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THE FARMER'S ADVOCATE

AND HOME MAGAZINE

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

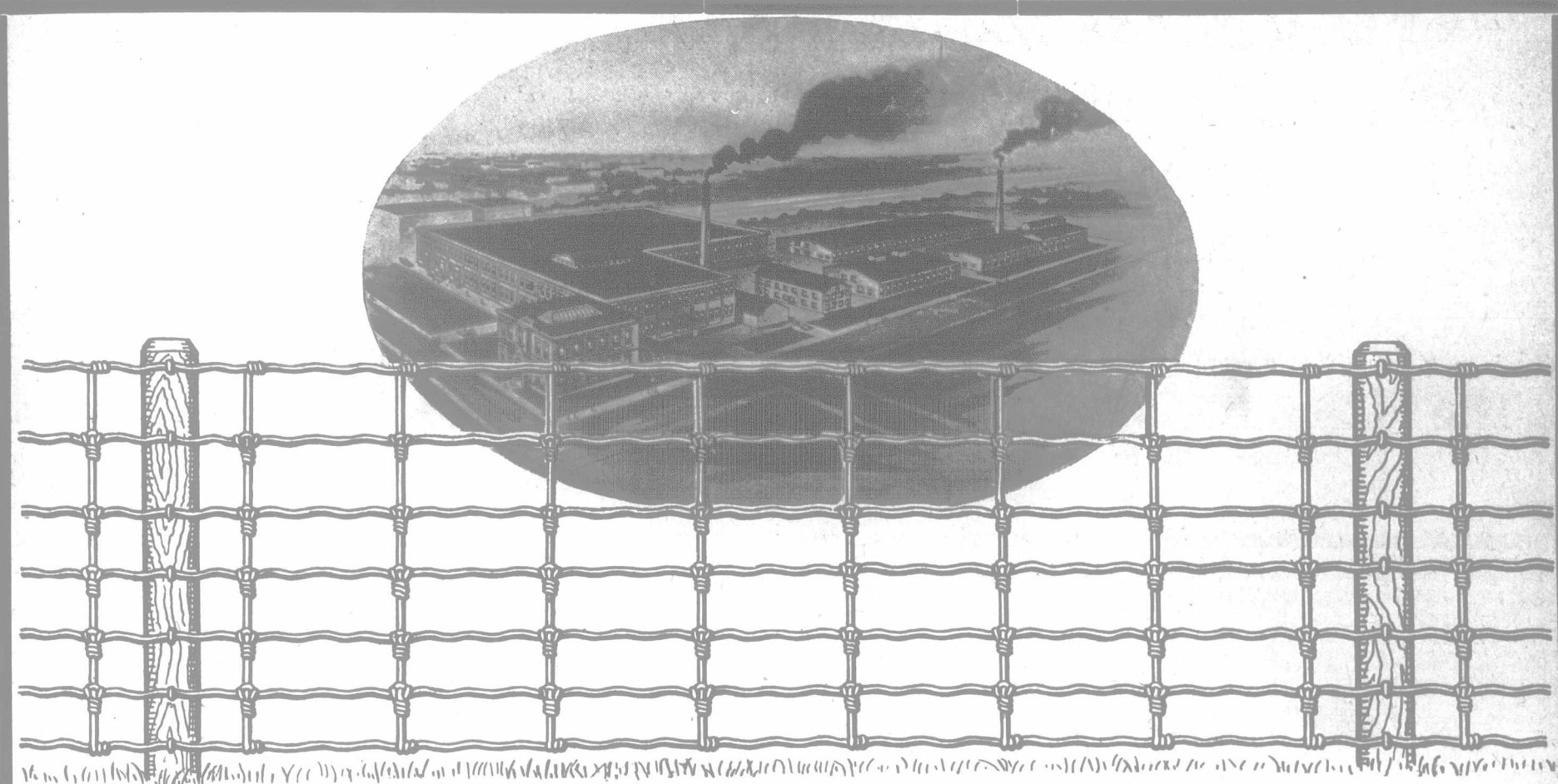
T. K. Donoherty, Editor
Chief Officer, Dept. of Agr.
Ireland, March 18, 1913

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VOL. XLVIII.

LONDON, ONTARIO, MARCH 13, 1913.

No 1068



A GLANCE at the factory behind the fence is sufficient to convince the most shrewd observers that "FROST FENCE" must be uncommonly good value for the money. Like the leading product in every industry, the home of "FROST FENCE" is a big, thoroughly modern factory in every detail.

But, study the picture closely. You see, we have plenty of room for developments. The growth of our business has been steady. And, big as our present plant is, the ever-increasing demand for "Frost Fences" and Gates calls for constant extensions, greater facilities.

In addition to the two-storey, well-equipped Fence Factory, we show our most complete wire-producing and galvanizing mills giving us an output every 24 hours of better than 70 tons of galvanized wire expressly made for fence service.

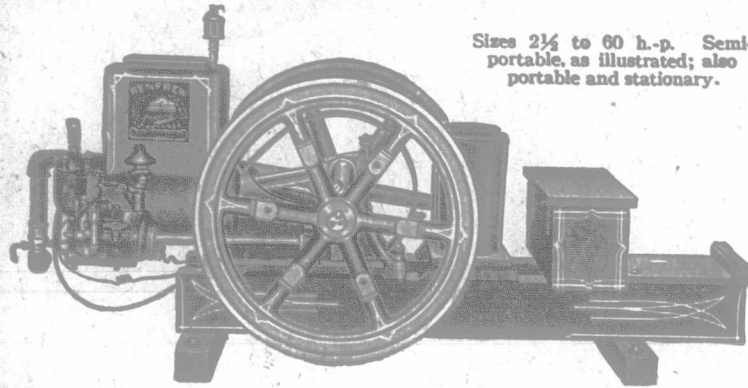
We do not make what is known as custom or commercial wire, the kind that is turned out to serve all purposes like the "Jack of all trades, master of none," but we have studied fence needs, and know the quality

of steel best suited to give service in fence, and we are making it.

It costs as much for posts and labor to make a foundation for a cheap fence as it does for a good one. The difference between the total cost, including posts and labor, to build a cheap fence and a good fence is such a small portion of the total fence expenditure, one could not afford to take a chance on getting only ten years' fence service, when for a few cents more invested you can get a good fence that will last 20 years and prove a better-looking article in the bargain.

These are some of the features about "Frost Fence" that make its use so attractive to the most careful fence buyers.

The Frost Wire Fence Company, Ltd., Hamilton, Ontario



Sizes 2 1/2 to 60 h.p. Semi-portable, as illustrated; also portable and stationary.

Factory Methods on the Farm

THE modern manufacturer and the modern farmer use strikingly similar business methods. The modern manufacturer is always on the lookout for labor-saving machinery for his factory—machinery that will do the work in less time and at less expense. The modern farmer is also on the watch for labor-saving machinery for his farm. And of all the labor-saving farm machinery, what can excel the gasoline engine? It saws wood faster than a hired man can saw it. It pumps water for the cattle quicker than he can pump it. It shells the corn faster, grinds the feed quicker. It will run the fanning mill and the emery wheel for you. It will run the cream separator, the churn and the washing machine for your wife. If desired, it will furnish the power to light your home or barn with electricity.

A good engine will produce gasoline-power at a fraction of the cost per hour you would pay for man-power.

The Renfrew Machinery Company, Limited
 Head Office and Works: RENFREW, ONTARIO
 AGENCIES EVERYWHERE IN CANADA

Therefore it is good business to use gasoline-power wherever it is possible to substitute it for man-power. That's what the modern manufacturer would do if he brought his factory methods to the farm.

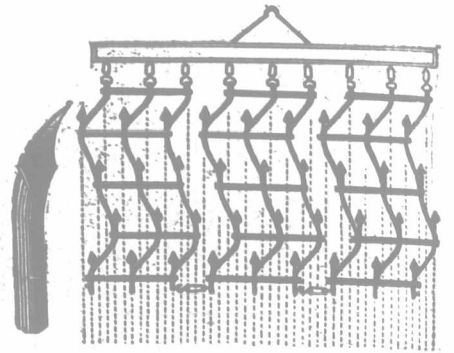
A good gasoline engine, such as the **Renfrew-Standard**, will soon pay for itself. And it will last for years. It's built to last. It is so perfectly balanced and runs so steadily that it requires no anchoring.

Main bearings are of anti-friction metal. Cylinders are of close-grained semi-steel, like those used in high-grade auto engines.

The carburetor consists of but three parts. Nothing about it to confuse the operator or get out of order. The governor, which is the fly-ball type, like that of a steam engine, permits the speed to be varied while engine is running. And you can start the engine easily without cranking in cold or warm weather.

The **Renfrew-Standard** is the latest and best type of gasoline engine sold in Canada to-day. A booklet giving complete description will be mailed promptly on receipt of your name and address.

Just drop us a card by next mail. Also ask us about the Gifford 1 1/2 h.p. engine—truly a wonderful little engine.



Erie Lance Tooth Harrow

Is the finest and most useful article that can be placed on a farm. The teeth are so shaped that they tear rough ground, and cultivate and make the finest seed bed possible. Once used on a farm, it will be the last implement parted with. Made strong and adapted to the roughest usage. 2-section set, \$10.00; 3-section set, \$15.00; 4-section set, \$20.00. Each section covers 3 feet of ground in width.

Erie Iron Works, Limited
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DO you know of the many advantages that New Ontario, with its millions of fertile acres, offers to the prospective settler? Do you know that these rich agricultural lands, obtainable free, and at a nominal cost, are already producing grain and vegetables second to none in the world?

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Cunard Line, Canadian Service

Have opened up an

IMMIGRATION DEPARTMENT

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Tell Us, If You Want Help

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The Cunard Steamship Co., Limited
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 N. E. Mallory, Bienheim, Ont.

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 Every hill you miss in planting means money lost out of your pocket. No machine can plant perfectly unless there is hand correction of misses and double sowing. 10 to 50 bushels more to acre, using

IRON AGE Potato Planter
 (Improved Robbins) (Now made in Canada) A seed piece in every space and one only. No pickets used—no injury to seed. Perfect placing of seed and uniform spacing. Can't you see that it must pay for itself? Write for booklet, "100 per cent potato planting." We make full line Potato Machines, Garden Tools, Sprayers, etc.
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Choice Ensilage Corn
 THAT WILL GROW
 Mammoth White
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 February, March, April shipments
 Our crop is very choice this year.
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London Automatic Concrete Mixer
 does any kind of mixing automatically, measures and mixes. If you use concrete you must write us for price of this machine. We have the largest line of concrete machinery of any firm in the world. Tell us your requirements. **London Concrete Machinery Co., Dept. B., London, Ont.**

Pump Water, Saw Wood, Grind Grain, Churn

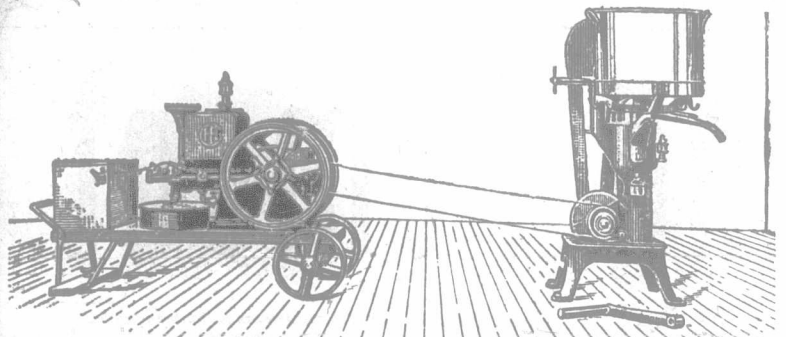
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 Stationary or portable; 3 to 100 h.p., for gasoline, distillate, natural gas and producer gas. Make and break or jump spark ignition.

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So often you lose money because you are not quite sure of the weight of the article that is changing hands, and by just putting it on the scales your eyes are opened, and you are in a position to judge very accurately as to what this or that particular thing is worth. Write to-day for our illustrated catalogue, telling you about the Three-wheeled Wagon and Stock Scale. Capacity, 2,000 lbs. All material and workmanship first-class and guaranteed.
 Address:
The Aylmer Pump & Scale Co., Limited
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WHILE we were getting the opinion of farmers on our new cream separator power outfits, one of them said: "I have been looking for such a combination as this for a long time. I need an engine with that kind of a gear on it to slow down the speed. There are half a dozen small machines on my farm for that engine to run. I want that outfit." You, too, will want it when you see it. The outfit consists of an

I H C Cream Separator Dairymaid or Bluebell

and a one-horsepower back-g geared I H C engine. The engine is mounted on a portable truck, and can be used for any farm work to which power can be applied. The back gear adjustment runs at the proper speed to operate any hand turned machine.

The working parts on I H C cream separators are accurately made and all bearings are well lubricated. The shafts and spindle are the strongest used in any separator. The gears are easily accessible for cleaning. Both separators have the famous I H C dirt-arrester chamber.

See the I H C local agent and ask him to explain carefully all of the good points of these outfits. You can get catalogues and full information from him, or, write the nearest branch house.

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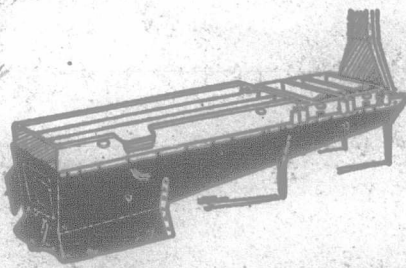


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Why Not Be a WINNER in This Contest ?

We are giving away \$500 in gold, cash prizes, to users of the GRIMM "CHAMPION" EVAPORATOR. Full particulars will be mailed on receipt of above coupon.

The competition will take place during the last two weeks of April, and samples of syrup and sugar received will be placed on exhibit in the show windows of the "Montreal Star." Every purchaser and user of the Grimm "Champion" Evaporator may take part in this contest. Now is the time to properly equip yourself to make high-grade syrup and sugar—high priced, and therefore profitable. Do it now, before the sap runs. State number of trees you will tap, and we will give you prices on a suitably-sized outfit. Address all, enquiries:



PRIZE CONTEST
GRIMM MFG. CO., Limited
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MONTREAL

(Don't forget coupon)

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Your cows will be in the barn for two months more—and its slow, heavy work wheeling the manure through the muddy yard. A BT Manure Carrier will do the work in half the time and without any hard work on your part. You can load it, run it out, and dump it on the pile or into the spreader in a jiffy—half-a-ton of manure at a time—one big load cleans your stable. It's easy to get the manure rods away from the barn, for the level overhead track is not affected by any condition of the yard.

Now is the time to install a BT Manure Carrier

It will save you enough time and enough tedious work in the spring months alone to almost pay for itself. Mail the coupon to-day for our catalogue and investigate.

OUR SPECIAL OFFER

If you will put in a BT Manure Carrier now, we will give you our best cash price, and make it payable in the fall. This offer gives you three months' use of the BT Carrier without costing you anything. The spring is your busy time. Get a BT Manure Carrier to help you with the chores—get it now on easy fall terms.

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Please send me your catalogue on Manure Carriers.

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is the highest-grade cement on the market. Our mills are well equipped and are a guarantee of uniform good quality.



Concrete piers recently completed for bridge over railroad at Sunnyside, Toronto, Ont.
Crushed stone and cement supplied by Alfred Rogers, Limited.

Throughout the entire manufacture of **Rogers' Portland Cement** every precaution is taken to keep the product at its high standard. The care exercised in this regard has produced a high grade that is dependably uniform.

A Few Reasons Why You Should Use Cement:

It is frost-proof and fire-proof.
It is cheaper than wood, brick or stone.
Everything you make of **Rogers' Portland Cement** is permanent.

You do not have to renew or repair good cement work. Therefore, if you use cement, the time which you have been spending in repairing buildings of wood would be free for other necessary work.

We have a handsome book containing 170 illustrations, the regular price of which is \$1.00, which you can obtain free in connection with our special offer as follows: Send us \$1.00 for the Rogers' Book, and we will mail you with the book an order for \$1.00 worth of Rogers' Cement on the nearest Rogers' dealer. This cement will make you a hog trough worth at least \$5.00, or many other improvements which you no doubt have in mind, namely, hitching posts, flight steps, hen nests, horse block, etc. If there is no Rogers' dealer in your vicinity, send us 50c., and we will send you the book by return mail; the information contained in the same is worth a good many dollars to you. This book explains many other reasons, besides those mentioned above, why you should use cement, and gives the reasons why you should use Rogers' Cement. Ask for the book, "Portland Cement on the Farm." In all your future building, no matter how small or how large, be sure and use cement. "Everything from a fence post to a silo."

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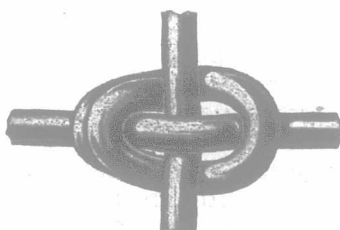
We can furnish crushed stone in all sizes, clean and free from dust, dirt and mould, and evenly graded. This is the best line for road and concrete work—thousands of tons used locally.

ALFRED ROGERS, LIMITED
28 King St., West TORONTO, ONT.

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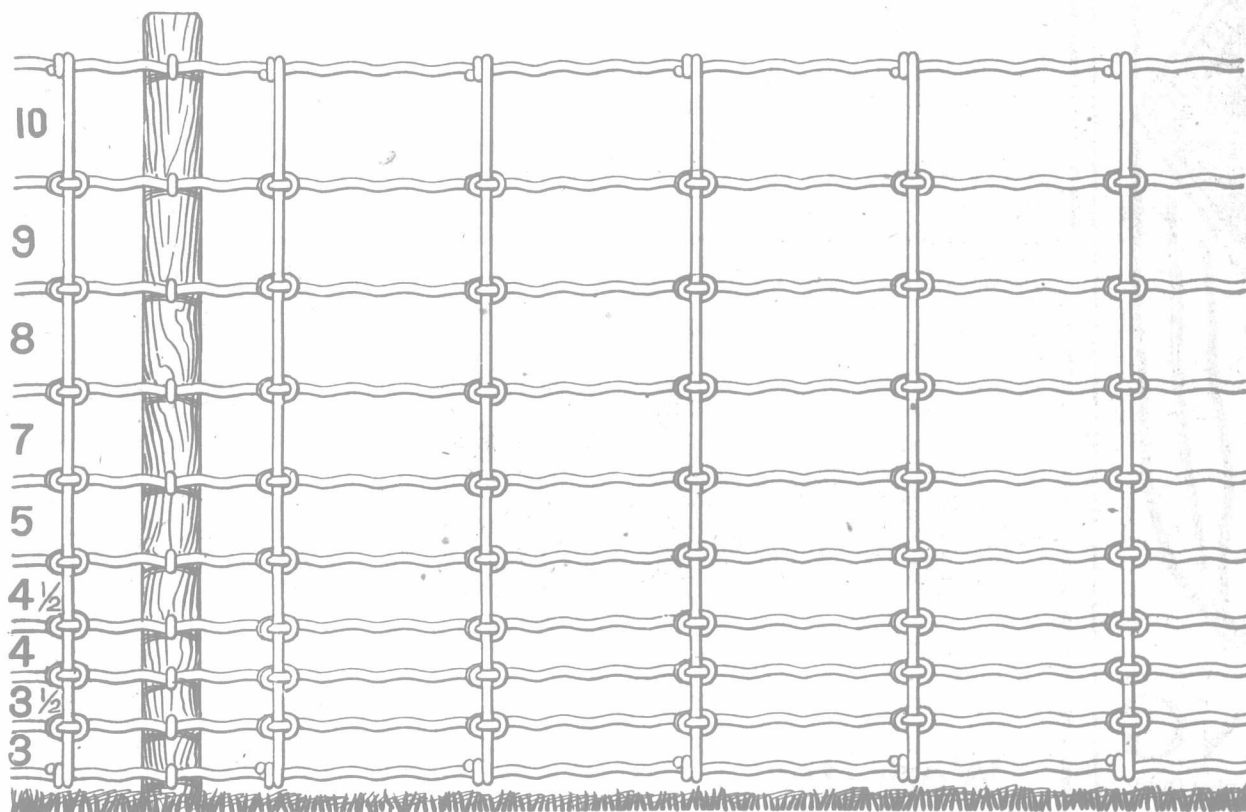
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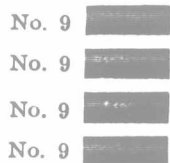


THE BEST STIFF STAY FENCE MADE



Actual Size of Wire Used Throughout

Horizontal and upright wires firmly and strongly tied together and will not slip.



Made in all heights, with upright wires sixteen and a half and twenty-two inches apart.

MANUFACTURED BY

The Canadian Steel & Wire Co., Limited

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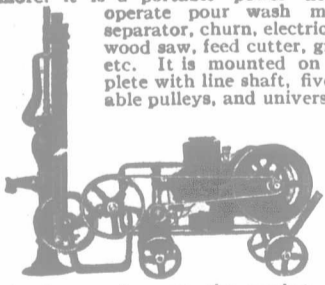
offers a selection that cannot be beaten—the good old favorites, and all the new and improved varieties that have made good.
Write for this Catalogue—it will certainly help you to choose the right seeds for bumper crops next year.
Then, if your dealer cannot supply you with the Ewing's Seeds you want,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

WM. EWING & CO.,
Seedsmen
McGILL ST.,
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With a "GOES LIKE SIXTY" Pumping Outfit.

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



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

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

GILSON MANUFACTURING CO.,
301 York St., Guelph, Ont.

PRESIDENT SUSPENDER
NONE SO EASY

DE LAVAL CREAM SEPARATORS

No Excuse for any Cow Owner Being Without One

There is no reason why any cow owner who sells cream or makes butter should be without a cream separator, and there is no excuse why he should not have the best separator.

Any creameryman or experienced dairyman will tell you that a good cream separator will give you a great deal more and a great deal better butter than you can make with any gravity setting system, and equally, of course, more and better cream, if you are selling cream.



The DE LAVAL is acknowledged by creamerymen and the best posted dairymen the world over to be the "World's Standard," and the one and only separator that always accomplishes the best results possible, and always gives satisfaction.

You cannot make the excuse that you can't afford to buy a De Laval, because it will not only save its cost over any gravity setting in six months and any other separator in a year, but is sold either for cash or on such liberal terms that it will actually pay for itself.

A little investigation will prove to you that the truth of the matter is that you really can't afford to make cream or butter without the use of a DE LAVAL cream separator.

The nearest De Laval local agent will be glad to demonstrate this to your own satisfaction, or you may write to us direct.

De Laval Dairy Supply Co., Ltd.
Montreal Peterboro Winnipeg Vancouver



Work for Your Neighbors Too

Deeper plowing, better preparation of the seed-bed, more discing and harrowing all bring better crops. Keeping horses to do this extra work take away the profits. The profitable way is with a



15-30 h.p.

With an OilPull you can do your own work quickly—when it should be done. After you've finished you can make the tractor pay for itself by working for your neighbors.

You can be sure they'll still have work to do after you are through. Remember an OilPull will do all kinds of work—plow, bale, thresh, shred, cut ensilage, build roads, etc. The investment is small—the return large.

If you can't afford one yourself—join with your neighbors and get one. It will do better work for all of you—it will pay for itself in short order.

You can't go wrong, if you buy an OilPull. It's less expensive to buy because it lasts longer—it's cheaper to run because it burns cheap kerosene. It is oil cooled and works equally well winter or summer. Has two speeds and is well adapted to rolling country. The 15-30 h.p. size is right for most work—there is a larger size for the heavy work.

Data-Book No. 353 tells all about the OilPull.



RUMELY PRODUCTS CO.
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BROWN'S

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We take the time and pains to build them right. There are many good features in the BELL never found in other makes. Information in our (free) catalogue No. 40. Send for it.

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Should always find the successful husbandman with a surplus on hand. Make use of a portion of this by investing in a short term Life or Endowment Policy. Make your future independence certain.

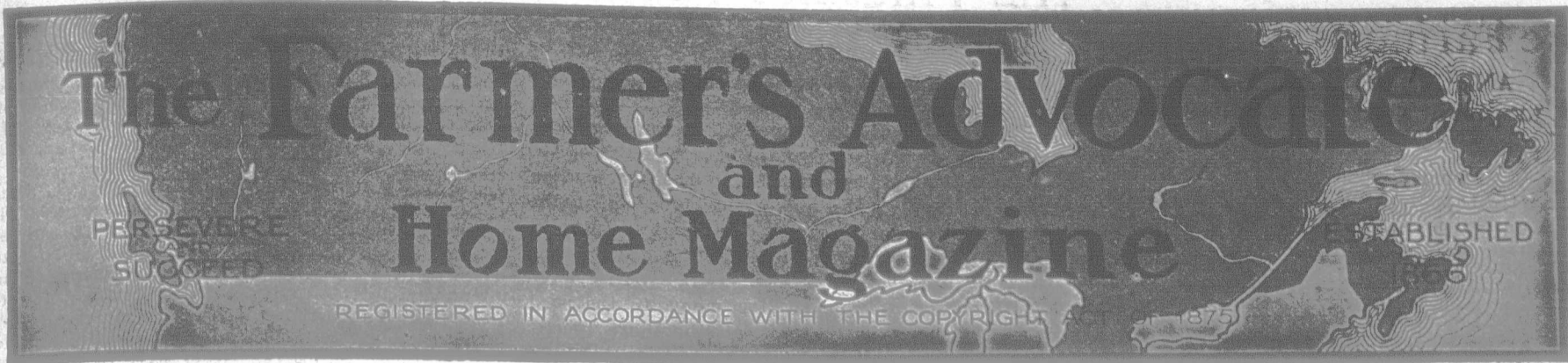
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Choice Seed Barley O. A. C. No. 21, at 85c per bush. 10 bush. or over, 80c; bags 25c extra.
R. B. BROCK, Jarvis, Ont.



Vol. XLVIII.

LONDON, ONTARIO, MARCH 13, 1913.

No. 1068

EDITORIAL.

Obstacles fade before purpose.

What gilt or lacery of art can match the glory of the rising sun, radiating its golden glow upon the delicate hoar frost of the forest trees?

An improvement in yield is the general experience of our cheese factories last season, as disclosed by the annual statements now being presented.

The current theory that pellagra—that Southern disease of human beings which prevails in thirty states of the Union and affects some fifty thousand cases—is the result of eating damaged or inferior corn, seems to have been discredited by some of the best trained investigators, who now think they have almost proven that it is an insect-borne disease and that probably corn does not enter into the problem at all. The insect has not been discovered.

Appeals come almost every week from readers who wish assistance in preparing debates. We never comply. In the first place we are too busy. A second and quite sufficient reason is that it is unfair for a debater to secure such outside assistance, and not in his or her own best interests. If you are down to prepare a debate, prepare it. Do your best, work the case up yourself, and derive what benefit you can thereby. Not winning, but practice is the important thing. No more such requests, please.

Many thousands of cows are freshening now each month. If you have not already commenced to keep milk records, this is a good time to begin. Write J. A. Ruddick, Dairy and Cold Storage Commissioner, Ottawa, asking him to send you blank forms for keeping individual milk records; buy a circular-dial spring balance for \$3.50 to \$5.00, nail up a board where you strain your milk and tack the blank forms to this from week to week. Keep a pencil handy; weigh each milking from every cow, and at the end of the week total each cow's seven days' production, entering it in a book at the house kept for the purpose. Continue this from year to year and it will prove the most profitable step ever taken in the handling of your herd. It will lead to so much else.

In ministry as in teaching best results are likely to be attained—other things, of course, being equal—by those in closest everyday touch with the community they serve. In a rural district lately we were told of a minister said to be quite as much at home in a stable as in the pulpit, and one of the best horse judges in the neighborhood. Should that not help him to exert a more effective spiritual influence among his congregation, enriching also his sermon with telling illustrations from every-day life? We have no sympathy with the idea that rural ministers should aim primarily to promote better farming; but one would think their religious ministrations ought to be improved by knowledge of and sympathy with agriculture. If this knowledge and sympathy help to uplift the industry in which the people are engaged, that will be a further but secondary gain.

Let the Feeder Decide.

From the Atlantic to the Pacific and from the borders of turbulent Mexico to the homesteader's shack on the fringe of cultivation, in the woods or on the plains of Northern Canada—everywhere in America where good beef forms a staple portion of the daily diet and where beef production is possible, or has been in the past successfully carried on, the cry goes forth—"There is an alarming scarcity of beef." A shortage of a commodity has the one redeeming feature of high prices to those who are fortunate enough to have that commodity to market, but high prices are only a detriment to the man who has nothing to sell.

This question has been discussed all over Canada and the United States, and the agitation reached such a pitch that, as recently announced through these columns, the National Live Stock Exchange of Kansas City, sought to have legislation enacted in the States of the Union prohibiting the slaughter of female calves regardless of breed, quality or conformation, and giving them a minimum lease of life of three years. A draft of the bill was submitted to the various local live stock exchanges throughout the United States, and the Chicago Exchange promptly placed their mark of disapproval on the proposed scheme, which as a well known American contemporary recently stated consigned it to oblivion.

Oblivion seems to be the only safe place for such an act. From the viewpoint of a theorist the proposal seemed to be ideal, but the producers of beef rose up in arms against it, and the proposed cure for all the ills, in place of being a soothing narcotic proved to be an exciting stimulant, not to beef production, but to producers' unrest.

To get a larger supply of beef cattle more females are necessary so it would seem that the object of the scheme is to be commended. But compulsory legislation to force farmers to keep all sorts of female calves to an age of three years could never be countenanced by thinking producers. The loss to the breeders by having to develop a large number of inferior cattle would be enormous. Thousands of female cattle are born every year that could not be economically raised to three years of age because of their inferior breeding, or conformation. Such a measure would in a very few years lower the standard of the country's cattle more than could be regained in several decades of scientific and practical breeding management of the highest order. The breeder being compelled to keep the heifer until three years of age in an endeavor to get pay for her feed and care, would be induced to breed her at an early age, and thus her own usefulness would be injured, and in the case of an inferior individual, the tendency of the offspring, owing to the well-known laws of inheritance would be to resemble the dam, and if the calf proved to be a female it is readily seen how the propagation of an inferior grade of cattle generation after generation would soon result in a race of "scrubs." Such could not be tolerated after all these years of more or less systematic work in the improvement of the cattle of the country. It would undo much of the work of the originators of the breeds, and would render the grade and cross-bred cattle almost valueless in a comparatively short time.

Again, agricultural colleges, the agricultural press, and thousands of prac-

tical feeders have during the past few years been encouraging the marketing of baby beef, not veal, but young beef. It is a good rule to follow in beef production to mature the animal for the market at as early an age as possible. Thousands of two-year-olds are sold annually at greater profit than could possibly have been made had they been kept until three years of age. This act would have compelled the feeder to keep his feeding heifers until three years of age and often at a loss to himself. If a government passed such an act it would be only fair that they provide to reimburse the breeders for all losses sustained by them as a result of such legislation. This would be impracticable, therefore such an act would be impracticable.

There is still another angle from which such a measure does not appear as a bright light to guide the beef-cattle industry to unqualified success. Would it increase production? If it did, to the extent which its sponsors hoped, it would inevitably lower prices, but this is not the point. What would be the result? Simply this. Cattle breeders are for the most part thinking men. Crops even in a country so favored as Canada or the United States are not always bumper, nor even average yields, therefore the hard-headed breeder, always careful in his movements, would not go into cattle breeding extensively. He would curtail production. He would sell off a number of his females now over the three-year age limit because being compelled to face a three-year uncertainty with every calf he dare not take the risk of extensive breeding.

Beef breeders are not the only cattlemen to be affected by such legislation. Dairymen would also have a grievance. The man who is producing milk for city or town use, or for cheesemaking, but particularly the former would be compelled to feed a large number of calves and thus city milk supplies would be curtailed. Labor is scarce and the dairyman would also require more hired help to care for his increase of stock. Calves, yearlings and two-year-olds would soon form a large portion of the herd, even where the original number of cows were kept, and as the young stock would be unproductive expenses would likely outweigh income and the result would mean disaster to the business. Cattle feeders would not care to feed calves from the dairy breeds and the owner would not be able to dispose of his overplus stock. The only good the act might do would be to turn more men following mixed farming towards the dual-purpose cow.

While this or other legislation has not been proposed in Canada it is well to have it discussed. What is good or bad for cattle feeders in the United States is more or less good or bad for Canadian feeders. Calf slaughter has increased at a very rapid rate in both countries during recent years, but compelling breeders to keep all females to a certain age is not the best remedy. Take the profit out of the business and the business will soon succumb. The cure is simple and yet it is difficult. Feeders are wide-awake men and just so soon as prices warrant the keeping of beef calves until matured to be sold for beef just so soon will calf slaughter diminish and matured beef increase on our markets. It is largely a question of profit. As long as economic conditions favor the production of milk, butter, cheese and as a consequence veal and pork in preference to matured beef so long will beef be scarce. Beef prices are now higher than a few years ago.

The Farmer's Advocate
AND HOME MAGAZINE.
THE LEADING AGRICULTURAL JOURNAL
IN THE DOMINION.

PUBLISHED WEEKLY BY
THE WILLIAM WELD COMPANY (LIMITED).

JOHN WELD, MANAGER.

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

1. THE FARMER'S ADVOCATE AND HOME MAGAZINE is published every Thursday. It is impartial and independent of all cliques and parties, handsomely illustrated with original engravings, and furnishes the most practical, reliable and profitable information for farmers, dairymen, gardeners, stockmen and home-makers, of any publication in Canada.
2. TERMS OF SUBSCRIPTION.—In Canada, England, Ireland, Scotland, Newfoundland and New Zealand, \$1.50 per year, in advance; \$2.00 per year when not paid in advance. United States, \$2.50 per year; all other countries 12s.; in advance.
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LONDON, CANADA.

The agitation of the scarcity of beef has resulted largely because of the advancing prices. More people are talking beef production than there were a short time ago when so many were drawn into the current of milk producers. This in time is bound to have an effect. Legislation is not the remedy for the beef shortage, but more economic production due to better farming methods and the keeping of a higher class of cattle, together with a higher market price to make the business yield a greater net profit is the sure cure. Let the farmer kill or raise his calves as his own good judgment warrants. Educate him to better methods by which cost of production may be lowered and leave the matter in his own hands.

Dual-Purpose Shorthorns.

"I hope the plan recently adopted by our Association providing for the official testing of Shorthorn cows and heifers and the publication of the milk and butterfat records of those exceeding the stipulated minimum for each respective age in an appendix of the herd book will not lead to a cleavage in the breeders of Shorthorn cattle, one group going in for dairying and the other for beef." Thus, in substance, spoke Harry Smith, President of the Dominion Shorthorn Breeders' Association, to a member of the "Farmers Advocate" staff last month. "What we want to do," he added "is to develop Shorthorns as a dual-purpose breed. I also hope we won't have a new fad worked up for English Shorthorns. I have heard the phrase, Scotch Shorthorns, till I am sick of it. It is Shorthorns we want to breed—not English Shorthorns nor Scotch but good cattle. There is need for judgment in mating and selection."

While scarcely sharing Mr. Smith's fear of a troublesome cleavage in the ranks of Shorthorn breeders we heartily commend the caution he throws out. Shorthorns are an immensely numerous breed and comprise many strains as they probably always will. Some breeders will emphasize beefing tendencies more strongly than others, while some will place relatively

more importance upon milking function, just as they did in the days of Booth and Bates. This is possible without the necessity for any sharp differentiation of blood lines. But the great common aim should be to retain in large measure the adaptability of the breed for beef production while developing the milk-giving function at the same time, thus improving the females as breeders and guaranteeing their ability to at least raise their own calves. Mr. Smith's own county of Huron bears eloquent testimony to the need for such effort on the part of Shorthorn breeders. Notwithstanding that the farmers of South Huron have been strongly in favor of the dual-purpose cow, which fits in admirably with their system of farming, they have of late been gradually adding one or more Holstein or Jersey heifers because they could not keep up the milking quality of their grade Shorthorn herds with the class of beef-bred Shorthorns available, these being mostly raised on dams never hand-milked or in some cases on foster mothers. That class of Shorthorn is not the kind Canadian farmers want. Neither would it be constructive breeding to evolve a race of red, white and roan Holsteins. That field is already occupied by the special-purpose dairy breeds, which will not be ousted from it. We hope no Shorthorn breeder will ever undertake to breed "rakes" for milk. Even the special-purpose dairy breeders have been warned against sacrificing everything on the altar of milk records. Constitution and type must also be regarded. Not less but more important will it be to consider these things in breeding Shorthorns. Mr. Smith's ideal is right. There is real need in this country for dual-purpose Shorthorns and this without displacing the recognized dairy breeds, which also have a large place to fill. There is room and demand for all. What suits one locality will not best suit another, and the same is true of individual cases within those localities.

Back to the Land.

Mr. Kettle, junior partner,
In the firm of Scott & Scott,
Having made a little money
Purchased a suburban lot,
Very nicely situated,
Half an acre—rather more,
Trolley car in twenty minutes
Took him right into his store.

"Now, my dear" said Mr. Kettle
To his young, admiring wife,
"We can leave the noisy city
And begin the Simple Life.
We shall grow our own potatoes,
Keep some chickens, perhaps a cow,
That is, if you'd like to milk her—
Don't ask me—I don't know how!"

So next day they sought the office
Of a careful architect,
Gave him very full instructions
As to what they would expect:
Country house with south-east aspect,
Modern plumbing, bedrooms four,
Hardwood finish, concrete cellar,
Little greenhouse—and much more.

We omit the painful details
Of the wearisome delays,
Caused by strikes of builder's workmen,
Wasted days, and days, and days.
In the meantime, Mr. Kettle,
Soaked his mind in literature,
How to make a kitchen garden,
And the value of manure,

Got some books on chicken raising,
And the care of an estate,
Even sent a year's subscription
To the "Farmers Advocate."
Said he knew a cow and chickens
Would reduce at least one-half
The outrageous cost of living.
Read up how to raise a calf.

Thus, one evening, at supper,
Talking of his country home,
(Nearly finished)—took a helping
Of new honey in the comb.
"That" he said "is most nutritious,
And the first we've had this year,
I was always fond of honey,
How much does it cost, my dear?"

"Well" she said, "that little section
Costs exactly twenty cents."
Mr. Kettle smiled serenely,
"That's one item of expense
We may save when in the country,
I must write the O. A. C.
For the latest information,
Happy thought—we'll keep a bee!"

WILLIAM Q. PHILLIPS

Beholden for the Baby's Milk.

Moralizing on the expected change in the army of office-holders consequent upon the election of a new administration in the United States, "The Khan" in his column of the Toronto Star, offers some wise suggestions for the consideration of ambitious youth. Any Canadian election would afford an equally good test. The eagerness with which so many thousands snatch at the sour grapes of government office is pitiable to those who realize by observation how blighting to ambition and initiative it generally proves, how dependent it makes those who rely upon regular salary, spending it often before it is earned, and how it unfits men for aggressive creative work. Perhaps the saddest feature of the spoils system is its effect upon the spoilsmen. Go to Washington or Ottawa, visit among the homes of the civil servants, converse with them, get their point of view, enquire confidentially of the merchants and tradesmen with whom they deal, then draw your own conclusions and agree that the Khan is right.

We quote in part: "When one realizes that there are millions and millions of rich wheat, fruit, and grass lands still unclaimed on this great continent, one wonders why an intelligent youth would prefer an office to a farm. Thrones and administrations may crumble and fall in hideous ruin, but the farm stays on."

"The title 'independent farmer' is no misnomer. He is his own master. The man who holds office, whether it be a country post office at an obscure cross-roads or a seat in the Cabinet, is not his own master. He who is not his own master is more or less of a slave. The farmer is the only man who is free. His farm may be rocky and thin, but if he have any brains at all he can make a good living. One thing is sure; he always has an abundance of good milk for the baby. If he is any manager at all, he can set aside a healthy and wholesome young cow to cater to the baby. How many young men and women in vast and crowded centres would consider this the greatest luxury of life! They can have their autos and their player-pianos and their first nights at the opera and the play-houses, but they haven't got a cow behind the garage that caters to the baby. Baby's milk may come a hundred—three hundred miles; the farmer gets it right at home, and gets the pure quill, the real thing, undiluted, sweet and warm—and all of it she wants. The clever ladies who write about the nursery and the home tell us that a baby that gets all the fresh, sweet, pure milk she can surround won't die—she can't die! "But some of these fellows in offices have not only one master; they have a dozen or more. And there is always someone looking for their job. And they are likely to get into trouble. They are charged with offensive partisanship. Can you blame them? Their bread and butter and the baby's pint bottle of milk depend on the "administration" remaining in power. Self-preservation is the first law of nature. No wonder some of these poor fellows work frantically to maintain the Government."

Grip the Real Bull by the Horns.

Editor "The Farmer's Advocate":
With your permission I desire to add a few words in commendation of the article in your issue of February 27th, entitled "Mr. Farmer, Get Busy." It must be apparent to everyone that if farming, as an industry, is not keeping up the food supplies of the nation fast enough, it is not for want of advice handed out in resolution and speech by nearly every other organized industry in the country. I am of opinion, however, if some of these strong and worthy bodies, like the Associated Boards of Trade of Ontario, would lend a hand in bringing about reforms set forth in "The Farmer's Advocate," it would be much more to the point than telling us to convert skinny, dairy dekin calves into choice beeves, which simply cannot be done at a profit. The position taken in your columns is absolutely sound in regard to the part shared by the school system, and various conditions tending to rural depopulation, and consequently non-tillage of the land. If the cost of living is high it is not because we as farmers are not busy, but too few, and because of the cost of the distribution of food products. Your editorial might well have gone a step further and touched on the question of transport. If the Board of Trade men want to get the real bull by the horns, let them tackle the transportation (freight and express) problem, and give the "veal calf" a rest. As a member of the government that has to do with the control of the giant corporation of transport and finance, Hon. Martin Burrell, the Minister of Agriculture, will appreciate the most vigorous backing that can be given him by those engaged in trade and commerce. He is too astute not to discern the causes at work driving population cityward. When public revenues are buoyant it is comparatively easy to dispense a million a year in a useful agricultural instruction

propaganda, but it is not a light undertaking to enforce conditions that will ensure the real fruits going to the masses of producers and consumers. We have mortgaged our country to equip it with systems of transport for public service, then let a rightful share of the proceeds of that service go where it belongs. ALPHA.

A Rural School Fair Association.

Waterloo County has a new organization. The Rural School Fair idea seems to have taken hold, and the schools in North Dumfries Township, which have been holding such a Fair for the last few years, have organized a Rural School Fair Association. The pupils in each of the last few years, have organized a Rural directors, one from each school, and these directors met in the local office of the Department of Agriculture on Saturday, March 1st, and completed the organization with the following officers. The president is Frank McPhail, River Road School, and the Secretary, Scott Turnbull, R. R. No. 3, Galt.

In the formation of this organization, everything was carried on in a business-like way. Nominations were moved and seconded, nominations closed by motion, voting by ballots, and speeches by the directors elected, as in any properly conducted business meeting.

Heretofore the Fair has been carried on by the Department of Agriculture, but in thus placing it in the hands of the pupils themselves, the Fair will not only become more substantial and progressive because the pupils will be more vitally interested, but it will also afford an education in business methods and in conducting an association of this kind. At the first meeting many important suggestions were offered for improving the Fair, and plans made for increasing its success. The association has already started a poultry breeding station, originated with Professor Graham's famous laying strain of Plymouth Rocks, obtained for the pupils last year, and eggs will be obtained from this source to continue the poultry work of the Association.

Work of this kind is bound to be of large educational value to the boys and girls in our rural schools.

Nature's Diary.

By A. B. Klugh, M. A.

