.
If a ton of silage without cobs is equal to silage containing cobs, will the varieties of corn which would, if sown thinly, produce a large crop of cobs, have any higher feeding value if sown thickly, than corn which would not produce much cob?
G. T. W.

Ans.—In this work we advise the use of nothing but good varieties of corn, early-maturing, and varieties which, sown thinly, produce good crops of corn. There are only a few really "best" varieties. We have only tried this with one variety, but results should be similar in a like season with any of the standard varieties.

Pasture Land—What to Sow.
1. What, in your opinion, would be best to sow or plant, in a plot of clay loam that has been fifteen years in cow pasture?

2. What would you consider to be the value to the land, from a fertilizer standpoint, of five years' continuous pasture by cows?
J. J. McN.

Ans.—1. It should be all right to sow either corn, peas or oats. One would have to run the risk of the season being favorable, and from attacks of white grub or wireworm, no matter which crop was sown.

2. If the land was judiciously pastured, it should be considerably more fertile than when seeded. It would be difficult to state just what the value of the increase in fertility would be.

Dehorning—Treatment for Smut.
Milk cow was dehorned Jan. 7, by the use of a hand-saw; did not bleed very much, and did not appear to suffer much. In the course of a few days a discharge began to run from both cuts, which was clear and stringy, and gave the appearance of a cold in the head. The discharge has now become yellow in color. Cow is in stable at night, and out in yard all day.

1. Will her milk be all right for family use?

2. Is there any danger of the discharge proving fatal?

3. What treatment, if any, should the cow receive?

4. How much formalin per gallon of water should be used for treatment of smut in oats?

5. Is there any danger of damaging oats by using too much formalin?

6. If a tub half-filled with the formalin solution is used, will it be necessary to leave oats in a while, or take them out as soon as they are wet?
T. W. W.

Ans.—1. It should be.

2. Yes. Such cases have proved fatal.

3. This will be very tedious to treat. Keep the cow in a comfortable box stall, and inject into the cavities twice daily a four-per-cent. solution of carbolic acid. Then, turn her head so that the fluid will escape each time. If after a while the fluid escapes through the nostrils, it will indicate a favorable condition. By patience and continued treatment, a cure may be effected.

4. One-half pint of formalin (40-per-cent. formaldehyde) is used in twenty-one gallons of water.

5. Yes. The correct amount should always be used.

6. For best results, the grain should be immersed in the formalin solution for a period of twenty minutes, during which time it should be stirred occasionally so that every kernel will become wet.

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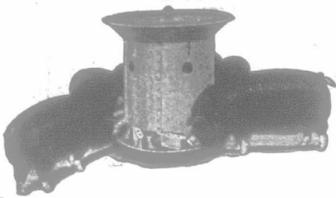
in Canada. Look up our show record, it will give you an idea of the kind of Oxfords we have for sale.

PETER ARKELL & SONS, Proprietors, Teeswater, Ont.

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Shropshires and Cotswolds For Sale—Yearling rams and yearling ewes, a few lambs from imported ewes. Prices very reasonable.

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Claremont, C.P.R., 3 miles Pickering, G.T.R., 7 miles Greenburn, C.N.R., 4 miles.



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YOUNG Yorkshire Sows FOR SALE

Farrowed in October from sire and dams of extra good quality. These young pigs are choice individuals. Address.—

Weldwood Farm

Farmer's Advocate, London, Ont.



Tamworths A choice lot of bred sows some due in February and others about 1st of April.
Herbert German, St. George, Ont.
Bell Phone.

Townline Tamworths We can supply young Tamworths of both sexes and any desired age of superior quality. Also Leicester Ram and Ewe lambs, Pekin ducks, Langshan cockerels and pullets. Write us your wants. T. Readman & Son, Streetsville, Ont. R.M.D.

SUNNYSIDE STOCK FARM Champion herd at Toronto and London Fairs.
Chester White Swine Dorset Horn Sheep, young stock of both sexes for sale.
W. E. Wright & Son, Glanworth, Ontario

Pine Grove Yorkshires—Bred from prize-winning stock of England and Canada. Have a choice lot of young pigs of both sexes, pairs not akin, to offer at reasonable prices. Guaranteed satisfaction.
Joseph Featherston & Son, Streetsville, Ont.

CLEARVIEW CHESTER WHITES For many years my herd has won the highest honors at Toronto, London, Ottawa and Guelph. For sale are both sexes of any desired age, bred from winners and champions.
D. DeCoursey, R. R. No. 5, Mitchell, Ont.

Lakeview Yorkshires If you want a brood sow, or a stock boar of the greatest strain of the breed, (Cinderella), bred from prize-winners for generations back, write me. Young sows bred and boars ready for service. JOHN DUCK, Port Credit, Ont.