An unusual migration is taking place in Ontario. The Canada Jay, a bird which is, as a rule, resident in the northern parts of Muskoka and northwards, has appeared in Eastern Ontario. Mr. Beaupre, of Kingston, has informed me that in January he saw several Canada Jays within forty miles of this city. This is very interesting news, as we have records of but two such migrations in Ontario, and I should be glad to hear from readers of the "Advocate" if they have seen any of these birds in any parts of central or southern Ontario.

The Canada Jay is about the same size as the well-known Blue Jay, but has no crest, and differs greatly in coloration. It is dull leaden-gray above, and dull yellowish-white beneath. The forehead is yellowish-white, the hind part of the head and neck is blackish, the wings have one whitish bar, and the tail feathers are narrowly tipped with white. The sexes are similar in coloration.

It is a very familiar bird in the northern woods, and is usually termed "Whiskey Jack" and "Meat Bird," the former being a corruption of the Indian name, "Wis-Ka-Tjan," which pronounced in English sounds like "Whiskey John," while the latter name is derived from its fondness for eating meat, about camp and pecking holes in deer carcasses hung up by hunters.

This species is a very early breeder, as it lays its eggs early in March and often has young hatched out when the temperature is below zero. The nest is bulky and cup-shaped, built of twigs, bark-strips, moss and grass and warmly lined, as it certainly needs to be, with feathers. It is usually placed in a spruce tree. The eggs are from four to five in number, grayish-white, marked with yellowish-brown.

The Canada Jay has a very soft flight, more like that of a great moth or an owl than a jay.

Year after year the Canada Jay remains, summer and winter, in the northern woods, only on very rare occasions migrating southwards. One such migration occurred in the winter of 1839-40, and was recorded by one of our early naturalists, the late Hon. G. W. Allen. This migration extended as far south as Toronto. Then for sixty-five years the Canada Jay kept within its usual limits, and not until 1904 did another migration occur.

In October of that year a general migration into the southern portion of Ontario occurred. They were first reported from Madoc, Hastings County, by the Rev. C. J. Young on October 7th. The next reports came from Toronto, where they were seen on October 15th. I saw them at Puslinch Lake, near Guelph, on October the 31st, and again on November 16, and my friend,

E. J. Colgate, saw them near Guelph on November 3rd, 12th and 17th. In October, November and December they were reported from Penetanguishene, Millbrook, Galt, Kingston, Wellington (Prince Edward County) and Belleville, and these records show how widely spread was the migration.

We saw nothing of the Canada Jays returning north after the migration, and the probability is that none lived to return. It is an unfortunate fact that many people seem to think that any strange bird or mammal seen must be shot, and, then having shot it, they are no wiser about it than before. It is often merely turned over a few times and then left where it fell, or it may possibly be taken home and shown to friends who know as little about it as the shooter. The very least that should be done in the event of shooting a strange bird or beast is to send it to someone who can identify it and, if it is in good enough condition, preserve it. The writer will be glad at any time to identify such specimens, and so will my friend, P. A. Taverner, of the Victoria Museum, Ottawa. Mr. Taverner has just made an appeal for material for a great National Museum at Ottawa and has written a very

prehended, would be found not worth the trouble of discovery."

On glancing back on the page from which I have copied this conclusion, I find a sentence which fully answers Mr. Way's suggestion, that science needs restatement and readjustment:

"It has ever been the task of one race of philosophers to demolish the works of their predecessors, and elevate more splendid phantasies in their stead, which in turn are demolished and replaced by the air-castles of a succeeding generation."

Referring to the way in which we see a fire at night, he asks, "Since the space is, for the most part, dark between the fire or source of light and the eye of the spectator, how does he see the fire—in other words, how do the rays of light from the fire make a distinct and vivid impression through the intervening darkness?"

Mr. Way was not the first to notice the power of light to make itself visible in the darkness. Shakespeare says:

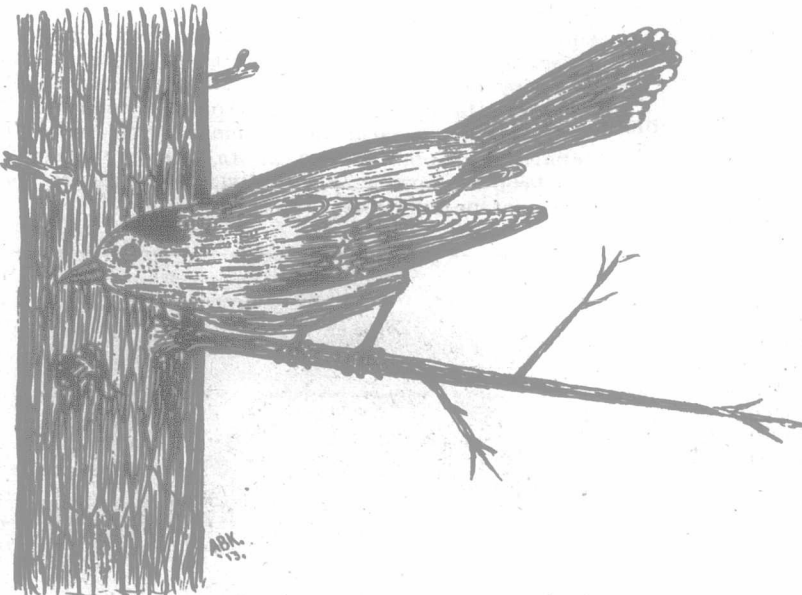
"How far that little candle throws his beams!
So shines a good deed in a naughty world."

Since this question has been propounded I have laid it before several persons, and they seemed disgusted that anyone could ask anything so simple.

"Why, the fire is there and stands out in the darkness and we see it, and that is all there is to it." Of course that does not explain anything, but it reveals the commonest mistake in all the world. We all jump to the conclusion that because we are familiar with a thing we know about it. As a matter of fact one thing is just as mysterious and unintelligible as another. Light and its transmission is as mysterious as wireless telegraphy, but because we are familiar with light we never think about it, while wireless telegraphy seems incomprehensible because it is new and unfamiliar. In speaking of miracles Carlyle says some-

where that to be able to move one's hand is as miraculous as anything else in the world. It involves a nicety of balance between air pressure, gravity and the strength of the muscles, that is nothing short of a miracle. It is the same with everything else in nature. Mr. Way has simply selected one fact that attracted his attention just as the falling of the apple attracted the attention of Newton, and started the train of thought that resulted in his discovery of the law of gravity. Newton also grappled with the question of the transmission of light, and tried to explain it by what is called the crepuscular theory. He held that the flame gives off small particles which reach the eye, and make us see it. His theory, however, has given place to Clerk-Maxwell's theory of light waves, and I think that this is now the accepted explanation. As Irving remarks ironically, it is a peculiar fact that the latest authority is also the best. Not being a professional physicist I cannot undertake to explain Clerk-Maxwell's theory with certainty, but I remember that some years ago when discussing another question with a noted physicist I happened to give my understanding of the wave-theory of light, and he said that it was a fairly accurate statement in ordinary language of Clerk-Maxwell's theory. With this endorsement I shall venture to give it here. If it is wrong you must blame the polite professors.

Scientists assume that all space—the space between molecules as well as the space between the stars—is filled with a substance called ether. They compare it to "an palpable, and all pervading jelly through which light and heat waves are constantly throbbing." A fire, such as Mr. Way described, is supposed to start waves in this ether that pass out from it in all directions in the form of "an ever increasing sphere." (The phrase quoted is the one which the scientist said gave expression to Clerk-Maxwell's theory, and I give it for what it is worth.) When this wave in the imagined ether strikes the eye, we see the source from which it started or the object by which it has been deflected to us. When the waves that reach us are attenuated by travelling a great distance, we see only their source in the flame. For this reason we seem to be seeing the flame through the darkness. The light of the flame is not strong enough to throw all objects into relief as does the light of the sun. But all this does not explain the mystery of light waves acting on the eye and brain, and enabling us to see all. Now this may not seem very intelligible, but perhaps that is just as well. As Zangwill



Canada Jay.

clear and concise little book telling how to prepare specimens of all kinds. He will be glad to send it free of charge to anyone asking for it.

I heartily second Mr. Taverner's appeal. We certainly need a large museum to which our people can go and study our native forms of animal life, as at present we find more specimens of our Canadian forms in the museums of Europe and the United States than in any museum of our own. If we are to have such a great National museum, we must take as our motto: "Do it now," and make a good beginning. And enough good material goes to waste every year in Canada to make such a beginning.

Science and Stones.

By Peter McArthur.

The questions asked by Mr. Way in "The Farmer's Advocate" of February 20th and passed on to me by the editor, are of a kind that I usually avoid. If a writer is to make any pretence of being even decently informed he must be allowed to choose his own subjects, and one of Mr. Way's questions goes so completely to the root of things, that all I can do is to show my ignorance of the principles involved. At the same time I may be able to show that the great and learned are also somewhat ignorant, and that may furnish some amusement. Let us deal with his questions in the order in which they are given. He begins by asking, "Do not some of the positions, even of science, need readjustment, restatement or elucidation?"

I find that this question has been answered fully by Washington Irving in his humorous history of New York. After reviewing the many theories of creation and the universe generally, that have been offered to the world by the sages and scientists of different ages, and showing how they contradict one another, he sums up the whole matter in this fashion:

"Thus it would seem that knowledge and genius, of which we make such great parade, consist but in detecting the errors and absurdities of those who have gone before, and devising new errors and absurdities, to be detected by those who are to come after us. Theories are the mighty soap-bubbles with which the grown-up children of science amuse themselves, while the honest vulgar stand gazing in stupid admiration, and dignify these learned vagaries with the name of wisdom! Surely Socrates was right in his opinion, that philosophers are but a sober sort of madmen, busying themselves in things totally incomprehensible, or which, if they could be com-

once remarked "To be intelligible is to be found out."

Many people will, perhaps, agree with Socrates that speculative science of this kind is valueless, but to do so would be to make a grave mistake. The whole fabric of applied science is based on theories, such as Clerk-Maxwell's theory of light. They may be no more than splendid guesses, but if they satisfy all the important aspects of the case under investigation they make possible many practical things. Take the case of electricity. Most of us are familiar with its use in light, and know enough to turn off the electric light instead of bursting a lung trying to blow it out, but that is about all we know. I remember hearing a story about Lord Kelvin, the greatest of electrical experts. He was being shown through an electrical plant by a foreman who did not know who his visitor was. The foreman amused the party with Lord Kelvin by explaining the uses of all the machines to the scientist, who listened respectfully. Finally, when they were at the end of their tour of inspection, Lord Kelvin turned to the foreman and asked: "What is electricity?"

"Ah," said the foreman, "None of us know that."

"Quite right," said the scientist, "None of us know that."

Considering how cocksure a great many people are about what they think they know, it is amusing to recall a few anecdotes about the humility of the greatest scientists. On one occasion Huxley went to a place in the country to see some bones of prehistoric animals that had been unearthed. There was quite a gathering of scientists, and among others there was a young curate who protested against the proceedings. He said that the bones were those of dragons that had been hurled from heaven at the time of the fall, and he thought it was sacrilege to be disturbing them and talking about them.

"I suppose you gave him a great dressing down," said the friend to whom Huxley was telling the story.

"No," said the great man. "I didn't say a word. The curate was the only man among us who felt absolutely sure of what he was talking about."

A few years ago when the talk about food values began, McClure's Magazine asked the most eminent biological chemist in the United States to write an article about the chemistry of digestion. He began his article by saying that he understood that the whole subject of the chemistry was taught in the primary schools, but, as he had never attended a primary school, he did not know anything about it.

I do not want to leave the impression that because the great scientists, who deal with essential principles and working hypotheses, are so ready to confess their ignorance that the scientific work of the world is of little importance. It is the most important factor in modern progress, but there is a vast difference between speculative science such as had to be considered in dealing with Mr. Way's question, and the practical science with which we have to deal in everyday life. The correctness of Darwin's theory of evolution is still debatable, but what has been learned from it in the way of selection and heredity has been of incalculable value to stock-breeders, grain-growers and producers of all the fruits of the earth. He gave the world a working hypothesis of incalculable value. Lord Kelvin might confess his ignorance of electricity, but his discoveries made it possible for Edison and others to apply electrical energy in many valuable ways. The theories of Clerk-Maxwell and his fellow investigators, though based on the properties of a luminiferous ether whose existence cannot be proven are the foundation of much that is useful in our applied science. But none of these pioneers of science, with their splendid guesses, had any of the cocksureness of some of their insufficiently informed followers. "A little learning is a dangerous thing," said Pope, and Shakespeare said of "man, proud man" that he is "most ignorant of what he's most assured." So-called exact science has accomplished much, but it has not given the absolute explanation of anything. Its facts are simply points where investigation has ceased. Study facts a little, and they soon break up and finally disappear in a mist of technical phrases.

As for the January thaws, the editor has answered that question. Nevertheless, as usual, I am reminded of a story. When attending the Collegiate Institute we had to take up the question of winds—and I think thaws are said to be due to changes in the wind that bring warm waves. Our science master gave us an elaborate explanation of the action of the winds, the causes of changes and all that. When he got through one

of the pupils put up his hand for permission to ask a question.

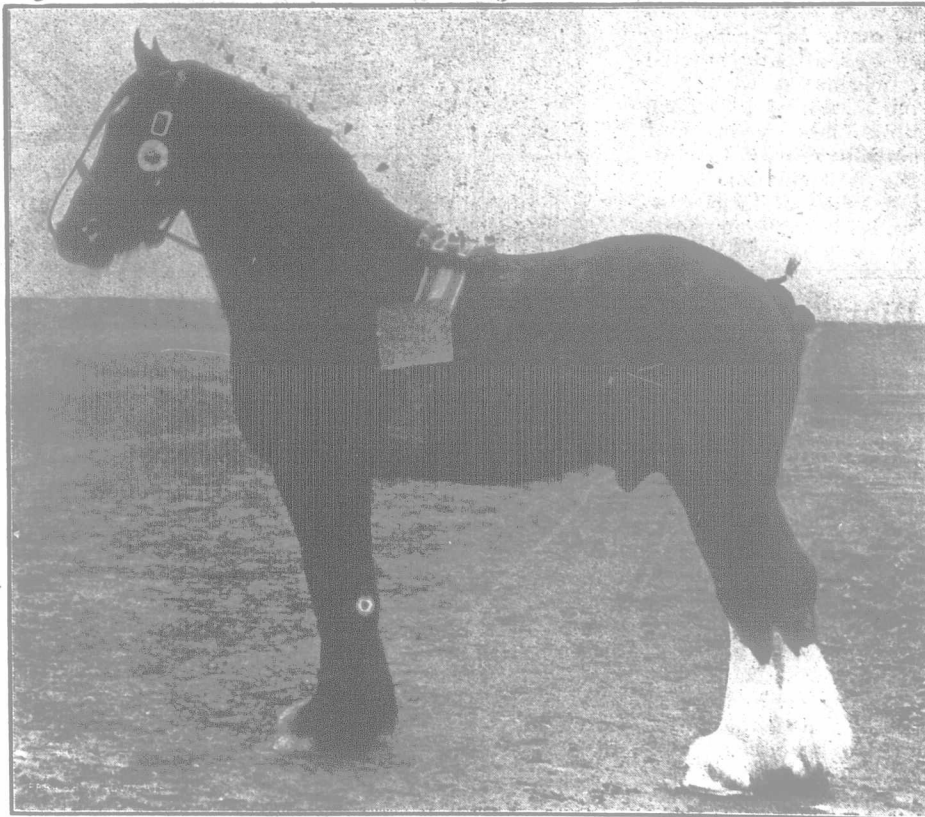
"Well," said the teacher.
"If you please, sir," said the boy respectfully, "Isn't it written in the Bible that: 'The wind bloweth where it listeth, and thou hearest the sound thereof, but canst not tell whence it cometh and whither it goeth.'"

And right there the class was dismissed.

HORSES.

Care of the Mare and Early Foal.

The early foal will soon be arriving, and experience has shown that while it may not be very difficult to save a good, strong, healthy colt, even though the mare is still on dry feed and the colt is foaled in a stall, such usually requires more care and attention. In the first place, the mare is not in as good condition to properly nourish the foal, nor is the place provided for her so suitable for foaling as would be a nice fresh, green grass plot. All are agreed that of all feeds, dry or green, coarse or concentrated, prepared or raw, nothing is equal to nature's best cure—pasture grass. It is the mare's best tonic, is her best laxative, and the very best feed to stimulate milk production and supply a goodly quantity of this fluid in the best strength to suit the delicate digestive system of the young foal. Then, again, pasturing the mare gives her an unparalleled opportunity to take ample exercise and keep her organs physically fit to undergo the strain of parturition.



Silver Wood.

Clydesdale stallion, winner of the Glasgow Premium, aged class, in February last. Owned by John Pollock, Paper-mill Farm, Langside, Glasgow.

CARING FOR THE MARE.

With the early foal, grass for the dam is impossible, so feeding and exercise must be regulated to as nearly as possible approximate natural grass conditions. Unless precautions are taken in this direction, there is a great danger that the foal may be weakly, and also more danger of difficult parturition. Good care does not mean pampering, but it does signify an abundance of exercise and careful feeding on suitable feed. A pregnant mare should be well fed. She must nourish herself and her developing foetus. As time for foaling approaches, greater care should be exercised. Less exercise is necessary during the last few weeks, as the mare becomes clumsy, but many of the most successful breeding mares do light work up to foaling time.

To take the place of grass, add some bran to the ration. The feed of the horse is rather limited in variety at best. Hay and oats form the ration of the bulk of the horses in this country. If good clover or mixed hay is available, feed on this, and also give a few roots. A small feed of carrots or a fair-sized swede turnip once daily is enough. These precautions taken, all that can then be done is to prepare a suitable place for the mare before, at and after foaling, keeping in mind that the colt must have cleanliness.

A roomy box-stall is the best substitute for the pasture field, and good, bright, clean straw is the best substitute for pasture grass as the first bed of the foal. The stall should be cleaned out

daily before the mare foals, a little lime scattered on the floor and fresh bedding supplied. This precaution may destroy many germs which lurk in the dust of straw or in the crevices of the floor, and which, provided they gain access to the foal, might cause trouble often of a most serious nature.

FOALING PRECAUTIONS.

An attendant should be on hand when the mare shows first symptoms of foaling. If everything is all right, labor is often of exceedingly short duration, but the person in charge should be on the alert, should know the appearance of a normal presentation, and what to do in case of the simpler forms of mal-presentation. Of course, the more complicated forms of the latter require the services of a competent obstetrician. It is taken for granted that the man in charge has at least a reasonable knowledge of the anatomy of the reproductive organs of the mare. If he has not, he is not a capable man to be left in charge of the mare. If there is difficulty in deliverance, prompt action is necessary, but promptness does not mean that the operator should rush pell-mell into the work. Proceed steadily. Ascertain the cause of the trouble; remedy it, and assist gently. Hasty action is dangerous, and is often attended with the loss of the foal. As soon as the colt is foaled, see that the umbilical cord is severed. Very often the afterbirth is expelled soon after the colt, and it is often attached to the foal by this cord. If the mare is strong and upon her feet, she will generally break this with her teeth. Sometimes it breaks as the foal struggles, but often it does not, and the mare is too weak to rise, and so it is necessary that something be done. If possible, it is better for the umbilical cord to be broken naturally, but the knife is sometimes necessary. Every attendant should have a clean, sharp knife, a piece of strong but soft sterile cord and a bottle of antiseptic. The latter may consist of 15 grams of corrosive sublimate to a pint of water, or may be a five per cent. carbolic acid solution. If the umbilical cord is not severed, the soft, disinfected string should be tied tightly around it, about an inch below the abdomen, and the cord severed by means of a scraping motion about an inch below the tie. Do not make a clean cut. Always sever by scraping off. Dress the cord immediately with the antiseptic, and repeat the dressing three or four times daily until it

dries up and is perfectly healed. This precaution should be taken with all colts, but is doubly necessary with the colt which is foaled in the stable, because there is a greater danger of the germ of the dread disease "joint ill" gaining access to the raw surface than when the colt is foaled on pasture and spends most of his time outside. Do not under any circumstances neglect to have the antiseptic ready, and be sure to apply it thoroughly three or four times daily during the time necessary.

As soon as the mare is on her feet, clean the stall out thoroughly, putting in dry bedding. Now assist the colt to nurse, and as soon as this is attended to, give the mare a warm mash, consisting of bran and chopped oats. Avoid all drafts in the stall.

EXPULSION OF THE MECONIUM.

Watch the colt carefully to see that he expels the meconium. If he is weak, some assistance may be necessary. It is always well to keep a close watch until evidence of the colostrum is noticed in his faeces. If the colt makes continued ineffectual efforts to defecate, something should be done. The common practice is to give purgatives, but this should not be done and is to be condemned. The meconium is the result of the action of the bowels during foetal life, in the form of more or less hard lumps which have passed into the bowels, filling the rectum. The anal sphincter muscle prevents their escape. Medicines given by the mouth have practically no

action is dan may b young and in in this foal b way n injecti soap, and w double inserti fully h which this h get a be res oil an consid remov sympt done, On nursin grate for so give l

action on these contents of the rectum. There is danger in giving purgatives, because diarrhea may be produced and is very weakening to the young colt. Oil the forefinger, trim the nail, and insert the finger into the rectum and remove in this way all lumps that can be reached. The foal by his expulsive efforts will help, and in this way much of the material may be removed. An injection will also aid. A little warm water and soap, or warm water and linseed oil or glycerine and warm water, is good. A stout piece of wire doubled may often be used to good advantage by inserting the blunt end into the rectum and carefully handling to loosen and draw away portions which the finger would not reach. If after all this has been done the milk has not been able to get a passage through the colt, a laxative may be resorted to. Give one or two ounces of castor oil and continue the injections frequently. Many consider that it is a good practice to assist to remove the meconium in all colts, whether or not symptoms of retention are manifest. If properly done, no harm can result.

Once the meconium is expelled and the colt is nursing regularly with his navel well cared for greatest danger is over. Good care is necessary for some weeks, but once well started most colts give little further trouble.

Record Price for a Shire.

Editor "The Farmer's Advocate":

All previous records for English Shire horses were eclipsed on February 14th, at the sale conducted by Messrs Sexton, Grimwade and Beck, for Lord Rothschild, at Tring Park, when an average of 2,070 dollars was realized for 32 head, with 21,525 dollars as the top price of the day.

Lord Rothschild has for many years past been an enthusiastic supporter of the Shire, the direct lineal descendant of the ancient war horse of Britain. Five years ago his lordship sold the greater part of his breeding stud at what was then the record average of 1,383 dollars each. Since then he has only kept stallions, some of which he lets to various Shire horse societies, while others travel districts nearer home for the benefit of tenant farmers. Each year Lord Rothschild searches out and purchases the best of the foals bred by those who use his horses, and brings them out at the shows, where in his name they have won the highest honors possible. Most of the 32 sold had been raised by tenant farmers, who, themselves, can have no cause for complaint that their animals sold so well, for Lord Rothschild is known to them all as a generous buyer. He always puts "the dust" down when needs be.

The company which assembled at this sale numbered close upon 800, and was thoroughly representative of the Shire horse industry. At the luncheon Lord Rothschild paid a well-deserved compliment to Richardson Carr, his agent, and to Tom Fowler, his stud groom, when he attributed his success as a Shire breeder to their unflinching judgment and painstaking.

The sensation of the sale was, of course, the payment of 21,525 dollars for the two-year-old stallion, Champion's Goalkeeper. This grand colt, which last year was first and reserve for championship at the Royal Show, and first at the Ashbourne Show, in the autumn, is a son of Childwick Champion. Put in at 5,250 dollars, the price quickly rose to 15,750 dollars at which point Sir Walpole Greenwell, of Marden Park, Surrey, and Mr. Gresson, one of the partners in the Edgcote Shorthorn Company, near Banbury, were left to fight it out. The last named bid 21,000 dollars, and Sir Walpole capped it with another 525 dollars, which secured for him one of the best, if not quite the best, horse ever offered by public auction. The previous record for a Shire stallion was 19,425 dollars, paid four years ago at the dispersal of Earl Egerton's stud at Tatton, for Tatton Dray King.

Other prices were good. Blackland's King-maker, the very massive three-year-old, which was junior champion in London last year, also caused keen competition, and finally fell to Sir Arthur Nicholson at 9,185 dollars. The highest priced filly was Halstead Duchess 7th, which went to J. G. Williams for 4,335 dollars. England. G. T. BURROWS.

Under most conditions it is advisable to choose, as a sire, the horse which has proved his worth. A horse which is getting along in age and has been a sure getter of high-class foals, is not so much of a gamble as the young unproven sire whose name is still to be made. Soundness is a great consideration. There is a chance that the young horse may show a blemish of some kind before he is as old as the older horse, and the tendency toward this blemish, while latent in him, may be hereditary and transmissible to his offspring.

Encourage Good Horseshoeing.

Editor "The Farmer's Advocate":

The day has come in Canada when something will have to be done to encourage good horseshoeing. As the old mud roads disappear and the gravel roads take their place, the need for having the road horse shod all the year round increases. The increase in the use of cement in the stables makes it necessary to keep the iron on the hoof for protection. If, however, the shoeing be poorly done, the horse is seriously handicapped in the race for the high price or for rendering his highest service.

The matter would not be so serious were all horses' feet normal to begin with. Instead, the majority of horses have feet that require human skill to help them out. Hence the need of the shoer who thoroughly understands his business.

Is it asking too much of the department to make this a matter of early consideration? The Farmer's Institutes might well be favored with a few lectures dealing specially with this very matter. The feeding, breeding and general care of the horses have been thoroughly and profitably dealt with. Why not give this vital point of the care of the horse some special attention?

Then, would it not be well to give the blacksmiths themselves a chance to perfect themselves in an art that lies so near the foundation of agricultural success, as the art of horseshoeing? Blacksmiths, like farmers, are willing to learn. Why should not the government give this craft the same kind of help that has been given the farmer in the Farmer's Institutes? We have licensed veterinaries. Why not have licensed horseshoers? All admit the force of the old adage, "No foot no horse." Why not make a move in the direction of better shoeing? York Co., Ont. J. D.

Mating Up the Team.

On the farms where a considerable number of horses are kept, and in fact on many of those on which only a comparatively few are in use, it is many times possible to mate up the teams very well according to size, conformation, color and temperament. Where this is the case it is always advisable to pair the horses off having the individuals composing the team as nearly alike as may be. A writer in "The Farmer and Stock-breeder" has this to say on the subject:—

"One thing which is too frequently neglected—partly perhaps on account of the prejudices which the men sometimes have themselves—is the proper selection of the teams—by which I mean putting the horses together to the best advantage. I think that in this particular they were no better in the brave days of old than we are now. Horses should be matched by their weight, their activity, and by that indescribable characteristic, their style. Nothing looks worse than to see a heavy horse and a light one working together, the light, quick horse tied back and fretting his heart out in order that his pace may be reduced to that of his heavier yokemate. But more than mere appearance is affected by such bad "pairing." There is waste of work, and where there are several badly paired teams this apparently trivial, because not very obvious waste, becomes quite a considerable item. So it is worth while to spend some time in putting the various teams together, and on a large place perhaps to change them about somewhat."

Classification of Horses at Shows.

At the annual convention of the Ontario Association of Fairs and Exhibitions a resolution was passed authorizing the superintendent to select a committee to arrange for the proper classification of horses at fairs and exhibitions.

The committee composed of Messrs Robt. Graham, H. G. Reed, John Gardhouse, C. F. Bailey and J. Lockie Wilson met on February 17th, and drew up the following regulations:—

HEAVY-DRAFT.—Heavy-draft horses should conform in type to the breed which they represent. A matured animal should weigh 1,500 pounds and upwards.

AGRICULTURAL.—An agricultural horse should conform closely in type to draft horses, but on a smaller scale, and should weigh from 1,350 to 1,500 pounds.

GENERAL-PURPOSE.—No agricultural society should offer prizes for general-purpose stallions at exhibitions, but, if thought advisable, prizes might be offered for general-purpose mares, fillies or geldings. General-purpose horses should conform in outline closely to the coach, carriage or hunter type, but should be larger and stronger, and able to do satisfactory work in wagon, plow, buggy and saddle. They should be clean-limbed, without excessive hair on the legs, and be able to travel seven miles per hour. Horses showing draft conformation should not be included in this class. They should weigh from 1,150 to 1,350 pounds. The minimum height of general-purpose horses should be 15.3 hands.

CARRIAGE.—There should be separate classes for carriage horses and roadsters at every exhibi-

tion, and these two breeds should not be shown in the same class. In judging carriage horses, style, conformation, and action must all be considered. The minimum height of the animals should be 15.1 hands.

ROADSTERS.—Roadsters should be judged in every case for conformation, style and speed.

SADDLE HORSES.—In the saddle class horses should be tested in walking, trotting and cantering.

PONIES.—The maximum height of all classes of ponies, except polo, should be 14 hands. Shetland ponies should not exceed 12.3 hands. J. LOCKIE WILSON.

The Thoroughbred and the Farm.

Editor "The Farmer's Advocate":

A few days ago I received a catalogue of the Canadian National Bureau of Breeding Ltd., Montreal, and as I have been in the horse business for almost half a century, especially in the County of Simcoe where I have during the last forty years owned a great many stallions of Thoroughbred, Percheron, Clydesdale, Shire, Belgium, Standard-bred, and Hackney breeding, I have given horsebreeding very careful consideration, and having managed a farm for many years myself, I think I can give a little good common-sense advice. Forty-five or fifty years ago, in the County of Simcoe, the majority of horses, that worked on farms, had a streak of Thoroughbred blood in them. Their price would average from sixty to eighty dollars, and sometimes as much as one hundred dollars. But about that time the heavy horse made his appearance and to-day you can hardly find a farmer, willing to breed a light horse, suitable for saddle purposes. Why does he object? Because times have entirely changed. Instead of plowing with an old Scotch plow which turned a furrow only from six to nine inches wide, you'll see him with a riding plow, turning a furrow from eighteen to twenty inches in width. Attached to the plow you will find a pair of horses each weighing from fifteen hundred to two thousand pounds and these horses are almost self supporting from two years old, and if properly bred, are worth, from five to eight hundred dollars each. Now here comes a company, with a catalogue, shaking it in the poor farmer's face and telling him if he crosses his mares with a Thoroughbred horse, he will improve his stock, and make a larger sum if war breaks out. I will ask the farmer to take his pencil and do a little calculating as this is quite essential, when hay, straw and grain are selling at such high prices.

We'll say the farmer breeds to this castaway Thoroughbred at the low service fee of \$10 which I believe is the price, and he is lucky enough to get a good strong colt, I ask him to charge that colt up with fifteen cents per day for keep, for 365 days. I think this would be a minimum scale. His first year would at this rate cost the farmer \$54.75 and he would have to keep him till five years of age before he would be fit for market, which means, an outlay for the farmer of \$273.75. Add \$10 for service fee making a total of \$283.75. We'll say he sells to the army, for \$160, or should he sell to an outside party for \$200, which would be a maximum price. In the first case he would lose \$123.75, in the second \$83.75. This is a calculation based upon facts, and I think very reasonable, but how much will he lose on the misfits? We know from history that the Thoroughbred horse when crossed with cold blood, is apt to leave many blemished colts.

—Now let us take the other side, that of the Canadian National Bureau, and see how their end figures out financially. According to their catalogue, they have sixty-one stallions standing for service in the Dominion of Canada. For this service the Dominion Government pays the Canadian National Bureau the sum of \$750 each horse per year, this amounting to \$15,250 per year. They further collect \$3 from the service fee of each mare. We'll say each horse serves thirty mares, which I think would be a fair estimate, which would net the Bureau \$90 per head each season, for the sixty-one the amount would reach \$5,490 thus netting each year for the Bureau \$20,740 at the present number of horses. Now we'll see what the farmer makes, for keeping this horse for a year, under a cast-iron rule. Take \$3 from \$10 and \$7 remains for each foal and at 30 foals the stallioner would get \$210. The horse must be regularly exercised, must be housed in a loose-box, in a warm, dry, well lighted and ventilated stable. To give a horse this accommodation with proper food, at present prices, cannot be done for less than fifty cents per day, which will amount to \$182.50 per year, this is for food and housing only. Deduct this \$182.50 from a possible \$210, leaving the poor farmer with a magnificent "gold brick," \$27.50 and not one cent for his trouble during the season, for extra grooming and care. Now I would like someone to show me where the farmer can make any money raising remounts. Brother farmer stick to the bridge that carried

you over safely. The only profitable horse for the farmer to breed to-day, is the purebred, heavy horse.

J. GORDON McPHERSON, (V. S.)
York Co. Ont.

[Note—It was not the purpose of the Government in bonusing Thoroughbred stallions that they should be bred to heavy-draft mares. All are agreed that such would be a foolish move. The mares of "cold blood" to which it was advised to breed the Thoroughbred are the general-purpose or light-boned and bodied mares of no particular breeding. We agree with Dr. McPherson that the heavy draft horse is the most profitable for the average farmer to produce but would not like to say that no good could be or is being done by the Thoroughbred sires in the country if the right type of mares were or are being bred to them. If Dr. McPherson's figures are correct and only thirty foals result from each sire in a year it doesn't look as though it was a money-making venture from the stallioner's view-point. Thirty seems to be a very low number and at this number profits would be exceedingly small, but if a larger number of foals were produced profits should be fair. Will someone who has handled one of these stallions give us his experience.—Editor.]

LIVE STOCK.

The sow about to farrow requires a laxative diet.

Avoid too much bulky food in the brood sow's ration before parturition.

When treating cattle or other domestic animals for lice, bear in mind that it is just as necessary to clean up and disinfect the stables, as to treat the affected animals.

Cough among hogs may be due to very dusty quarters. With young hogs it is frequently due to minute thread-like worms in the bronchial tubes. A soft, hacking cough is a very common symptom of hog cholera. Hogs also have the common forms of bronchitis and pneumonia, just like other animals, and people. With hogs, coughs and lung troubles, aside from cholera, are frequently due to sleeping in warm quarters, possibly piled up, and then going into cold places to feed.

In experiments carried on at the Agricultural Experimental Station, Clonakilty, Ireland, in the feeding of pigs from eleven to fourteen weeks of age it was found that pigs can be fattened successfully with raw meal and the average daily gain in live weight was greater when meal was fed raw than when cooked into porridge. When meal was fed raw less food was required to put on one pound increase in live weight. The proportion of dead to live weight was higher in the case of the pig fed with raw meal, i.e. they killed out a larger percentage of carcass. The raw meal was found to be good feed for the pigs right after weaning and they cleaned up their food well and handled firm and also required less litter than those fed on cooked meal. This will be news to the majority of pig feeders in Ireland where the old practice of cooking feed is still adhered to by the larger portion of the feeders.



A Study in Sheep.

While sheep may be valuable to keep down roadside weeds, they are more valuable to destroy weeds on the farm, and at the same time add fertility to the soil.

Feeding after Parturition.

Editor "The Farmer's Advocate.":

The brood sow or the ewe that has just farrowed or lambed, or the mare that has just foaled, should be fed carefully and with caution. Feeding immediately after parturition should not be the same as it was previous to this time. There must be a let-up for a time, and the feeds given should be of such nature as to suit the abnormal condition of the entire system at the time. The system is naturally somewhat feverish and vitality low, hence rations soothing in effect are the kind needed.

Instead of giving the brood sow her regular feed of slop and grain feeds, give her some fresh water with the chill taken off, and only enough of the slop which should preferably be thin, to satisfy a small feeling of want for food. For the first few feeds slop containing only rolled or ground oats is an excellent one. Oats are not heating in any way to the system, and therefore do not aggravate the fevered condition as either highly carbonaceous feeds or feeds high in protein do.

After the first forty-eight hours have passed, the normal condition of the system has again fairly well established itself and the regular feeding may gradually be resumed, such feeds being added to the ration as will encourage heavy milk production for the young pigs.

The ewe's feeding, too, after parturition should be in keeping with her condition due to this phase of the life process. She, too, should receive some fresh water in small amounts at intervals, and with the chill taken off. The fevered condition of the system causes thirst, which must be satisfied to subdue the fever, and to encourage the system to regain its normal state. The feed in the ewe's case should preferably be dry crushed oats and a little cut roots, with such amounts of bright, well-cured clover hay as she will eat. There is not much danger that she will take too much of the clover hay, but the crushed oats and roots should never be given in large quantities just after lambing. Very small amounts of them are sufficient, and for the first few hours after she has lambed the ewe will not demand anything other than the fresh water and a little clover hay. The ewe also, after forty-eight hours, can be gradually placed back on regular feed with such additions as are conducive to encourage her milk flow.

With the mare that has just foaled, thirst due to a fevered condition must also be satisfied to encourage the normal condition to be regained. With her, more care will be necessary, perhaps, to see to it that she does not get too much, and also that the chill is well taken off the water, because of the proportionately larger amount of water that a mare will drink than the other animals considered. Eight or ten quarts at first will do, followed later at an interval of about an hour, with a little more, or what she will take, if that is not more than an ordinary sized pailful (ten or twelve quarts).

Ground oats moistened with lukewarm water make about the best thing a mare can receive as her first feed after she has foaled, and it may be continued for the first forty-eight hours after with a small amount of crushed or whole oats given in addition. Besides these, bright and dust-free timothy hay may be at hand.

The troubles that frequently set in to effect serious results just after parturition are generally due to a lack of management or to careless-

ness, because the condition of the dam's system at this time is not understood.

That the vital forces of the bodies of all females are reduced to a decidedly low level at parturition, as compared with the ordinary condition during other periods of their lives, should be well understood.

Something is to be learned of the first condition, even from our common observations on plant life. It is quite generally understood that a large number of our plant life forms cease to exist after they have borne fruit. It becomes necessary to plant the seed in order that the same form of plant life may exist. All the cereals, which we raise on our farms annually, are of this nature. They are sown, then grow, flower, bear fruit, and after this, die. The very fact that they bear fruit precludes their further existence. Their vital force has been reduced to its lowest level and then disappeared entirely from their forms. Again, in other plants the vital force leaves the vegetative portion entirely, and remains dormant in roots ready to spring up again and thrive in a new vegetation starting up from the same root.

This is known in all our ordinary pasture grasses which even produce a second vegetation within a single growing season of the year, and a large number of other plants of the perennial and biennial classes. Again, in other plants the vital force disappears entirely from only the leaves and remains in the dormant state in the body of the plant, as well as in the roots. Of these our deciduous fruits are a very common example. In other trees the vital force remains dormant even in the leaves, as is the case with the evergreen trees; while in still other plants the vital force does not even become dormant, but goes on in the active life processes. Such is the case with many of our house flowers, such as the well known Geranium and Fuchsia. However, while the active life processes do continue to go on in these plants during fructification, it will be readily noticed that during this time the plants do not seem to retain the appearance of highest thrift in their foliage, which they had just previous to and during flowering time. They take on the appearance of being suddenly checked.

So it is that all life, whether of the plant or the animal kingdom, during periods of actual reproduction, through fructification or bearing young, has its vital force retarded by the process, and life's level is reduced to the minimum of its ordinary course. Since that is true of the dam bearing young on the farm, it is only natural to suppose that this is the time in her life when she is most susceptible to disease, and such, in fact, is true. Her vitality being reduced, her system is left most subject to the ill effects of outer forces and conditions. These are liable to so affect the body in its weakened state as to bring on serious troubles.

Should disease germs, which have previously been successfully combated by the system, now exist therein, the chances of their producing disease are increased manifold, and incipient stages of disease already existing in the system are most sure to make great inroads on health. Pneumonia is frequently contracted by females just after parturition, and tuberculosis usually makes rapid advances if already in the system.

The herdsman's duty, then, is to so manage the treatment of his dams at parturition time as to place them in the best possible condition to successfully withstand the great strain.

Johnson Co., Ill. W. H. UNDERWOOD.

Lung Worms in Hogs.

Pneumonia of hogs is not always due to worms, yet it is not uncommon to find young pigs, and even old hogs, to be affected, and dying from inflammation of the lungs and bronchial tubes, due to the presence of large numbers of small white to whitish-brown thread-like worms, which are found to be located in the bronchial tubes.

Vermineous pneumonia is most often found on low or swampy land, although it may occur on the uplands.

This disease of pigs occurs at all times of the year, but it is more frequently observed during the late summer and fall. When pigs are first affected, the symptoms are few and elusive, but as the invasion by this worm progresses the symptoms become more and more pronounced. At this stage of development, frequent spells of coughing are noticed.

There is a thick discharge from the nostrils which will, at times, contain masses of mucous. A close examination of this material will, at times, reveal the presence of the young worms as well as adult worms. The symptoms most apparent to the owner are thinness and lack of development of the pigs. Death is probably due to the air passages being closed or to a watery condition of the lungs.

At times this disease may be confused with hog cholera or even with tuberculosis of swine. By careful study of the symptoms and history, together with the finding of the worms either be-

fore death in the discharges from the nostrils, or after death in the bronchial tubes at the base of the lungs, should be sufficient evidence to enable one to be sure.

It is very difficult to relieve hogs affected with lung worms, because of injuring the lungs or air passages in undertaking to kill or dislodge the worms. "An ounce of prevention is worth a pound of cure." Be very careful not to introduce into the herd any hogs that are affected by the parasite. If you know that any low or swampy ground on your farm has been used as pasture for infected hogs, keep healthy hogs away from it. This is not an absolute preventive, as the trouble sometimes occurs in uplands as well as lowlands.—Dr. W. L. BOYD, University Farm, St. Paul.

Ringworm in Cattle.

The Irish Department of Agriculture advises that treatment of ringworm is not usually difficult, if a determined effort is made to rid the herd of it. It is, of course, extremely contagious, and steps must be taken to suppress it immediately it makes its appearance. This means the isolation of infected animals. Ringworm is caused by a fungus, which, to live, requires air, so it is sometimes sufficient to smear the affected spots thoroughly with something which excludes all air. Thus a simple application of lard or oil, frequently repeated, is sometimes effective in producing a cure, but stronger measures should be adopted. One of the most useful applications is made by thoroughly mixing half a pound of lard with two ounces sulphur and four ounces of oil of tar, a small quantity of this mixture being smeared on the patches daily. Any good reliable sheep dip applied daily for a few days is also generally effective. A solution of four ounces of sulphate of copper in one quart of water may be used if the number of patches is not too great. Care must be taken to prevent this or any other irritant substance used from getting into the animals' eyes. Poisonous substances must not be used extensively where cattle lick themselves or each other. Mercurial ointment is a treatment of the latter class, and should be applied only about the head and neck in moderate quantities. In the treatment of any ringworm it is advised to soak the patches thoroughly with hot water in which washing soda has been dissolved in the strength of four ounces to one quart. This softens the crust, and allows the remedy, whatever used, to penetrate.

In prevention all bedding used by infected animals should be kept away from the healthy stock. The stable walls, partitions and floors should be disinfected with some such substance as the carbolic acid solution. Treating all stables with whitewash once or twice a year is a good precaution. Feed liberally, as lean, half-starved animals are more likely to be attacked than well-nourished individuals, so it is imperative that cattle, especially the younger cattle, are well fed.

Pig-Feeding Success.

Editor "The Farmer's Advocate": In a recent issue of "The Farmers Advocate" you invited a discussion of hog-feeding methods which, especially at this time, should be of much interest to hog-raisers.

We hear much about balanced rations for dairy and beef cattle, but the hogs are generally left to balance their own, although a balanced ration should be of as much importance in the case of hogs as in that of cattle. The average farmer does not bother much with balanced rations, but generally feeds what he has himself, or what he can buy handily.

As it is generally conceded by all experimenters that a mixture of grains and mill-feeds is better than one or two kinds of grain alone, the writer generally tries to do this, milk-feeds generally forming the bulk of the ration.

In my earlier years of farming a good deal of time and trouble were taken in caring for the hogs, and in preparing their feed. Water used to be heated and mixed with the meal in barrels; roots were pulped and mixed with dry meal; sometimes feed was boiled. This method took considerable time as well as using a good deal of wood. Now a great saving of time and labor is effected. We never boil feed for hogs, they do their own pulping, as the roots are thrown into the pens whole; no slop-feeding is followed. The meal is put into the troughs and the whey and skim-milk is poured on top. In this way they get a drink first, and then they eat the meal. Whole corn is soaked for about twenty-four hours.

The latter method is very satisfactory. The hogs grow just as fast if not faster. When heating water and feeding in the form of slop, we used to have crippled pigs occasionally, now we have none. Our clothing and our pails are not plastered with slop, and pig-feeding is made easy and not disagreeable.

We have never tried feeding only twice a day, but the idea looks good, especially in the winter time. But in the long days of summer, the hogs might raise some objections. Our brood sows now get for their noon meal a good sheaf of oats to four animals with a pail of kitchen slop. The straw then does for bedding.

I think it always pays to keep hogs comfortable and feed them well from start to finish. By following the method described (of course in summer the hogs have the run of a good large pasture) we can make them weigh as high as two hundred pounds at five and one-half months old. Of course they do not all do this, but some of them do, and they are of the bacon type too. I suppose it would be more interesting and perhaps more profitable if figures were submitted showing profits in hog-raising, but I have not kept hog-feeding accounts.

Carleton Co. JAS. FERGUSON.

White Scours in Calves.

White scours is a serious form of diarrhoea which may affect calves from a few hours to a few days old though some calves live for days or even weeks after the first illness and eventually die of pneumonia. The disease is often, though not always, coincident with infectious abortion in a herd and in some cases calves carried to full time, or nearly so, are practically born abortions collapsing in a day or so after birth. Other cases are not quite so serious. The name of the disease is somewhat misleading for the discharge from the bowels is not always white or even dirty-white, but the diarrhoea is always severe with a lightish-colored and foul discharge.

The treatment most in favor is prevention by antiseptic precautions, including disinfection of the navel cord by tying it an inch and a half below the navel and wetting the string in a fifteen percent solution of liquid formaldehyde or a five percent solution of carbolic acid, repeating until the navel cord all shrivels up. An English authority has also recommended washing the udder and teats of the dam with a solution of coal-tar disinfectants or sheep dips before the calf is allowed to suck.

For an affected calf the favorite prescription is internal administration of formaldehyde. Procure half an ounce of liquid formaldehyde, dilute with 15½ ounces water and administer with a bottle and rubber nipple, a tablespoonful of the medicine and a pint of new milk three or four times a day. Such is the orthodox treatment. There are others, however. A member of "The Farmers Advocate" staff once treated a case successfully by the giving of a raw egg shell and all once or twice daily. The egg was crushed up to a pulp well back in the calf's mouth and the calf forced to swallow it. The calf was being nursed by a rich-milking dam and began to improve after the first two or three eggs were given.

A Shorthorn breeder told us another one the other day. He claimed to have cured a persistent case of white scours with Zenoleum at the rate of a teaspoonful in milk three times a day. As his calf was about a month old, however, there may possibly be room for doubt whether it was the specific disease of white scours. It was a bad case of diarrhoea anyway, and the treatment was successful, the animal shown us being now well grown and healthy.

THE FARM

Hair-Snakes in the Water Trough.

When the writer of this note was a youth on the farm he shared two opinions accepted without question in his neighborhood at that time, namely that fall wheat can transform into smooth chess and horse-hairs into water-snakes. Some of the boys whom he knew claimed to have proved the latter by laying horse-hairs in the water-trough although his own experiments resulted in failure. The hired man, however, who had come from the Old Country, and consequently spoke with authority declared that the only way to insure success was to fasten the hair in ditch water in the dark of the harvest moon.

It is not difficult to see that these absurd beliefs might originate, but if they still persist to any extent it is a proof of lack of training in observation on the part of our educational methods.

These remarks are suggested by the receipt from a subscriber—"M. K."—near Chatsworth, Grey Co., Ont., of a living gordins or hair-snake "pumped out of the well two months ago" accompanied with enquiries as to its name and nature.

The specimen received is a pale-colored female about 6½ inches long with a dark band near each end. This is the free adult stage now lacking a functional mouth and intestine and with no further duty in life than to mature its eggs. The larvae that will hatch from these eggs will perish if they fail to secure an abode in the bodies of insects mostly of aquatic or moist-ground species where they may dwell parasitically until they develop sexual maturity. The name gordins is drawn from the interesting classic story of the Gordian Knot on account of the habit of the adults of gathering into an apparently inextricable tangle.

Noticing the snaky motion of one of these worms in a glass of water will naturally make the drinker pause. But in case one of them inadvertently slips down his throat he need not feel any anxiety and he will not feel anything else. The well, however, from which it came may require cleaning and better protection around the top.

Removing the Burr from the Wagon.

Editor "The Farmer's Advocate":

When the burr which holds the wagon wheel on, becomes stuck and refuses to move by ordinary means, most people are completely beaten themselves and are inclined to go at it with a hammer. This method is quite effective in most cases but there are times when the burr refuses to turn and to say the least hammering is hard on the burr. After letting a wheel go for some time the writer hit upon a scheme. Place the wrench over the burr and tie with a rope to one of the spokes; place a notched stick between the wrench and the opposite spoke and, holding the wrench on with one hand, pull the wheel with the other hand and push with one foot. This plan can be used on buggies and automobiles too.

Elgin Co., Ont. J. C. INMAN.



Ready for the Spring Work.

Why Grow Corn?

The reasons for growing or making an attempt to grow corn for forage, wherever livestock are kept in any numbers are numerous and cogent. A few of them, given by J. H. Grisdale, Director of Experimental Farms for the Dominion, follow :-

1.—As a plant capable of yielding a large amount of valuable forage under a great variety of soil and climatic conditions, corn is without an equal.

2.—When properly preserved, whether silage or dried, it can be used as material to render less palatable roughage more acceptable to farm animals.

3.—It is the best plant or crop for ensiling that can be grown to advantage in Canada. It is practically a perfect crop for this purpose, hence it helps to solve the great problem of how to furnish an abundant and cheap supply of succulent food for winter or summer feeding of dairy or beef cattle.

4.—When properly grown and well preserved as silage, it is the equal of or superior to roots in feeding value and palatability. It can, however, generally speaking, be more cheaply grown and more easily preserved than roots.

5.—The labor of growing an acre of corn is of a character much more agreeable to perform, and much less arduous than that of growing an acre of roots of any description.

6.—Corn being cultivated or hoed crop, serves well to clean the land, that is, free it from weeds, so fitting it for grain growing, and putting it into condition to seed down to grass or hay.

7.—Corn is a gross feeder, and may be depended upon to make good use of an ever so abundant supply of plant food. It is, for this reason, particularly well adapted to occupy that place in the rotation where humifying vegetable matter, and a fairly liberal supply of barnyard manure unite to supply large quantities of plant food suitable for root, leaf and stem growth, rather than for seed production.

8.—The growing of corn on a fair proportion of arable land on the farm will permit of keeping more cattle, and so increase the revenue as well as augment the manure supply, so essential to the maintenance of soil fertility.

9.—Corn, when preserved as silage, can be stored much more cheaply in less space than any other roughage. In addition, stored in this way it will keep indefinitely, and is always ready to feed. Ten tons silage occupies no more space than one ton hay. One ton hay is worth about two and one-half tons silage.

10.—In thirty years' experience in farming in the Ottawa Valley, the writer has seen all kinds of grain crops utter failures; he has seen hay so light as not to pay for the making and roots and potatoes practically nil, but in all that time he has never seen a failure in the corn crop. There has always been a fairly profitable return from the fields in corn.

11.—It makes it possible to greatly lessen the pasturage, consequently more land can be brought under cultivation.

12.—At a moderate estimate, two cows can be kept on the same acreage and at the same cost when corn silage is properly grown and used, as one on the same farm when cattle are fed on hay or other roughage.

Treating Seed Grain for Smut.

Editor "The Farmer's Advocate":

Would you kindly give me information through the columns of your valuable paper as to how to treat seed oats for the prevention of smut.

Lincoln Co., Ont.

A. G.

The importance of clean seed cannot be too strongly impressed upon grain and seed growers. Clean seed should mean pure seed (as to variety and class), seed free from all noxious weeds and also seed free from the seed (spores) of smut. To prevent smut, two precautions are necessary. First—sow seed from a crop which had no evidence of smut, and secondly—treat the seed by some method which will kill the smut spores and leave the germ of the seed uninjured.

For the stinking smut of wheat, the loose smut of oats and the covered smut of barley, three smuts which have very similar life histories, the formaldehyde treatment is recommended. Never treat the seed more than three days before sowing, and be careful to sterilize the bin or bags into which the seed is placed after treatment, and also sterilize the seedbox on the drill. The sooner the seed is sown after treatment the better.

Several different percentages have been recommended in the formaldehyde treatment, but experiments carried on at the Ontario Agricultural College showed the greatest yield of both winter wheat and oats to be produced from seed immersed in a solution made by adding one pint of formalin to 42 gallons of water for a period of twenty minutes. This treatment was also most effective in preventing the trouble from smut.

The grain should be stirred while soaking. This is no doubt about the best method to follow.

Some authorities advise piling the grain on a clean floor, and by sprinkling it and shovelling it over and over thoroughly moisten it with formaldehyde solution of one pound to thirty-five gallons of water. After the grain is thoroughly moistened cover the pile tightly with a canvas or tarpaulin for two or three hours. Of course the grain must be spread out to dry in any case before sowing.

Others sprinkle with a stronger solution of formaldehyde and do not cover afterwards. This treatment consists in thoroughly moistening the grain with a solution of one-half pint of formalin in five gallons of water.

Bluestone or copper sulphate is also often used, but the formaldehyde treatment is generally preferable, and especially with oats as the bluestone seems to injure their germinating power somewhat.

The best of the bluestone treatments is to immerse the seed in a solution of one pound of bluestone in twenty-five gallons of water for a period of twelve hours, after which the grain is spread out to dry.

Sprinkling until all the seed is thoroughly moistened with a solution of one pound of bluestone in ten gallons of water, stirring carefully to ensure thorough moistening, is quite effective, and fair results may be obtained by immersing for five minutes in a solution of one pound of copper sulphate to one gallon of water, but as previously stated bluestone is detrimental to germination.

There is also a hot-water treatment, but this we will outline as the double treatment for both

Where the seed is immersed, no matter what remedy is used, it can be accomplished quite expeditiously by using two large tubs or half barrels. Bore a hole in each near the bottom and make a plug to fit. Cover each hole on the inside with a wire screen. Set one tub up on a bench and the other so as to catch the solution when it is run off. Fill the upper tub two-thirds full of the solution and put in all the seed it will hold. Soak the required time and then pull out the plug and let the solution drain into the other tub; reversing the position of the tubs, repeat this until all the seed is treated.

The sprinkling of seed in piles or the immersing of it in sacks has the drawback of leaving smut balls in the seed. Many simply use two or three large barrels for the liquid and dip the seed in coarse sacks. This gives fair satisfaction, especially for oats and barley, but as previously stated is not effective in removing the smut balls of wheat. The tub method would be preferable in any case and especially for wheat.

Care must be taken to get the seed sufficiently dry before sowing. Spread on a clean sterilized floor not more than three inches deep, and in sowing allow for the swelling of the seed due to soaking or a light seeding may result. It might be wise to test the seed, especially after using the hot-water treatment, as to germination before sowing. This would give a chance to make allowance for seed injured by treatment in case such should occur. Be careful not to allow the seed to again become infected after treatment and before sowing. And in purchasing formaldehyde insist upon getting the required strength (a 40 per cent solution of formaldehyde).

Caterpillars in Winter.

The unusual mildness of the midwinter general throughout Ontario and Eastern Canada was naturally attended by unseasonable results. A subscriber in Compton Co., Quebec, reported the observation on the last day of January of the emergence from their winter quarters of "thousands of small worms or grubs so numerous that they could be swept together in piles." His communication was accompanied by examples of larvae which seem to belong to the climbing cutworm or one of the cutworm species. The examples were less than a half-inch in length and exhibited the markings and form suggestive of the first named species. These have at times been so numerous in certain localities as to be given the name of army-worms. We should suppose that all the larvae thus prematurely drawn from their hibernation have perished.

THE DAIRY.

The Holstein in England.

Editor "The Farmer's Advocate":

Since the Holstein breed of cattle has had a society to look after its interests in England, it has quickly come to the front, and the useful milk yields that have been recorded from time to time have had not a little to do with the rapid advancement of this splendid dairy breed. Colton Daisy Bell, belonging to Hugh Brown, Colton Mains, Dunfermline, gave 1788 gallons between November 1st, 1911, and December 13th, 1912. Gorstage Gouda, the property of Mrs. Townshend, Sandiway, Cheshire, after a previous record of 1,778 gallons in 14 months, has produced 1,692 gallons between February 18th, 1912, and January 11th, 1913. John Caddey, Egham, Surrey, possesses two heavy milkers, Egham Priceless and Egham Pride, the former having yielded 8,107 gallons in her last six lactations, the average being 1,351 gallons of milk per lactation. At 18 cents per gallon this cow has produced milk to the value of \$1,515 in six years and four months, the total number of milking days being 1,866. Her best average is 19.492 quarts daily from February 14th, to November 7th, 1911, 266 days in all. Egham Pride has milked to the extent of 1,752 gallons between January 27th, 1911, and August 27th, 1912, the average for the 578 days being 12.126 quarts. Since February, 1906, this cow has yielded 8,052 gallons in six lactation periods, the average being 1,342 gallons for each lactation. Her best record was made in 1907, when she averaged 16.6 quarts daily over 273 days. At the basis of 18 cents per gallon, this cow's milk in six and a half years has been worth over 1,505 dollars.

Dutch cattle were first introduced to England by the Teutons, who brought their cattle with them when they were summoned from Jutland, Holstein, and Friesland, to assist the Britons—from whom the protection of the Roman legions had been withdrawn—in repelling the attacks of the Picts and Scots. Storer says that these cattle were descended from the Urus, the ancient wild ox of Europe. Mention of Dutch cattle in England was made in "Systema Agriculturae," by J. Worledge, published in 1681, the reference to cows and oxen containing the following para-



Maple Sap, Nature's Most Delicious Distillate.

stinking smut of wheat, loose smut of oats and for the loose smuts of wheat and barley. These two latter smuts, because they infect the embryo or germ of the seed, can not be reached by either the formalin or copper-sulphate treatment. Soak the seed in cold water for not less than four hours and not more than five hours. Then immerse for a minute or two in hot water at 120 degrees F., and then for barley immerse for thirteen minutes in water at a temperature of 126 degrees F., and for wheat immerse in water at a temperature of 129 degrees for ten minutes. Be careful not to exceed these temperatures and time limits. If the temperature with barley should go up to 127 degrees reduce the time to ten minutes. A temperature lower than 124 degrees is not effective and one above 129 degrees is injurious. Because the grain has been soaked for four or five hours it will not withstand such a high temperature as if it had not been soaked, thus it is that when treating oats for loose smut, or wheat for stinking smut, the grain may be immersed at first in water at 115 degrees F. for a few moments and then in water at from 130 degrees to 135 degrees F. for fifteen minutes, being occasionally stirred.

Unless well equipped and prepared for all difficulties, we would not advise the farmer to try the hot-water treatment especially where other treatments are effective. Of course with the loose smuts of wheat and barley it is the only means to successfully destroy the disease.

MARCO

graph that ordinary This ev favorec substanc Whole 1716, only th are th Dutch in Lin these meal.

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graph:—"The best sort is the large Dutch cow that brings two calves at one birth, and gives ordinarily two gallons of milk at one meal." This evidence that the Dutch animal was greatly favored as a milker more than 200 years ago is substantiated by Mortimer, who stated, in "The Whole Art of Husbandry," which bears the date 1716, that "the best sort of cows for the pail, only they are tender and need very good keeping, are the long-legged, short-horned cow of the Dutch breed, which is to be had in some places in Lincolnshire, but mostly in Kent; many of these cows will give two gallons of milk at a meal."

It is probable that most of the Dutch cattle in England at that time were red. Mortimer asserts that the cow of this color was reckoned to be the best milker, and the black to have the best calves. Marshall refers to the Holderness or Dutch breed, and in describing the cattle of the East Riding of Yorkshire, it is stated in an Agricultural Survey, published by the Board of Agriculture in 1812, that about 70 or 80 years before that time a bull and some cows were introduced to the district from Holstein. These animals were similar to those already in Holderness, but possessed some qualities superior to them, and it is thought that Holderness cattle sprang from the mating of the native cattle with those from Holland. For many years large numbers of these cattle reached Britain, but whether they came from the Province of Holland or the Province of Friesland, or even from the now German district of Holstein, is uncertain, although it is believed that the ancestors of the animals, at present in Britain, were exported from the Netherlands. The majority of animals so exported, in more recent years, were probably landed at Harwich for general dispersion, and at Deptford for the Metropolitan markets, but many cattle from the Continent must have also been received at various Scottish ports.

During the last century many dairymen, especially in London, kept black and white Dutch cattle, but with the gradual withdrawal of cows from towns and the subsequent passing of the act prohibiting the importation of live cattle, the numbers of specimens of the breed diminished, and comparatively few enthusiasts maintained the purity of their stock. Happily this small minority was successful in preventing the extinction of such a valuable race of dairy animals, and in 1909 a society was formed to encourage the breeding of British Holstein cattle.

The impetus in the breeding of British Holstein cattle has resulted in the creation of an export trade, and while congratulating breeders on the distinction thus conferred upon them, it may not be out of place to sound a note of warning. If the best blood is to be sent out of the country at this early stage, the improvement and strengthening of British herds will be a longer and more difficult matter.

London. G. T. BURROWS.

Two Middlesex Creameries.

KERRWOOD CHEESE AND BUTTER FACTORY. Twelve years ago Frank Inch founded at Kerrwood, in the west end of Middlesex County, a cheese and butter factory which has grown to be one of the largest creameries in Canada, with an output of nearly a hundred and fourteen thousand dollars. Mr. Inch ran it for six years and sold out to W. Waddell, who developed the business to its present proportions, and has earned for Kerrwood butter a reputation which retails it readily, in home markets, at two cents per pound above ruling prices for creamery butter. The writer had long promised himself a visit to this celebrated creamery, and so was pleased to attend the annual meeting of the Kerrwood Cheese and Butter Factory, in company with the Chief Dairy Instructor, Mr. Hens. It is still called a cheese and butter factory, being equipped for both lines of manufacture, but of late years the cheese patrons have been very largely turning over to butter, until in 1912 less than twelve tons of cheese were made, or scarcely more than the patrons of this and the neighboring Strathroy creamery could eat. The cheese end of the business was run at a loss to the proprietor last year, the make being so small, but will, nevertheless, be continued in 1913. Two or three years ago Mr. Waddell put in equipment to manufacture dried casein from skim milk for those patrons sending whole milk who did not want their skim milk returned. The casein business, however, has not proven very attractive, the total receipts last year for this by-product amounting to only \$420.54, this, however, being over double the corresponding item of 1911. Hand separators have been extensively

sold through the territory, and the creamery is fast becoming a cream-gathering one.

The Kerrwood plant is not especially imposing, being rather too small for the extent to which the business has grown. It is efficient, however, and very efficiently managed.

We present below the annual report in full. The total receipts show an increase of thirty thousand dollars over 1911, the make of butter having very largely increased. The average price of butter was 28.04 cents, an advance of about three cents over the average of the previous year. The average price paid patrons per pound of fat (less the cost of hauling, 25 cents per cwt. of cream) amounted to 30.08 cents against 25.33 for the previous year. The overrun was excellent, being over 21 per cent. This fact and the large make, together with the receipts from buttermilk, which are added to the patrons' checks, go to explain how it was possible to pay the patrons two cents more per pound of fat than the price per pound received for the butter.

Cheese was made but for a short season, and the average test of the cheese milk, as stated approximately at the meeting, was 3.4 per cent.

In other respects the summarized report is sufficiently self-explanatory except for one item of \$19.09 deducted from the creamery proceeds, and added on to the cheese patrons' returns to compensate for loss on cutting cheese, sold to all patrons at wholesale prices.

BUTTER STATEMENT.

Total amount of milk for butter.....	Lbs. 1,972,439.00
Total amount of cream for butter.....	868,205.00
Total amount of butterfat.....	321,020.70
Total amount of butter made.....	390,603.00
Average price paid patron per lb. fat	30.08c.
Average price received per lb. butter	28.04c.
Total amount of casein made.....	5,792.00

CREAMERY RECEIPTS.

Total cash received for butter.....	\$109,543.80
Total cash received for buttermilk.....	608.13
Total cash received for milk and cream	11.28
Total cash received for casein.....	420.54
Interest from bank	95.84
Credit balance from 1911.....	109.49
Total	\$110,889.08

CREAMERY DISBURSEMENTS.

Paid patrons by cheque...	\$87,450.27
Paid patrons in butter...	4,506.54
Paid patrons in cheese...	1,012.95
Paid patrons for milk for casein	277.05
Paid for manufacturing casein	143.49
Paid for drawing milk....	3,529.74
Paid for manufacturing and drawing	13,671.06
Paid auditor's fees	20.00
To balance cheese account	19.09
Credit balance in bank....	258.89
Total	\$110,889.08

CHEESE STATEMENT.

Total amount of milk for cheese.....	Lbs. 244,881
Total amount of cheese made.....	23,681
Average lbs. of milk to make lb. of cheese	10.34
Paid patron per 100 lbs. of milk, drawing paid	\$1.04
Paid patron per 100 lbs. of milk, delivered	1.12
Average price received per lb. of cheese	13.22c.
Total cash received for cheese.....	\$3,131.39

CHEESE RECEIPTS.

Total cash received for cheese.....	\$3,131.39
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CHEESE DISBURSEMENTS.

Paid patrons by cheque.....	\$2,356.88
Paid patrons in cheese.....	24.00
Paid patrons in butter.....	207.20
Paid for manufacturing and drawing	562.40
Balance overpaid	19.09
Total	\$3,150.48
Total receipts for the year.....	\$114,020.47
Total expenditure for the year.....	113,761.58
Credit balance	\$258.89

THE STRATHROY CREAMERY.

The Strathroy Creamery has been operated by Mr. Waddell for three years. Some of us have almost forgotten that Strathroy was the seat of the old Western Dairy School. Nearly fifty-two thousand dollars worth of business was done here last year, but the field is capable of extensive development, and the new proprietor, Malcolm Waddell, who succeeds his brother in charge of the business, hopes to double it. Malcolm Waddell is a young man who has had thorough training in the creamery work under his father, is a graduate of the Ontario Agricultural College, and has left a lucrative position in charge of a big centralized creamery across the line to come home and take charge of the Strathroy Creamery and work it up. It is always gratifying to see a successful Canadian returning from abroad, and we wish Mr. Waddell the patronage he deserves.

The average price paid patrons per pound of butterfat last year was 27.66 cents, an increase of three and a half cents over 1911. In 1910 the average price was less than in 1911, cream having been taken to Kerrwood for a time that winter when butter was the highest price. An important factor in regulating the average price paid by a creamery per pound of fat is the percentage of cream received during the months when butter commands the highest price. In February and March, 1912, the returns were 38 and 40 cents per pound of fat, the highest ever paid at this creamery, according to the auditor J. B. Shotwell. Here, as at Kerrwood, the buttermilk is sold and the proceeds distributed among the patrons. The charge for making is three and a half cents per pound of butter, and the charge for hauling cream is 25 cents per cwt. The ground is covered with teams and an automobile, and endeavor will be made to gather cream three times a week in summer, except possibly at a few scattering points. Patrons who haul their own cream are not charged for hauling.

ANNUAL REPORT, 1912.

Total lbs. cream received.....	563,285.00
Total lbs. butterfat	162,923.08
Total lbs. butter made	189,460.00
Average price paid patrons for butterfat	27.66c.
Average price received for butter.....	26.93c.

RECEIPTS.

Balance from 1911	\$ 50.83
Total cash received for butter.....	51,026.22
Total cash received for buttermilk....	469.58
Total cash received for cream.....	37.17
Total cash J. A. Waddell for cream spilled	53.00
Interest from Bank	60.00
Balance expenditure over receipts.....	27.21
Total	\$51,723.99



Kerrwood Cheese and Butter Factory.

Photographed upon the occasion of the annual meeting, showing, however, only a fraction of those who attended.

EXPENDITURE.

Paid patrons by cheque...	\$43,012.90	
Paid patrons in butter...	279.29	
Paid patrons in cheese...	438.03	
Paid for drawing cream.	1,342.69	
Paid for manufacturing and drawing	6,631.08	
Paid auditor	20.00	
		\$51,723.99
Total receipts	\$51,696.78	
Balance due proprietor...	27.21	
		\$51,723.99

The Strathroy Creamery is a neat cement-block building, well equipped with up-to-date apparatus, including a splendid 40 h. p. boiler, and an especially convenient device for holding cream sample bottles.

Business Dairying.

Addressing a couple of creamery meetings lately we endeavored to emphasize systematic milk and butter-fat records of the individual cows of the herd as being the chief corner stone of progressive dairying. The majority of speakers and writers on this subject dwell chiefly upon the necessity of records as a means of weeding out the poor cows, but this is only the second of three great advantages. The first one is that milk records enable one to derive larger yields and greater profits from the cows he already has. The third and greatest effect of all, is on the man behind the cows, making him a more studious, intelligent, efficient dairyman and citizen.

After citing personal experience to show how the weighing and recording of the milk had stimulated an increase of a pound and a half per head per day in the milk flow of a herd of stuffers that had fast been drying up before the records were commenced, we concluded in this wise:

"Even if we never expected to breed another cow we would still keep milk records for the knowledge it gives and the stimulus it supplies to study an effort. The man who keeps records isn't liable to let his herd shrink fifty per cent in July before opening his summer silo or commencing to cut green feed.

"The man who is keeping milk records, studying them, poring over the results night after night, is brushing the rust spots off his mind and getting a grip of his business.

"For dairying is a business and a complicated one at that. You take a cow costing say \$60.00 on which you must earn \$3.60 interest and say \$2.00 depreciation every year of her life if you are to come out even in the end. You put into her feed worth about \$40, house her in a barn, the interest and depreciation on which represent an overhead charge of say \$5.00 per year against every head of stock confined in it. You spend about 100 hours time milking her and at least as much more feeding and caring for her, representing in all 200 hours a year worth about \$25 or \$30. Then you have minor expenses now and again for veterinary treatment, drugs, salt and a dozen other small items, bringing the total close up to \$80. Against that you set her produce in the form of cream, skim milk, a calf and her manure.

"I have always been a stickler for valuing manure. I believe it is nearly always grossly undervalued, there are a lot of cows being kept in this country that would need their manure written up at a higher value than their owners can ever make out of it to show a respectable balance on their accounts.

"You put into your barns, silos and granaries last summer and fall, a lot of hay, corn, straw, oats, barley and peas and have perhaps bought a little bran or oil cake besides. What could you have sold that stuff for last fall? And how much cash will you have to show for it next spring? These are some of the stubborn questions that will confront you once you begin keeping milk records, and follow them up with feed records. The inexorable answer will give the scrub cow no quarter. You will want good cows and only good cows even though you have to sell half your herd and team some hay to town. I would rather haul hay to town and bring back manure or fertilizer than spend any time as valet to an unprofitable cow turning good hay worth \$12 a ton into manure worth \$3. It makes dear manure.

"We talk about the drudgery of dairying, and it is rather a binding business, but it is the poor half of your herd that makes it so. Keep records, weed out those poor cows, pay more individual attention to the rest, feeding them up to their capacity to respond and feed the rest of the field products to sheep or colts or steers or heifer calves or even sell them outright. Cull out the unprofitable part of the herd, and don't do it by guess work. Some people think they can tell by the looks of a pail how much milk there is in it. I'll venture to say any man who has not actually weighed or measured several messes of milk will be inclined to exaggerate the amount by from 25 to 50 per cent. They look at the foam on the

lower side of a flaring pail set tilted towards the cow, and think they have a twelve-quart pail of milk when it would really measure up about eight quarts. We have these things emphasized to us every now and then when buying cows.

"Here are nine things that the keeping of milk records will do:

"1. It will arouse the interest of the manager and his help.

"2. Milking will be more punctually and carefully done.

"3. The herd will be better fed and attended to.

"4. The cows you have will give more milk.

"5. It will enable you to cull out the poor cows, turning them over to the butcher as his lawful prey.

"6. It will enable you to build up a better herd by keeping calves from your known best cows.

"7. It will lead to business methods all round.

"8. It will make you a better dairyman.

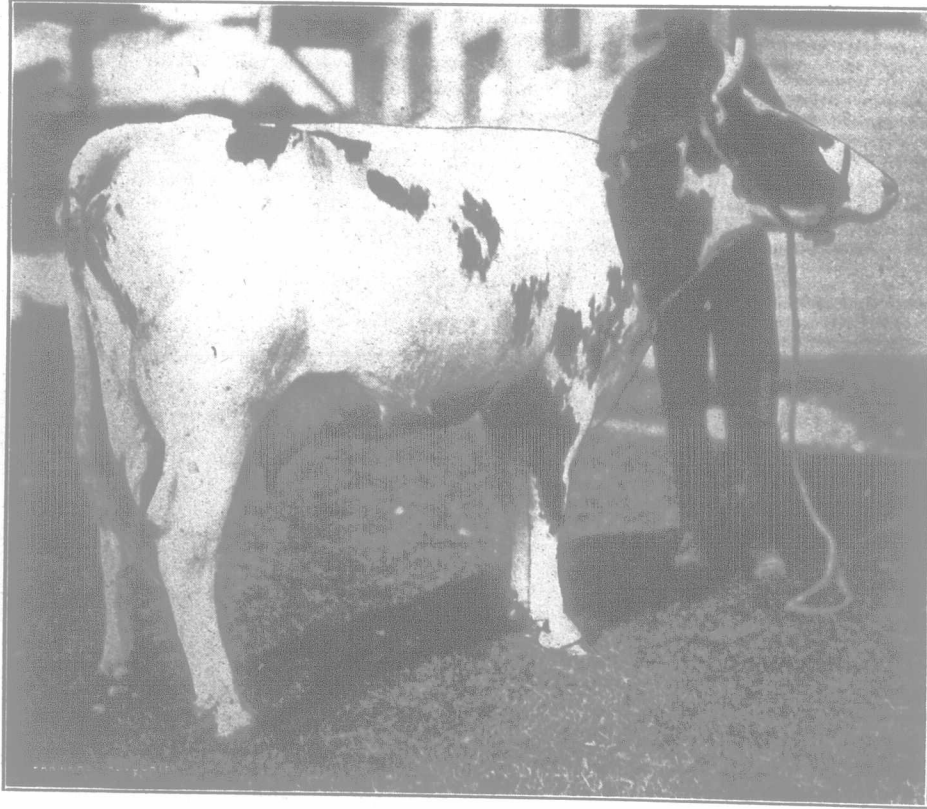
"9. And finally by reducing the drudgery of unprofitable dairying, it will help to keep the boys and girls on the farm.

"It is a familiar plea in these days of scarce help that "we can't get time to keep records." The truth is one cannot afford not to do it. As a matter of fact it doesn't take much time. Half a minute a day per cow will cover all the time involved in weighing and marking down the figures. That is five minutes per day for a herd of ten cows. If I hadn't time to keep records I'd dispose of one cow, taking chances even of selling my best one, and weigh the milk of the rest.

and an attempt to administer a drench will probably cause death by suffocation. All medicines, in such cases, should be administered through a tube passed to the stomach, and the liquid poured into the tube through a funnel. In fact, where there is either partial or complete coma it is unsafe for any person but a veterinarian to attempt to give medicines by the mouth.

PARTURIENT APOPLEXY.—We will call it "milk fever," as it is commonly known by that name, is much more common. The first symptoms are usually seen in from 6 to 48 hours after parturition, but cases have been known before parturition or practically accompanying the act, while, on the other hand, it may occur several days or even several weeks after the act. The first symptoms usually are an uneasiness on the part of the cow, stamping of the feet, whisking of the tail, a staggering gait, a dilation of the pupils of the eyes, and a somewhat shining appearance of the same, (this is known as an amaurotic condition) and an indifference to her calf. The pulse at this stage is usually frequent and strong, but soon becomes weak, but increases in number of beats. The temperature is now below normal and will continue so unless complications arise, hence we say that, "milk fever" is not a correct name for the disease. The symptoms continue to increase in severity, sometimes very quickly, at other times very slowly. She more or less gradually loses control of her muscles, and will lie or fall down. She may or may not be able to regain her feet. If she should she will soon go down again and after a

time is unable to rise, and partial or complete coma soon becomes evident. She will assume one of two positions, either lying flat with limbs and head and neck stretched out, or lying upon the sternum with the head backwards resting upon the flanks. If the head and neck be straightened and let go, they will immediately go back to the former position. This tends to give the observer the impression that there is a contraction of the muscles of that side of the neck, but if the patient be turned on the other side the head will take the same position on that flank. In some cases there is well marked delirium before coma becomes well marked. This fact, no doubt, gave rise to the name of parturient apoplexy to



Blue Bell of Menie.

Winner of first prize in the three-year-old class at the Western Fair, London, in 1912. Exhibited by Wm. Stewart & Son, Menie.

"If by so doing I found I had only two or three cows that were paying their way I'd release myself from bondage by selling the rest and raising the heifer calves from those two or three. Not number, but quality counts. Cut out the star boarders that are bringing the stoop to your shoulders, and the frown to your brow, apply business methods to your business and keep none but good cows."

Parturient Troubles in Cows.

Parturient paralysis and parturient apoplexy, the latter being generally but incorrectly called "milk fever" are liable to be confounded, as the symptoms are very similar to the ordinary stockman. Parturient paralysis is of somewhat rare occurrence. It is liable to occur shortly after parturition, and is due to a congestion of the vessels of the spinal cord and sometimes of the brain. It may be said to be the same as paralysis occurring at other times from the same cause, often from stomachic trouble. When the cord only is involved there will be more or less marked paralysis of the hind, and sometimes of the fore extremities, but the patient remains conscious and will probably eat and drink fairly well. Treatment consists in administering a purgative of about 2 lbs. Epsom salts and 1 ounce ginger, and following up with 2 drams nux vomica 3 times daily. If the brain be involved there may be practically total paralysis and more or less loss of consciousness, in which case diagnosis is more difficult, as the symptoms more strongly simulate those of parturient paresis. In such cases there will probably be inability to swallow,

the disease. In such cases it requires that the constant presence of an attendant to prevent the patient injuring her head, knocking off her horns, etc. Fortunately these symptoms are not common. When coma is complete the patient pays no attention to anything, has no sensation and practically no power of motion. In fact she appears as dead except for the fact that she breathes. Breathing is sometimes almost normal, but generally more or less noisy (called stertorous breathing). The disease is usually noticed in cows that are heavy milkers, are in high condition or both, but it may occur in a cow that is neither. We know of no cases in which it followed the first calf, and it is very rarely seen after the second. While veterinary literature, from its earliest stages, has discussed the disease, no writer has yet been able to give a satisfactory explanation of its nature and causes. Opinions as to the pathology and phenomena of the trouble have always differed, and still do so. One man has one theory while another has a different one, and while a man has a theory he is usually honest enough to admit that he cannot prove it to be correct. Post mortems reveal practically nothing as to the nature of the disease or immediate cause of death, except where complications have arisen. We know that it is a specific disease peculiar to the cow, occurring under certain conditions, and we have an intelligent idea as to the best means of prevention and cure.

After a great many years of study and investigation and the use of a great many drugs of different natures, it has been discovered that a full udder tends to prevent the disease, and also

tends to cure. Just why this is so is not well understood, but the knowledge that it is the case is of more practical importance than its scientific reason.

Hence prevention largely depends upon allowing the udder to remain practically full for about three days after parturition. We also deem it wise not to feed very highly for a few days before parturition, and it is claimed by many that the administration of a purgative a few days before parturition and feeding on dry food in the meantime, and administering a second purgative immediately after parturition is good practice, but such drastic preventive measures are not now generally recommended. The old idea that as soon as a cow calves she should be milked dry is absolutely wrong. Unfortunately this idea still prevails to some extent. Where nature is allowed to take its course, even with cows that are in high condition and heavy milkers, cases of milk fever are few. In such cases the calf nurses often but takes little at a time, hence the udder may be said to be practically full all the time. When we know this it teaches us that the better plan is to allow the calf to nurse for, at least, three or four days, and in the meantime no milk should be artificially drawn. When from any reason it is not advisable to allow the calf to nurse, the cow should have a little milk drawn frequently, but in no case should more be drawn than sufficient to prevent udder trouble for, at least, three days, in most cases better make it four, after which she may be milked dry in the usual way with reasonable safety. It must be understood that while this treatment is usually successful there are exceptions, and it is not unknown for a cow to be apparently all right in the evening and when seen the next morning she has produced a smart calf, and is down and comatose from milk fever, hence preventive treatment sometimes fails and we cannot tell why.

CURATIVE TREATMENT.—When symptoms of the disease appear, of course, curative treatment becomes imminent. In the very earliest stages the patient loses to a greater or less degree her power of swallowing, hence it is very dangerous to attempt to give her a drench, as more or less of it will almost surely pass down the wind-pipe and cause trouble. If sufficient reach the bronchial tubes to entirely fill them, the cow will die of suffocation in a few minutes. If a less quantity reaches them it will set up mechanical bronchitis, which will probably cause death in a day or longer, but in rare cases may not prove fatal. Hence in all cases probably the most important point to be observed is not to give anything whatever by the mouth. In some cases it is necessary to give medicine to keep up the heart's action, but this must be given hypodermically by a veterinarian and he will give strychnine. It is seldom that this is necessary. Successful curative treatment consists in distending the udder. So far as immediate results are concerned it appears to make little difference what we use for this purpose, so long as it is not of an irritant nature. The udder may be distended with a fluid or inflated with oxygen or air. Inflation is considered the better plan. The effects of distention are remarkable, and appear incredible to those who have not observed them. The udder should be washed with a warm disinfectant fluid, as a 5 per cent. solution of Creolin, Zenoleum or carbolic acid. It is good practice to draw all the milk in order that it may not interfere with inflation. A rubber or cotton sheet should be placed under the udder to keep it clean and the teat syphon disinfected with the fluid, and then carefully introduced into the milk duct, and the air or gas then forced into the quarter until it is full. It is then good practice to tie a tape tightly around the teat to prevent an escape of gas or air. Each quarter is filled in this way. It is wise to fill the quarters of the lower side of the udder first, as the patient often revives sufficiently to sit up before the last quarter is full, in which case the lower teats are hard to get, and if not filled will necessitate a little more trouble.

Oxygen gas is considered the safest for inflation, as it is pure and cannot cause udder trouble. It can be purchased in cylinders with the necessary apparatus for conveying it to the udder.

Sterilized air is more commonly used now. It also should be pure, and not cause udder trouble. Apparatus for this treatment can be bought from any dealer in veterinary instruments. Air injected through a rubber tube and teat syphon by an ordinary bicycle pump will give the same immediate results, but there is greater danger of udder trouble following. After inflation the udder should be well massaged every half hour until the patient regains her feet. The tapes should be removed from the teats in, at most, an hour after they have been applied. In most cases the patient regains the standing position in from one to two hours. When she fails to do this in three or four hours the udder should be again inflated. She should be fed on easily digested food for two or three days. She must not be milked at all for twenty-four hours

after inflation, and then a little milk drawn four or five times for the next twenty-four hours, after which she should be milked and fed as in ordinary cases.

Mostly every veterinary practitioner has occasionally met with a case, at any period of lactation, that simulates in every way a case of milk fever, and yields to its treatment. We cannot call this a parturient disease, and must admit that we do not understand it.

It is certainly wise for the owner of a cow, attacked with this disease, to procure the services of a veterinarian when possible, but there are cases where this cannot be done, hence this article to explain the symptoms and treatment. Where the proper apparatus is on hand and the owner understands its use, he will have fair success by home treatment. WHIP.

The Cheese-Factory Patron's Returns.

As emphasizing the value of dairy by-products in enabling dairymen to supplement the returns from their cows with proceeds from hogs raised partly upon the whey, Frank Hems, Chief Dairy Instructor in Western Ontario, has been presenting this winter at annual cheese-factory and creamery meetings some figures gathered in a dairy census completed this winter in a township of Middlesex County.

This census represented 80 herds comprising 1005 cows, the mathematical average being 12.5 cows per herd. These cows yielded 5,009,258 pounds of milk or an average of slightly less than five thousand pounds per cow—to be exact 4,984 lbs. The value of the produce sent to the cheese factory and used at home was \$53,401.17, an average of \$53.22 per cow. In addition the owners of these 80 herds sold 2,147 hogs, raised partly on the whey, or an average of 26.8 hogs per herd. These hogs brought \$22,158, an average of \$14.97 per hog and of \$32.47 per cow.

The average proceeds per patron for milk was.....\$ 668.63
The average proceeds per patron for hogs was..... 401.97

The average proceeds per patron for hogs and milk was.....\$1070.60
The average proceeds per cow for hogs and milk was..... 85.65

It is but fair to state that the hogs consumed some grain as well as whey, but, even cutting the hog proceeds in two and allowing half of it as payment for the whey consumed, the return per cow would still be seventy dollars besides the value of the calf and the manure.

But note these differences between the best and poorest herds:

The highest herd average was 9428 pounds of milk per cow. This patron received \$104.59 per cow for his milk and in addition sold \$280 worth of hogs; making his total proceeds from hogs and milk \$134 per cow.

The lowest herd average was 2893 pounds of milk per cow, and the cash proceeds from factory was \$31.37. This man fortunately sold \$200 worth of hogs and as he had ten cows this means a saving item of \$20 per cow as returns from pork or a total of \$51.37 per cow for cheese and pork together making no allowance for grain fed to the hogs.

"I sincerely trust" added Mr. Hems "that it did not cost this man \$80 a year to keep a cow or it will take him a long while to get rich."

Mr. Hems also analyzed the record of a certain Lambton County factory receiving the milk from 89 herds with an average of six cows per herd. Of the 89 herds 18 averaged less than 3000 pounds milk per cow; 34 averaged between 3000 and 4000 pounds; 18 averaged between 4000 and 5000 pounds; 15 averaged between 5000 and 6000 pounds; 3 averaged between 6000 and 7000 pounds, while only one exceeded the latter figure, by giving 7,960 pounds per cow. Contrast with this the lowest herd, which yielded only 2,196 pounds per cow. The average of the whole factory was 3,888 pounds per cow.

The average proceeds per cow was..... \$38.88
The highest proceeds per cow was..... 87.12
The lowest proceeds per cow was..... 24.66

Why not have more herds like the best?

"I wonder if we realize the increase in the price of butter since 1904" said Chief Dairy Instructor, Frank Hems, in a recent creamery address. At that time cheese was bringing six and three quarters to seven cents a pound, May, 1904; butter, 19 to 20 cents. There was any amount of milk. Hogs were \$5.15 in March, 1904, against \$9.75 in 1913, and beef cattle \$4.40 in 1904 against \$6.90 in 1913; oats, 37 cents then, as compared with 40c.; wheat \$1.00 in 1904, and 98 cents in 1913. About that time everything began to get scarce, and wages to go up. Prices for grain, however, have not risen so much as the prices for produce. Demands

for milk have multiplied. It has been estimated that the dairy products of Canada last year footed up pretty well to a hundred-million dollars in value. The outlook for the producer of dairy products is bright.

POULTRY.

Sell the Eggs to the Consumer.