Alderly Edge Yorkshires Young pigs both sexes, born in September and March. Price right.
J. R. KENNEDY, KNOWLTON, QUEBEC

Tamworths Boars fit for service, young sows ready to breed pigs of all ages for sale. Before buying, write for prices.
JOHN W TODD
R. R. No. 1, Corinth, Ont.

Choice stock to offer in SHORTHORNS, POLAND CHINA AND CHESTER WHITES. First prize Poland China herd at Toronto and London, 1915. Fairs not akin—bred from winners. Prices moderate. Geo. G. Gould, No. 4, Essex, Ont.

Questions and Answers. Miscellaneous.

Sowing Salt.

1. How much land salt is one supposed to sow per acre?
2. Is land salt good to sow with oats?

Ans.—1. From 150 to 300 lbs.
2. It is claimed that salt will liberate some soil constituents, such as potash, and therefore has some value. Lime might prove more profitable.

Applying Manure—White Grub—Variety of Corn.

1. Please state the proper way to apply manure on land for corn. Would you recommend spreading it in the winter, or would it be better left in yard until spring?
2. Which is the better for corn, stubble land or sod?
3. When plowing sod last fall for corn next spring, the ground was thick with white grubs. Will they do harm to this year's crop?
4. Would you advise sowing corn there or not?
5. Which is the better way to manure for corn, top dressing or plowing the manure under?
6. What variety of corn do you recommend to sow in this country for silage purposes?

Ans.—1. Many successful farmers claim they secure the best results by applying the manure to the land direct from the stable. Others prefer piling the manure and spreading it in the spring. Where the ground has good under-drainage and not too much slope, we see no reason why manure should not be applied in the winter. By so doing, the spring work is lessened.

2. A clover sod is preferred.
3. If the grubs were full grown last fall, they will change to the June beetle by late spring, and so do no harm to this season's crop. However, if the grubs were small, there is a danger that they may damage the crop.
4. It is not wise to sow corn on a field that is known to be infested with the white grubs.
5. Plowing under the manure is preferred.
6. Wisconsin No. 7, Golden Glow, Bailey, Leaming, or White Cap, of the dents; and Compton's Early, Longfellow, or Salzer's North Dakota, of the flints, are varieties of corn that have given good results for silage purposes.

Bloody Milk—Value of Silage.

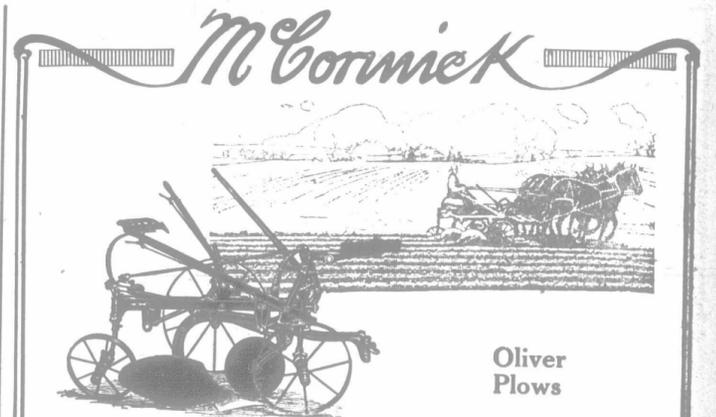
I have a pair of two-year-old heifers which calved last June. They did fine for a month or two, and were heavy milkers. Then one of them began giving bloody and stringy milk in one teat. This became worse, until the milk became very bloody in all the teats, and continued so for a couple of months, when she was allowed to go dry. The other heifer gave bloody milk for a while in one teat, and then got all right for some time. Now she is giving a little thick milk in the same teat.

1. What do you think would be the cause for this?
2. Is there any cure for it?
3. Would the one that was allowed to go dry likely be all right another year?
4. What would you value silage of fair quality at per ton, where feed is quite plentiful, had you an opportunity to buy some? How many cubic feet is generally figured to the ton?

SUBSCRIBER.

Ans.—1. The trouble is possibly due to rupture of some small blood-vessel in the udder. In some cases there is a congenital weakness of these vessels, and the cow will never make a satisfactory milker. In addition to the hereditary tendency, contributory causes are abuse, chasing by dogs, or accident of some kind to the udder.

2. Treatment consists in bathing the affected parts, long and often, with cold water, and giving one ounce of tincture of iron in a pint of cold water as a drench three times daily until blood flow ceases. If the cow becomes constipated, give her one pint raw linseed oil.
3. It is doubtful.
4. The value of silage will depend on its quality and the value of other feeds. On the average, silage should be worth \$3 in the silo. Forty to sixty-six cubic feet of settled silage will weigh about one ton.