Editor "The Farmer's Advocate.":

I have noticed this winter that in every paper you may happen to glance at you will find an article on the high cost of living in the city. Now I think that part of this high cost is partially the fault of the consumer. We will first take the price of eggs, which are at the present time in our village store 20c. trade; if you don't want trade you may take a small piece of bright metal called a cheque or due bill and trade it out some other day, if the merchant has not what you want you may go to another store and pay the cash, if you have it, if not you may wait until the hens lay enough to get that article and then go back to store number two and get it.

Now why should not eggs bring the cash at country stores? If they have what you want you can pay the cash. If not you have the cash to go to another store the same day if there is another in the village, it would save another trip and you would not have to wait until the hens lay, hence you would save time.

Now I have a well-to-do neighbor who has a number of hens and they have more cheques or due bills in one year than they could trade out in two years. What will they do with the balance of their cheques? They are not money unless you buy at store number one.

You may say why do they take all the eggs to the one store? Simply because it is the nearest and less trouble. Last winter they attempted to ship them to Toronto to a commission merchant and they got a little more than they would get at home for the first few crates, and after that there would be a few broken ones when they arrived which would be taken out of the cash which made them worth but very little more than they got at the country store, and finally they lost the last crate, eggs and all, and have never heard of it since.

If the consumer would advertise in "The Farmers Advocate" for a twelve or twenty-four dozen crate of eggs per week strictly fresh laid, there are many farmers who would supply them if they got anywhere near the price they were paying in the city. I for one would gladly take the city price less the express, and the consumer would have fresh eggs. As it is the consumer has to take what he can get, namely country store eggs sent to a commission merchant, and three out of every dozen none too good as they are gathered every two or three days by perhaps thirty different farmers and kept for a week or ten days and taken to the store, and kept there ten days more, and then the commission merchant has them a few more days and still they are called fresh eggs.

But many consumers seem to think that they should get eggs at the same price as you would get at the country store. I have found some of them that way, but not all of them. I am supplying a gentleman in the city who is well pleased. He says they are the best eggs he ever bought as they are all fresh. There must be more people like him in the cities and surely one-half at least of the farmers could be trusted to send strictly fresh eggs. If they were found not to be good send them back to him and I think you would only have to do it once. But there are so many who have to have a larger profit out of these eggs than the farmer has before they reach the consumer that the cost is high and they think the farmer is getting rich fast. Now the same thing happens with apples by the barrel. If the consumer would pay the grower about half what he pays the retailers they would both receive a profit. I sold apples last fall for which I only got \$1.00 to \$1.15 per barrel and the same apples will retail at \$4 and \$5 per barrel. Who gets the profit?

Now to show that the farmer gets the small end of everything he has to sell, only last week I had a beef hide to market. I hired a butcher to kill the beef therefore it would be a butcher's hide and he buys hides. He offered me eight cents per pound for it and remarked that the buyer said they were going down, so I got the Toronto paper which quoted them at 13½c. Consequently I sent it to Toronto and in a few days received a cheque at twelve cents per pound less ten cents freight, and I sent it by express, now why did I not get 13½ less the express, was it because I was a farmer and as green as the hide, or what was it, can anyone tell?

Norfolk Co., Ont. A SUBSCRIBER.

(Note.—This letter shows the great need of bringing the producer and consumer closer together. Selling eggs direct to the consumer can be

managed and we would advise "Subscriber" to look into the matter of forming an egg circle in his district. He lives in a county noted for its progressive fruit-growers' association. All fruit growers should profit by joining it and by putting up number one fruit get top prices.—Editor.]

A Correction in Poultry Profits.

On page 126 of our issue of January 23rd, 1913, there appeared an article "Poultry Work in Ontario County." The net profits were given as \$184.84. One rather large item of expense was inadvertently omitted from this statement, viz., \$39.00 which was the cost of the feed of the young stock, the \$37.80 given being the cost of feed of the laying stock only. This would reduce the profit to \$145.84. A further oversight was made by the person who kept the accounts in crediting the hens with all the eggs sold, when a few were used for hatching purposes in the home flock. This, judging from the number of chickens hatched, would be a matter of from \$5.00 to \$7.00. Even after making these deductions the results were excellent. The thirty pullets yielded a net profit, over all outlay, of, as nearly as can be estimated, \$140. This is surely sufficient evidence to justify the continuation of the demonstration work, and to convince poultrymen that it pays to keep good stock under favorable conditions.

Cure for Turkey Trouble.

Editor "The Farmer's Advocate.":

In reply to Mr. Bell's letter in your issue of February 27th, on swelled head in turkeys. I am not doubting Mr Bell's treatment, but I had a pair of matured turkeys with this trouble and I lanced and squeezed the lumps out as they could not see to pick up their feed, and I gave them internally one tablespoonful of turpentine and one of castor oil in a little warm water, given with a spoon every other day for three doses. Their droppings were greenish-white in color. They both got all right and raised young turkeys the next summer, and did as well as we ever had turkeys to do. Now this is a cheap cure. Hoping some one else may try it and report his experience.

Bruce Co., Ont.

G. D. SPAVAN.

GARDEN & ORCHARD.

Pleasure and Profit in a Small Garden.

Editor "The Farmer's Advocate.":

I read the article by Mr. Krouse in your February 20th issue, with great interest. I am a farmer's wife, and thought I would tell of my own experience in gardening for profit on a very small scale, if it would prove of interest or benefit to anyone. But I would not advise any farmer's wife to try it unless she had a real love for gardening.

In the spring of 1912 I had a small hotbed made, three sashes 3 feet by 6 feet each, making a 9-foot by 6-foot bed. My first crop was lettuces and radishes, which I used on my own table and gave away to my neighbors. After they were finished I planted two sashes in vegetables and one in flowers. I did not start my hotbed with any idea of profit, but found that everything grew so well that I had far more vegetables than I could use. A little extra money never comes amiss to the average farmer's wife, so I tried to sell some of my vegetables to neighboring villages without success. The nearest town is eighteen miles away. We live very close to a station, and finally I got a market with trainmen who were glad to get fresh vegetables at reasonable prices. As my husband takes cream to the station every morning, the vegetables were easily delivered. I will give briefly a table of my expense and profits.

Expense.—Hotbed sashes, \$3.00; putty and glass, \$2.25; vegetable seeds, \$2.00. Total, \$7.25. Receipts.—Vegetables sold: cabbages, \$4.05; new potatoes, \$6.90; cauliflowers, \$4.05; onions, \$3.45; green corn, \$1.70; tomatoes, \$2.13; beets and carrots, \$3.40; tomato plants, \$1.00. Total, \$26.68. Net profit, \$19.43.

We have strawberries growing along our fences and I sold about \$3.00 worth, but cannot count that as garden profit. Besides what I sold I had ample for myself, and I may say I only planted $\frac{3}{4}$ bushel of potatoes and had enough for our own use from early summer till fall. My flower gardens were very beautiful too, and a great pleasure to me. Profits would have been greater had it been a good summer for tomatoes and onions. But the continued wet weather rotted a great many of my tomatoes, and developed thick necks in the onions. I did almost all of the work myself, except that my husband went between the rows of vegetables with

a single horse cultivator about once in two weeks.

Next year I hope to profit by my experiences still more. I may say too that I had a close acquaintance with the countless bugs, grubs and worms that infest gardens, and that my melons were a great success, but we did not sell any.

Oxford Co., Ont.

AMATEUR.

THE FARM BULLETIN.

Another Impostor.

Editor "The Farmer's Advocate.":

In your recent issue of "The Farmer's Advocate," February 20th, my attention was greatly drawn to the topic of "Impostor at large" of which I read with great pleasure, as from what description you give, he is the same man as visited us in a similar manner as that you have spoken of.

A year ago this last Christmas a man came here and asked for his supper and lodging for the night, of which we did not refuse. He said he was a government surveyor, and that another man had been with him towards evening when he took off some other direction. However, he made a few trips strolling through the woods making us believe that he and this other man were actually doing government work. He stayed with us the entire week, and then one nice bright day he disappeared as mysteriously as he arrived, and not paying a cent for board or lodging. He called himself here Archie McPhail, of wealthy parents, living in Dundas County, farmers. He also said he was a brother of Alex McPhail, veterinary surgeon in Winnipeg, and also a brother of McPhail, a Presbyterian minister at London. However, we don't begrudge his keeping here for nothing, but I am very much pleased to know that it has started publication through your valuable paper, which is read by many far and near. I hope that any persons who have read Adamson's letter and this one, will be careful of visitors, if chance they get a man of this description, that they won't treat him as leniently and believe his many gossips as I was prone to believe.

Muskoka, Ont.

P. WILLISON.

Stock Yards Consignment Sale.

The sixth annual consignment sale of registered Clydesdale and Percheron stallions, mares and fillies, held at the Union Stock Yards, West Toronto, on Tuesday and Wednesday, February 25th and 26th, drew a large and representative gathering of breeders from many points in Ontario, Quebec, and some from across the lines. All told, there were offered about 40 Clydesdale fillies, 20 Clydesdale stallions, 16 Percheron fillies and 7 Percheron stallions. Many of these were imported. A particularly choice lot of Clydesdale fillies, all of them imported, were consigned by Goodfellow Bros., of Macville, Ont., and of Percheron fillies imported T. D. Elliott, Bolton, Ont., had out a choice lot. The majority of the latter breed came from the stud of E. J. Wigle, Kingsville, Ont. Many of the offerings, particularly the Clydesdales, were not up to a particularly high standard, and the prices offered were not at all satisfactory to the owners, and many of them were withdrawn. The highest price paid for a Clydesdale mare was \$600, for the imported mare, Royal Rose, purchased by J. Goodall, Bellwood, and the highest price for a Clyde stallion was \$360, for General Baron, Canadian bred, and purchased by E. O'Leary, Bloom Prairie, Minn., U.S. The highest price paid for a Percheron stallion was \$1,400, for the four-year-old, Albert A, bred in the United States. The highest price for a Percheron filly was \$590, for the Toronto first-prize yearling, Latine Imp, consigned by T. D. Elliott. Altogether the sale cannot be said to have been a great success.

Customs Regulations for Pure Bred Stock.

The regulations in regard to the free entry into Canada of animals for the improvement of stock have been amended, the new regulations to come into force April 1st, 1913. These new regulations differ from the old in that to obtain the duty-free privilege a person must be a British subject resident in the British Empire, and a statutory declaration must be provided by the importer to the effect that he is a British subject resident in the British Empire. Import certificates for horses, after April 1st, must show the color and markings of the horse, and if there are no markings, such must be so stated. All customs officials will be required to compare the description given on the import certificate with the animal, and, if there is any discrepancy, the duty must be paid.

A Paper for All.

For a number of years "The Farmer's Advocate" has been in constant use in our home. It is amusing to see how carelessly and indifferently all other papers are shoved aside as soon as the latest edition of this invaluable paper makes its appearance. Father, mother, sister, brother and children all want it and all at the same time, and we feel it quite a task to have to await our turn. We men folk like it because it treats with the most modern and scientific methods of farming. The women like it because in it they find pages that deal with their domestic affairs. Last, but not least, the children have their page. They have their little talks and discussions on their various subjects, from how to fly a kite to the best way to lay out their little garden plots, a work which it would not be a bad plan if a good many of their elders would imitate, the results of which would likely mean larger profits and less failures.

Oxford Co., Ont.

STANLEY S. MURRAY.

An American contemporary urges that in calculating the profits of stock husbandry, crops should be charged not at their market value but at what they may have cost to produce. Is this good business? Is it not more logical to charge the animals with what their feed is worth (less the cost of hauling it to market) and then credit them with the full intrinsic value of their manure? On the other hand, in estimating the profits of crop production one should never forget to charge the corn, wheat or oats with what they may have appropriated from the manure applied to the field on which they were grown or from the reserve supplies of fertility in the soil or from both. We believe this method of calculation will make for a juster appreciation and more careful utilization of that greatly undervalued by-product of stock husbandry—manure.

All such advantages claimed for mixed farming as being able to produce crops more economically on manured land than on unmanured land, to secure catches of clover seed more certainly and to work the land more easily—all these advantages resolve themselves into terms of dollars and cents per ton of manure. To be sure, it is difficult to estimate them fairly, or, in other words, to arrive at a true opinion of what manure is really worth, but the value is undeniably much higher than commonly assigned. We believe good manure may easily be worth three dollars per ton on the field, allowing for the effect upon future as well as upon immediate cropping. The manure spreader, by distributing the dressing finely and evenly over a large area, helps us more nearly to realize its full potential value.

The Ontario Government has again, this year, placed in the estimates a grant of \$18,000 for Standing Field Crop Competitions, to be conducted under the auspices of the Boards of Agricultural Societies. Competition in each society is limited to one kind of crop, and competitors must be members of an agricultural society. The Ontario Department of Agriculture, as in the past, will furnish the judges. Substantial prizes will be given for grain and potatoes at the Provincial Winter Fair. Arrangements have been made for a grand sheaf exhibit at the Canadian National, where handsome prizes will be donated. The grain exhibit at this show is also to get \$50. Large prizes will also be offered at the Canada Central Exhibition, Ottawa, and possibly at the Western Fair, London.

At a meeting of the Toronto Fair Board, held last week, John G. Kent was re-elected President and George H. Gooderham, M.P.P., was elected Honorary President, with Joseph Oliver and Noel Marshall as Vice-Presidents. The Executive Committee for 1913 is composed of W. K. McNaught, M.P.P.; Mayor H. C. Hocken; George Booth; Robert Fleming, and Samuel McBride. John Gardhouse, of Highfield, was made Chairman of the Committee on the breeding classes of horses, and the representatives on committee for cattle, sheep and swine are T. A. Russell, Toronto; Robert Miller, Stouffville; W. W. Ballantyne, Stratford, and W. A. Dryden, Brooklin. Mr. Ballantyne is also chairman of the committee on dairy products, and agricultural, horticultural and floricultural products will be in charge of John Firstbrook.

There is no farmer's paper like "The Farmer's Advocate," and I have been very much interested in the plans for barns which have been published in recent issues, as I intend to build a barn. But as I am also going to build a house, I would be very much pleased if you would give some plans of farm houses. I hope those who have good farm homes will give a plan of their houses and tell of any alterations they would make if building again.

Welland Co., Ont.

W. W. MARSHALL.

All Looking for Good Seed Grain.

The conditions of the supply of seed grain throughout Eastern Canada; due to the prolonged wet weather of last harvest season, is a question of more than ordinary importance this spring. Farmers in all of the provinces east of Lake Superior except Prince Edward Island, are this year more than in any other, looking for fresh supplies of seed oats. Their own oats stood out in the shock for weeks, being repeatedly soaked with rain. Nearly all the oats and much of the other grain was badly weathered and germination started. As a result the vitality of the grain available for seeding this spring is irregular; it differs widely on different farms, and even with the best of care in handling the crop the germination of the seed is precarious.

That the growers of selected seed have suffered much loss in common with others was clearly evident in the discussion of the first session of Canadian Seed Grower's Annual Convention, held in Ottawa last week. The area under registered seed crop was greater than in any previous year, yet the quantity of seed grain that came up to the high standard of quality demanded before the seed may be sealed in the sack with the seal of the Association and catalogued for sale, was less than last year.

Seed Fairs, and Field Crop Competitions, have done much to awaken an interest in the advantages of using superior seed grain and other seeds, and the demand for selected registered seed produced by members of the Association is much greater than the supply. How to increase the supply seemed to be a perplexing problem. Many farmers commence with the work but after one or two years experience find it difficult to maintain the high standards of quality in their crops because of the great scarcity of efficient farm labor.

The work of several of the members who have continued with the work for thirteen years, have established for themselves an enviable reputation and in consequence find seed-growing to be a remunerative industry as a specialty in farming, was highly commended, Thos. Waugh, of Prince Edward Island; Donald Innes, New Brunswick; J. Levasseur, of Quebec; C. R. Gies, and D. Carmichael, of Ontario; Dow Bros., and Thos. Thompson, of Manitoba; F. J. Dash, of Saskatchewan and others being especially commended. That they have received small remuneration for the immense benefit they have been to their respective provinces was agreed to by all.

The Association expressed approval of the co-operative endeavors of its members and others in forming local clubs for the advancement of their interests, especially in the marketing of their supplies. The Banner Oat Club, of Prince Edward Island, and the River Front Corn Club, of Essex County, were especially mentioned.

The corn growers of South Western Ontario appealed for the appointment of an expert who would devote his time to the interests of seed-corn growers. The main difficulty to be overcome is in the tendency of the growers to multiplicity of varieties. This adds difficulty in keeping the strains pure, and in securing at any one centre bulk quantities of any one kind that can be counted upon to be uniform as to quality of seed and earliness of maturity. It was proposed that some action should be taken under a strong man with a view to forming centres for the growing of particular varieties and to supervise the marketing of it, after the plan of Fruit Growers' Associations.

The Committee on varieties, appointed a year ago, met in conference and agreed that the Association should recognize only those varieties that have been tested and improved by selection.

SUCCESS FOR NEW INSPECTION SYSTEM.

The report of the Board of Directors to the general meeting commented upon the success that has attended the double-inspection system that was introduced a year ago. Seed, to be eligible for registration, must now be inspected when growing in the field and again when in the bags ready to be sold, when it is sealed by the inspector if it passes inspection. By this system purchasers have been protected, and some lots, not up to the standard, have been prevented from being put on the market as registered seed.

SEED CENTRES.

The difficulty of securing any one variety of seed in large quantities was pointed out as a drawback to the success of the Association. To correct this, growers were strongly recommended to create seed centres, by a number of members in the same locality producing the same kind of seed. It was pointed out that much success had followed the formation of Banner Oat Clubs in Prince Edward Island, by a number of growers concentrating on one variety. W. J. Lennox, reported that seed centres were being organized in Western Ontario for the production of O. A. C. No. 21 barley, O. A. C. No. 72 oats, peas and potatoes. Districts adapted for a certain kind of grain are being selected, and efforts made to induce

growers to confine themselves to one sort. In this way there is less danger of mixing, and a large supply is made available at one point. C. Sweet reported that the seed-centre idea was being worked out in Quebec by supplying registered Banner oats to be used in a competition for boys in the Cookshire District, who are to compete in growing a quarter-acre seed plot for three years.

A report was presented showing a comparison between registered seed oats and non-registered oats, the best obtainable from seedsmen of the same variety. A large number of farmers co-operated in this test, which was decidedly favorable to registered seed. Seventy-seven per cent. of the growers obtained a higher yield from registered seed, while the superiority in uniformity of type and general purity was very pronounced.

PROGRESS OF ASSOCIATION.

The report of the secretary-treasurer showed that the Association has made a considerable gain in membership during the year. In 1912 there were 152 growers who made satisfactory hand selection of seed compared with 90 the previous year, while 118 applications for membership were received, compared with 50 the year before. During the year 49 applicants made satisfactory selections, and were elected members. In 1912 there were 1,621 acres devoted to the production of registered seed of cereals, the amount produced being 33,474 bushels.

OFFICERS ELECTED.

The election of officers resulted in only two changes on the Board of Directors. J. B. Daggett taking the place of W. W. Hubbard, Fredericton, N. B., and Prof. Moorehouse, M. A. C., Winnipeg, succeeding Geo. Batho.

The Guelph Shorthorn Sale.

The tenth annual sale of purebred Shorthorn bulls held under the auspices of the Guelph Fat Stock Club, and the Ontario Department of Agriculture, at Guelph, March 5th, was by far the most successful auction yet held by the Club. The quality of the offering was good and the prices indicative of the upward trend in demand for Shorthorn breeding stock. There was a large attendance, breeders being present from distant parts of Ontario, from Manitoba, Saskatchewan and Montana. Of twenty-nine head sold, twenty-three averaged \$156. The highest price was \$325, three others selling for \$200 and over and thirteen for \$150 or over. Seventeen head went to Montana, one to Manitoba and one to Saskatchewan, the remainder staying in Ontario. The following is a list of animals selling for \$100 and upwards.

Animal	Contributor	Buyer	Price
Golden Fame	W. C. Edwards & Co., H.		
Brown, Montana			\$150
Challenge	W. C. Edwards & Co., H.		
Brown, Montana			180
Clipper Prince	W. C. Edwards & Co.,		
Geo. Rankin & Sons, Hamiota, Man.			825
Ruby's King	W. C. Edwards & Co., H.		
Brown, Montana			180
Rosy Prince	W. C. Edwards & Co., H.		
Brown, Montana			175
Gloster Champion	W. C. Edwards & Co.,		
Jos. W. Barnett, Moosejaw			180
Wanderer	W. C. Edwards & Co., H.		
Brown, Montana			105
Prince Amaranth	W. C. Edwards & Co.,		
Geo. Smith, Embro			102.50
The Sultan	W. C. Edwards & Co., H.		
Brown, Montana			150
Banker	W. C. Edwards & Co., H. Brown,		
Montana			155
Victor's Emblem	A. Burnett & Son, H.		
Brown, Montana			100
Sir Wilfrid	P. Stewart, R. Mc Allister,		
Auburn			215
Ramsden Groom	G. and W. Parkinson,		
M. M. Wilson, Ferguson			200
Stamford Hero	G. and W. Parkinson,		
James McQueen, Arthur			110
Matchless Victor	Irvine B. Weber, H.		
Brown, Montana			110
Fashion Primrose	H. K. Fairbairn, H.		
Brown, Montana			150
Golden Primrose	H. K. Fairbairn, John		
Peary, Winterbourne			160
Chancellor Lad	John J. Elliot, W. J.		
Isaac, Norwood			115
Lancaster Bud	Leslie Bros., H. Brown,		
Montana			150
Bud's Victor	W. G. Gerrie, H. Parker,		
Seaforth			175
Lancaster Sovereign	A. F. and G. Auld,		
H. Brown, Montana			147.50
Conqueror	James Cowan & Son, H.		
Brown, Montana			100
Sailor Joy	Geo. D. Fletcher, H. Brown,		
Montana			240

Huntingdon Dairymen's Convention.

The 31st annual convention of the Huntingdon Dairy Association was held in Macdougall Hall, Ormstown, on Friday, Feb. 28th. It was the best convention held for some years. The President, Robert Ness, of Howick, in his opening remarks referred to the many changes in the Agricultural world since the Association was organized. The secretary's financial statement showed a balance on hand of \$80.56.

At the morning session, Prof. Barton of Macdonald College, in an address on the feeding of dairy cows said in part that most of farms are understocked with underfed, and poorly-bred animals. The right kind of roughage is not being sown and losses were heavy in this regard. Farmers should grow more silage, roots and clover. He advised not to start growing too large an acreage of corn at first but to commence in a small way and as experience was gained increase the average. He considered no dairy farmer should be without a soiling crop to supplement the pasture and recommended alfalfa, peas, oats, vetches and clover, and silage. Feeders should study more the making of a balanced ration.

At the opening of the afternoon session, Dr. Harrison, of Macdonald College, gave an interesting address on milk production from a bacterial standpoint. He considered the situation of farmers in this eastern section was linked with the milk supply of Montreal City and he described some of the methods of delivering milk in the cities of Europe, where best results were realized by companies commencing in a comparatively small way and working upward to a large distribution. He emphasized the necessity of farmers putting up clean milk and showed the connection of disease-producing organisms between the animal and the human, especially in connection with tuberculosis and kindred diseases. A great responsibility rested on the dairymen in producing clean, wholesome milk as the largest consumers were children and invalids. He advised dairymen to pay greater attention to the cleanliness and ventilation of the stable. Use only clean utensils and cool the milk thoroughly.

Louis Simpson, of Ottawa, commended the object of the promoters of the Consolidated Milk Company, Limited, as being the best method for the producers to put their cream before the consumers. He referred briefly to the labor problem in its relation to the farm and considered that the Government should no longer boom our Canadian West as the railways were quite capable of doing this, but should turn their attention more to bringing labor into the eastern country. He recommended the using of more power machines.

At the evening meeting, D. M. MacPherson, of Lancaster, the first President of the Association, referred to the good work done by the Association since its organization. In a lengthy address he went on to show how that formerly he advocated the feeding of the cow to make fertilizer to enrich the soil, to grow large crops. He had seen the fallacy of that system and had learned that the proper method was to feed the land so that it would produce large crops to feed more cows and thus increase the profit per acre and lessen the cost of production. He recommended that along with a certain amount of barnyard manure the application of a commercial fertilizer with four per cent. soluble nitrogen, eight per cent. soluble phosphoric acid, six per cent. potash and about two hundred pounds soluble lime, an application such as this would be a balanced ration to the soil, and applied early in the spring he had found it to give big returns in experiments that had been tried in the County of Glengarry during the past two years.

Robert Brodie, of Westmount, discussed orcharding and Wm. Ewing, of Montreal, dealt with the subject of clover seed. H. B. Cowan, of "Farm and Dairy" also addressed the Convention.

One of the features of the Convention was the presentation of the gold and silver medals to the successful winners in the Provincial Farms Competition in 1911, as follows:-

Gold medal, Alex Younie, Tullochgorum, Quebec; Silver medals, T. O. Bourdon, Chateauguay; John Brown, Howick; Andrew Geddes, Ormstown; John Geddes, Ormstown; J. W. Logan, Howick; J. Milne, Riverfield; Jas. MacKell, Riverfield; Robert McNeil, Ormstown.

The following are the officers and directors for the ensuing year:-

President, Robert Ness, Howick; Vice-President, Arch. Muir, sr., Huntingdon; Secretary-Treasurer, W. H. Walker, M. L. A.; Directors, D. D. McBain, Valleyfield; Wm. Scott, Valleyfield; Edward McCowan, St. Martine; Jas. Bryson, Brysonville; Thos. Drysdale, Allan's Corners; Jas. Burke, Corbin; D. H. Brown, Beth; Jas. Donaldson, Dewittville, and Thos. White.

A week's free course, on plain and fancy ice-cream making, is to be put on at the O. A. C. Dairy School, March 24th-29th, in charge of D. McMillan.

MARKETS.

Toronto

REVIEW OF LAST WEEK'S MARKETS

At West Toronto, on Monday, March 10, receipts of live stock numbered 49 cars, comprising 699 cattle, 349 hogs, 39 sheep, 8 calves, and 36 horses; no business transacted. Hog prices firm, at \$9.65 fed and watered; and \$9.30 f. o. b. cars at country points.

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

	City.	Union.	Total.
Cars	15	324	339
Cattle	228	3,192	3,420
Hogs	35	7,446	7,481
Sheep	52	543	595
Calves	8	264	272
Horses	18	204	222

The total receipts at the two markets for the corresponding week of 1912 were as follows:

	City.	Union.	Total.
Cars	129	153	282
Cattle	1,792	1,861	3,653
Hogs	3,006	1,947	4,953
Sheep	988	515	1,503
Calves	215	14	229
Horses	93	328	421

The combined receipts of live stock at the two markets for the past week, show an increase of 57 cars, 2,528 hogs, and 43 calves; but a decrease of 233 cattle, 908 sheep and lambs, and 199 horses, compared with the corresponding week of 1912.

There was a fair supply of cattle at the Union yards last week, and for quality and prices, the market was a repetition, as nearly as possible, of our last report. There were far too many of the unfinished classes, and barely enough of the good to choice quality to supply the demand. Prices were no higher generally, only seven cattle selling at \$7.10, which was 10c. higher than the highest quoted in our last report. Receipts of sheep and lambs continue to be light, and, as a rule, of very poor quality, and prices remain firm; in fact, when quality is considered, they are higher. Moderate supplies of hogs and calves, caused prices to remain very firm in both classes.

Exporters.—Probably there would be about 150 cattle of export quality and weights, bought by the abattoirs, at \$6.75 to \$6.90, and 7 cattle at \$7.10.

Butchers.—Choice picked lots of butchers' cattle sold at \$6.25 to \$6.75; loads of good, \$5.90 to \$6.25; medium, \$5.40 to \$5.75; common, \$5 to \$5.25; inferior, \$4.25 to \$5; cows, the bulk sold at \$3 to \$5.25, but a few of choice, heavy-weight cows, good enough to export, sold at \$5.40 to \$5.60; bulls, common to choice, sold at \$3.75 to \$5.40; canner cows, at \$2.50 to \$2.75.

Stockers and Feeders.—Stockers, 500 to 750 lbs., sold at \$4.50 to \$5.15; feeders, 800 to 1,000 lbs., at \$5.25 to \$5.65. The trade in these classes was light.

Milkers and Springers.—The market in these classes has been stationary for several weeks past. The supply, as a rule, was light for the past week, but quite equal to the demand. Enquiry, as a rule, was centered largely on the good to choice kinds, and most of the selling was from \$55 to \$70. Common and medium sold from \$40 to \$48.

Veal Calves.—Receipts of veal calves were light, and, as a rule, the quality of those offered was never worse. Good to choice vealers sold from \$9.50 to \$10; fair to good, light vealers, sold at \$8.75 to \$9; strong-weight vealers, \$6.75 to \$8.25; inferior, rough, heavy calves, sold at \$4 to \$5.50.

Sheep and Lambs.—Receipts were small and prices very firm. Sheep—Ewes sold at \$6.50 to \$7.15 per cwt.; rams, \$5.50 to \$6; lambs, \$9 to \$9.50 per cwt., and a few sold up to \$10 per cwt.

Hogs.—Receipts moderate, and prices firmer, at \$9.60 to \$9.65 fed and watered, and \$9.35 f. o. b. cars at country points.

Horses.—There was a fair supply of horses delivered at the Union Horse Exchange, Union Stock-yards, last week. Trade was very quiet, few sales being made to outside points, and only a limited number to local buyers. There was little change in prices, which were

reported as follows: Drafters, \$175 to \$250; general-purpose horses, \$150 to \$225; expressers, \$150 to \$225; drivers, \$100 to \$150, and serviceably sound, \$80 to \$100 each.

BREADSTUFFS.

Wheat.—Ontario, No. 2 red, white or mixed, 95c. to 96c., outside; inferior grades, down to 70c.; Manitoba, No. 1 northern, 97c.; No. 2 northern, 94c., track, lake ports. Oats—No. 2, 33c. to 34c., outside; 33c., track, Toronto. Manitoba oats, No. 2, 41c.; No. 3, 39c., lake ports. Rye—No. 2, 60c. to 65c., outside. Peas—No. 2, \$1.15 to \$1.20, outside. Buckwheat—51c. to 52c., outside. Corn—No. 3 yellow, 56c., track, Toronto, all-rail shipment. Barley—For malting, 56c. to 60c.; for feed, 45c. to 50c., outside. Flour—Ninety-per-cent. Ontario winter-wheat flour, \$3.95 to \$4.05, seaboard. Manitoba flour—Prices at Toronto are: First patents, \$5.30; second patents, \$4.80; in cotton, 10c. more; strong bakers', \$4.60 in jute.

HAY AND MILLFEED.

Hay.—Baled, car lots, track, Toronto, \$12 to \$13 per ton for No. 1, and \$11 to \$12 per ton for No. 2. Straw.—Baled, car lots, track, Toronto, \$9 to \$10 per ton. Bran.—Manitoba bran, \$19 to \$20 per ton; shorts, \$21.50; Ontario bran, \$19 to \$20, in bags; shorts, \$21.50, car lots, track, Toronto.

TORONTO SEED MARKET.

Unchanged, and very quiet. Alsike No. 1, per bushel, \$11.50 to \$12.50; alsike No. 2, per bushel, \$10.50 to \$11; alsike No. 3, per bushel, \$9.50 to \$10; red-clover seed, Ontario-grown, \$7 to \$9 per bushel; timothy No. 1, per bushel, \$1.90 to \$2.25; timothy No. 2, per bushel, \$1.25 to \$1.60. The above quotations are prices paid to farmers for seed that has to be cleaned by the seedsmen.

COUNTRY PRODUCE.

Butter.—Market remains steady, prices being unchanged. No. 1 creamery rolls, 32c. to 34c.; creamery solids, 28c. to 30c.; separator dairy, 28c. to 30c.; store lots, 22c. to 24c. Eggs.—Strictly new-laid, 26c. to 27c.; cold-storage, 17c. to 18c. Cheese.—Large, 14c.; twins, 15c. Honey.—Extracted, 12c. per lb.; combs, per dozen sections, \$2.75 to \$3. Beans.—Car lots, at Toronto, hand-picked, \$2.60 per bushel; primes, \$2.25, ranging down to \$1.25 for poor quality. Potatoes.—Car lots of Ontario potatoes, track, Toronto, 60c. to 65c. per bag; New Brunswick Delawares, 80c. per bag, and market easy at these prices. Poultry.—Receipts continue light, and prices firm. Turkeys dressed, 25c. to 26c.; geese, 18c. to 20c.; ducks, 20c. to 22c.; chickens, 20c. to 23c. per lb.; hens, 16c. to 18c.

HIDES AND SKINS.

No. 1 inspected steers and cows, 13c.; No. 2 inspected steers and cows, 12c.; city hides, flat 12c.; country hides, cured, 11c.; country hides, green, 10c.; calf skins, per lb., 14c.; lamb skins, \$1.10 to \$1.50; horse hides, No. 1, \$3.50 each; horse hair, per lb., 37c.; tallow, No. 1, per lb., 5c. to 6c.

FRUITS AND VEGETABLES.

Apples—No. 1 Spies, \$3.75 to \$4; No. 2 Spies, \$3 to \$3.50; Greenings, \$2.75 to \$3; Kings, No. 1, \$4 per barrel; Baldwins, No. 1, \$3 to \$3.50; cabbage, per barrel, \$1; beets, 75c. per bag; turnips, 40c. to 50c. per bag; parsnips, 60c. to 75c. per bag.

Chicago.

Cattle.—Beeves, \$7.25 to \$9.30; Texas steers, \$5.50 to \$6.50; stockers and feeders, \$6.25 to \$8.25; cows and heifers, \$3.60 to \$8; calves, \$7 to \$11. Hogs.—Light, \$8.60 to \$8.92; mixed, \$8.50 to \$8.85; heavy, \$8.35 to \$8.80; rough, \$8.35 to \$8.50; pigs, \$6.85 to \$8.75. Sheep and Lambs.—Sheep, native, \$6 to \$7.10; yearlings, \$7.25 to \$8.30. Lambs, native, \$8 to \$9.10.

British Cattle Market.

John Rogers & Co. report prices at 14c. to 15c. per pound for Irish steers.

Montreal.

Live Stock.—There was a stronger tone in the cattle markets, and prices were about 1c. higher than a week earlier, owing possibly to the smaller supplies. Some choice steers were reported as sold at 7c. to 7c., and a few at 7c. per lb. Choice butchers' stock sold at 6c. to 6c., and medium down to 5c., while common ranged down to 4c. per lb. Ewes sold at 5c. to 5c. per lb., and lambs at 7c. to 8c. per lb. There was also a good demand for calves, and prices were steady, at \$5 to \$12 each. Select hogs brought from 10c. to 10c. per lb., weighed off cars. Milch cows sold at \$80 to \$85 for choice, and down to \$70 for ordinary.

Horses.—Throughout the country the demand is light. On the whole, sales were about as good as could be expected. Prices were steady, as follows: Heavy-draft horses, weighing from 1,500 to 1,700 lbs., \$300 to \$400; light-draft, 1,400 to 1,500 lbs., \$225 to \$300; light horses, 1,000 to 1,100 lbs., \$125 to \$200; broken-down animals, \$75 to \$125, and choice saddle and carriage horses, \$350 to \$500 each.

Poultry.—Supplies light, and as a result dealers asked high prices. Choicest turkeys, 22c. to 25c. per lb.; ducks and chickens, 19c. to 21c. or 22c.; fowl, 15c. to 17c. and 18c., and geese, 14c. to 15c. or 16c. per lb.

Dressed Hogs.—The market for dressed hogs was steady to firm, and prices were 13c. to 14c. per lb. for fresh-killed, abattoir-dressed stock. Country-dressed sold at 13c. to 13c. per lb. for lights, and 12c. to 12c. per lb. for heavies.

Potatoes.—There was very little change in the market for potatoes, but the quality is becoming less desirable. Prices, in car lots, Montreal, were 72c. to 75c. per 90 lbs. for Green Mountains, while Quebec grades were 60c. to 65c. In small lots, prices were 25c. to 30c. more than the above figures.

Eggs.—Although the market was not much changed as compared with a week ago, the tone was easier. Prices were still 28c. to 30c. per dozen for new-laid.

Syrup and Honey.—Syrup prices were 7c. to 9c. in wood, and 10c. per lb. in tins. White-clover comb honey was 16c. to 17c. per lb., and extracted 11c. to 12c. Dark comb was 14c. to 15c., and extracted 8c. to 9c. per lb.

Butter.—The market was reported to be fairly firm, with small supplies, although there are occasional arrivals of New Zealand butter. Prices were about 29c. to 31c. for choicest, and 1c. less for fair. Dairies were 28c. to 24c.

Grain.—There was some selling of American corn, No. 3 mixed, at 58c., ex track, car lots. Oats showed little change, being 41c. per bushel for No. 2 Canadian Western, store, and 40c. for No. 1 feed.

Flour.—There was no change in the market. Prices were \$5.40 for first-patent Manitoba flour; \$4.90 for seconds, and \$4.70 for strong bakers'. Ontario winter-wheat patents were \$5.25, and straight rollers, \$4.85 to \$4.90.

Milled.—There was no change, bran selling at \$20 per ton in bags; shorts at \$22, and middlings at \$25 per ton. Mouille was \$35 to \$36 per ton for pure grain, and \$30 to \$33 for mixed.

Hay.—Prices were \$14 to \$14.50 per ton for No. 1; \$13 to \$13.50 for No. 2; \$12 to \$12.50 for No. 2 ordinary, and \$10 to \$12 for clover and No. 3, pressed, carloads, track.

Seeds.—Market was steady, at \$3 to \$4 per 100 lbs. for timothy, at country points; red clover, \$6 to \$10 per bushel of 60 lbs., and alsike \$12 per bushel.

Hides.—The market was steady. No. 1 hides sold at 12c. per lb., Nos. 2 and 3, 13c. and 14c., respectively. Calf skins were 14c. and 16c. per lb. for Nos. 2 and 1, respectively. Lamb skins were \$1 to \$1.10 each, while horse hides sold at \$1.75 each, for No. 2, and \$2.50 for No. 1. Tallow was 1c. to 3c. per lb. for rough, and 6c. to 6c. for rendered.

Buffalo.

Cattle.—Prime steers, \$8.50 to \$8.75; butchers', \$6 to \$8.25; bulls, \$5 to \$7; stock heifers, \$4 to \$4.50; shipping, \$7.50 to \$8.35; heifers, \$5 to \$7.75; cows, \$3.50 to \$7; stockers and feeders, \$4.50 to \$6.75; fresh cows and feeders,

\$4.50 to \$6.75; fresh cows and springers, \$45 to \$82.

Veals.—\$4 to \$11.75. Hogs.—Heavy, \$9.25 to \$9.35; mixed, \$9.35 to \$9.50; Yorkers and pigs, \$9.50 to \$9.60; roughs, \$8.35 to \$8.50; stags, \$6.75 to \$7.50; dairies, \$9.25 to \$9.50. Lambs.—Lambs, \$6 to \$9.40.

Gossip.

THE JOHN DAVIDSON ESTATE SALE OF SHORTHORNS AND CLYDESDALES.

As advertised on another page, a dispersion sale by auction, of the entire herd of Shorthorns and stud of Clydesdales of the estate of the late John Davidson, Ashburn, Ont., will be held on March 19th, on the farm, 1 1/2 miles from Myrtle, C. P. R., 37 miles east of Toronto, and 2 1/2 miles from G. T. R. Few opportunities are afforded the public of buying either of the above breeds of live stock from a herd or stud kept for practical purposes with such marked success, and in the every-day judicious condition in which they have always been kept. The Shorthorns comprise representatives of the most popular tribes of the day, including six young bulls of choicest breeding, cows with calves at foot, and heifers in calf. The best of judgment has been used in the selections and mating, and the best of results are assured when buying from such a herd, as Mr. Davidson always believed that no one should aim at second-best, and a stock of horses and cattle such as this is rarely offered for sale. There has been little time to advertise, and those who take advantage of the opportunity will doubtless secure good bargains. See the advertisement, and write for catalogue to James B. Davidson, Ashburn, Ontario.

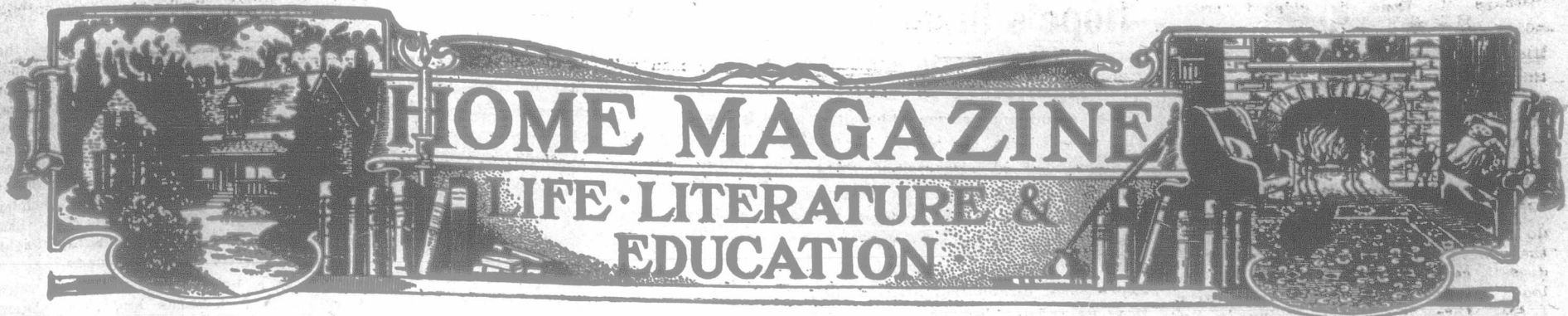
SPECIAL PRIZE FOR CARLOAD BUTCHERS' STEERS.

In order to encourage the feeding of choice cattle, suitable for slaughter, the Harris Abattoir Company, Limited, will offer \$3,500 in cash prizes, for cattle exhibited at Toronto Fat-stock Show, which is an annual event held early in December at the Union Stock-yards, Toronto. A special cash prize of \$500 is offered for a carload of not less than sixteen steers, all to be polled or dehorned, weighing under 1,300 pounds each, the cattle to be judged with due regard to quality, general uniformity and suitability for market demands, and the entire load to be exhibited by owner, who must have fed and owned same, himself, for a period of not less than six months preceding the opening date of the Toronto Fat-stock Show in each year that this prize is offered. With the exception of the time of ownership, the entry to conform to the rules of the Fat-stock Show. This prize is to be offered annually for five successive years, beginning with the show of 1913. A further cash prize of \$1,000 will be awarded the feeder winning the annual prize as above three times in succession. Attention is directed to the fact that no particular breed of stock is specified, making the competition open to all breeds. This is the right kind of encouragement to the feeders, and will doubtless bring out keen competition.

A DISPERSION HOLSTEIN SALE.

On Friday, March 21st, as announced in his advertisement on another page, will be sold at auction the entire herd of thirty head of registered Holsteins, the property of Wilber C. Prouse, of Tillsonburg, Ont., three miles north of town. Included in this sale are richly-bred animals, male and female, from high-class sires and dams, the cows and heifers having creditable official records of merit and of performance. This offering should attract the attention of breeders and farmers generally. See the advertisement, note the date, and plan to attend the sale.

"Brown sent me a brick by parcel post, but I got even with him."
"What did you do?"
"Passed the word along to a number of agents that he was figuring on taking out more life-insurance."



The New Public Health.

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

Conducted by Institute of Public Health, London, Ont.

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

How to Trace Typhoid.

The rapidity with which the routes of spread and source of a typhoid outbreak can be determined by modern epidemiologists and the practical infallibility of the results are incredible to those who have been accustomed to slow-moving inquiries and investigations extending over weeks or months.

So drastically revolutionary are the achievements of modern epidemiological investigation, that this incredulity is not unreasonable, and can hardly be removed, except by a clear statement of the methods used.

The fact that the new epidemiological methods are the very converse of the old is in itself an explanation of their immense relative efficiency.

To make clear this complete inversion of the older methods, an illustration may be offered.

Suppose a hunter is asked to find and kill a particular wolf whose depredations of the night before are indicated by bodies of dead sheep lying in a pasture. He may proceed in either of two ways to his task. He may gather an army of assistants, and send them out to follow the outline of a thirty-mile circle, centering on the slaughtered sheep, with the hope of thus picking up trails of various wolves, intending then to work inward along each trail to determine if it be the trail of the guilty wolf, i. e., until satisfied that it does or does not lead to the dead sheep. Of course, they might encounter the trail of the guilty wolf at once—but much more likely they would encounter many other wolf trails, each of which they would have to "run out" before at last they strike the right one. Indeed, they may not strike the right one at any time, because the one guilty wolf may have his range wholly within the circle the hunters are following—and in that case of course they could not cross his trail at all.

No real woodsman would follow such a plan. Rather he would go alone straight to the slaughtered sheep and work outward along the only trail that leads from them. That trail must be the trail of the guilty wolf, and of that one only. It must lead directly to where that guilty wolf is now. Such a plan cannot fail to find, not only a wolf, but the wolf, and once that wolf is found, it can be put out of action forever.

The older investigators usually approached a typhoid outbreak on the lines of the first plan outlined above, arguing thus:

1st.—Water is by all means the most likely route—we will therefore study the water supply, or supplies, take samples, analyze them, and in two, three or four weeks, decide whether or not we have evidence to show that the water supply, or supplies, or some one or more of them, are or are not polluted.

2nd.—Milk may be the route—we will

therefore investigate the milk supplies of the community in detail, trace each to the original dairies or farms from which it comes, and since water is, (?) after all, the chief route used by typhoid fever, we will investigate the water supplies of each dairy, taking samples and analyzing them—a matter of two or three weeks.

3rd.—Food is so ubiquitously used that it is almost hopeless to search for the route of infection there. However, we will look over the markets and stores, delve into the ice-chests, and inspect the back premises. If we find dirt and disorder, we can at least recommend that these be cleared up.

4th.—Fingers and (in fly-time) flies are ubiquitous. The physicians must guard against transfer by the former. If we find many flies, we must have manure-piles and garbage taken up and removed because flies breed in them.

In brief, the older investigator's idea of a typhoid investigation consisted in flooding the community with inspectors of water, milk, markets, restaurants, dairies, back alleys, and grocery stores; analyzing, examining, probing the whole community from top to bottom, comparing notes, following clues, working especially in the slums—digging up engineering records, street-department records, vital-statistical records, interviewing physicians, talking to mass-meetings of citizens—and usually coming away two or three weeks later with volumes of information, and the epidemic still running. Whatever of field information was collected could not be interpreted fully until all reports and analyses were complete—and the mere bulk of the material was so great that the task of collation alone took precious time, to say nothing of getting out of it the essential facts. But the modern public-health expert, working alone, or, at most, with one associate, is ashamed to spend over three

days in finding the channels of infection and their proximate source, and usually can announce indisputable and incontrovertible conclusions within twenty-four hours after he begins.

How is it possible that one man can find essential facts in twenty-four hours by the new method, that ten men often failed to find in as many days by the old? The writer has tried both methods, and the reasons are extremely clear. There has appeared upon the scene a new figure—the public-health detective. He is equipped with training, facilities, and experience for the ready clinical recognition of the numerous forms of infectious diseases, with their modifications and combinations; he is familiar with the wiles of the enemy which lead astray the amateur and the uninitiated; he has a trained nose for the trail; he has the ability to get the information he needs from the ignorant, the unintelligent, even the deceptive; and he, above all, is a specialist in his line, placing undiverted energies wholly upon his task. Finally, he has one simple guiding principle—that of going directly to the known cases and working the trails outward from them.

To illustrate the general principles, let us suppose notification be received that a typhoid-fever outbreak exists in a far-off community. The public-health detective packs his grip and goes. He knows no details; he has never heard of this particular community before; he has not even any general information about the character of the country; he enters the community with no preconceived ideas. But he does know how typhoid fever originates, and how it spreads. Water, milk, food, flies, and fingers, are the routes—typhoid cases or typhoid carriers the sources. His duties are to find both; and to find them, not as a scientific amusement, or as a matter of record; not to furnish food for speculation—above all, not to make a show of doing something—but to stop the outbreak; and then to advise measures to prevent recurrence.

The public-health detective, on entering the community affected by typhoid fever, does not first examine the water supply, the milk supply, the sewage-disposal system, the markets, the back alleys, the dairies, or anything else. He goes directly to the bedside of the patients. Of course, he must obtain the names and addresses of the patients from someone—the local health officer, if he has them; from the attending physicians, if the health officer has no list; from the lay citizens themselves, if no one else is immediately available. The more complete the list, the faster he can work,

because then he is not compelled to hunt up the cases personally. But if there be no list, he begins making one himself. His intention is to see just as many patients as he can, for each furnishes evidence, and he wants it all. But he knows that it is not always necessary at this stage to see absolutely all the patients, so long as he sees the majority.

Reaching the patient's bedside, his investigation begins. (If the patient is a child, or delirious, or not strong enough for an interview, or speaks only some foreign tongue, the relatives, friends, or associates, must supply the information.) Automatically, almost mechanically, he decides whether or not the patient has

(Continued on page 487.)

Letters from Abroad.

III.

ON MEDITERRANEAN SHORES.
Taormina, Sicily, January-10, '13.

Dear Cousin Jean.—For three days we have been trying to be cheerful, trying to believe we are in the most beautiful spot in all the world; trying to fool one another in pretending we are happy. But the discomforts of a Sicilian hotel, when the sun is not shining, are legion. The temperature is that of a cold-storage warehouse. There isn't a door that does not stick, or a chair that isn't wobbly, or a drawer that will open without nearly jerking your arms out. The stove in my room won't go, the electric bell won't work. There is no place one can keep warm except in bed with a hot-water bottle—that's where I am now.

A slatternly maid has just removed the breakfast tray. The "breakfast" consisted of one sour roll, with a crust as tough as sole leather, and an interior of rubbery dough, a pot of muddy stuff called coffee, a jug of goat's milk of a most unpleasant flavor, a lump of uneatable butter, and a dish of alleged honey. After sampling the above-mentioned list, I pushed it aside and tried to satisfy my inward craving with an orange and one nut. What wouldn't I give this minute to be in snow-bound Canada, with a roaring fire in the grate and a steaming cup of Mocha beside me!

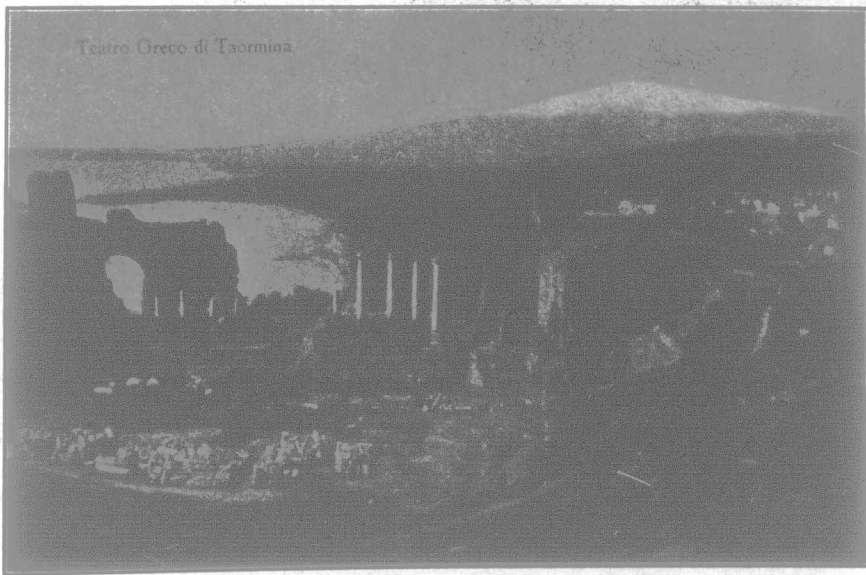
January 14th.—I was terribly homesick when I wrote the above, and I wouldn't send it to you now only things are different. The sun is shining, and Taormina is transformed—everything wears a different face—even the Sicilian cooking does not seem as bad as it did at first.

This is a most astonishing place, especially to a wanderer from agricultural Canada. It seems the most impossible site for a town—far more suitable for goats and eagles than for human beings. Just think of the location—a narrow ledge of rock, with the sea 700 feet below, and a precipice 1,400 feet higher above. That's bad enough, but up on top of the higher precipice is perched another little mountain town called Mola, looking as if it might slide off and crush in Taormina's roofs any minute. The Corso is the only level street in Taormina. It is narrow and crooked, and twists its tortuous way along the ledge, terminating at either end in picturesque old gates, through which everything on wheels or afoot must enter the town. All the rest of the town clings to the rocks either above or below the Corso, and consists of stone houses (without any chimneys), huddled irregularly together, with cracks for streets, steps for footpaths, and connecting arches above—presumably to keep the town from sliding down the steep slope into the sea. All day long the Corso is teeming with life—everything and everybody in the middle of the street; donkeys so heavily laden you can see nothing but their legs; women carrying huge, heavy water jars on their heads; tourists with goggles and cameras and veils; children; hens; goats,—all in one general mix-up.

One day we were sitting peacefully in the hotel reading, when all at once there was the most terrible uproar in the street.

"Mercy!" gasped Miss Morris, jumping from her chair, "What can have happened?"

We all rushed to the balcony. A hatless man, with thick, black hair, was marching along the Corso shrieking loudly and excitedly, and waving his arms as he went. "Something awful has happened," said Mrs. Russell. "Perhaps war has been declared against Italy, or there has been some dreadful disaster."



Ancient Theatre, Taormina.

"Perhaps Mt. Etna is going to erupt, and he is warning the people," added Miss Morris. But it was none of these things. It was simply the corner butcher declaring the fact that he had some fresh meat for sale. It was a primitive form of advertisement, but very effective, for when we passed his store later on he was doing a rushing business.

The women and the donkeys seem to do all the work here, and my opinion is the women are donkeys to do it. There doesn't seem to be any limit to the loads the donkeys and the women carry. I saw three women marching in line from the railway station one day, and each one had a large, heavy trunk on her head. Another day I met a woman with a large laundry basket full of wet clothes on her head, and a big baby in her arms. She was going down a steep, rocky path, bare-footed. Another day I met a woman carrying eight chairs on her head. It goes without saying that the women are as straight as rushes. I have not seen a round-shouldered one yet, except some shrivelled-up old crones who look as if they had been here since the Saracen invasion. You must excuse that historical allusion. My head is so full of history that some of it is sure to leak out. Taormina is layers deep in history, and the dates are appallingly far off, reaching back to 735 B. C.

It just makes you weak to think of the things you don't know. The Greeks, Romans, Saracens, and Normans, all ruled here at one time or another, and the very buildings they lived in are standing to-day. All the water used in the town comes from the public fountains, and they are supplied by the aqueducts built by the old Romans. In almost any patch of earth, you can dig up coins of ancient dynasties.

The wall of Lady Hill's garden here is an old Saracen wall, honey-combed with tombs, and her house, a 12th-century monastery. The old chapel is now used for a Protestant church. But I must not forget to tell you about the Greek theater here, because that is the first thing tourists go to see. It dates away back to something-or-other B. C., and is such a magnificent ruin, in such a wonderful setting, that artists, historians, and archaeologists, come thousands of miles to see it, and, of course, no self-respecting tourist would think of writing a letter home without referring to it in grandiloquent language.

Every morning, artists are up there with easels, and kodakers are hopping around on the broken columns hunting for views, and every evening the forestieri (strangers) rush up there to see the glory of the sunset.

It is a marvellous panorama—the misty coast of Italy on the east, dark, jagged mountain peaks on the north, and the long sweep of the shore and the glittering, white cone of Mt. Etna on the west. It's superb. It's something you can't talk about—you just feel the wonderful beauty of it all!

Some day when that baby apple orchard of yours gets big enough to earn gold, you must spend a winter in Sicily. But you have such an inconveniently-large conscience, I suppose you'll always think you must stay at home and look after something or somebody. When you are ninety, perhaps you'll feel free to take a trip. Have I ever told you about my travelling companions? I meant to, but I may have forgotten. Of course, you know who Miss Morris is—tall, commanding, and most entertaining, and has a smile that no one can resist. The other—Mrs. Russell—is about 32 years old, and has been a widow ten years, her husband having died suddenly about a year after their marriage. She is tall and slender, with big, blue, expressive eyes, and thick, dark hair. She is a great student, and our chief linguist, and so full of information that she is as convenient to us as a handy Reference Book.

So Jack misses me, does he? Well, I miss him, too. I haven't had a good quarrel since I last saw him. He's an old dear, but an awful crank. Tell him I'm going to write to him one of these days. Good-bye. We are off to the hills with our lunch. LAURA.

Hope's Quiet Hour.

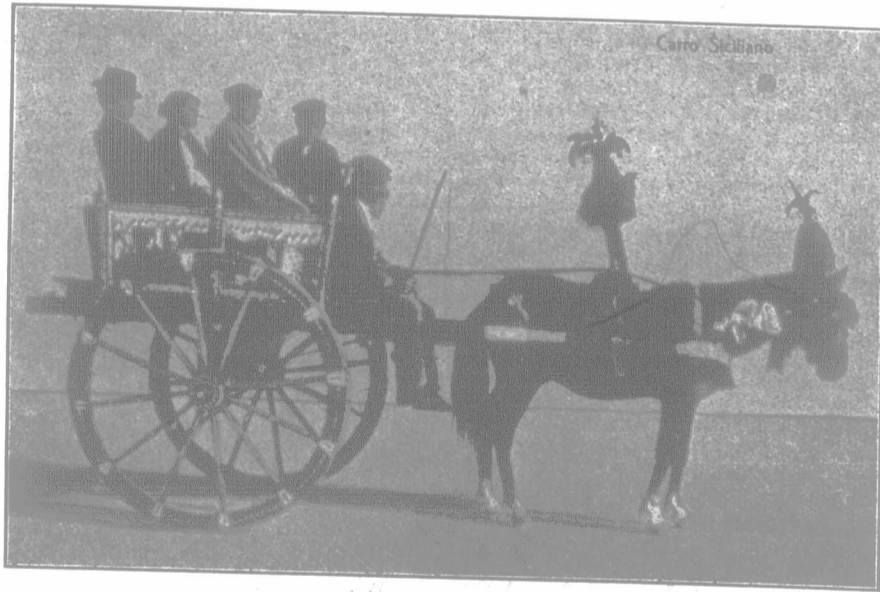
Against the Cold.

"Peter stood and warmed himself." The very Christ for whom he bore Such brave, bold witness, but a few Brief days ago—the Christ he knew Had raised from death one week before His friend at Bethany—he saw Now in the clutch of Roman law, Reproached, dishonored, helpless, lone, Dragged rudely o'er the pavement stone, And—stood and warmed himself!

He watched the jeering soldiers strip Away the robe the Marys made, Tear off the inner garment frayed By brutal wrenchings; marked the lip Quiver, as o'er the flesh made bare Blew gusts of chilling midnight air; Yet by the sight not stricken dead, Above the brazier's coal he spread His hands—and warmed himself!

He heard a maid say, "Here, behold! One of this man's disciples: see, He speaks the speech of Galilee." And then—ah, then, his blood ran cold, And as the leaping flame rose higher, Amid the crowd that girt the fire, With sharp, reiterate, angry "Nay," He thrust his arms, and pressed his way, And crouched—and warmed himself!

"Yea, thou art one of them"—he heard The charge come back and back again, Tossed from the mouth of mocking men; And as with oaths he flung the word Straight in their teeth, he sudden turned— And, oh, that look! It burned and burned, As if Gehenna's hottest coal Had down into his central soul Dropped, while he warmed himself!



Carro Siciliano.

His hands he could no more uphold, Remorse, despair, self-loathing, woe, Clutched at his heart; he did not know If it were night—if it were cold; He cast no gaze behind, before, Nor cared that she who kept the door Said, "Surely this was he who drew The sword on Malchus—Malchus knew, The while he warmed himself!"

Remorseful on the ground he lay, So sunk in self-abhorrent shame He dared not breathe the Master's name, Recounting, till the break of day, How through that mystic anguish dim, He had not spoken a word for him, Forsaken in the high-priest's hall, But midst the mocking, watched it all, And stood and warmed himself!

So do we still: we sulk afar, With scarce the scoffed-at Christ in sight, Nor dare the wrong, nor brave the right, Poor, cowardly cravens that we are! And while we see our Lord betrayed, We linger mid his foes, afraid To own Him; yet like him of old, We comfort us against the cold, And stand and warm ourselves!

—Margaret Preston.

The Gain of Loss.

Then said JESUS unto His disciples, If any man will come after Me, let him deny himself, and take up his cross, and follow Me. For whosoever will save his life shall lose it, and whosoever shall lose his life for My sake shall find it, For what is a man profited, if he shall gain the whole world, and lose his own soul.—S. Matt. xvi.: 24-26.

The words of our Master are as fresh and living to-day as when they were first spoken. We have never been able to discover a higher ideal than He has set before us, by His marvellous words, and His example of self-devoted love. After all these centuries of Christian illumination, we need the warning of our text as much as ever. We are still inclined to measure the success of a day, or a year, by the amount of temporal prosperity gained in it; counting as a secondary thing—if it is considered at all—the gain or loss which our souls have received.

Our Lord had just given high commendation to St. Peter, even saying to him: "I will give unto thee the keys of the kingdom of heaven." Then He went on to tell the disciples of the sufferings and death which awaited Him in Jerusalem. St. Peter, probably feeling himself to be a person of importance in the little company, attempted to lead his Master away from the awful road of agony, saying: "Be it far from Thee, Lord: this shall not be unto Thee." Instantly he received the terrible rebuke: "Get thee behind Me, Satan!" and the disciples were warned of the awful loss any man must sustain if he turns from duty in order to escape temporal pain and loss. One who sets his heart on saving himself shall lose his higher life, and one who is prepared to sacrifice him-

self, when Love calls, shall find the great treasure of real life.

in little unnoticed ways, choosing duty when it is hard or unpleasant? St. Peter—soon after he received the warning against seeking selfish gain—"stood and warmed himself," while the Master he loved was enduring insult and facing death of awful agony. Can you imagine a loving mother trying to make herself comfortable while her child was on trial for his life? Was it natural and wise for the three chosen disciples to sleep while their Lord (Who had asked them to watch with Him) fought His awful battle in Gethsemane?

There is a beautiful little story which describes how Lazarus and his sisters kept faithful watch all through that night of suspense. They were with their Master in spirit, though parted from Him in body. It is a true instinct which keeps us from trying to make ourselves comfortable when a loved one is suffering. It is a very astonishing thing that many Christians change Good Friday from a "holy-day" to a "holiday." Surely on that one day, at least, we should fix our thoughts as far as possible on our Lord's sufferings and death. If our hearts follow Him through the shame and agony, we can hardly feel inclined to turn our backs on the Cross and seek our own pleasure or amusement.

"Blessed are those who die for God And earn the martyr's crown of light— Yet he who lives for God may be A greater conqueror in His sight."

God may suddenly call us to die for Him, and He only knows whether we are strong enough to obey that call. We think of that sublime saying: "Greater love hath no man than this, that a man lay down his life for his friends," and then perhaps we settle down comfortably in the conviction that at present we are not called to die for others. Yet our Lord prefaced that saying about "greater love" by the words: "This is My commandment, That ye love one another." To lay down a life does not always mean to die; very often it means to pour out life in service for others.

When "Sister Dora" got the chance to rest, after her long day's work in the Walsall hospital for waifs and strays, she lay down to sleep under a bell on which was inscribed: "The Master is come and calleth for thee." If that bell rang, she cheerfully got up to obey the call of her Master, and to serve Him, in the person of one of the least of His brethren. That message is really written on every duty that lies before us. If we only could always remember that the call of duty is the call of our Master, we should find joy in springing to serve Him.

We are inclined to shrink any disagreeable or difficult duty. Perhaps we put it off as long as possible, or even try to shift the burden to the shoulders of someone else. Yet that is one opportunity offered to us of laying down our life for others. Each time we accept and use the opportunity we have become spiritually stronger, each time we allow it to slip past us, we have refused to accept loss for Christ's sake—and have therefore refused real and lasting gain.

We are told to "endure" hardness, as any soldier worthy of the name is proud to do. Real endurance of the small vexations and trifling annoyances of everyday life is both rare and beautiful. How often we grumble about the weather, for instance, and yet the weather comes to us straight from the hands of God. To murmur about it is to find fault with our Father's appointment; it is an implication that we know better than He does what is for our real good. He knows—and so do we—that a life of continuous ease and comfort would mean spiritual loss to us.

We want to live splendidly, like the heroes we admire, but the question is: "Are we willing to live bravely?" It is easy to dream about the glory of martyrdom, and at the same time overlook the fact that we are, even now, being tested in the commonplace atmosphere of ordinary living. If we, in actual fact, consider that it is "loss" when we are called by our Master to sacrifice time, money, strength, or anything else—right here and now—then we are suffering incalculable loss. But if we are cheerfully and willingly taking up the cross and trying to follow our Lord wherever He may lead, then our apparent loss will be real gain. Each hour

EATON'S SPRING AND SUMMER CATALOGUE

NOW READY SHALL WE SEND YOU ONE

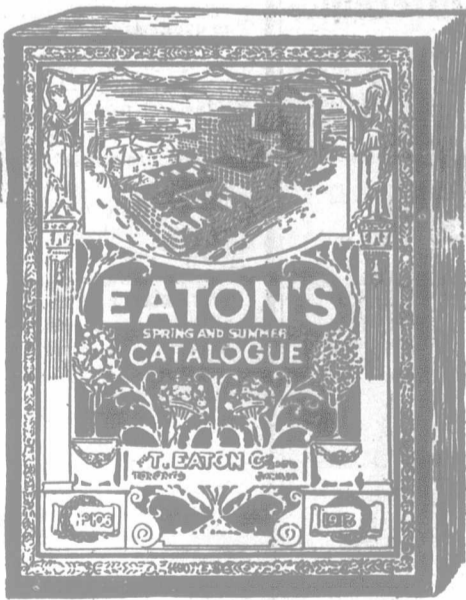
NO one should miss having a copy of our latest issue. It's not only an interesting book to look through, but, over and above all, it's a book with a purpose. You'll find throughout its two-and-a-half hundred odd pages enough to convince the most sceptical of its saving opportunities. It's a style book—not too extreme in Fashion's trend, yet featuring what's newest and most serviceable, and, above all, conveniently priced—and what a profusion of home needs it portrays—furnishings from a door mat to a high-grade piano. A choosing of articles necessary for every room and clothing for all the family. Then there are also interesting values in modern **Farm Equipment, Farm Wagons, Cream Separators, Plows, Wire Fencing, Harness,** and lots more you might be glad to know about, such as **Athletic Goods, Boats and Canoes, Cameras, Drugs, Jewelry.** So you see that this big new book with its fund of buying opportunities has got something of interest for all, and every home has need of it. To those who have not received a copy we simply ask that they forward us their name and address—at once—even as you read this you should write for your copy, so that through no delay or forgetfulness any chance that is now apparent to save on the spending would be lost.

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of life that is laid down in loving self-sacrifice is gathered as a precious jewel into the King's Treasury—it is treasure laid up in heaven:

"For all you can hold in your cold, dead hand,

Is what you have given away."

DORA FARNCOMB.

News of the Week.

CANADIAN.

Thirty-eight persons were killed and three injured in railway accidents in Ontario last week.

The Canadian House of Commons during the week has been the scene of a

dramatic struggle over the Navy Bill. The debate, beginning on Tuesday morning, March 4, lasted continuously throughout the week.

Dr. Friedmann, the Berlin physician who discovered what promises to be an inoculation cure for tuberculosis, arrived in Montreal on Tuesday, and will demonstrate his cure. Ottawa has offered

Dr. Friedmann the freedom of the city if he will make tests there.

Saskatoon is to have the first aviation school in Canada.

Pauline Johnson, the famous Indian poetess of Canada, died of consumption in Vancouver on March 7th. She was born near Brantford, March 10th, 1862, her

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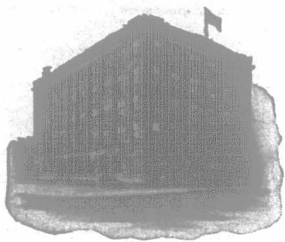
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L-287—This new "Nazimova" Waist, in beautiful self-striped white lawn, with Gibson pleated shoulders, flat Robespierre collar, front opening inlaid with side jabot of Val. lace extending inside collar and around neck, mannish pocket with button and flap, long sleeves with dainty cuffs, pearl buttons. PRICE.....\$1.00



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"Hydegrade" Petticoat, \$1.67. P-235—Lady's "Hydegrade" Fabric Petticoat, black and white stripes, made with the new "Kloft" patented waist band, and finished with deep knife-pleated flounce, as illustrated, sizes 36 to 42. \$1.67 PRICE, delivered

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father being a Mohawk Chief, her mother an English woman, distantly related to William Dean Howells, the noted American writer and man of letters. Miss Johnson was well known personally throughout Canada, where, for some years, she gave frequent recitations from her works.

BRITISH AND FOREIGN.

It is now asserted that Madero was killed before his removal from the palace in the city of Mexico.

Colombia has refused the overtures of the United States, and is demanding arbitration in regard to her losses in Panama.

It is said that many among the poorer classes are leaving Germany in consequence of the unprecedented general levy on property to meet the first cost of increasing the army and fortifications of the Vaterland. The amount called for is \$150,000,000, and even the princes of the reigning houses, hitherto exempt, are to be taxed.

President Wilson's speech, given at his inauguration in Washington on March 4th, has been meeting with unstinted praise in the comments of the periodicals in America and Europe. William Jennings Bryan has been appointed Secretary of State in the new cabinet.

Tremendous military preparations are being made in Russia and in France, as well as in Germany.

A Woman Suffrage Bill is to be drafted and ready at the beginning of the next session in the British House of Commons.

The Turkish fortress of Janina surrendered to the Greeks on March 6th, after a two-days' bombardment.

Forty were killed and one hundred injured by the explosion of a cargo of dynamite in the hold of a British steamship in the harbor at Baltimore, on March 7th.

Two hundred were drowned by the foundering of the British ship, Calvados, in the Sea of Marmora, on March 7th.

The Ingle Nook.

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

MARMALADE.

Dear Junia,—Having noticed "Subscriber's" request concerning marmalade, I felt tempted to send in my recipe, which is a prime favorite in our home. Before using it, none of the family cared for marmalade, owing to the bitter taste, but now it cannot appear too often. Take three oranges, three lemons, and six apples. Put through food-chopper, and cover with four pints of water. Let stand over night. Boil two hours, add eight pounds sugar, and boil one-half hour.

As usual, I am coming for some help. I have a black rain-coat—moire—which I have used a good deal as a dust-coat in summer. The waist is lined with a white, silky material, which has become considerably soiled. Recently, I find that the black color is beginning to come off the skirt part of the coat, and also from the waist lining, and soiling light dresses over which it is worn. In other respects the coat is as good as ever, and I should be very glad to learn of any way in which it could be cleaned.

Durham Co., Ont. MRS. C. H. Write to a professional cleaner in regard to your rain-coat. I doubt if you could do much with it yourself. Very many thanks for the marmalade recipe. It certainly "sounds" good, as does also the one below.

ANOTHER MARMALADE RECIPE.

Dear Junia,—I am enclosing a good English recipe for orange marmalade, which I

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TARIO

have never found to fail, and also a pudding recipe, and please thank "Cook" for giving us one for fruit pudding, which we enjoyed, and also found it very nice cut up in slices next day and fried.

Orange Marmalade.—Eight Seville oranges, one sweet orange, eight pints of water, eight pounds preserving sugar. Cut each orange in half, then in quarters, then in eighths, then cut each piece in the tiniest possible slices, using up skin, pulp, everything except pips, which must be removed as you go on. It must then be put in a large earthenware dish, and covered with eight pints of water and allowed to stand for forty-eight hours. The fruit and water must then be allowed to come to the boil, and boil for forty minutes. At the end of that time add the eight pounds sugar, and boil furiously for another forty minutes.

Imperial Pudding.—Four ounces bread-crumbs, one ounce sugar, two ounces butter, three ounces raisins, one ounce peel, one egg, juice of lemon, two table-spoons of corn syrup. Beat peel, butter, sugar, and syrup, to a cream; add raisins (stoned and cut in pieces), bread-crumbs, then egg and lemon juice. Pour into buttered basin, and steam an hour and a half. A MILHILLIAN.

NOTE TO "JEAN."

Have tried Scotch Lassie Jean's way of bread-making, and it is just lovely. My thanks, Jean, for helping one poor soul over a rough spot.

P. Q. YOUNG WIFE.

MAPLE-SYRUP QUERY ANSWERED—CAKE RECIPES.

Dear Junia.—I thought I would have answered a question I saw asked last fall, long before this, but my time has been very fully occupied, and so my good intention has not been carried out. But I will take courage from the old adage, "Better late than never," and see if my answer will be of any help to the "Nooker" who asked what to do with maple syrup that had become musty. We make syrup every year, and occasionally I have had a can get musty. All that is necessary to do is to heat it to the boiling point, remove from the stove, and set aside to cool, and I think it will be found that the musty taste will be gone. If it should still taste a trifle musty, re-heat again, and boil two or three minutes and set out to cool as before, and I am sure it will be as good as new syrup.

A reader not long ago asked for some cake recipes. I would like to give her some of my favorite ones. These are very simple, and especially nice. One of them has been a prizewinner at the fall fair whenever I have shown baking.

Chocolate Cake.—Two cups brown sugar, 1/2 cup butter, 2 eggs, 1/2 cake grated unsweetened chocolate, over which is poured, to dissolve it, 1/2 teacup boiling water, with 1 teaspoon soda dissolved in it, 1/2 cup sour milk, 2 cups flour, 2 teaspoons vanilla.

House-Upside-Down Cake.—Put in a crock 1 cup granulated sugar, 1 1/2 cups flour, and 1 1/2 teaspoons baking powder. Stir together. Break whites of 2 eggs in a cup, add enough butter to make half-full, and fill up with milk. Add to the other ingredients, with any kind of flavoring. Beat all up smooth, and bake in loaf or layers. Be sure to put together exactly as the recipe says. No beating separately.

Layer Cake.—Put 1 cup granulated sugar in a crock, add 1 tablespoon butter, stir up together, then add 1 cup sweet milk. Sift in 2 cups flour and beat up smooth, then throw in dry 1 small teaspoon soda and 2 small teaspoons cream of tartar. Beat up smooth and pour in greased jelly tins. This cake, with a lemon filling and cocoanut icing, is as nice as anyone could wish for.

I hope these will be of use to some housekeepers who, like myself, desire to make nice cakes, yet not so rich that they are indigestible.

I will some day write and give my recipe for canning tomatoes. I nearly always do up a large quantity, and rarely have any spoil.

I think my letter is long enough for this time, and this is not the canning season, unless, perhaps, for apples, but everyone knows how to can apples.

I have to sign a new name this time, for, like a "Mother of Two," whose

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Our customers do not actually get this money, but they save it, which is the same thing.

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If not, write to-day for our new Spring and Summer Catalogue. Compare the prices and note the savings. Compare the goods themselves if you will. If not what you expected, if not better value than you can buy elsewhere, send them back at our expense, and get your money refunded.

The fact that we are parties to a one-sided contract like this—bringing the goods to your door and taking them away again if you are not pleased—makes it imperative that only first-class values and up-to-date goods are offered.

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brood changed to three, mine has changed to three also, so instead of "Another Mother of Two," I will call myself, AUNT DEE.

Middlesex Co., Ont.
You certainly are generous enough to

believe in "passing a good thing on," Aunt Dee. We are all very grateful to you.

HANDKERCHIEF BAG.

Dear Junia,—I noticed someone asking

a few weeks ago for a design for work-bags from handkerchiefs, and so far have seen no reply, so I thought I would tell how one was made, which my daughter received at Christmas.

Take a large fancy handkerchief with

New Hose Free

Send for six pairs of warm Cashmere Holeproof Hose. Six pairs are guaranteed to wear six months. If any wear, tear or break a thread in six months, you get new hose Free! Six guarantee coupons with every six pairs.

More than a million people in the United States and Canada now buy their hose from us in this way. They save all the darning they formerly had to do. They never wear darned hose now. Their hose are soft and warm, but not of excessive weight. They save money, too, for twelve pairs a year keep their hose whole forever. Six pairs of medium grade for men cost but \$2 (33 1/3c a pair). Six pairs of fine grade for men cost \$3 (50c a pair). Six pairs for women cost \$3. Three pairs of children's Holeproof Stockings, guaranteed three months, cost \$1.

Think What It Means!

Think what such hose—at the price of common hose—save in time, trouble and money. Forget the darning. Forget hurtful darned places that make the feet sore. Forget the whole question of hosiery by simply buying two boxes a year!

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We have been selling fine hose in this manner for the past thirteen years. In that short time we have come to be the largest house of our kind in existence. Our success is due solely to making the hose that the most people seem to prefer. The same people buy them again and again because of their wonderful quality. In all our experience 95% of our output has outlasted the six months' guarantee. That amounts to 24,700,000 pairs.



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Our \$60,000 Inspection insures this quality in every stitch. We pay that amount in salaries to inspectors yearly. They examine each pair twice over, carefully, to see that it lacks every possible flaw. We do this to protect ourselves as well as to insure the wear to our customers. There is no better way that we know to make hosiery, and there are no better hose to be had. Don't you think that our million customers prove it?

The figures above refer to our business in both Canada and the United States.

Send the Coupon!

Send today for six pairs of these hose to try. See what they save. Note the comfort they give. Send the money in any convenient way. Mark the grade, size and colors plainly. Send the coupon below, or a post card or letter. Do it right now, while you're thinking about it. We guarantee satisfaction as well as the wear.

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FOR MEN, WOMEN AND CHILDREN

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

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

JOS. TOTTEN, North Ridge, Ont.

Cream—Sweet or sour, bought at highest Toronto prices, at any point in Ontario. We furnish cans, pay promptly—haven't paid less than 32 cents for weeks. Write: TORONTO CREAMERY CO., Ltd., Toronto

an all-over pattern, by preference, in pretty colors. On two opposite sides stitch wide tape, through which the ribbon for draw-strings is to be run. Put the tape at least an inch from the edge, well under the colored border. Now take two brass rings, slightly over an inch in diameter, and crochet round them with silk, or mercerized cotton, in a color to match the handkerchief. Fill in the centers with "cobwebs" of the same thread, then gather the remaining two sides of the bag to the rings, one at each side. Finish with double draw-strings, and two bows of ribbon to blend. This is the prettiest style of handkerchief bag which I have yet seen. A more elaborate one might be made by using a fancy silk "hanky."

Wellington Co., Ont.

SNOW-APPLE JELLY.

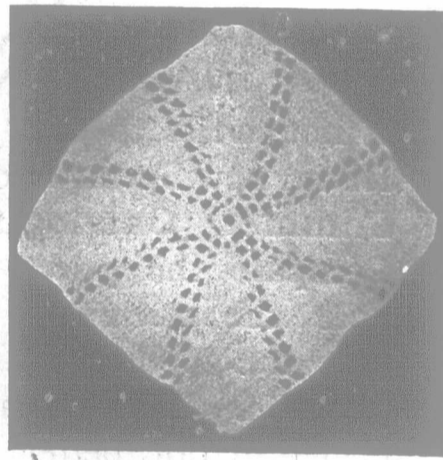
Dear Junia,—I have never written before, but find many useful hints in your column. Could any of the Chatterers tell me if Snow apples would make jelly at this season? If so, would lemon or orange be added?

Oxford Co., Ont.

Personally I have had no experience in making apple jelly in spring. Perhaps someone else has tried. Apples at this season may, however, be made into delicious marmalade by boiling them down with sugar and flavoring. You may add oranges or lemon, put through a chopper, rind and all, if you wish.

Quilt Patterns.

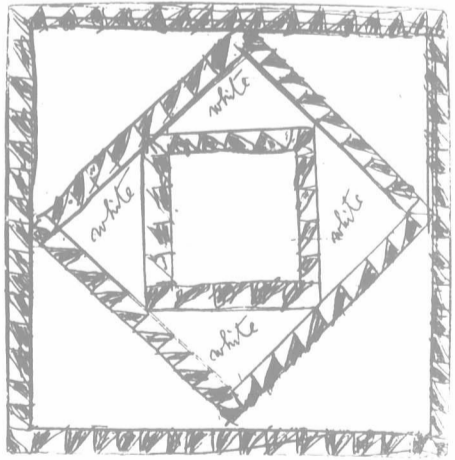
"Greybird" encloses the pattern for crocheted quilt block, which appears in this issue. She says: "The pattern is stars and diamonds. When two blocks



Crocheted Quilt Pattern.

are joined, a diamond is seen; when four are joined, a star is seen. It is very pretty when done."

The "Diamond Quilt Pattern," the construction of which may be easily seen by referring to the design, is made of cot-



Diamond Quilt Pattern.

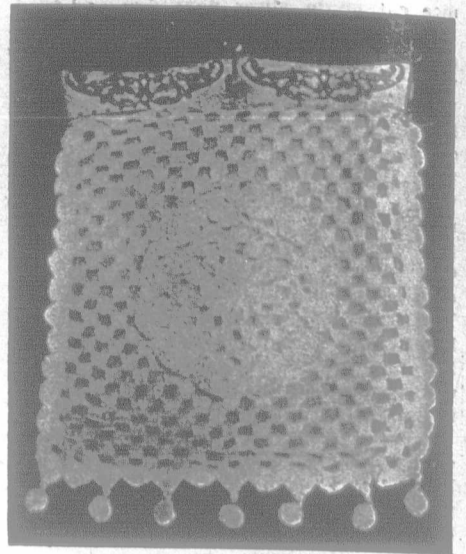
ton, in three colors. It has been sent, very kindly, by "A Sister of a Subscriber."

By the way, we cannot publish any more quilt patterns sent by contributors, unless they are so perfectly drawn that they can be photographed from the original drawing.

Crocheted Hand-bag.

The making of the hand-bag, a picture of which appears in this issue, may be grasped at a glance by anyone who un-

derstands crocheting. The whole bag may be made of the square mesh, but any pretty wheel pattern may be tacked



Crocheted Hand-bag.

over one side if preferred. The brass top may be bought at any fancy-goods store, but it may be dispensed with by simply crocheting a flap long enough to fall well down over one side of the bag, and fastening a bit of featherbone along the top, inside, to keep the bag from crumpling up.

Rebecca of Sunnybrook Farm.

By Kate Douglas Wiggin.

[Serial rights secured from Houghton Mifflin Publishing Company, New York.]

CHAPTER XXI.

THE SKY LINE WIDENS.

The time so long and eagerly waited for had come, and Rebecca was a student at Wareham. Persons who had enjoyed the social bewilderments and advantages of foreign courts, or had mingled freely in the intellectual circles of great universities, might not have looked upon Wareham as an extraordinary experience; but it was as much of an advance upon Riverboro as that village had been upon Sunnybrook Farm. Rebecca's intention was to complete the four year's course in three as it was felt by all the parties concerned that when she had attained the ripe age of seventeen she must be ready to earn her own living and help in the education of the younger children. While she was wondering how this could be successfully accomplished, some of the other girls were cogitating as to how they could meander through the four years and come out at the end knowing no more than at the beginning. This would seem a difficult, well-nigh an impossible task, but it can be achieved, and has been, at other seats of learning, than modest little Wareham.

Rebecca was to go to and fro on the cars daily from September to Christmas, and then board in Wareham during the three coldest months. Emma Jane's parents had always thought that a year or two in the Edgewood high school (three miles from Riverboro) would serve every purpose for their daughter, and send her into the world with as fine an intellectual polish as she could well sustain. Emma Jane had hitherto heartily concurred in this opinion, for if there was any one thing that she detested it was the learning of lessons. One book was as bad as another in her eyes, and she could have seen the libraries of the world sinking into ocean depths and have eaten her dinner cheerfully the while; but matters assumed a different complexion when she was sent to Edgewood and Rebecca to Wareham. She bore it for a week—seven endless days of absence from the beloved object, whom she could see only in the evenings when both were busy with their lessons. Sunday offered an opportunity to put the matter before her father, who proved obdurate. He didn't believe in education, and thought she had full enough already. He never intended to keep up "blacksmithing" for good when he lost his farm and came into Riverboro. It proposed to go back to it presently, and by that time Emma Jane would have finished school and would be ready to help her mother with the daily work.



"What's flour *gluten*, Bud?"
 "It's what makes your dough *rise*, Rose."
 "Yes"—she encouraged.
 Added Bud very sagely:
 "Makes it *rise* in the mixer and *expand*
 "in the oven. It's the *elastic* part of
 "flour—*absorbs* all the water and milk
 "—and things."
 Rose grew interested.
 "FIVE ROSES, said Bud, is exceedingly *rich*
 "in gluten. I s'pose because it's *all* made
 "from *Manitoba* wheat. Takes up a lot
 "*more* water — makes those *fat* loaves —
 "*lasts longer* too."
 "Saves *money*, doesn't it?" asked Rose.
 Bud in a big voice:
 "The fat loaf makes the fat pocketbook."
 Use FIVE ROSES *always*.
 And Rose said YES.

Five Roses Flour

Not Bleached



Not Blended

LAKE OF THE WOODS MILLING COMPANY, LIMITED, MONTREAL

Another week passed. Emma Jane pined visibly and audibly. Her color faded, and her appetite (at table) dwindled almost to nothing.

Her mother alluded plaintively to the fact that the Perkinses had a habit of going into declines; that she'd always feared that Emma Jane's complexion was too beautiful to be healthy; that some men would be proud of having an ambitious daughter, and be glad to give her the best advantages; that she feared the daily journeys to Edgewood were going to be too much for her own health, and Mr. Perkins would have to hire a boy to drive Emma Jane; and finally that when a girl had such a passion for learning as Emma Jane, it seemed almost like wickedness to cross her will.

Mr. Perkins bore this for several days until his temper, digestion, and appetite were all sensibly affected; then he bowed his head to the inevitable, and Emma Jane flew, like a captive set free, to the loved one's bower. Neither did her courage flag, although it was put to terrific tests when she entered the academic groves of Wareham. She passed in only two subjects, but went cheerfully into the preparatory department with her five "conditions," intending to let the stream of education play gently over her mental surfaces, and not get any wetter than she could help. It is not possible to blink the truth that Emma Jane was dull; but a dogged, unswerving loyalty, and the gift of devoted, unselfish loving, these, after all, are talents of a sort, and may possibly be of as much value in the world as a sense of numbers or a faculty for languages.