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OLIVER plows for Eastern Canada are the result of the closest study of plowing conditions in Eastern Canadian fields. The point that interests you, of course, is whether or not you can get the plow that your conditions require. See the McCormick local agent and you will find that he has in stock or can get promptly, an Oliver that is exactly the plow for your work.

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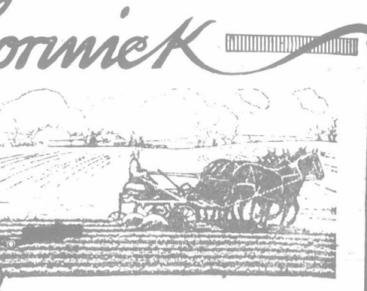
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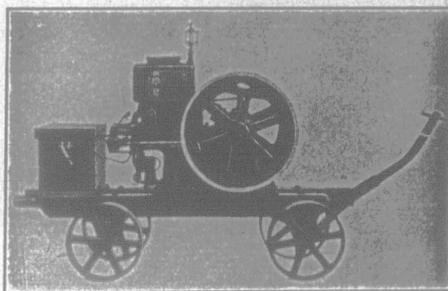
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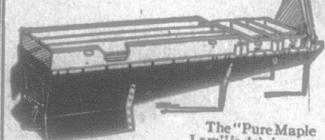
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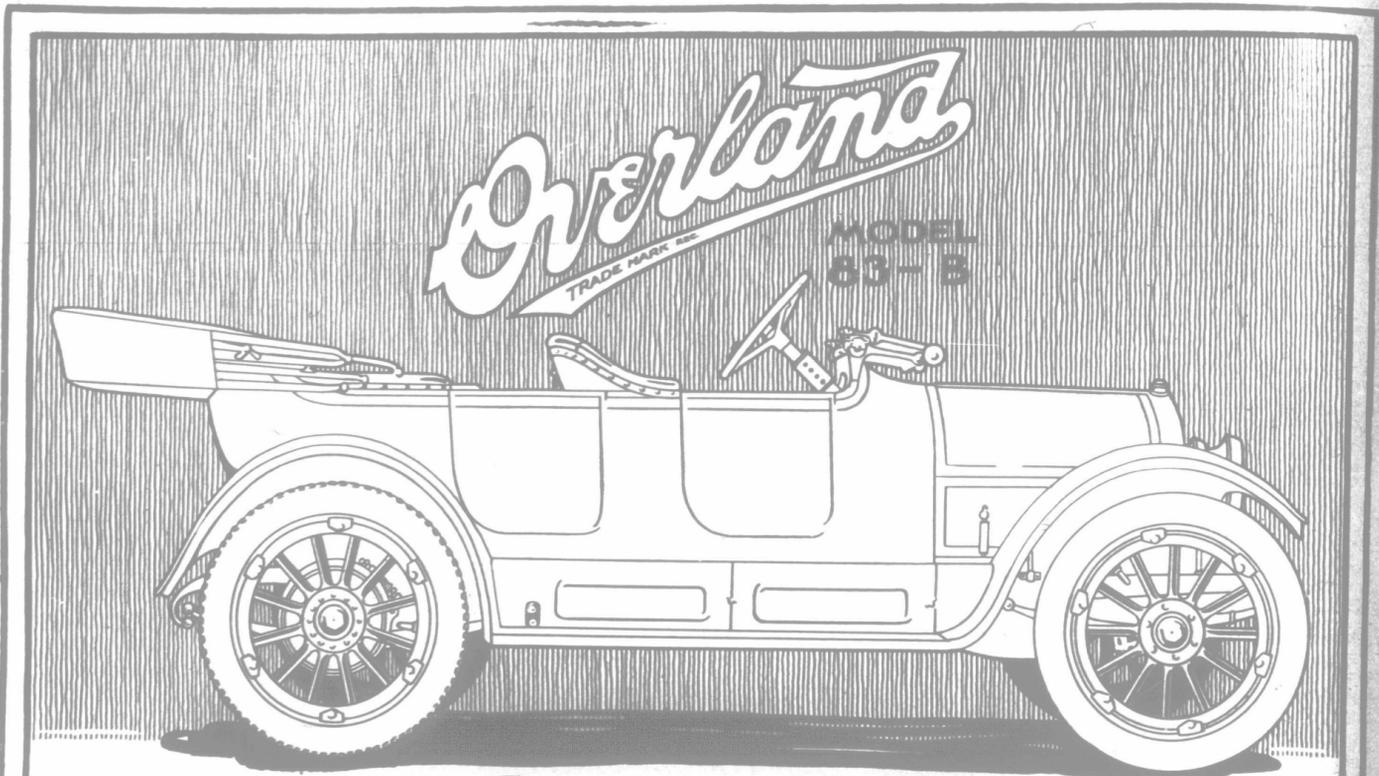
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