Wareham was a pretty village with a broad main street shaded by great maples and elms. It had an apothecary, a blacksmith, a plumber, several shops of one sort and another, two churches

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

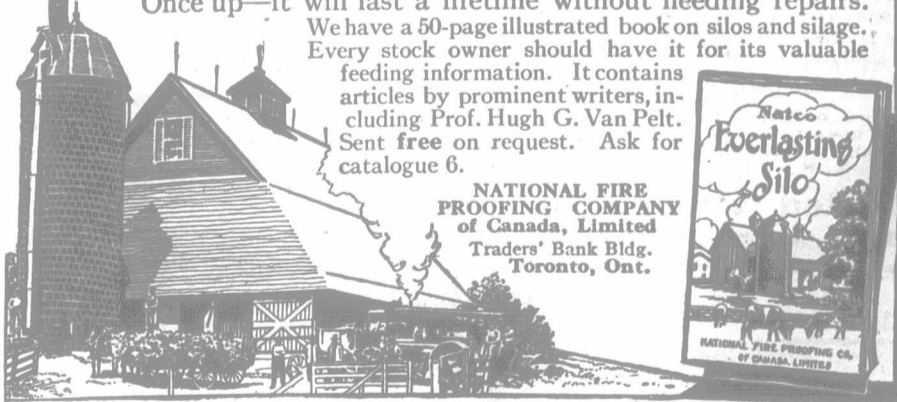
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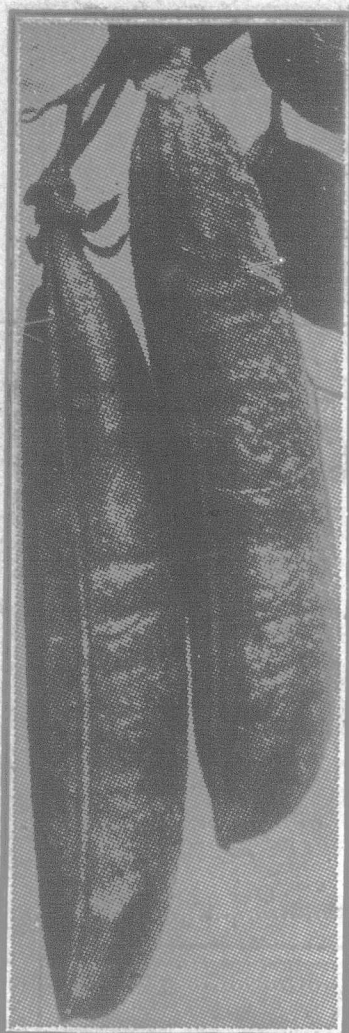
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Furniture Co., Limited
 TORONTO, ONT.



and many boarding-houses; but all its interests gathered about its seminary and its academy. These seats of learning were neither better nor worse than others of their kind, but differed much in efficiency, according as the principal who chanced to be at the head was a man of power and inspiration or the reverse. There were boys and girls gathered from all parts of the county and state, and they were of every kind and degree as to birth, position in the world, wealth or poverty. There was an opportunity for a deal of foolish and imprudent behavior, but on the whole, surprisingly little advantage was taken of it. Among the third and fourth-year students there was a certain amount of going to and from the trains in couples; some carrying of heavy books up hill by the sterner sex for their feminine school-mates, and occasional bursts of silliness on the part of heedless and precocious girls, among whom was Huldah Meserve. She was friendly enough with Emma Jane and Rebecca, but grew less and less intimate as time went on. She was extremely pretty, with a profusion of auburn hair, and a few very tiny freckles, to which she constantly alluded, as no one could possibly detect them without noting her porcelain skin and her curling lashes. She had merry eyes, a somewhat too plump figure for her years, and was popularly supposed to have a fascinating way with her, Riverboro being poorly furnished with beaux, she intended to have as good a time during her four years at Wareham as circumstances would permit. Her idea of pleasure was an ever-changing circle of admirers to fetch and carry for her, the more publicly the better; incessant chaff and laughter and vivacious conversation, made eloquent and effective by arch looks and telling glances. She had a habit of confiding her conquests to less fortunate girls and bewailing the in-



RICHARD SEDDON PEA

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True **DECARIE** Selected Strain.—1/2 oz. \$1.00, Pkt. (with special cultural instructions).... 25c

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A NEW EARLY TOMATO Rennie's "Ninety Day"

This northern-grown strain of Tomato is undoubtedly the very best earliest scarlet-fruited Tomato. Oz. 80c, 1/2 oz. 50c, pkt. 15c

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A SLIGHT push starts the tub moving. That's because the Connor Ball Bearing Washer swings on ball bearings. The ball bearings carry the weight of the tubful of clothes. You have nothing heavy to push. You simply give the tub a little swing. It strikes a set of powerful coil springs. They swing it back swiftly until it strikes another set, which return the tub to the first set. These springs do nearly all the work.

Connor Ball Bearing Washer

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cessant havoc and damage she was doing; a damage she avowed herself as innocent of, in intention, as any newborn lamb. It does not take much of this sort of thing to wreck an ordinary friendship, so before long Rebecca and Emma Jane sat in one end of the railway train in going to and from Riverboro, and Huldah occupied the other with her court. Sometimes this was brilliant beyond words, including a certain youthful Monte Cristo, who on Fridays expended thirty cents on a round trip ticket and travelled from Wareham to Riverboro merely to be near Huldah; sometimes, too, the circle was reduced to the popcorn-and-peanut boy of the train, who seemed to serve every purpose in default of better game.

Rebecca was in the normally unconscious state that belonged to her years; boys were good comrades, but no more; she liked reciting in the same class with them, everything seemed to move better; but from vulgar and precocious flirtations she was protected by her ideals. There was little in the lads she had met thus far to awaken her fancy, for it habitually fed on better meat. Huldah's schoolgirl romances, with their wealth of commonplace detail, were not the stuff her dreams were made of, when dreams did flutter across the sensitive plate of her mind.

Among the teachers at Wareham was one who influenced Rebecca profoundly, Miss Emily Maxwell, with whom she studied English Literature and composition. Miss Maxwell, as the niece of one of Maine's ex-governors and the daughter of one of Bowdoin's professors, was the most remarkable personality in Wareham, and that her few years of teaching happened to be in Rebecca's time was the happiest of all chances. There was no indecision or delay in the establishment of their relations; Rebecca's heart flew like an arrow to its mark, and her mind, meeting its superior, settled at once into an abiding attitude of respectful homage.

It was rumored that Miss Maxwell "wrote," which word, when uttered in a certain tone, was understood to mean not that a person had command of penmanship, Spenserian or otherwise, but that she had appeared in print.

"You'll like her," she writes, "whispered Huldah to Rebecca the first morning at prayers, where the faculty sat in an imposing row on the front seats. "She writes; and I call her stuck up."

Nobody seemed possessed of exact information with which to satisfy the hungry mind, but there was believed to be at least one person in existence who had seen, with his own eyes, an essay by Miss Maxwell in a magazine. This height of achievement made Rebecca somewhat shy of her, but she looked her admiration; something the most of the class could never do with the unsatisfactory organs of vision given them by Mother Nature. Miss Maxwell's glance as always meeting a pair of eager dark eyes; when she said anything particular-good, she looked for approval to the corner of the second bench, where every shade of feeling she wished to evoke was reflected on a certain sensitive young face.

One day, when the first essay of the class was under discussion, she asked each new pupil to bring her some composition written during the year before, that she might judge the work, and know precisely with what material she had to deal. Rebecca lingered after the others, and approached the desk shyly.

"I haven't any compositions here, Miss Maxwell, but I can find one when I go home on Friday. They are packed away in a box in the attic."

"Carefully tied with pink and blue ribbons?" asked Miss Maxwell, with a whimsical smile.

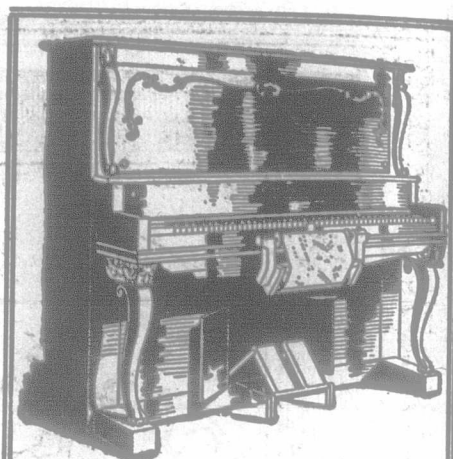
"No," answered Rebecca, shaking her head decidedly; "I wanted to use ribbons, because all the other girls did, and they looked so pretty, but I used tie my essays with twine strings on purpose; and the one on solitude I fastened with an old shoelacing just to show what I thought of it!"

"Solitude!" laughed Miss Maxwell, raising her eyebrows. "Did you choose your own subject?"

"No; Miss Dearborn thought we were not old enough to find good ones."

"What were some of the others?"

"Fireside Reveries, Grant as a Soldier, Reflections on the Life of P. T. Barnum, Buried Cities; I can't remember any



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BRIGHTEN UP

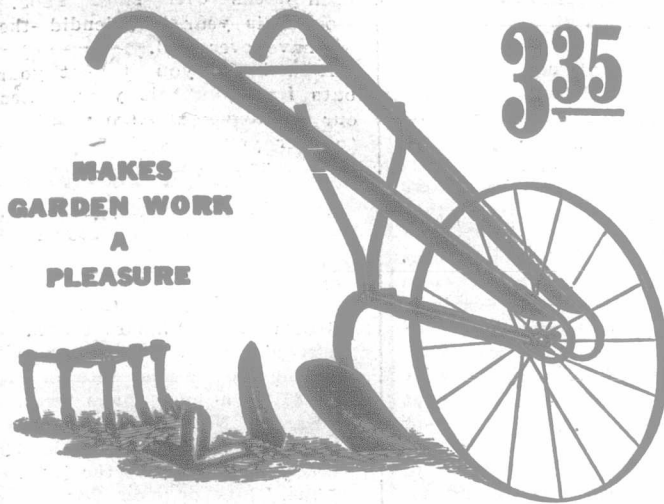
your home with the wonderful White Flame Burner. Makes your old lamps and lanterns give a brilliant soft white light better than electricity or gas. Saves eyesight and makes reading or sewing a pleasure. No Waxes to Break. Reliable and economical. Satisfaction guaranteed. Delights every user. Complete Sample Mailed to any address for 38 cts., or 3 for \$1.00. Money back if not Satisfactory. Mail orders promptly filled.



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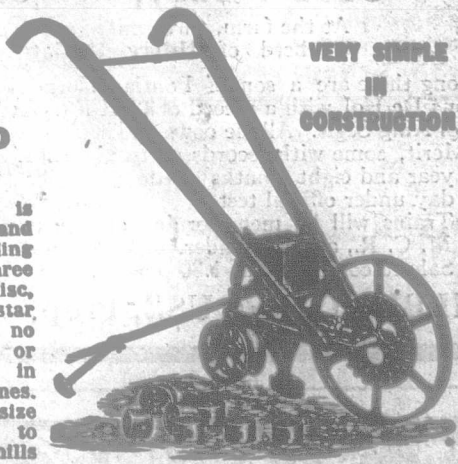
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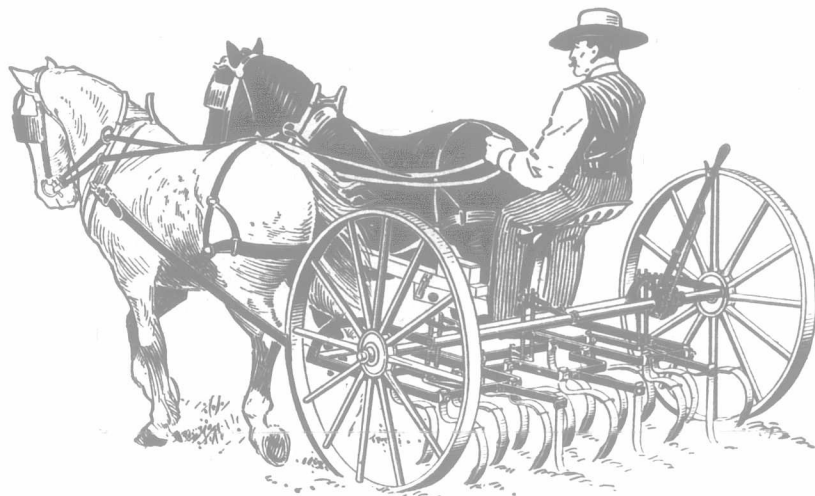
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more now. They were all bad, and I can't bear to show them; I can write poetry easier and better, Miss Maxwell." "Poetry!" she exclaimed. "Did Miss Dearborn require you to do it?" "Oh, no; I always did it even at the farm. Shall I bring all I have? It isn't much." "Rebecca took the blank-book in which she kept copies of her effusions and left it at Miss Maxwell's door, hoping that she might be asked in and thus obtain a private interview; but a servant answered her ring, and she could only walk away disappointed. A few days afterward she saw the black-covered book on Miss Maxwell's desk and knew that the dreaded moment of criticism had come, so she was not surprised to be asked to remain after class. The room was quiet; the red leaves rustled in the breeze and flew in at the open window, bearing the first compli-

Big Dispersion Sale 30 Reg. Holsteins 30

WILBER C. PROUSE, of Tillsonburg, Ont. will sell at auction

Good Friday, March 21st, 1913

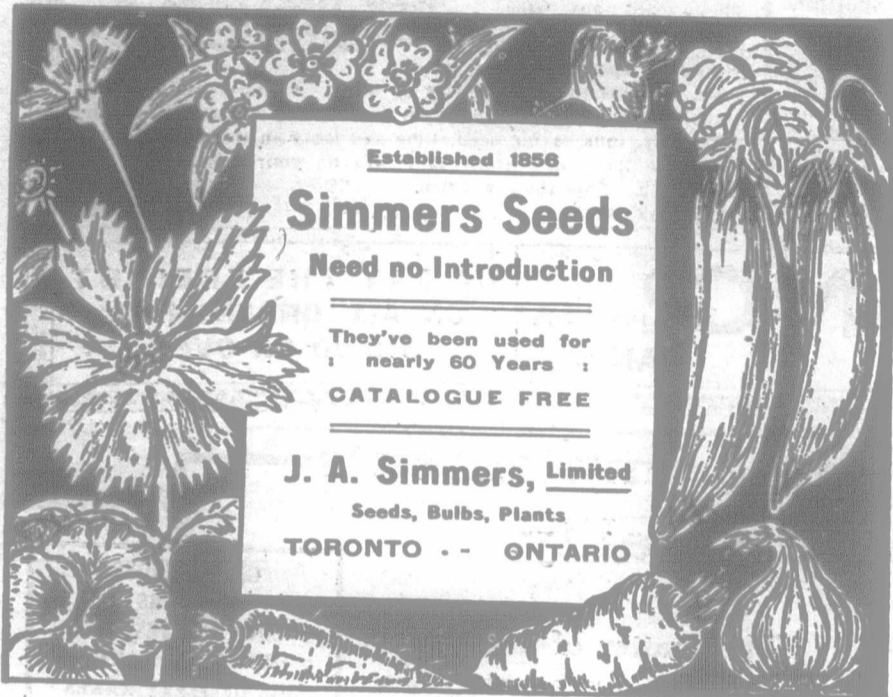
At the farm, three miles north of town, his entire herd of thirty Registered Holsteins

Among these are a son of Pontiac Korndyke, a granddaughter of Blanche Lyons De Kol, with a record of 33.31 lbs. butter in 7 days; also a granddaughter of King Segis. All the cows and heifers, with two exceptions, are in Record of Merit, some with records up to 21.84 lbs. butter in 7 days. One heifer at one year and eight months made 14.05 lbs., her dam gave 80.7 lbs. milk in one day under official test.

Trains will be met morning of sale at Tillsonburg, G. T. R., C. P. R. and M. C. R., and Ostrander, C. P. R.

Sale to commence at 1.30 p.m. Write for catalogue.

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Established 1856

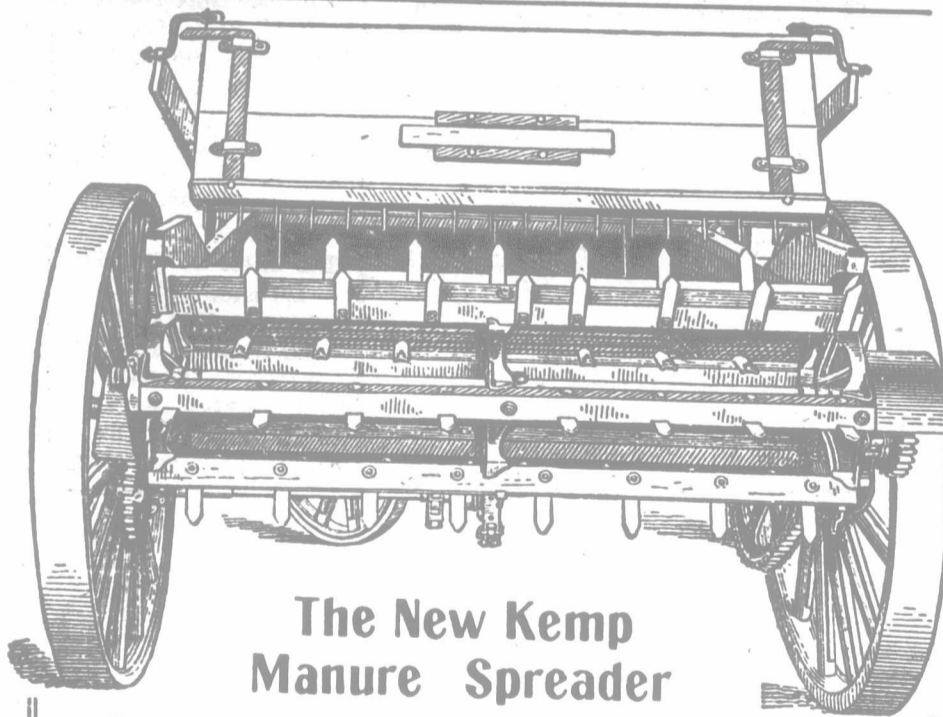
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ments of the season. Miss Maxwell came and sat by Rebecca's side on the bench.

"Did you think these were good?" she asked, giving her the verses.

"Not so very," confessed Rebecca; "but it's hard to tell all by yourself. The Perkinses and the Cobbs always said they were wonderful, but when Mrs. Cobb told me she thought they were better than Mr. Longfellow's I was worried, because I knew that couldn't be true."

This ingenuous remark confirmed Miss Maxwell's opinion of Rebecca as a girl who could hear the truth and profit by it.

"Well, my child," she said smilingly, "your friends were wrong and you were right; judged by the proper tests, they are pretty bad."

"Then I must give up all hope of ever being a writer!" sighed Rebecca, who was tasting the bitterness of hemlock, and wondering if she could keep the tears back until the interview was over.

"Don't go so fast," interrupted Miss Maxwell. "Though they don't amount to anything as poetry, they show a good deal of promise in certain directions. You almost never make a mistake in rhyme or metre, and this shows you have a natural sense of what is right; a 'sense of form,' poets would call it. When you grow older, have a little more experience,—in fact, when you have something to say, I think you may write very good verses. Poetry needs knowledge and vision, experience and imagination, Rebecca. You have not the first three yet, but I rather think you have a touch of the last."

"Must I never try any more poetry, not even to amuse myself?"

"Certainly you may; it will only help you to write better prose. Now for the first composition. I am going to ask all the new students to write a letter giving some description of the town and a hint of the school life."

"Shall I have to be myself?" asked Rebecca.

"What do you mean?"

"A letter from Rebecca Randall to her sister Hannah at Sunnybrook Farm, or to her aunt Jane at the brick house, Riverboro, is so dull and stupid, if it is a real letter; but if I could make believe I was a different girl altogether, and write to somebody who would be sure to understand everything I said, I could make it nicer."

"Very well; I think that's a delightful plan," said Miss Maxwell; "and whom will you suppose yourself to be?"

"I like heiresses very much," replied Rebecca contemplatively. "Of course I never saw one, but interesting things are always happening to heiresses, especially to the golden-haired kind. My heiress wouldn't be vain and haughty like the wicked sisters in Cinderella; she would be noble and generous. She would give up a grand school in Boston because she wanted to come here where her father lived when he was a boy, long before he made his fortune. The father is dead now, and she has a guardian, the best and kindest man in the world; he is rather old of course, and sometimes very quiet and grave, but sometimes when he is happy, he is full of fun, and then Evelyn is not afraid of him. Yes, the girl shall be called Evelyn Abercrombie, and her guardian's name shall be Mr. Adam Ladd."

"Do you know Mr. Ladd?" asked Miss Maxwell in surprise.

"Yes, he's my very best friend," cried Rebecca delightedly. "Do you know him too?"

"Oh, yes; he is a trustee of these schools, you know, and often comes here. But if I let you 'suppose' any more, you will tell me your whole letter and then I shall lose a pleasant surprise."

What Rebecca thought of Miss Maxwell we already know; how the teacher regarded the pupil may be gathered from the following letter written two or three months later.

Wareham, December 1st.

MY DEAR FATHER,—As you well know, I have not always been an enthusiast on the subject of teaching. The task of cramming knowledge into these self-sufficient, inefficient youngsters of both sexes discourages me at times. The more stupid they are, the less they are aware of it. If my department were geography or mathematics, I believe I should feel that I was doing

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The very best seed is none too good for you. We have made a specialty of farm seeds ever since 1803. Our stock this year is splendid—the best we have ever had.

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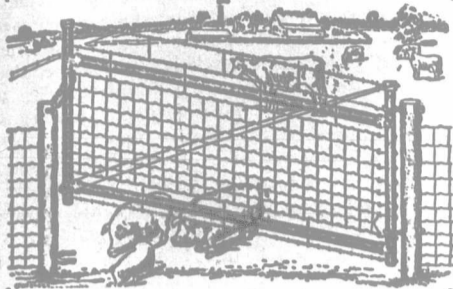
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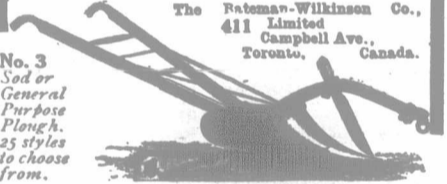
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Bookkeeping

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Shaw Correspondence School 397 Yonge Street, North TORONTO, ONT. W. H. SHAW, President

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MITCHELL SLIDE-EASY QUALITY TIES STYLE VARIETY

Auction Sale of Thoroughbred Shorthorn Cattle 15 head of first-class registered stock Tuesday, March 18th, 1913 Sale commences at 1 p.m. Catalogue of stock forwarded upon request. Teams will meet trains at Bright Station on day of sale at 9.20 and 10.40 a.m. A. FRASER, Auctioneer. Knox Bros., Props., Chesterfield, Ont. Seed Corn for Sale High germination test white cap yellow dent, grown on our own farm. TISDELLE BROS., Tilbury, Ont. Essex County.

plishing something, for in those branches application and industry work wonders; but in English literature and composition one yearns for brains, for appreciation, for imagination! Month after month I toil on, opening oyster after oyster, but seldom finding a pearl. Fancy my joy this term when, without any violent effort at shell-splitting, I came upon a rare pearl; a black one, but of satin skin and beautiful lustre! Her name is Rebecca, and she looks not unlike Rebecca at the well in our family Bible; her hair and eyes being so dark as to suggest a strain of Italian or Spanish blood. She is nobody in particular. Man has done nothing for her; she has no family to speak of, no money, no education worthy the name, has no advantages of any sort; but Dame Nature flung herself into the breach and said:—

"This child I to myself will take, She shall be mine and I will make A Lady of my own."

Blessed Wordsworth! How he makes us understand! And the pearl never heard of him until now! Think of reading Lucy to a class, and when you finish, seeing a fourteen-year-old pair of lips quivering with delight, and a pair of eyes brimming with comprehending tears!

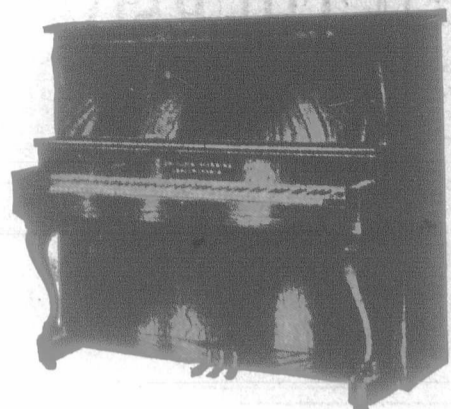
You poor darling! You, too, know the discouragement of sowing lovely seeds in rocky earth, in sand, in water, and (it almost seems sometimes) in mud; knowing that if anything comes up at all it will be some poor starveling plant. Fancy the joy of finding a real mind; of dropping seed in a soil so warm, so fertile, that one knows there are sure to be foliage, blossoms, and fruit all in good time! I wish I were not so impatient and so greedy of results! I am not fit to be a teacher; no one is who is so scornful of stupidity as I am. . . . The pearl writes quaint countrified little verses, doggerel they are; but somehow or other she always contrives to put in one line, one thought, one image, that shows you she is, quite unconsciously to herself, in possession of the secret. . . . Good-bye; I'll bring Rebecca home with me some Friday, and let her and mother see her for yourselves.

Your affectionate daughter, EMILY. (To be continued.)

The New Public Health.

(Continued from page 477.) typhoid fever or not. Satisfied on that point, his first question is not, "Tell me all the different water supplies you have used, or all the sources of milk you have used." The first question is, "When did you first show the earliest symptoms of the disease?" Why? Because this date once fixed, the date at which infection entered the patient's mouth is fixed also, i. e., a date between one and three weeks previous to the date of earliest symptoms. (The occasional exceptions do not affect the validity of this statement as a practical, working rule.) Remember, that at this stage the detective may not have even an inkling as to which of the usual factors, water, milk, food, flies, or fingers, is involved. Still less can he guess which particular water supply, milk supply, etc., of the many possible ones, may be the guilty one. But the answer to this question reduces possible routes to those used by this patient—not at any time—but during a specific period, i. e., from one to three weeks preceding his date of earliest symptoms. Not yet, however, are the milk and water questions offered. The second question is, "Where were you during that period?" Why? Because if the patient were not in the community during that period, he could not have contracted his infection within it, and does not belong to the outbreak under examination at all, but to some other. He is, in brief, an "imported case," and while, of course, he is to be supervised lest he spread his infection to others, he cannot help to locate the source of the main outbreak—unless perchance he be himself that source, i. e., the introducer to the community of the original infection. If he be an imported case, he is noted for further reference, and the detective goes to another patient. If not, the questions continue. But not yet are water or milk or flies mentioned. The third question is, "Were you associated during

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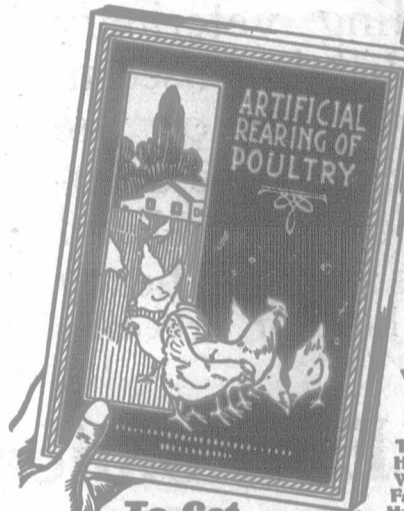
Higel Double Repeating Action—Pohlmann Wire the best imported—Weickert Felt Hammers, none better—Billings Brass Action Flange, the latest innovation. The

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your period of infection with any then known typhoid case?" Why? Because such association, especially if intimate, makes it more than probable that the case under examination received his infection from the preceding case, rather than from any general route, and that he is therefore a "secondary" case. If he had such associations, this is noted for further reference, and the investigator passes on to another bedside. If not, the questions continue, and now, at last, take up milk, water, food, etc., but of course only so far as to determine those used by the patient during his infection period.

Then the investigator passes to the next patient. What has he learned so far? Nothing much yet. But he has narrowed the possible routes of infection to certain water supplies, certain milk supplies, certain food supplies, etc., i. e.,

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those used by the first patient during a certain period, and he has done this in thirty minutes—in scarcely the time it takes for the old style investigator to get his bottles ready to collect his first water sample!

At the bedside of the second patient, the same inquiries in the same order are made. If this second patient be an imported case, or a secondary case, he also is merely noted for future reference. If he be a primary, however, the origins of his drinking water, milk, food, etc., during his infection period are also ascertained. Perhaps he coincides with the first patient in every detail of alimentary supplies, in history and associations. If so, nothing much has been added to the detective's knowledge. But more than likely, dissimilarities have developed. Since the responsible water supply, milk supply, etc., must be one of those water supplies, milk supplies, etc., used in common by primary cases, all those not common to both of these primary cases may be dropped from consideration (except in rare instances of multiple routes). Thus, if both have used the same water, water from that origin remains as a possibility. But if the water supplies have been different, water is eliminated from the question entirely. If the milk supplies are identical, milk remains as a possible route of infection; if not, milk is eliminated from the question entirely.

In brief, provided the information obtained be reliable, and it is a part of the public-health detective's training to distinguish at a glance truth from falsehood, the honestly mistaken, or forgetful, or stupid replies from the reliable ones—and above all never to believe anything (to the extent of recording it) unless it is checked, confirmed, and established as a fact, the modern investigator has in one hour narrowed his investigation to a point which the old-style investigator often would not reach for weeks.

And so from patient to patient the inquiry proceeds. In the course of the day the investigator has seen perhaps thirty patients. The tabulation (probably already made in his own mind) shows, say, three imported cases, five secondaries, two uncertain or indefinite. The remaining primary cases show in common, say, one water supply only, the milk, etc., varying; or one milk supply only, the water, etc., varying; or no connection except attendance at some one social function.

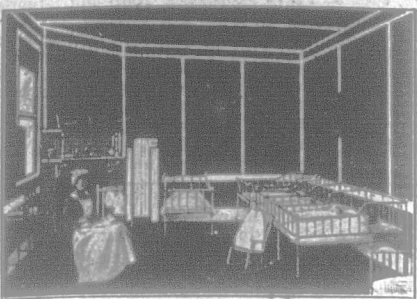
Going straight to the route thus indicated, the public-health detective quickly confirms the indications of his results. He knows that the route indicated must be the guilty one, for only that route can account for all the cases. He concentrates on that route until the evidence is complete—when and how that route became infected, when and by what sub-routes the infection was distributed, why it infected the patients found and not others, etc.

In this illustration I have assumed complete ignorance on the part of the epidemiologist as to everything connected with the community he is investigating, except what he finds by cross-examining the patients. As a matter of fact, every epidemiologist, however much a stranger to the particular community he enters, begins to learn about it from the moment he enters it.

Thus, almost unconsciously, he notes the size of the community or rural district, and compares it with the number of cases reported as existing; if it is summer-time, he almost automatically notes the presence or absence of open toilets in the back yards, of manure-piles, and of garbage-cans—all bearing upon fly infection. If it is winter-time, or the community be well sewered, he does not even consider flies. If the cases are grouped in one quarter of the community, while the public water supply extends all over it, he tentatively eliminates the water supply, before he asks a question. If good surface drainage and a sandy soil exists, or driven wells are chiefly in vogue, he tentatively eliminates well water—even before he visits the health officer.

This is not and cannot be a complete synopsis of all the combinations of circumstances which the epidemiologist meets. It is intended to illustrate his methods, and to show why they are incredibly rapid and incredibly accurate—how they eliminate speculation and guarantee a correct solution—which

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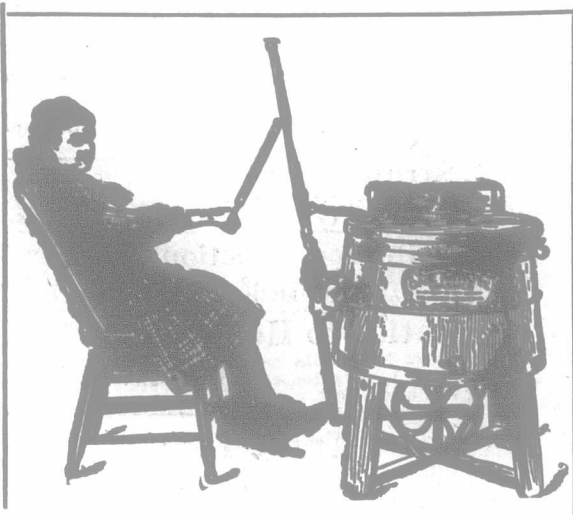
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One customer says, "One of the happiest hours of my life is wash-day, when I am operating my 'Happy Hour' Washer."

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means, of course, the achievement of the great end, the finding of proper measures for suppression.

As soon as the route is indicated, he must go to that route, and establish beyond peradventure that it was in truth responsible. A water supply cannot convey typhoid if typhoid-fever discharges have not entered it. There is no object in attributing an outbreak to fly-infection from toilets into which typhoid faeces have not been discharged at such a time as to account for the cases. A milk supply, not handled at some point by an infected person, nor adulterated at some time with infected extraneous matter, cannot convey typhoid. Whatever his results, they cannot be true unless they are consistent—they should not be accepted unless they are provable—and proved.

If the public-health detective is familiar with the community where the outbreak occurs, including its water supplies, its milk supplies, the sociological relationships of its people, etc., etc., he can often tentatively determine the cause of the outbreak by a mere inspection of the names and addresses of primary cases, especially if platted on a map of the

community, taking into account also the time of year, and other general points. But such deductions, while often wonderfully reliable, can never be as conclusive and satisfactory as are the results of an investigation by even a total stranger, if the investigation be conducted as above described.

Once the main route of the typhoid outbreak is discovered, what should be done?

Water Supplies.—If the contaminating material can be excluded from the supply, this should, of course, be done instantly, and hypochlorite should be added at once after cutting out the contaminating source, to secure disinfection of the water already in mains, reservoirs, etc., making sure, by blowing out dead ends, etc., that the hypochlorite reaches every part of the system. Thereafter, nothing whatever is needed concerning the water supply, except to see that new contamination is not introduced.

If, as often happens, the contaminating material cannot at once be excluded from the supply, order the water boiled, and begin at once the construction of a hypochlorite disinfecting plant. This plant costs less than \$50 to build and set up

ready for work. On detecting a water outbreak of typhoid or dysentery, a portable plant may be shipped to the community or farm affected, and is usually in operation within twenty-four hours of receipt of notification of its need. In many cases, orders to boil the water is superfluous; because the hypochlorite reaches effectively every part of the water system before the order reaches the consumers effectively. As soon as the hypochlorite treatment is installed, measures for permanent reformation of the supply are begun. This may take weeks, months, or years, and the hypochlorite treatment in some cases must remain a permanent feature of the supply.

This is true of any place where a public water supply exists—even a small village, or a farm piped with water from its own well, or other source. Wells having ordinary pumps may be disinfected with hypochlorite still more easily without any plant.

Milk Supplies.—For milk outbreaks, the guilty supply should be cut off or pasteurized, unless and until the actual contaminator (milkman with walking typhoid, milkman who is nursing a sick relative, carrier, etc.) is located and excluded from handling the supply. When this latter can be and is done, no further action is needed. Of course, a thorough disinfection of all cans, bottles, and other apparatus possibly contaminated, should be done at once in all cases.

Flies.—In fly outbreaks, immediate liming of all out-door toilets, the prevention of soil-pollution by the inhabitants, and the fly-proofing of toilets, are the quickest and best methods for immediate results. The abolition of flies is a hopeful idea to pursue, but the exclusion of existing flies from infected discharges is much more practical and almost infinitely quicker.

Food Supplies.—Food outbreaks are usually due to one lot of infected food, long since eaten or otherwise disposed of, and usually little can be done about it. When, however, the food (as in the case of milk) was infected by a handler, who may still be handling new supplies, the handler should be located, if possible, otherwise the particular article involved should be excluded or used only after cooking.

Fingers.—Finger outbreaks can be handled only by supervision of existing infected persons, their nurses and associates.

Every typhoid outbreak becomes a finger outbreak at some stage or other, whatever its original cause, i. e., the primary cases can be prevented by cutting off contamination from the main conveyor (water, milk, flies, etc.); but secondary cases can be prevented only by immediate attention to every existing infected person.

Hence, every typhoid outbreak should result in the immediate appointment of a visiting nurse or equivalent officer, whose sole duty it is to visit every day the existing and new cases, instructing the attendants in the care of discharges, the care of their own hands, etc., by the prevention of sale of food, milk, etc., by infected persons, or from infected houses, etc. In addition, the epidemiological search for missed cases and carriers should be continued as long as new known cases continue to develop. This most important second stage in the control of an epidemic does not call for description here. Like the finding of the origin of the primary outbreak, the finding of missed cases and carriers is based upon detective principles, and depends primarily upon the epidemiologist.

Finally, publicity is needed. Publish abroad the cause of the main outbreak, and warn everyone of the dangers of the secondary infection from existing cases. Too often both public and official opinion consider the danger over when the guilty water is purified, the guilty milk shut out, etc. As a matter of fact, cases from the original cause will develop for a period of three weeks after the main route has been abolished (due to typhoid bacilli ingested from the main route before it was purified). Further, each primary case is likely to give rise to secondaries. Hence, every case, primary or secondary, whenever developing, is a separate focus of the disease for spread by contact—chiefly fingers, and every typhoid epidemic must be supervised for three months at least, often longer, be-



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75 acres of good clay loam situated one half mile from village of Princeton, in County of Oxford. Extra large brick house, two stories, nearly new, 32x58ft., kitchen 24x12ft., cellar under most of building. Barn extra large, cement floors throughout; shed 48x24ft. 7 acres of wheat; 15 acres fall ploughed; 28 acres seeded down. No waste land. Telephone connections, good continuation school close by. Price \$6,500. Box 57, Princeton, Ont.

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Size	Price doz.	Fifty tags
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No postage or duty to pay. Cattle sizes with name and address and numbers; sheep or hog size, name and numbers. Get your neighbors to order with you and get better rate. Circular and sample Mailed free. F. G. JAMES, Bowmanville, Ont.

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Continued 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 news, bred poultry and eggs for sale will find plenty of customers by using our advertising columns. No advertisement inserted for less than 50 cents.

BARRED Plymouth Rocks, offering stock from my Toronto winners reasonable. Eggs on sale for hatching. Leslie Kerns, Freeman, Ont.

BUFF ORPINGTONS—Pure bred cockerels \$3 pullets \$2; large stout healthy birds. Satisfaction guaranteed. Hugh A. Scott, Caledonia, Ont.

CLARK'S Orpingtons, Buff and White, 40 Ck's good type and color, \$2 to \$5 each; 50 pullets and yearling hens, \$2 to \$4 each. Good laying strain. Eggs for hatching. Free illustrated catalogue for asking. J.W. Clark, Cainsville, Ont.

EGGS—\$1 setting, \$5 hundred, "Snowflake" S. C. W. Leghorns. Record layers. E. W. Burt, Paris, Ont.

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

FOR SALE—Single comb White Leghorn cockerels and pullets. Good birds, \$2 a pair and up. Eggs for hatching. R. Hughes Ideal Poultry Yards, Collingwood, Ont.

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

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

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Cycle Hatchers, Brooder Hatchers, Fireless Brooders, Model Hot Air Incubators, Model Out-door Brooders, Grain Sprouters, Bone Milk, Nursery Chick Food, Grit Shell and all Poultry Supplies.

MODEL INCUBATOR CO., River St., Toronto

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50 ACRES of exceptional good clay loam, well tilled, with square fields and good fences; situated one mile north of the Village of Princeton, in the County of Oxford. Must be sold at once. Good bank barn, 48x48, with good stabling, nearly new, and frame house. Close to both creamery and cheese factory. Price, \$4,000. Apply to

CHAS. R. DAVIS, Princeton, Ontario

Big commission

Exclusive territory to be allotted for "The Everyday Vacuum Cleaner." Best hand-power machine on the market. Will sell by hundreds this spring. Write

LONDON SPECIALTY CO.
94 Fullarton St., London, Ontario

Clydesdale Stallion.

A well-bred 5-year-old will sell on easy terms, or will exchange for a grade. He is a bay, and weighs about 1,820, is a sure foal-getter, and I would be glad to show anyone over his route.

C. L. HUNTER, Wyecombe, Ont. Delhi Sta.

For Sale

a property appraised at \$6,000; immediate possession. Would consider a good imported stallion, 5 to 7 years old, weighing ton. Address Box 20, Farmer's Advocate, London, Ontario.

Leeming Seed Corn

FOR SALE on cob that will grow. JOHN McCUTCHEON, R.R. No. 1, Thamesville, Ont.

Registered Jersey Heifer

fresh; a beauty. G. A. Deadman, Brussels, Ont.

fore typhoid fever is abolished from the community.

On an occurrence of typhoid fever, the local Medical Officer of Health should be notified. He may, if necessary, call in the aid of the newly-appointed "District Officers of Health."

H. W. HILL.

Home Dressmaking.

Those who find trouble with home dressmaking may find it to their advantage to read the advertisement of the Ellison Dress Cutting Co., elsewhere in this issue.

The Beaver Circle.

Senior Beavers' Letter Box.

Dear Puck and Beavers,—I think I will try and answer this great question, "If I could do as I wished, what I would do?"

No person could go through this world without working, or even without education. If we tried, we would have a very hard time. If we could all do as we wished, no one would work very much, but we would all have it as easy and nice as possible.

If I had plenty of money, I would get a good education, and spend a lot of time travelling. I would see all the nice countries, and spend a lot of time in parks, and green-houses, and see all the animals and plants that live in other countries, or I would go to the countries and see the plants growing there. I would not wish to see all the animals running wild, though.

I would see the West, and, greatest of all, I would own a lot of land, and live in a large, beautiful house, with beautiful grounds around it.

I would go skating on the Atlantic ocean, and sleigh-riding down the Rocky Mountains; I would go up to Mars in an airship, and explore a country with mountains of gold and lakes of ink.

After the money would be all gone, I would go over the Niagara Falls in a barrel, to get enough money to live the rest of my life in this way.

It would not be wise if we could do as we wished, because we would use up all the money so that nobody else could live.

Will some more Beavers write on the same subject? IVAN GROH.

Preston, Ont.

Dearest Puck and Beavers,—Well, here I come again! It's quite a while since you heard from me, isn't it? But never mind, I'll make up for it now.

My, how I would love to sit with a big doll among all those pretty doll dresses. Wouldn't I make them fly! As old as I am, I love dressing dolls.

Now, do I not hear someone (I believe a boy) say, "Such rot!"

Say, Puck, did any of the girls in the office come across that thousand-legged worm? Wouldn't it be great to see them jump!

If Enid Simpson sees this letter, will she please remember that she owes me a letter? I see, Enid, that Mrs. MacDonald's book, "Chronicles of Avonlea," is out. More of Anne, I see. Am I sorry? Oh, no; I shall never get tired reading of "that red-headed snippet." Will you?

My, oh my, how my pen is running away with me! It is about time I should stop, isn't it? EFFIE GROH (age 14).

West Gravenhurst, Ont.

Never a sight of the millipede have we had since, Effie.

Dear Puck and Beavers,—This is my second letter to your charming Circle, but I did not see the other one in print. May I join your Circle? I have been reading the Beaver Circle for years, and I am keeping all the photos of the gardens which are in "The Farmer's Advocate." My father has taken "The Farmer's Advocate" for years, and likes it fine. I enjoy very much reading the Beavers' letters.

HAZEL LISHMAN.
(Age 12, Class Sr. IV.)
Hagersville, Ont.

Dear Puck and Beavers,—I like reading your letters very much. My father has taken "The Farmer's Advocate" for a long time, and likes it very much. I will soon be eleven years old, and I am in the Senior Third Book. We have a nice teacher; her name is Miss Woodhill. I go to school every day I can. I have one mile to walk in summer. In the winter, we sometimes get a ride. I like reading very much. We have a little kitten, but it is wild and will not come to the house. I liked reading the Garden Competition letters.

IVY KELLAM.
(Age 11, Sr. III. Book.)
Highfield, Ont.

Dear Puck and Beavers,—As my last letter had the good luck to escape the w.-p. b. I thought I would write again. I have a number of pets of which I am very fond. At present we have plenty of snow, and I do enjoy snow-shoeing and sleigh-riding.

Say, Beavers, don't you think it would be fine for us to give pen-names, and pick out jolly ones? I am ten years old, and have three miles to go to school, and in the winter it is sometimes rather cold.

I suppose you have all read a number of books. I am very fond of reading, and have read "Fallen Fortune," "The Rosary," "A Question of Science," "The Prairie," "Phil the Fiddler," "Evelyn's Mistake," and a great many others. Reading hurts my eyes, so that I have to stop sometimes.

I would be pleased if some of the Beavers would correspond with me. EVA BOYLE.
Watson's Corners, Ont.

I am sorry, but it is a rule that Beavers shall not use pen-names, Eva.

Dear Beavers and Puck,—I like to read the Beavers' letters every week very much. We have two hundred acres of land, and I help my father with the work. We have two colts, King and Queen. One is black and the other red. King is very tame, and likes us to pet him. We have a large garden, and I like to work in it. At one end of the garden there is a large bed of strawberries, but on account of the dry weather last summer we did not have very many. Beech Ridge is a large, level tract of country. There are many apple orchards, which yield great quantities of the fruit. Along the roadside, large maple trees grow, and in the autumn, when the leaves turn red and gold, they look very beautiful. The school is only a short distance from our house.

Well, Beavers, I think I had better close my letter. DOUGLAS BRADLEY (age 12).
Beech Ridge, Ont.

Riddles.

How many parts are there to a "grammar"? Ans.—Two, inside and outside.—Sent by Jessie Kitchen, Royal Oak.
Spell rat-trap with three letters. Ans.—C-a-t.
Spell pig without an eye. Ans.—B-l-l-n-d p-l-g.—Sent by Frank Colton, Navan, Ont.

Gossip.

HANDSOME PRICES FOR HEREFORDS
At an auction sale of Hereford cattle, by W. T. McCray, at Kentland, Indiana, February 26th, seventy-six head sold for an average of \$525, 27 bulls averaging \$740, and 49 females \$410 each. The highest price for a bull was \$2,500, twice realized, respectively, for the yearlings Crusader Fairfax and Duke Real. The two-year-old, Byron Fairfax, sold for \$2,450, and two others for \$1,650 and \$1,575. The highest price for a female was \$1,100, for the four-year-old cow, Gay Lass 5th, purchased by J. A. Chapman, Brandon, Manitoba. Mr. McCray reports that on the day following the public sale, he sold by private contract, to L. O. Clifford, of Oshawa, Ont., for \$1,000, a thirty-day-old bull calf, by the \$2,450 Byron Fairfax. On the same day he sold to Simon Downie & Sons, of Carstairs, Alberta, for \$1,750, the bull, Beau Perfection 11th.

"Pa, who is Mrs. Grundy?"
"She is an old lady who is always supposed to belong to some other man's family."



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

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

FARM FOR SALE OR RENT, 130 acres or 180 acres well drained sandy loam and clay loam, well adapted for dairying or grain growing. Joseph Weld, Farmer's Advocate, London, Ont.

FARM FOR SALE—200 acres; grain and stock farm, brick house, frame barn, power mill, modern stabling, 6000ft. cement floor, water throughout; splendid farm for alfalfa and corn. Two spring creeks. For particulars write J. A. Douglas, Mount Forest Ont.

LINCOLN OATS from prize-winning field. Won first at Guelph, 1910 and 1912. Also first at Central Fair Ottawa, 1910, 1911 and 1912. 85c. per bus. W.G. RENNIE, Ellicottville, Ont.

WANTED by April 1st for mixed farm reliable married man; must be temperate; good with stock. Apply with references. A. H. Blair, Ont.

WANTED—Three good men for dairy and mixed farming; good milkers. Wages three hundred and sixty dollars a year and board. Con-ford, Koksilah, Vancouver Island, B. C.

WANTED—Three first class milkers; wages \$28. per month and board; only first class men need apply. Brindale Farms Ltd., Brindale, Ont., (near Toronto.)

WANTED—By April 1st a married man, with small or no family, to work 130-acre farm. Good horseman preferred. Apply to I. R. Thompson, Box 235, Guelph, Ont.

WANTED immediately an experienced farmer; unmarried preferred. Apply, Lewis Grigg, Foldens Corner, Ont.

WANTED—CUSTOM TANNING—Send me your cattle and horse hides, and have them tanned and made into robes and coats. Deerskin tanned for buckskin, also made into mits and gloves. We tan all kinds of hides, skins and furs. Send them to me and have them dressed right. B. F. BELL, Delhi, Ont.

O. A. C. NO. 21 BARLEY.

Another supply of beautiful seed now ready. We increased one pound to nine hundred bus. in three crops. Price 90 cents per bus. Also a supply of clean and pure improved Siberian Oats, the leading variety. Price fifty cents per bushel. Best cotton bags twenty seven cents.

Jno. Elder, Henall, Ont.

SEED OATS FOR SALE—Yellow Russian. These oats will win you a place in the field crop competition. 1912, I won 1st in competition crop, 1st at Ottawa winter fair, 2nd on sheaf and 6th on grain at Ottawa fall fair. This oat won 1st 2nd, 3rd, 5th in our field crop. 1911, won 1st and 2nd in field crop; I won 4th at Ottawa winter fair and 1st at Toronto on sheaf. 1910, I won 2nd on sheaf at Toronto and 2nd on grain at Ottawa. Price, 50 bushel lots 85c. per bushel; 5 bushel lots \$1.00; bags 25c. each. THOS. COSH, Bobcaygeon, Ont.

Strawberry Plants that will grow in trays, standard varieties, list free. ONTARIO NURSERY CO., WELLINGTON, ONTARIO.

Improved Section in Alberta would let on shares to reliable farmer. ELIZ. HUSBAND, 129 Main W., HAMILTON, ONT.

Notice to Horsemen and V. S. Patent No. 145578 in a Rupture Truss for horses, which I guarantee a cure or no sale. M.G. ERB, Wellesley, Ont.

Trade Topics.

Dr. T. E. Watson, V.S., Niagara Falls, Ont., whose advertisement of horse-wash, Liptoil, a preventive and cure for boils, sores abrasions, galls, crack, corns, etc., runs in this paper, writes that readers seem to think that the 50-cent sample is given free. The advertisement is, therefore, changed to read, the sample will be sent on receipt of the price.

The manure spreader as a labor-saver, and as a means of evenly distributing the fertilizer gathered from the stables, has come to stay, as it commends itself to the farmer who gives it a trial. Like other farm implements, it has been improved from time to time by manufacturers, and the John Deere Company, Toronto, Ont., in their advertisement on another page, call attention to their patented improved spreader, claimed to be the simplest and strongest, and as much in advance of ordinary spreaders as was the self-binder over the old reaper. Being low-set, only "hip-high," it is easily loaded, and the beater on the axle does away with chains and clutches, puts the strain and stress of spreading on the main axle, and wheels do not interfere with loading, while the roller bearings make the draft light. See the advertisement, and write for their spreader data free, as Package No. Y119.

Gossip.

Volume 6, of the Canadian Hereford Herdbook, has been issued from the office of the Canadian Live-stock Records at Ottawa, and a copy received at this office. This volume contains pedigree records of 3,882 animals.

Volume 29, of the Dominion Shorthorn Herdbook, has been issued from the office of the Canadian Live-stock Records, Ottawa, and a copy received at this office. This volume contains pedigree records of 3,368 bulls, numbering from 84541 to 87909, and 3,468 females, numbering from 97691 to 101159, a total entry of 6,836, recorded from January 1st to December 31st, 1912.

Geo. McCormick, Rockton, Ont., near the town of Dundas, breeder of high-class Ayrshire cattle, advertises for sale a richly-bred young bull, sired by the noted Burnside Heather King, by King's Own, and his dam closely related to the celebrated Primrose of Tanglewild. Some of the best producing cows of the breed have been bred in, or traced to, the Rockton herd, such as White Floss, Snowflake, Floss Morton, and Milkmaid 2nd, the grandam of Milkmaid 7th. The champion cow at Amherst, N. S., Winter Fair, was bred in the Rockton herd.

BRAMPTON JERSEYS.

Another visit to the great Brampton herd of Island Jerseys, found the herd of something over 300, coming through the winter in good shape. This famous herd, the largest by far in the Dominion, and up to a standard of excellence attained by no other under the British flag, has gained that standard through the united efforts of a lifetime's experience by the firm of B. H. Bull & Son, Brampton, Ont., whose annual selections and importations from the country of the breed's origin are the most extensive of any on this continent, and the quality of those selections and importations can be gauged by the fact that last year, in common with that of many years past, representatives of the herd won for their owners practically everything hung up at the leading shows in Ontario, Manitoba, Saskatchewan, Alberta and British Columbia, and in the hands of their purchasers, at Quebec and the Maritime Provinces. Very much of this phenomenal success can be attributed to the high-class quality of the sires that have been continuously in use, a few of which may be mentioned, with the records made in official R. O. P. tests by their daughters. Brampton King Edward, three-year-old daughter, record, 8,956.05 lbs. milk, 468 lbs. butter-fat; mature daughter, 14,449.9 lbs. milk, 727 lbs. butter-fat; mature daughter, 11,915.5 lbs. milk, 619 lbs. butter-fat. Brampton Blue Beau, two-year-old daughter, 6,841 lbs. milk, 347 lbs. butter-fat; two-year-old daughter, 7,275 lbs. milk, 352 lbs. butter-fat. King's Winged Fox, two-year-old daughter, 9,154.2 lbs. milk, 453 lbs. butter-fat. Brampton Sweet Briar, two-year-old daughter, 11,001.75 lbs. milk, 455 lbs. butter-fat. Blue Blood, mature daughter, 9,982.4 lbs. milk, 511.9 lbs. butter-fat; three-year-old daughter, 8,712 lbs. milk, 328 lbs. butter-fat. Arthur's Golden Fox, two-year-old daughter, 7,071.8 lbs. milk, 397 lbs. butter-fat. About forty two-year-old heifers of last year's importation will be put to the test as they come to milk. Not only are the heifers doing remarkably well in the test in the hands of the Messrs. Bull, but heifers from the herd sold to other parties are doing equally as well. Individual mention of the many good ones in the herd is out of the question in this short synopsis. Suffice it to say that last year's winners and champions are doing remarkably well, and look like repeating their successes. The young bulls now on hand are probably the most attractive lot ever bred in the herd. Several of them are imported. One, eighteen months old, has the distinction of having for dam a cow that made the second highest butter-test ever made on the Island. This cow is now in the herd. These young bulls, as well as the others for sale, are sired by bulls with R. O. P. daughters, and many of them are out of R. O. P. dams. The Messrs. Bull report an extra big enquiry for Jerseys, from one end of the country to the other.

On another page in this issue is advertised for sale a 100-acre clay-loam farm, all under cultivation, in Huron County, Ont., 1 1/4 miles from the town of Seaford, G. T. R., with good buildings, one mile from country school, and one and one-quarter miles from Collegiate Institute. Farm is well adapted for dairying or grazing.

The attention of breeders of Holstein cattle, and of dairymen desiring to found or improve a herd in producing lines, is directed to the new advertisement in this issue of L. E. Connell, Fayette, Ohio, who offers for sale service bulls, and bull calves, sons of richly-bred sires, and from high-producing dams, full of the blood of some of the most noted producing strains.

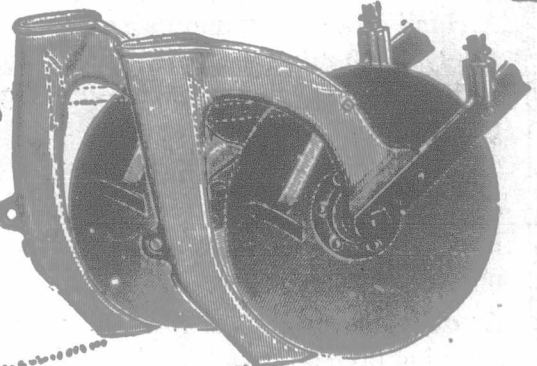
Geo. Gier & Son, of Waldemar, Ont. (C. P. R.), breeders of Shorthorns, write that they have sold all their young bulls that are of serviceable age, but still have the beautiful, straight and smooth roan cow, with a nice, red, bull calf. In heifers, they are offering something good, ready to breed. Parties wanting good Shorthorn females will do well to visit the herd, which is noted for the superior young stock shown at Toronto and other leading Ontario shows in recent years.

The catalogue of Shorthorn cattle, the property of Ira B. Vannatter, Ballinacree, Ont., advertised in this issue to be sold by auction at the farm on Wednesday, March 26th, shows that their breeding is first class, being founded upon high-class importations from leading Scottish herds, some of which were of deep-milking strains, while the sires used have been choicely bred in the blood of the best of Cruickshank, Marr, Duthie, and other noted herds. Several nicely-bred young bulls of serviceable age are included in the offering, also the red three-year-old stock bull, Village Ury, by Village Earl, grandsire and grandam imported. There are also in the sale a mare in foal to an imported Clydesdale horse, two colts by imported sires, several young Yorkshire sows bred, a sow with a litter, fat pigs, and Barred Rock fowl. See advertisement, and write for catalogue.

Hodgkinson & Tisdale, Beaverton, Ont., write: The following are among our more recent Percheron sales: To J. D. Malott, of Ruthven, Essex County, the four-year-old dapple-gray stallion, Jusant (imp.) [2140] (86059), a particularly good horse, rising four, combining extreme quality with extra weight, weighs now 1,965 lbs., and will easily finish at 2,100 lbs. or more. His feet and legs are superb. In breeding he can not be beaten, being sired by the world-famous Etudiant (59291), the highest-bonused sire that ever left France. To John W. Guest, Ballymote, Middlesex County, the very tidy three-year-old, Kaimacan (imp.) [2952] (90427), a nice dapple-gray in color, with the very best of feet and legs, and weight at time of shipment, 1,710 lbs. This mare was a prizewinner at Toronto Exhibition last September, and is safe in foal to one of the leading sires of France. To Storrington Horse Co., of Frontenac County, Kabot (imp.) [3001] (90448), a low-set, very thick colt, with a grand set of feet and sensational action, as he goes high, fast, and straight, and is the admiration of all who see him. He has been a consistent prizewinner at the leading Ontario fairs the past season. To W. C. Langwith, Sunbury, Frontenac County, the two-year-old filly, Lame (imp.) [2956] (97827), an exceptionally good mare, combining both size and quality, weighs 1,500 lbs., has the nicest kind of feet and legs, and trots like a Hackney; was a prizewinner at the Toronto Exhibition last September. To R. J. Brown, of Scotch Village, Nova Scotia, that well-known Percheron stallion, Jurat (imp.) [2141] (88462). Jurat needs no introduction, as his photo has appeared in all the leading farm journals of the country in the past year. He was only shown once, that as a two-year-old at the Dominion Exposition, Regina, where he was an easy winner in a class of thirteen. We still have a large selection of stallions and mares on hand, which we are selling at reasonable prices.

THE COCKSHUTT DISC DRILL

SOWS RIGHT



THIS shows the self-cleaning Cockshutt discs. Trash does not wedge between disc and grain boot. It drops off without having to stop the seeder.

TO SOW properly, all seed must be put in at even depth across the drill. By so doing, the crop all sprouts at the same time, and ripens evenly later. This advantageous yield is insured by a strong I-beam, which holds up the centre drills against sagging. Accurate seeding is essential to right sowing also. Unlike many seeders, the Cockshutt feed device is protected from jolting and derangement by the wheels. You still have accurate distribution after years of service. Proper seeding also needs speedy work, that whole fields may get every minute of Spring growth, and be well advanced before dry weather. This is assured by the light-draft features; self-oiling, self-cleaning and dust-proof discs with large scrapers for each disc, and by big, wide-tired wheels.

SOWS 6 INCHES APART

Cockshutt Drills are set zig-zag, and only 6 inches from row to row, instead of the usual 7 inches. You get from 2 to 5 more bushels per acre sown with a Cockshutt, than the same land sown with ordinary drills. Besides, evaporation and drought do not have the same effect on this close-set growth. You easily make \$5 extra per year on each acre you seed with a Cockshutt.

With the Cockshutt, you sow evenly. You sow fast. You sow without stops. You get good work under all conditions.

WRITE for our free catalogue today. It shows sizes from 13 to 22 discs, in double or single discs or with drag shoes.

COCKSHUTT PLOW CO. LIMITED
BRANTFORD, WINNIPEG

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

Pratts 160-page Poultry Book 10c by mail

Start the Chicks Right

and most of your chick-raising troubles will disappear.

The critical time is the first three weeks. During this period feed—at a cost of one cent per chick—

Pratts Baby Chick Food

It will positively grow all livable chicks and make them strong, vigorous, big-boned and husky. These are the profit-payers, the kind you need. We know that this food will give you astonishing results. Test at our risk. In boxes and bags, 25c up.

To prevent all losses from white diarrhea, use

Pratts White Diarrhea Remedy

It will surely do the work. 25c, 50c

Pratts Poultry Regulator

is great for the breeding flock. It improves fertility and insures bigger hatches. 25c, 50c, \$1 25-lb. pail, \$2.50

PRATT FOOD COMPANY OF CANADA, Ltd., Toronto, Ont.

Seed Corn—Every ear carefully selected by hand. Always a prize winner at O. C. G. A. S. E. OAKLEY, Edgar's Mills Essex County, Ont.

SEED CORN—First-class Essex-grown seed corn. Apply for varieties and prices: WALTER C. ANDERSON Malden Centre P.O. Essex, Ont.

Hand Spramotor

A machine that will return the money invested in it every year, and then some.

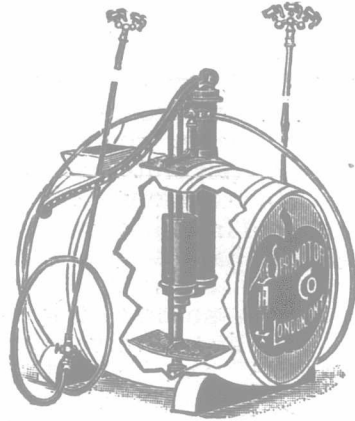
A Hand Power Spramotor sprays an acre of potatoes effectively in 30 minutes—annihilates bugs, germs and pests, and makes the blight impossible—making your work vastly more profitable than ever before.

The Hand Spramotor has two lines of 10-foot hose, couplings attached, patent valves, two bamboo extension-rods with internal brass tube, brass-cupped ends, patent drip-guard and two nozzle clusters.

A durable machine for all purposes—destroying weeds, spraying orchards, and can be used effectively for white-washing or painting the buildings about the farm.

NOTE: There's a Spramotor built for your exact requirements.

Prices range from \$6.00 to \$350.00.



You owe it to yourself to find out all there is to know about it. We forward you the facts with our treatise on "Crop Diseases," without placing you under any obligation to buy.

SPRAMOTOR LTD.

1560 King St.

LONDON, CAN.

Grand Trunk Railway System

COLONIST RATES

On Sale Daily

March 15 to April 15 Inclusive

TO

Vancouver, B.C. Spokane, Wash.
Victoria, B.C. San Francisco, Cal.
Prince Rupert, B.C. Los Angeles, Cal.
Seattle, Wash. San Diego, Cal.
Mexico City, Mexico

AT LOW RATES.

Proportionate low rates to other points in Arizona, British Columbia, California, Idaho, Mexico, Montana, Nevada, Oregon, Utah, Washington, etc. From all stations in Ontario. Ask Grand Trunk Agents for full particulars.

The Grand Trunk Pacific Railway is the shortest and quickest route between Winnipeg, Saskatoon, Edmonton.

Berth Reservations, Literature and full Information from any Grand Trunk Agent.

Homeseekers' Excursions

To Manitoba, Saskatchewan and Alberta

Each Tuesday March to October inclusive via Chicago and St. Paul. Through coaches and Pullman Tourist Sleeping Cars will leave Toronto 11 p.m. on above dates for WINNIPEG.

No Change of Cars.

WINNIPEG AND RETURN \$35.00
EDMONTON AND RETURN \$43.00
Tickets good for 60 days. Proportionate low rates to other points.

Settlers' Excursions

To Alberta and Saskatchewan March 11th.

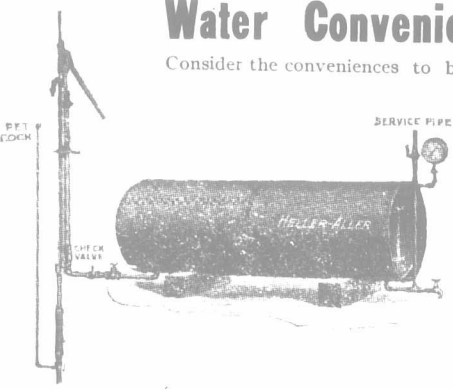
and every TUESDAY thereafter until APRIL 29th inclusive, from stations in Ontario, Peterboro, Port Hope and West.

LOW RATES

Through Coaches and Tourist Sleepers to WINNIPEG without change, leaving Toronto 11.00 p.m. on above dates.

Water Conveniences on the Farm

Consider the conveniences to be had by having on the farm a supply of water under pressure.



THE HELLER-ALLER

Pneumatic Water System makes it handy to have running water anywhere in the house, stable or yard for all domestic purposes. Tank may be installed in basement of house or barn, where there is no danger of freezing. Stock will drink more—cows give more milk—make you more profit. Operated by windmill, gasoline engine, electric motor or hand power. Write for information. Ask for catalogue on windmill or steel tanks if interested.

THE HELLER-ALLER CO.
Windsor, Ont.

Seed Corn, Barley, Oats for Sale—High-grade seed of Improved Learning Corn, Newmarket Oats of pedigreed stock, and O. A. C. 21 Barley. For samples and prices write: W. A. BARNET, Mgr. Gov. Exp. Farm Harrow, Essex Co.

Strawberry Plants Grown on the shores of Lake Erie. 94 selected varieties. Catalogue free. LAKEVIEW FRUIT FARM. Grovesend, Ontario.

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.

Tenant—Cutting Wood.

1. A rents farm to B for two years. If nothing is mentioned in agreement about wood, can B cut wood off farm for his own use?

2. If a tenant has privilege of cutting wood for his own use, can he take wood away with him, providing he brings some onto place when moving onto place?

Ontario.

Ans.—1. Yes.

2. No.

Unsatisfactory Weight—Mare has Heaves.

1. I sold a cow by weight, and I was not satisfied with the weight given. I was looking at the scales, and the weigher pushed me away, so I asked him to balance them and he would not. How can I make the man who is running the scales show that they are right?

2. I have a brood mare in foal, and she has the heaves. What could I get to feed her? As I feed her coal oil and raw oil mixed together, and a little oil of tar, when she is not in foal, will this hurt her when she is in foal?

S. R. W.

Ans.—1. Unless you have absolute proof that you were not given fair weight, it is not likely that you can do anything now. You should have insisted upon seeing for yourself that the scales were correct.

2. Better stop feeding the mixture. Dampen all her feed with lime water, and avoid feeding too heavily on hay.

Trade Topic.

The British Royal Agricultural Show is to be held this year on the Clifton Downs, in the city of Bristol, the capital city and port of the west of England. Clifton Downs is the name given to a huge plateau, high and dry above the historic city, and the River Avon, which wanders through the far-famed Avon Gorge till it empties itself into the Bristol Channel, is a series of plateaux, which forms a splendid playground for the people of Bristol. It is peculiarly well-fitted to be the scene of such a show as the Royal Agricultural Show, for several of England's kings have ridden over the Downs, as their descendants will again do in June. The cattle and live stock, horses, and dogs, exhibited at this fair are usually of the finest in the land. His Majesty's stock barns are ransacked, and his best are submitted in competition for the prizes. The patronage is that of the king himself, and several of the Bristol nobility, and the attendance is always large and representative. The city of Bristol is co-operating with the Canadian Northern Railway—its harbor is the English terminal for the Royal Line, which is owned by the C. N. R.—in making this show one of Empire interest. Exhibits are to be sent over from the Prairie Provinces, and there will be a good many Canadians present at the show.

Gossip.

H. G. McMillan & Sons, Rock Rapids, sold by auction, at Sioux City, Iowa, Feb. 18th and 19th, fifty-five Percherons, which made an average price of \$482. Thirty-two head, two years and over, averaged \$562. The highest price paid was \$980, for the two-year-old stallion, Lunar. Two other two-year-old stallions sold for \$900, and \$925, respectively. The highest price for a female was \$890, for an imported eight-year-old mare.

Seed Oats

American Banner at 60c per bush.; bags extra. Irish White, at 60c per bush., bags extra. Sensation, at 65c per bush., bags extra. American Beauty (new), at 80c per bush., bags extra. Sheffield Standard, at 60c per bush., bags extra. New Century, at 65c per bush., bags extra. Swedish Giant (new), at 85c per bush., bags extra. Regenerated Abundance, at 85c per bush., bags extra. Tartar King, at 60c per bush., bags extra.

PEAS—Early Centennial, at \$2.00 per bush., bags included. Multipliers, at \$2.00 per bush., bags included. Lakefield White, at \$1.75 per bush., bags extra.

GOOSE WHEAT—\$1.25 to \$1.50 per bush., bags extra.

BLACK BARLEY—Hullless, at \$1.50 per bush., bags extra.

O. A. C. 21 BARLEY—Fine sample, \$1.00 per bush.; 10 bush. lots, at 90c; bags extra.

TIMOTHY SEED—Pine Tree, at \$3.00 per bush.; bags included.

RED CLOVER—Fancy No. 1, at \$16.00 per bush., bags included. Red Clover, No. 2, at \$15.00 per bush., bags included.

LUCERNE OR ALFALFA—No. 1, at \$12.00 per bush., bags included.

ALSYKE—No. 1, at \$18.00 per bush.; No. 2, at \$17.00 per bush., bags included.

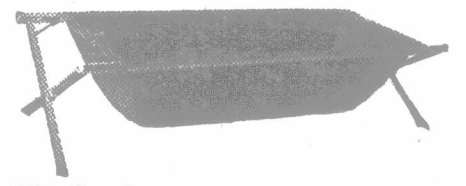
Cotton Bags, at 25c each; 3 bush. Bags, at 35c.

TERMS CASH.

Ask Us About Seed Potatoes.

Established 45 years ago.

Hewer Seed Co.
GUELPH, ONTARIO



"A Godsend to Humanity"

On a Saturday evening when you pull out that old wash tub to take your bath, and the only part of your body which you can get in it is your feet, have you not thought of that nice bath of your friends in the city and wished you had it in your home, where you could sit right down and splash the water around you? BUY ONE OF OUR FOLDING BATH TUBS and you have it for \$7.50 F.O.B., Gananoque, Ont.

Inside measurements of our bath tub are 5ft. long, 2ft. wide, 18 inches deep and weighing 15 lbs. Two pairs of water are all that are required to give one a proper bath, as the bottom rests on the floor, permitting the water to come to the body. This bath tub can be taken to the kitchen range for your bath and when finished with it, rolled up and set away in a corner.

FOLDING BATH TUB CO., LIMITED
Gananoque, Ontario.

BEAVER DAIRY SUPPLIES

In Summer The Demand For Milk Increases

Are you prepared to handle the increased demand for milk? Would not a few suggestions on coping with this additional trade help you?

Write us to-day and we'll send you a book of very helpful suggestions. Our long experience is at your service. Address Dept. "E"

W.A. DRUMMOND & CO.
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Questions and Answers. Miscellaneous.

A Roadway.

1. There is a road runs across a man's place. It is a rock-lot with only a little pasture on it, and it has been travelled for over thirty years. Can he fence the road in?

2. If the council wanted to establish a road there, as they could not keep to the surveyed road on account of high rocks, could they follow the old road? Ontario. W. J. G.

Ans.—1. Probably not.

2. They could by taking certain prescribed steps. It is a matter calling for the attention of their solicitor.

Dislocation of Patella.

I have a mare that dislocated her patella a few days ago, and would like you to publish a suitable treatment for her. Her symptoms are: Mare (13 years old) dislocated the cap on her right stifle. I replaced it and blistered it slightly. She stands on the leg most of time, but when she lifts the foot to step, the cap usually slips off again, and the large cord leading down to the hock seems to hang loose, giving the leg above the hock a fallen-in appearance.

1. What is the form of treatment? 2. Would it be wise to apply a strong blister? If so, please state elements composing it. H. E. H. Ans.—1 and 2. This question has been repeatedly answered in these columns. Blister with a blister composed of two drams each of biniodide of mercury and cantharides, mixed with two ounces vaseline. Clip the hair off the parts. Tie so she cannot bite them, and rub well with the blister once daily for two days. On the third day wash off and apply sweet oil. Let loose now in box stall and oil daily until the scale comes off. Repeat if necessary in a month.

Crossing for Dual-Purpose Cows.

I have a herd of heavy-milking, grade Holstein cows, with two or three Holstein top crosses. They are good dams to produce beef cattle when a beef sire is used, excepting some calves come black and white. Do you think it would be wise for me to use a milking-strain Shorthorn sire on these cows, and try to produce both milk and beef, or should I stick to the Holstein sire? Other farmers handling the dual-purpose cow might give me their opinion.

H. R. L. Ans.—Here is a question about which we are all concerned at present. If your cows, as you say, will produce good beef calves when bred to a beef bull, such a system would likely be profitable. If you wish to continue for milk alone, use nothing but Holstein bulls. To keep up the milking propensities of the herd, a few of the heaviest-milking cows might be bred to Holstein bulls to get milking heifers. As a rule, we do not favor crossing, but no doubt a fair class of beef cattle would be produced if an exceptionally prepotent beef sire was used. Here is a matter for discussion.

Cutting Back Spruce.

Have a number of spruce trees planted near house for wind-break that are growing too tall, and are not thick enough in the lower branches. The tops are healthy, but lower branches have a dead appearance.

1. Would cutting a portion of the tops off help to make them thicken out in lower branches? 2. If so, what proportion of tree would it be advisable to cut off? (Trees are from 30 to 40 feet high.) 3. Should cuts be dressed, and with what? 4. What time of year would be most suitable to cut them back? M. R. M.

Ans.—Care must be taken in cutting back spruce trees. It might be better to just clip back a portion of the new growth each year. Spruce naturally "run up." It is altogether likely the cause of the lower branches dying is because they are already too thick. Once these branches have died off, new ones cannot be forced out. The dying must be due to injury done by the spruce-gall louse. Examine the trees next summer to see whether or not they are attacked. Cutting back these trees severely should not be practiced.

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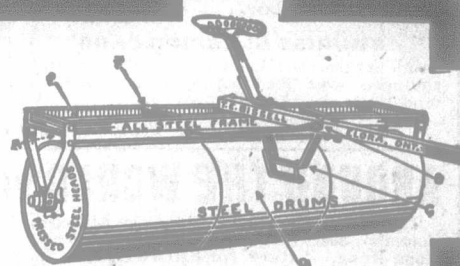
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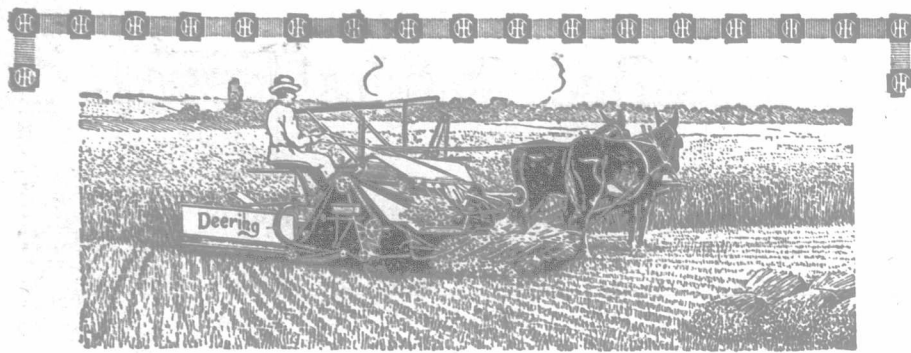
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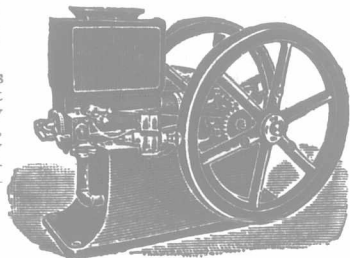
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Questions and Answers.

Miscellaneous.

Division of Property.

A bachelor dies in Manitoba, leaving some property not disposed of by will. His only surviving brother in Ontario wishes to know whether he, as next of kin, inherits this property, or if it shall be divided amongst brothers' and sisters' families as well? J. S.

Ans.—We think the families of deceased brothers and sisters have a right to share in the division.

Lump Jaw.

I have a cow, and about a year ago a small, loose lump, came on her jaw and developed to the size of about half a hen's egg, and towards fall, broke. It contained bloody matter and a hard core. Thinking she would be all right, I again have her with calf, but a hard swelling is coming in same place on the bone. If lump jaw, would her calf be subject to same, or would feeding her milk to calves give them disease? Is the iodide-of-potassium treatment injurious to cow afterwards? Is it dangerous? Would it cause her to lose her calf? How many feeds does it usually take before cow shows symptoms? Does the lump drop off or go away? Can you give me any information as to the reliability of lump-jaw applications as a treatment? F. R. S.

Ans.—Give a dram of potassium iodide twice or three times daily in half a pint of cold water as a drench. Gradually increase the dose by about one-half dram daily until appetite begins to fail and she drinks little, and tears run from her eyes. It requires about two weeks to effect a cure. But as soon as iodism is produced, cease to give the drug. Care must be taken, however, that the animal gets enough of the drug. It will be wise to defer treatment until a week or two after calving. If the first treatment does not remove the lump, after six weeks repeat it. It is not considered contagious, only through discharges, if any are present. The lump may remain after a cure is effected, but will not grow any more. If it disappears, it will do so gradually.

Manuring Leased Farm.

A leases 50-acre farm from B for three years (lease expires March 1st, 1913). As A lived on his own farm adjoining, it was specified in lease, no straw was to be removed from leased farm. The second year A drew everything to his own farm, from this leased farm, before second year was up. C bought said leased farm. C went to A and told him all manure must be returned to leased farm which it was entitled to. A agreed to do this, and in the spring (1912) commenced to draw manure on leased farm, but after taking a couple of loads on, A went over to C and told him the land was too soft to draw on manure, but if C was willing, A would manure a field following winter (this present winter), which C agreed to. The crop of 1912 was also taken to A's barn, with the understanding that the manure was to be returned. A is now (what he calls) manuring a six-acre field. He is drawing on about five or six loads per acre of very inferior manure, mostly straw. A owes two seasons' manure, which would thoroughly manure six acres, and some left over.

1. Did selling farm in any way break the lease? Nothing was said to A about lease at time of sale, as he had several acres of fall wheat in, and held the place for another year.
2. Can C compel A to make good the manuring of this field?
3. If so, in what way?
4. What is value of average load of barnyard manure?

ONTARIO. SUBSCRIBER.

Ans.—1. No.
2 and 3. C can require him to carry out the arrangement they made, or pay damages for the breach of it. C ought to notify A, in writing, to attend to this matter of manuring properly, and that, in default, he would be sued in the Division Court.

4. It is often bought at 50 cents per load, the buyer to draw it and place it on the land. It may be worth \$2.

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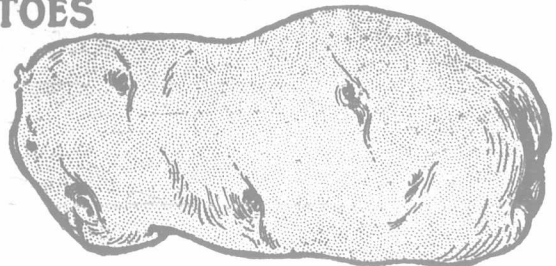
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A lot of potato-growing experience is boiled down and plainly told in "Money in Potatoes." We have culled out the frills that a practical farmer has no time to read. The book is complete, but brief and to the point. See the list of subjects it covers. From this book you can see how other men have got the best results. You can grow and handle bumper crops of potatoes and take the long price.

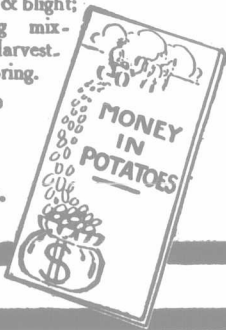
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Questions and Answers.

Miscellaneous.

Moving Building.

I would like to know whether it is possible to move a stone building about thirty feet square? A. M.

Ans.—We have known of even larger stone buildings than this being moved, but it requires a careful man in charge, and one with all necessary appliances.

Feeding Alfalfa to Pigs.

Have noticed in your paper some hints in regard to feeding alfalfa to hogs. Do you know whether it can be profitably fed to young pigs, and in what manner? What do you think of cutting the fodder with a cutting-box, and mixing some ground grain with it and letting it heat some? E. S. M.

Ans.—The best way to feed alfalfa to pigs is to cut it green and throw it into the pen or yard, letting the pigs eat what they will. It would not be advisable to cut it with the cutting-box and let it heat with grain. This heating would lower its digestibility, and there would also be a danger of giving the pigs too much alfalfa. Simply feed it as a soiling crop. It is a profitable feed. It might be pastured under some conditions to a limited extent.

Mare Leaks Milk.

I have a heavy mare which I bought last spring. She is about thirteen or fourteen years old. I bred her, and she is nine months gone now. This last week has developed udder, and is running milk freely. She has done no work all winter, and is out in the yard in day-time when weather is fit, and is fed chaff and straw, and about half a gallon of oats. What is the cause, or what would you advise me to do? I don't think she ever was bred before. J. J. R.

Ans.—There is very little you can do. The mare may abort, and there is also a possibility that she may foal a living foal some time before her gestation period is completed. Give her exercise and good feed. Mares which run milk for some time before foaling, often produce weak foals, and as the colostrum is lost, there is often difficulty in accustoming the colt's digestive system to the milk.

Miscellaneous Queries.

1. Is it a good plan to draw manure out in the winter, and which is best, to spread the manure or put it in heaps?
2. Have about three acres of light soil that was summer-fallowed last year, and is now standing idle. Intend sowing oats on it in the spring and seeding down with clover. Would you advise me to sow fertilizer, and what kind, and how much?
3. I am seeding down about an acre of alfalfa for calf pasture. Is it best to sow grain with it, or sow it alone?
4. Have a piece of land which is not very strong, and there is quite a lot of wiregrass in it. I intend summer-fallowing it. What would be a good thing to sow on it so as to have something to plow under for wheat? How would rape do, or what else would be good, what time to sow, and how much?
5. Will alfalfa seed, sown in the spring, catch, on fall wheat, or will it catch with a crop of oats?
6. Will horses that have salt in boxes in the manger, eat too much?
7. Are steel fence posts as serviceable as cedar? SUBSCRIBER.

Ans.—1. Under many circumstances, it is good practice to draw manure in the winter, and where there is little danger of loss from run-off, it is advisable to spread it.

2. The field should be in fair condition now. If you choose to fertilize, try a mixed fertilizer, composed of about 75 lbs. nitrate of soda, 200 lbs. of acid phosphate, and 75 lbs. muriate of potash, per acre.

3. It will likely do best sown alone. Cultivate the plot well up to past the first of July, and then sow alone, at 20 lbs. per acre. It may be sown in early spring with barley, at one bushel per acre.

4. It would likely pay better to summer-fallow thoroughly, and give the land a top dressing of manure or artificial fertilizer.

5. It might catch all right. Better chances would result with barley.

6. They are not likely to.

7. Properly erected, they should be.

THIS WASHER MUST PAY FOR ITSELF.

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

So I told him I wanted to try the horse for a month. He said "All right," but pay me first, and I'll give you back your money if the horse isn't all right." Well, I didn't like that. I was afraid the horse wasn't "all right" and that I might have to whistle for my money if I once parted with it. So I didn't buy the horse, although I wanted it badly. Now, this set me thinking.

You see I make Washing Machines—the "1900 Gravity" Washer.

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

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

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

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

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

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

Doesn't it prove that the "1900 Gravity" Washer must be all that I say it is?

And you can pay me out of what it saves for you. It will save its whole cost in a few months in wear and tear on the clothes alone. And then it will save 50 to 75 cents a week over that in washwoman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 60 cents a week, send me 60 cents a week 'till paid for. I'll take that cheerfully, and I'll wait for my money until the machine itself earns the balance.

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

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A **lock** that is **strong, neat and compact**.
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WALKERVILLE, ONTARIO



Central Nurseries Quality Stock

Apple, Pear, Plum, Cherry, Peach, Nut and Ornamental Trees in variety. Grape Vines, Berry Plants, Herburt, St. Regis, Himalaya and Cuthbert. Think of berries from July till October. Shade Trees, Evergreens, Cal. Privet, Hedge Shrubs and Roses. Just the kinds wanted. Send for our Priced Catalogue, and order quick for variety.

No agents. A. G. HULL & SON, St. Catharines, Ont.



Gossip.

"The Farmers' Gazette" publishes a story of a large London company which controls a large block of sheep farms in South Africa, which, being dissatisfied with the excuse given that shearing could not be proceeded with owing to it being the lambing season, called, "Stop lambing; start shearing." A joke for the sheepmen to enjoy, and for the townsfolk to ferret out.

This is the season when farmers and gardeners are busy laying in a supply of seeds for the coming spring's seeding. It always proves profitable to buy the best. Home-grown and imported seeds of superior quality are advertised in this paper by Ontario Seed Co., Successors, Waterloo, Ontario. Look up the advertisement, and write the firm for catalogue describing their seeds and spraying machines.

The auction sale of fifty Shorthorns, from the herd of White & Smith, St. Cloud, Minn., held at Chicago, on Feb. 12th, was a decided success, the average price obtained being \$261. The top price was \$1,450, for the show cow, Roan Queen, paid by J. G. Robbins & Son, Horace, Ind. The highest price for a bull was \$400, for the eight-year-old, Superbus. The late Col. Bellows, Col. Jones, and Capt. Robson, did the selling.

An advertisement of unusual interest to horsemen is that of Hodgkinson & Tisdale, Beaverton, Ont., in another column. This well-known firm handles some of the best horses in this country, and at the present time are showing at their stables one of the most attractive collections of Percheron stallions and fillies, and Clydesdale fillies, ever offered for sale in this country. See the advertisement, and write or phone this firm for further particulars, and plan to see these horses.

FARM AND STOCK AT AUCTION.

Attention is directed to the advertisement in this issue of the auction sale, to take place on March 12th, of two very desirable farms, suitable for beef-raising, or dairying, tile drained, and with good buildings, ten acres of woods and three of orchard, the property of A. B. McDonald, Appin, Middlesex Co., Ont., and being sold, together with the farm stock and implements, on account of ill health. The stock consists of twelve Clydesdale and Percheron horses, including brood mares and colts, fat cows, heifers, steers, milk cows, and sheep. See the advertisement, and note the date.

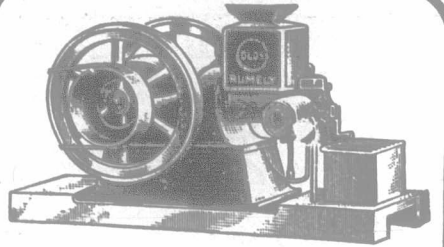
SALE DATES CLAIMED.

March 18th.—Knox Bros., Chesterfield, Ont.; Shorthorns.
March 19th.—Estate of John Davidson; Ashburn, Ont.; Clydesdales and Shorthorns.
March 21st.—W. C. Prouse, Tillsonburg, Ont.; Holsteins.
March 26th.—Ira B. Vannatter, Ballinafad, Ont.; Shorthorns.

"What is the first thing to consider in discussing the tariff?"
"Well," replied Senator Sorghum, "when a constituent wants to talk about regulating duties, the first thing you want to do is to find out what line of business he is in."

Trade Topic.

A study of foods, and their effect on different animals, led Dr. Hess to the conclusion that a method of feeding was possible which would reduce food-waste to an amount so slight as to be hardly worth considering. Working with this idea in mind, he finally formulated a preparation containing iron nitrates and bitter tonics in right proportion to produce the result aimed at, and put it on the market under the name, "Dr. Hess' Stock Food." It is sold, not as a ration, but as a tonic. See advertisement in this issue.



Better Spraying

Spraying by hand is slow and unsatisfactory. Save time and energy by attaching a

3 h.p. Rumely-Olds Gasoline Engine

to your spraying outfit. It will do your work faster and more thoroughly.

The Rumely-Olds has proved out. It has a 35 year reputation behind it. It's always ready because it's built for service. Inquire from us about the construction of this engine. It is built right—every part of the best material. It will be a handy man around the farm. You can find a hundred ways to use it. It is light and handy to use, simple and cheap to operate. Rumely-Olds Engines come in all sizes and styles—Stationary, Portable and Skid-Mounted.

Write for Data-Book No. 344, on Rumely-Olds Engines, and ask the name of our nearest dealer.

RUMELY PRODUCTS CO.
(Incorporated)
Power-Farming Machinery
Toronto, Ont.

554

GOVERNMENT STANDARD

SEEDS

Sold under the guarantee that if they do not entirely satisfy you on arrival, you may ship them back at our expense. We buy most of our seeds direct from the farmers here who grow them.

ALFALFA.—There is practically no home-grown seed this year, as the wet weather caused a new growth of plant instead of seed. We have some splendid seed, though, suited to our land, which we recommend. Price, \$12.00 per bushel.

RED CLOVER.—A splendid, clean, bright sample. Price \$15 per bushel.

ALSIKE.—Clean and bright. Price, \$15 per bushel.

TIMOTHY.—Bright and clean. Price, \$3.00 per bushel.

O. A. C. No. 21 BARLEY.—90c. per bush.

SILVER MINE OATS.—60c. per bush.

SIBERIAN OATS.—60c. per bush.

BANNER OATS.—60c. per bush.

We pay freight to any point in Ontario on 3 bush. clover seed. Bags for seed grain 10c. each. Cash to accompany order. Ask for samples.

The Caledonia Milling Co., Ltd.

CALEDONIA, ONT.

A Warning to Canadian Farmers

Do not starve your crops. Wherever there is a lack of plant food in the soil, plants cannot attain normal development; in other words, they starve. It is therefore necessary to provide the plants with the nourishment required, by judicious fertilizing. But in fertilizing, be sure to use sufficient POTASH, since of all plant-food substances, POTASH is most heavily drawn on from the soil. POTASH improves the quality, promotes the maturity and increases the yield of all crops.

This is a recognized fact in both science and practice.

Further particulars and free copies of illustrated bulletins may be obtained from

The German Potash Syndicate
1106 TEMPLE BLDG., TORONTO, ONT.

Don't Blame the Engine

Buy your Batteries right. See they have the Black Cat Trade Mark and its "NINELIVES."

**X-CELL
DRY BATTERIES**

PAPER POTS for starting Early Plants; best and cheapest. Send for sample. H. B. Elliott & Sons, Harbor Springs, Mich.



INVEST IN "IDEAL" FENCE

Money used in the purchase of "Ideal" Fence is not spent—it is invested. When you invest a dollar in "Ideal" Fence you get a dollar's worth. You get full value for your money because "Ideal" Fence is made exactly as represented and described in our catalogue and all our advertisements. When we say "Ideal" Fence is made of No. 9 gauge wire (which is one hundred and forty-four one-thousandths of an inch in diameter), it is full size No. 9; if anything it will average over full size.

When we say the uprights or stays on "Ideal" Fence are 16 1/2 inches apart, they are 16 1/2 inches, not 18 or 20 inches, and the same with 22 inch spacing.

A fence can be greatly cheapened by using under-gauged wire or having the stays farther apart than advertised. From top to bottom "Ideal" Fence is all the same, made of large gauge, No. 9, evenly galvanized hard steel wire—no small or soft wires—all are full size, true to gauge, tough

and hard. The reason that there are more miles of "Ideal" Fence sold in Canada annually than any other make is not due to salesmanship or advertising, but it is due to the merit of the fence itself, to the quality of material and workmanship that enters into it, to the protection it affords, to the service it renders and to our many satisfied customers all over the Dominion. Do not experiment in buying fence; it will not pay you. If you buy "Ideal" you are absolutely sure of getting a fence exactly as represented. We invite you to compare "Ideal" Fence with any and every other make on the market. Compare the size of wire; compare the weight to the rod of fence; study the quality of workmanship; test it—test it in the severest way you can think of, and you will find "Ideal" to be superior in every way. Do not spend money in buying fence—invest it in "Ideal"

A postal card will bring you the "Ideal" catalogue #31 which shows many different styles of fence—a style for every purpose; also our complete line of Field and Stock Gates, Lawn Fence and all fences supplies.

The McGregor Banwell Fence Co., Limited, Walkerville, Ont.

GUNNS



1	Tobacco Producer.....	3	8	10	8
2	Sugar Beet Special.....	2	6	8	7
3	Bowling Green and Lawn Special.....	5	6	8	7
4	Corn Manure.....	2	9	11	5
5	Potato and Celery Special.....	2	8	10	10
6	Bean Grower.....	2	7	9	8
7	Forcing Growth.....	5	8	10	7
8	Wheat Special.....	2	9	11	2
9	General Garden.....	3	5	7	6
10	Early Vegetable.....	4	6	8	7
11	Young Orchards.....	2	7	9	5
12	Berry Special.....	1	8	10	8
13	Fine Steam Bone.....	3	8	22	
14	Pulverized Steam Bone.....	3	8	22	
15	Blood and Bone Compound.....	7	7	9	2

— ALSO —

GUNNS SHUR-GAIN FEEDS

Gunns Shur-Gain Calf Meal.
Gunns Shur-Gain Hog Feed.

Gunns Shur-Gain Dairy Meal.
Gunns full line of POULTRY FOODS.

40 YEARS' REPUTATION BEHIND THEM, WRITE FOR PRICE LIST AND BOOKLET.

GUNNS LTD., West Toronto

BRUCE'S High-Grade SEEDS

Regal Red Clover - \$16.00 Bushel
Choice " " - 14.75 "
Regal Alsike " - 18.00 "
Choice " " - 15.50 "
Regal Lucerne " - 11.50 "
Choice " " - 10.50 "
Regal Timothy " - 3.75 "
Choice " " - 3.25 "

Cotton Bags 25c. each.

Our Regal Brand is No. 1 and our Choice Brand is No. 2 Govt. Standard.
Prices for Lower Grades on Application.

FREE Write for our handsomely illustrated 112-page Catalogue of Vegetable, Flower and Farm Seeds, Bulbs, Plants, Poultry Supplies, Garden Implements, etc.

John A. Bruce & Co.
Limited
HAMILTON, CANADA
Established 1850 133

125-Egg Incubator and Brooder Both For \$13.75

If ordered together we send both machines for only \$13.75 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 with thermometers, lamps, egg testers—ready to use when you get them. Five 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 \$13.75 is for both Incubator and Brooder and covers freight and duty charges. Send for FREE catalog today, or send in your order and save time. Write us today. Don't delay.

WISCONSIN INCUBATOR CO., Box 244, Racine, Wis., U. S. A.

Growing and Ensiling Corn.

The lack of confidence in the value and use of corn silage is gradually being overcome. According to J. H. Grisdale, Director of Experimental Farms, who has tested the matter in many parts of the Dominion, corn for forage or ensilage can be grown to advantage in almost all parts of Canada occupied by stock farmers. Failure to secure satisfactory results has often been due to wrong cultural methods practiced, or unsuitable varieties grown, rather than to adverse climatic conditions.

In order to secure for the benefit of stock-growers generally, reliable information on the subject of corn ensilage, Mr. Grisdale was summoned by the Select Standing Committee of the House of Commons on Agriculture and Colonization, to give evidence based on his experiments and observation. This evidence was printed in a pamphlet of sixteen pages, and sent out in large numbers, but there are still available for distribution a number of copies in the hands of the Publications Branch of the Department of Agriculture at Ottawa.

Corn will do well in almost any kind of soil provided with good drainage and well prepared. Barnyard manure, which may be applied during the winter or spring, is the best fertilizing material to use. From the middle to the end of May, according to the weather and soil conditions, is said to be the proper time to plant the seed, which may be put in hills or rows. After describing the necessary cultural operations, varieties suitable for various Provinces and districts are named. For the more northerly latitudes, Longfellow, Compton's Early, Angel of Midnight, North Dakota Flint, and Sanford, are recommended. Harvesting and ensiling are fully described, and feeding is dealt with also. For feeding young stock, some bran and clover hay should be added to the silage. Rations are given for all classes of cattle.

In discussing silos, a table is embodied which shows the capacities of those of different dimensions. A hundred-ton circular silo is shown to be 27 feet deep, and 16 feet inside diameter. Silos of different materials are dealt with, and their construction described. Cement silos, properly constructed, are referred to as being probably more durable and satisfactory than those built of wood.

Trade Topic.

Many horses are troubled with worms and bots. Newvermifuge, advertised elsewhere in this issue, is said to be an effective and absolutely harmless remedy, removing the worms from the body, dead, in from 18 to 24 hours. If your horses are thin, and worms are suspected, see the advertisement, and correspond with the Farmer's Home Remedy Co., 592 7th street, Milwaukee, Wis.

Dairymen, Attention!

Gluten Feed

is one of the greatest Milk Producers on the market.

Put up in 100-lb. sacks. Write us for prices.

Canada Starch Co'y
Limited
BRANTFORD ONTARIO

A FARMER'S GARDEN

Without real serious meaning to many thousand farmers because they think it is too hard work or it is not convenient to work a horse. So many farmers fail to understand what truly wonderful possibilities there are in modern hand tools.

IRON AGE Wheel Hoes and Drills
(See ready in Canada)

do all of the sowing, hoeing, cultivating, weeding, furrowing, ridging, etc., in any garden with better results, far less work and some real pleasure for the operator. 38 or more combinations at \$3.00 to \$15.00. Ask your dealer about them and write us for new booklet. "Gardening with Modern Tools" also copy of our paper "Iron Age Farm and Garden News"—both are free.

The Bateman-Wilkinson Co., Limited
413 Bymington Ave., Toronto, Ontario.

Send your Raw FURS to John Hallam

FREE I can pay you higher prices than you ever got. Send me your shipments at once and get top prices. We remit same day furs are received and pay express charges. Largest and oldest dealers in Canada.

John Hallam Limited
Mail Dept. 227
111 Front St. East TORONTO

IMPROVE YOUR STOCK It Pays to Clip
Horses, Mules and Cows. They are healthier and render better service. When the heavy coat that holds the wet sweat and dirt is removed, they are more easily kept clean, look better, get more food from their feed and are better in every way. Don't buy anything but



The Stewart Ball-Bearing Clipping Machine
—the only machine that turns easy, clips fast and close and stays sharp. Its gears are all file hard and cut from solid steel bar. **PRICE** They are enclosed, protected and run in oil. **\$975** Little friction, little wear. Has six foot new style easy running flexible shaft and celebrated Stewart single tension clipping head, highest grade. Get one from your dealer or send \$9 and we will ship C.O.D. for balance. Money and transportation charges back if not satisfied.

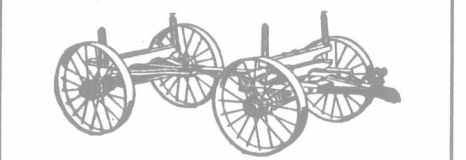
MAKE MORE WOOL MONEY
You will get more wool from your sheep—longer and better wool, that will bring the highest price from buyers if you shear with a



Stewart No. 9 Ball Bearing Shearing Machine
This is, without question, the most perfect hand operated shearing machine ever devised. Has ball bearings in every part where friction or wear occurs. Has a ball-bearing shearing head of the latest improved Stewart pattern. **PRICE** Complete, including 4 combs and 4 cutters of the celebrated Stewart quality. **\$1575** Get one from your dealer, or send \$2.00 and we will ship C.O.D. for balance. Money and transportation charges back if not pleased.

CHICAGO FLEXIBLE SHAFT CO.
110 LaSalle Ave. CHICAGO, ILL.
Write for complete new catalogue showing world's largest and most modern line of horse clipping and sheep shearing machines.

BUILT low, especially for farm use, a T-A Handy Farm Wagon saves much hard work. It is easier to load and unload, and will haul bigger loads without tiring horses more than a small load.



T-A Wide-Tire Steel Wheels & Handy Farm Wagons
T-A Wide-Tire Steel Wheels are lighter, stronger, cheaper and better in every way than ordinary wooden wheels. Make your old wagons new by fitting them up with these superb wheels.

Our free booklet (which please ask for), tells how you can make farm work easier and more profitable.

Tudhope-Anderson Co., Ltd.
Orillia, Ontario.

M. Moody & Sons Co., Terrebonne, Que.
Selling Agents for Province of Quebec.

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

WRITE US FOR DETAILS.
The Canadian Boving Co., Ltd.
164 Bay Street, TORONTO

For MORE Milk, Feed
CEREMOL
to your DAIRY COWS. Write
CHISHOLM MILLING CO., Limited
Toronto, Ontario.

Gossip.
Attention is called to the advertisement in this issue of the Canada Starch Company, Ltd., Brantford, Ontario. This firm is advertising gluten feed, put up in 100-lb. sacks. See the advertisement.

For injury to his Large Yorkshire boar, Worsely Turk VI., caused by the collision of one of the Tramway Companies' trains with a lorry conveying the champion hog above named to the Royal Show at Doncaster last summer, resulting in the death of the animal, his owner, Lord Ellesmere, to settle an action against the company, received from them £265, approximately \$1,325. Worsely Turk VI. is said to have been one of the best, if not the very best, boar of the breed ever seen. His own brother was sold for £200, after winning the championship at the Royal Show.

HOLSTEINS AT LAKEVIEW FARM.
Science, as applied in the art of livestock breeding and business principles in the management of all the details pertaining thereto, the former manifest in the selection of breeding animals that for generations have been put to the test, and have made record history, and the continual application of that test which annually shows a greater producing ability and a higher scale of records, all working out with a regularity only possible where everything is reduced to a system. This probably is the dominant factor that has brought the great Lakeview herd of Holstein cattle up to a standard of individual excellence and producing ability equalled by few and excelled by no other herd in this country. It was certainly a rare judgment exercised by the owner, E. F. Osler, of Bronte, Ont., when he purchased, as the breeding head of his herd, Count Hengerveld Fayne De Kol, a bull that is fast making history, and bids fair to soon be recognized as one of the great sires of the breed. Although his heifers are only now coming of breeding age, six of them that have been tested are in the A. R. O. Rose of Lakeview, record as a senior two-year-old, 20.036 lbs. in 7 days; in 30 days, 82.138 lbs.; Lakeview Sylvia Posch, senior two-year-old record, seven days, 12.645; butter-fat test, 3.8; Lakeview Daisy, three years, 18.875 in 7 days; 74.69 lbs. in 30 days; Lakeview Lestrangle, junior two-year-old, 13.77 lbs. in 7 days; Lakeview Hengerveld Wayne, junior three-year-old, 19.078 lbs. in 7 days; Lakeview Countess Grace, two years, 13.03 lbs. in seven days. Many more of his daughters will be coming to milk this spring, and will be tested, which, with a re-test of those mentioned, will surely place this sire at the head of the list in Canada. He is sired by Pietertje Hengerveld Count De Kol, with over 100 A. R. O. daughters, and is out of Grace Fayne 2nd, record 26.29 lbs., the dam of the late world's champion, Grace Fayne 2nd's Homestead, record 35.55 lbs. On the daughters of this bull is being used the equally well-bred Dutchland Colantha Sir Mona, whose six nearest dams have records averaging over 24½ lbs., and his sire has 27 A. R. O. daughters, and his grandsire 24, many of them testing over 4 per cent. Practically all the females of mature age are in the records, averaging along 24 lbs. Several of them are of that great Rattler strain, whose average butter-fat test is over 4 per cent. Strong, rugged constitutions, and ideally-balanced udders, are a predominating feature of the entire herd, particularly true of the daughters of the chief stock bull. Of interest to Holstein breeders is the splendid selection of young herd-headers for sale. There are seven, along about a year old. Lakeview Dutchland Lestrangle is sired by the young bull, his dam is by the old bull, and his seven nearest dam's records average 23.32 lbs., and every female in pedigree for four generations is in the Records. Another, bred the same, is Lakeview Dutchland Rattler. His seven nearest dams' records average 24.79 lbs., and he is of the great Rattler tribe. Winnie R's Lakeview Count 2nd is sired by the old bull, and his dam is by the great Prince Posch Calamity, with 12 A. R. O. daughters. These are representative in breeding of the entire lot. Write for prices.

Unreserved Sale by Auction
ON
Wednesday, March 19, 1913
At the farm on that date will be sold the

SHORTHORNS
AND
CLYDESDALES

The property of the estate of the late **John Davidson, Ashburn, Ontario**

There are about 30 Shorthorns, consisting of Cruickshank Lavenders, Village Girls, Mysies, Nonpareils, Broadhooks, Rachels, Clarets, Northern Belles and others, in the lot three bulls of serviceable age. All in good condition with no extra fitting. There are many cows with calves at foot and much show material.

In Clydesdales there are three young stallions and seven mares, mostly imported, and all bred in the purple. Full of Baron's Pride, Prince of Wales and Darnley blood, the quality is of the highest class. They will be sold, as the estate must be wound up, and there has been no better opportunity to secure the best in either breed.

Eight months' credit will be given, and every effort will be made to deliver animals purchased for shipment with no trouble and little expense to purchasers.

This is the last announcement, and it should not be overlooked, as it is an opportunity worth a great deal.

Trains will be met at Myrtle Station, on G. T. R. and C. P. R. on morning of sale, which will begin promptly at 1 o'clock. Write for catalogue to

JAMES B. DAVIDSON, Executor of Estate
ASHBURN, ONTARIO

SAVE-THE-HORSE
Registered Trade-Mark.
THE TIME IS NOW

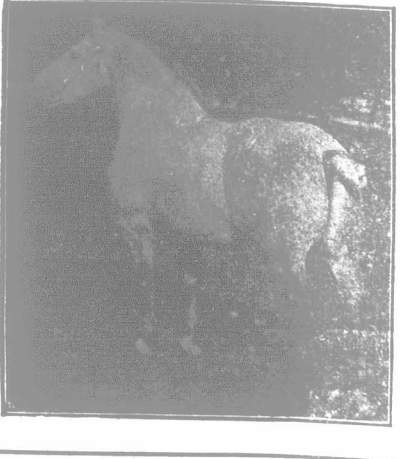
All the winter long, the troubled owner of a lame horse reads our advertisements. Then, day after day slips away, while he talks, laments, listens, takes advice and hesitating,—FAILS TO ACT,—till the Springtime is on him and his horse is not yet able to work. Meantime, the thrifty, prosperous, resolute man, reads, considers the evidence carefully — **Decides Promptly** — and his horse is working in, say, ten days to two weeks. That's exactly what happens every winter.

We Originated the treatment of horses by mail — Under Signed Contract to Return Money if Remedy Fails — and every minute of every day for **seventeen years** our advice and treatments have been on the way wherever mails go and horses are. **Our charges are moderate.** Spring work is near; Write at once.

Our Latest **Save-The-Horse BOOK** is a Mind Settler—Tells How to Test for Spavin—What to Do for a Lame Horse—Covers 51 Forms of Lameness—Illustrated—But write describing your case and we will send our **BOOK—Sample Contract and Advice—ALL FREE** to (Horse Owners and Managers—Only).
Address—**TROY CHEMICAL CO., 148 Van Horn Street, Toronto, Ont.; also** Binghampton, N. Y.

Druggists everywhere sell **Save-The-Horse** with contract, or sent by us **Express Paid.**

REGISTERED FOUR - YEAR - OLD
Percheron Stallion
REXALL (2842)
BY IMPORTED SIRE AND DAM.



A beautiful grey of good size, with quality to spare; action equal to the Hackney; nice flinty bone, with the best of feet and pasterns. Making his first initial bow to the public in 1912. When in close competition with imp. horses he was awarded first honors at two of the leading shows of Canada. To all parties contemplating buying a stallion, I feel confident that it will be to their advantage to inspect this horse, as I will sell below competition. Write for particulars, or better, come and see. Terms to suit.

Artemas O'Neil, Birr, Ont.
Phone connection Lucan.

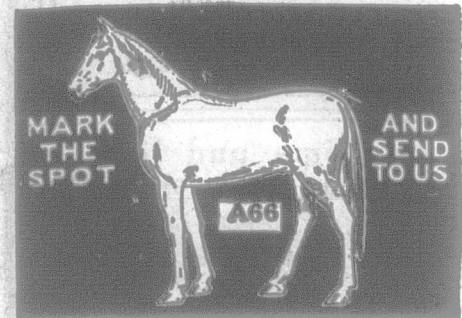
SHORTHORNS of breeding and quality. Our present offering: One grand young cow with calf at foot; also heifers, old enough to breed, got by Mildred's Royal. No bull to breed to. Will sell cheap.
Geo. Gier & Son, Waldemar P.O., Ont.

When writing advertisers please mention this paper.

Cures Lame Horses

Makes Limping, Idle Horses Sound of Limb and Valuable Pullers.

We absolutely guarantee Mack's \$1,000 Spavin Remedy to cure Bone or Bog Spavin, Ringbone, Thoroughpin, Curb, Capped Hock, Shoe Boli, Sprung Knee, Lacerated and Ruptured Tendons, Sweeny and all other forms of



lameness affecting a horse. It's a powerful remedy that goes right to the bottom of the trouble and cures the lameness in just a few days while the horse is being worked as usual. Contains nothing that can injure the horse and heals without leaving scars, blemish or loss of hair. We have deposited \$1,000 in a local bank which must be forfeited if we fail to do as we say. If you are not absolutely sure what causes the lameness, mark with an "X" on horse above where lameness occurs, tell how it affects the gait and give age of horse, and send to us. Our expert graduate veterinarian will tell you what it is and how to cure it.

Your druggist will obtain Mack's \$1,000 Spavin Remedy for you if you ask him. If for any reason you can't get it, write us. We will see that you are supplied. Ask for instructive free book "Horse Sense" No. 8.

McKellar Drug Co., Binghamton, N. Y.
LYMAN BROS. CO., LIMITED,
Distributors to Drug Trade, Toronto, Ont.

WESTERN LAND FOR SALE

In areas to suit purchasers from 160 acres upwards, situated on or near railways in the

Best Wheat, Oat and Stock Growing Districts of SASKATCHEWAN AND ALBERTA

200,000 acres to choose from. PRICES LOW.

Special Inducements Given Actual Settlers

F. W. HODSON & CO.
Room 102, Temple Building
TORONTO, ONTARIO, CANADA
Western Office: North Battleford, Sask.

FERRY'S SEEDS

Market gardeners and large planters everywhere place absolute confidence in Ferry's seeds. Professionals make their profits by knowing where to put their trust. Ferry's vegetable and flower seeds have averaged best for half a century. They are pure and they are vital. For sale everywhere.

1913 Catalogue free on application.
D. M. Ferry & Co., Windsor, Ont.

Shires and Shorthorns

In Shire stallions and fillies, from the best studs in England, we are offering some rare animals at rare prices. Scotch Shorthorns of either sex or age, of highest breeding and quality. John Gardhouse & Son, Highfield, Ont. L. D. Phone.

DR. BELL'S Veterinary Medical Wonder. 10,000 \$1.00 bottles FREE to horsemen who will give The Wonder a fair trial. Guaranteed to cure Inflammation, Colic, Coughs, Colds, Distemper, Fevers, etc. Agents wanted. DR. BELL, V.S., Kingston, Ont.

Questions and Answers. Miscellaneous.

Geese
How do you detect the male from the female in a flock of geese?

SUBSCRIBER.
Ans.—Chiefly by the call. The male bird is also longer and slimmer of body, and has a longer neck than the goose.

Woodman's Liens.

If A hires men to cut saw-logs for himself, and A also gives B a contract to saw these logs into lumber, can A's hired men put a lien on above lumber for their wages? Also, can B's hired men, who helped to cut this lumber, put a lien on A's lumber for their wages? Ontario.

Ans.—Yes—to both questions. And we would refer you to The Woodman's Lien for Wages Act (Ontario Statutes, 1912, Chapter 70), for further information.

Milk or Cream.

1. How many dollars' worth of fertilizer do you consider is taken off the farm with every ton of whole milk sold?
2. Which do you consider pays better, separating milk when you realize \$1 per cwt. for it, and the skim milk to good, or selling whole milk at \$1.56 per cwt. clear of expenses?

CONSTANT READER.

Ans.—1. According to analyses, a ton of milk would contain about 11.6 pounds nitrogen, worth, at a conservative valuation, \$17.40; 3.8 pounds phosphoric acid, worth \$2.28, and 3.4 pounds potash, worth \$1.70, making a total of \$21.38 per ton of milk.

2. Fifty-six cents per cwt. is a very heavy value to place on skim milk. Unless one had young pigs or calves that would particularly suffer for the lack of the skim milk, we should, and in our own practice do, prefer selling whole milk under the conditions specified. Economy of labor is one point.

Chimney Leaks.

I have one stovepipe that leaks about five quarts in one week, and the pipes rust out in a very short time. What can be done?
P. E. B.

Ans.—When fuel burns, a certain amount of water vapor is one of the products of combustion, and this, in coming in contact with cold material, condenses. Where a long pipe leads through a cold room, there is an extra amount of this vapor condensed on the chilled stovepipe, and this being mixed with soot, forms the offensive black fluid. Shorten the pipe where possible, or warm the cold rooms through which the pipes pass, or keep a steady fire. Or arrange a length of pipe to prevent the main draft going through the stove. This can be done by cutting a circular opening in a pipe-length, and fitting on a short length over it so that the opening may be closed when desired, and a current of air from the room be admitted.

Fattening Hens—Law School.

1. How much food would be required to fatten fifty hens, which at the present are in good, thrifty condition?
2. What ingredients, and in what proportion, would make best fattening ration?
3. How long should it take to fatten them?
4. What are the qualifications required to enter a law school in Ontario?
5. Is the degree of LL. B. in Canada, the same as that in the United States, or what is the rule of standards?
G. K. P.

Ans.—1, 2 and 3. Shut the hens in a box stall, or in crates. Feed on a mash composed of two parts finely-ground oats, one part of corn meal, and two parts ground buckwheat, moistened with sour milk to a batter consistency. Feed regularly twice daily, commencing with very small quantities, and gradually increasing until the hens are getting all they will eat. Be careful not to stall them. Feed for from two to three weeks. If fed in crates, each bird would consume between three and four pounds of the grain mixture, and between six and seven pounds of milk.

4 and 5. Write "The Bursar," Toronto University, for information.

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Present offering, King of Fountain Park (10220) a choice three-year-old stallion. Mertoun's Duchess (23701), a beautiful two-year-old filly. D. Hill, Staffa, Seaforth. G. T. R.

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Prince Charles [12573]; rising 3 years, dark bay with stripe in face. This horse is bred in the purple, being rich in blood of Prince of Wales (673) and Darnley (222). Inspected and enrolled; write: **JOS. W. HOLMAN, Columbus, Ontario**

Questions and Answers. Miscellaneous.

Building Queries.

1. How many barrels of cement, and ordinary loads of gravel, will it take for the foundation of a house, 20 x 26, outside (leaving the foundation out for brick), the wall to be 7 feet high and 12 inches thick, using stone to fill in with?
2. Which would be the best and cheapest to divide the cellar, brick or cement?
3. How many feet of rough lumber would it take to board same house outside, and how much for roof, also shingles, and how many feet of studding and joist will it take?
4. Would 16-foot studding be high enough for a house this size, or would 18-foot be too high?
5. I would like to build this house endwise to the road, with kitchen at the side. Would this be best, and what size should kitchen be to look right?
6. Would one flue be sufficient, and would it be best in center of building?

ENQUIRER.

Ans.—1. About 18 to 20 loads of gravel, and about 19 barrels of cement.

2. Very little difference. Both are good walls, and the cost is about equal.

3, 4, 5 and 6. Your carpenter or contractor will give you all necessary figures on these questions.

Will—Sideroad—Mining Rights—Line Fencing.

1. If a person makes a will and has it registered, can he change it while alive?
2. Can Mr. B— close the side-road between his farms, after being open for twelve full years?
3. If he closes it and tiles the ground, can I make use of this road still, and demand it to be opened?
4. If a miner claims a number of acres for mining purposes, and fails to do any improvements on it for over one year, can I come along and locate it for farming, after I have paid for necessary affidavits and location fees?
5. Mr. B— owns 160 acres on west side of the road, and 200 acres on east side, and is dividing the 360 acres into three equal farms for his boys, making 120 acres in each farm, and is taking side-road also to tile, putting fence in the center of the road. Can he, Mr. B—, do this, and do it legally?
6. If my neighbor has grain on one side of (an intended fence) the line, and I pasture on the other side of the road, can my neighbor compel me to build all the line fence to keep my cattle out of his grain, or can I compel him to put up half the fence, and if he refuses to do so, can I put it up and make him pay half the cost of material and work?

Ontario.

Ans.—1. He can alter his will as often as he pleases. It cannot, properly, be registered until after his death.

2. No.

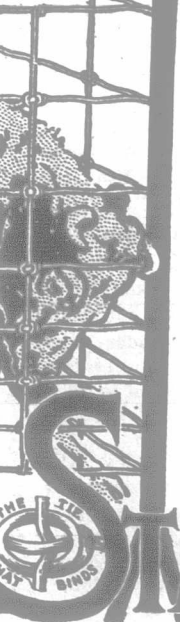
3. Yes.

4. Probably you can, but your entry for homesteading would give you no mineral rights.

5. Not if, as would seem to be the case, the road in question is a public highway. The fact that he owns the land on each side would not affect the question.

6. You are legally entitled to call upon him to do his just proportion of the requisite line fencing, and if you cannot come to an agreement about it, you may—either of you—call in the fence-viewers of the locality, and have them dispose of the matter. Your neighbor certainly cannot compel you to build the entire fence.

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Questions and Answers. Miscellaneous.

Seed Oats

As I am intending to buy some new seed oats this spring, I am asking you which is the best variety for clay soil?
J. M.

Ans.—There are several good varieties. For an early oat, either the Daubeney or Alaska is good. The Siberian is one of the best later varieties, and a new oat originated from it and called O. A. C. No. 72, is giving good results. There are several other heavy-yielding varieties, as the Banner, Improved Ligowo, New market, Sensation, and others. If you wish a black oat, try the Joannette.

Seed Wheat

Have a field in good condition which grew beans last season, but owing to the late bean harvest, was unable to get it under wheat. Would you advise trying some acres under spring wheat, and, if so, which kind would you recommend? Does Western wheat do well here, or would Wild Goose, or some other kind, be better? Where can I get seed, as it is not raised in this locality?
A. A. P.

Ans.—If your land is extra strong, Wild Goose wheat would likely give good results. It requires a rich, rather moist, heavy soil. One of the best all-around spring wheats is the Red Fife. Of course, the Wild Goose will outyield it a little, but it is a Macaroni wheat. Red Fife is one of the best milling wheats. Parties having seed of either of these varieties for sale should advertise in these columns. You could obtain it from some of the well-known seed firms whose advertisements run in "The Farmer's Advocate."

Fertilizers, Pasture Crops.

Being a constant reader of your valuable journal, I would like a few suggestions from you, hoping to receive same from you in your valuable columns.

1. I have got a farm to work—150 acres—which was once called first-class land. It has been sowed to oats and buckwheat for the last ten years. Some of it is now run down so badly that it will scarcely grow anything. I am going to sow a portion of it to barley and a portion of it to oats and mixed grain. Now, would it pay me to sow salt and plaster, mixed, on the crop. As I intend seeding it to clover and timothy heavily, how much salt and plaster per acre should I sow, and when should I sow it? I have sown when grain was up to quite a height, with good results.
2. Now, there are 25 acres seeded. Part of it has been cut for three seasons, and part of it has been cut four, and this cut a good crop of hay in 1912. Would it pay me to sow salt and plaster on this, it being the only hay ground on the place for this year, and I can't do without it?
3. There are ten acres near the buildings that I want to seed to pasture. The most of this is damp, mucky ground. It is late in the season before you can get on it. Couldn't get it plowed last fall for water. Would a good disking serve as well as plowing in the spring? Would you please advise me what kind of seeds to sow, and how much per acre, to produce the best pasture? The field is not drained only a little bit through the center. The field is in the form of a basin, that is, the height of land on three sides, and level on the front adjoining the highway. I intend sowing oats. This field has not been run like the rest. There has been four straight crops off it, and was in pasture about ten years previous.
J. L. O.

Ans.—1. Would not a complete fertilizer be advisable?
2. If it is a good season, and the land is in fair condition, another fair crop may result. Land plaster and salt would have little effect upon this. A top dressing with nitrate might stimulate growth.
3. Try alsike clover, 2 lbs.; white clover, 2 lbs.; orchard grass, 4 lbs.; meadow fescue, 4 lbs.; tall oat grass, 3 lbs.; meadow foxtail, 2 lbs., and timothy, 2 lbs., and if the field is dry enough, a few pounds of alfalfa. Sow the above mixture to an acre.

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Also Horses, Pigs and Barred Rocks. Property of Ira B. Vannatter, Ballinafad, Ont. Erin, C. P. R. and Georgetown, G. T. R., shipping stations.

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14 Shorthorns—10 bulls and 4 females, all of choice breeding. Foundation of herd was Actress 6th, imported, and Pearllet Butterfly, by the great imported bull, Baron Camperdown; followed by War Eagle, a Toronto silver medal bull. Royal Kitchener, imported; Village Earl, imported; and present stock bull, Roan Chief, also included in sale. Conveyances will meet morning trains at Erin, C. P. R., and Georgetown, G. T. R. If stormy, sale will be held under cover. TERMS: eight months' credit on approved joint notes, or 5 per cent. per annum off for cash. Fowl and fat hogs, cash.

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As I am feeding no steers this winter I have filled my stables with imported fillies, selected personally in Scotland; many in foal to such sires as Hiawatha, Sir Hugo, King's Champion, Sir Rudolph, etc. Fourteen have been sold, eighteen of the best are still on hand—the selections being made more on account of price than superiority. There are no culls in the lot. Send for pedigrees and particulars before buying elsewhere. Inspection invited.
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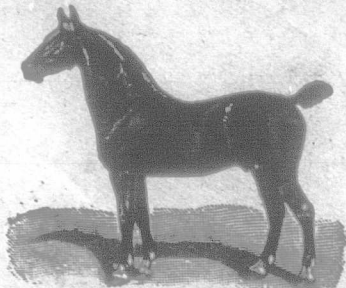
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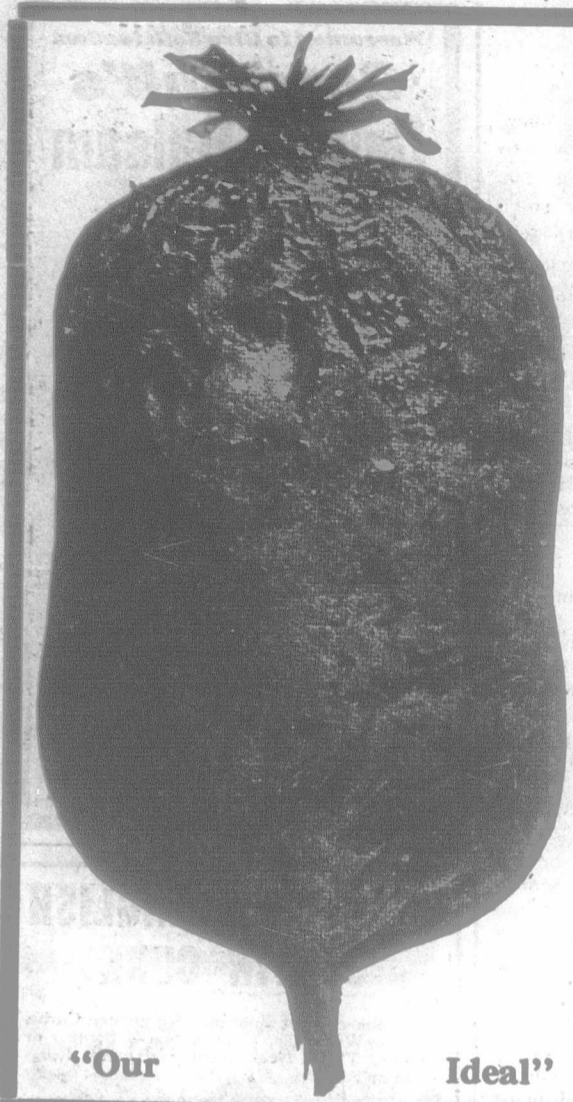
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Shorthorns, Cotswolds, Berkshires
For sale: 10 bulls, from 7 to 10 months; also cows, heifers and heifer calves. Would sell a few young Cotswold ewes. No Berkshires to offer at present.
CHAS. E. BONNYCASTLE
P.O. and Station, Campbellford, Ontario

GEDARDALE SHORTHORNS—To make room for newcomers, I am now offering some rare value in Scotch-bred cows and heifers, beautifully bred and high-class in type; also 1 yearling bull. Dr. T. S. Sproule, Markdale, Ont.

ATHELSTANE SHORTHORNS
For sale: Five choice young bulls, sired by Roan Chief (imp.)—60885—. They are a choicely-bred lot, and will be priced right; also a few heifers. They are of good milking dams. WM. WALDIE, R. R. No. 2, Stratford, L.-D. phone.

Clover Dell Shorthorns
Choice young stock of both sexes. Dual-purpose a specialty. Herd headed by (Imp.) Ivanhoe. L. A. WAKELY, BOLTON, ONT.

FOR SALE.
A good Ayrshire Bull, 17 months old, of the noted Primrose family.
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The Auld Herd and Pleasant Valley Shorthorns

We are putting three bulls in the Guelph sale March 5th. We have females of all ages and the best of breeding for sale. Correspondence invited.

A. F. & G. AULD, Edén Mills, Ontario
Bell 'phone. Guelph or Rockwood stations.

I have **SHORTHORN** Bulls and Heifers, **SHROPSHIRE** and **COTSWOLD** Rams and Ewes, **CLYDESDALE** Fillies and Colts that are as good as I have ever had, and that I will sell for prices within the reach of all. We have been in the business 75 years, always in the front rank, and propose to keep that position. You cannot afford to buy without writing us for prices. **ROBERT MILLER, STOUFFVILLE, ONTARIO**

Springhurst Shorthorns Four of the first-prize Shorthorns at the late Guelph show, including the champion and grand champion fat heifer, were all sired by bulls of my breeding. I have now for sale ten young herd headers of this champion-producing breeding. **HARRY SMITH, HAY P. O., ONT.** Exeter Station. Long-distance 'phone.

Shorthorns—Records show that cattle bought from the Salem herd won numerous ribbons the past season. We have others. Several young bulls are priced reasonably. **Elora G. T. R. and C. P. R. J. A. WATT, Salem, Ont.**

Willow Bank Stock Farm—Shorthorn Herd Established 1855. The grand imported Butterfly bull, Roan Chief—60865—, heads the herd. Young cows and heifers bred to him; also an exceedingly good lot of young bulls on hand, fit for service and at very reasonable prices. Some from imp. dams. **JAMES DOUGLAS, Caledonia, Ont.**

DAIRY-BRED SHORTHORNS
We have for sale Scotch- and English-bred Shorthorns. A few bulls of improved breeding on big milking lines; also others pure Scotch and heifers of both breed lines. **L.-D. 'Phone. G. E. MORDEN & SON, Oakville, Ont.**

Questions and Answers. Miscellaneous.

Wood

What kinds of wood are hard wood?
D. L.

Ans.—There are several which are generally conceded to be hard wood, as maple, the various varieties of beech, birch, oak, etc. These are the commoner ones. Of course, there are others, but they are not usually sold for wood.

Potatoes for Cows.

Will you tell me whether it hurts cows to feed raw potatoes? They are coming in in March and April.
W. J. H.

Ans.—A moderate quantity of raw potatoes, fed sliced or pulped to avoid danger of choking, are considered good for cows, and favorable for milk production. A gallon once a day, or perhaps even twice a day, after the cows had become accustomed to them, should produce no unfavorable effect. Potatoes for hogs should be cooked.

Rape—Lawn Grass—Potatoes

1. Am going to sow some rape for pigs to pasture on in the spring. Should it get its full growth before turning them on it, or is it injurious to them at any time?

2. If sown in April, in a favorable season, how long before it would be fit for pasture?

3. My lawn seems to have been eaten out in places by some insect, and the grass did not do well last year. It is a rich, sand knoll. How would it be best for me to re-seed without plowing?

4. Would seed potatoes that have wintered through without sprouting, be good to plant this spring? A good many of my potatoes have a dry rot, which you cannot distinguish until they are cut open.
S. H.

Ans.—1 and 2. The best time to sow rape is early in June. Of course, it might do well in a favorable season sown in April. Some sow it in the spring with a grain crop, to be pastured off after the grain is removed. If sown alone, it will be ready to pasture, or to cut and feed off, in about six to eight weeks.

3. This looks like the work of the white grub. If so, you will have considerable trouble. Get a lawn mixture and sow it on the lawn early in spring, and rake it in if you decide not to plow it up. Top dress it with well-rotted manure.

4. Avoid planting the potatoes with the rot. It might be advisable to get new seed. At least, before planting, be sure the potatoes are sprouting.

Miscellaneous Queries.

1. Is oil cake the best feed for calves getting separator milk after they are two weeks old?

2. Is there any difference in feeding rolled oats and bran, soaked twelve hours ahead, or dry?

3. Give plan of colony-house for one hundred chickens.

4. What is the best way to sow horse carrots, and when?

5. Does germination get weaker in oats as they get old?

6. Will a heavy colt, which is a little boggy, get all right?

7. What is the matter with pigs when they eat one of their own bunch?

8. Will not all steel roofs leak with a driving rain?
H. M.

Ans.—1. No. Ground or steamed flaxseed would be better.

2. What to? There should be no need of soaking these materials.

3. No portable colony-house is large enough for 100 chickens. A house 8x12 feet, to accommodate about 25 hens, is large enough for such a house. Write Prof. W. R. Graham, O. A. C., Guelph, for Bulletin, "Farm Poultry."

4. Sow in drills, or on the level, in rows about two feet apart; seed, two lbs. per acre.

5. Yes, gradually, until the germ dies.

6. He may, but boggy hocks are often hereditary, and grow coarse with age. It may require blistering to reduce.

7. Depraved appetite, due to a lack of some ingredient in their food. Give exercise, and, if possible, get some earth or rotten wood into the pen.

8. A steel roof, properly constructed, should turn any rain.

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Cotswold Ewe and Ram lambs of high quality.
WM. SMITH & SON - COLUMBUS, ONT.
L. D. Phone

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I have for sale a number of choice young bulls, from 8 to 14 months old (pure Scotch); also a number of heifers, 1 to 2 years old, of this level type, and richest breeding. G. M. FORSYTH, North Claremont, Ont.

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1854 Maple Lodge Stock Farm 1913

Am offering a very fine lot of young Shorthorn bulls just now. Excellent breeding and most from splendid milking dams. The kind that is needed.

House is one mile from Lucan Crossing, G. T. R.
A. W. SMITH, Maple Lodge P.O., Ont.

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Present offering: Young bulls and heifers from grand milking dams. Also a choice lot of Leicesters rams and ewe lambs, and ewes of all ages bred to imp. rams. W. A. Douglas, Tuscarora, Ont.

Questions and Answers.

Miscellaneous.

Possibly Stringhalt-Seedling Down.

1. I have a young mare which lifts her hind leg both high and wide, swinging it out when walking. She moves properly when made move around in single stall, and will not lift it in standing over. Will you kindly advise me what the trouble may be?

2. Have a field of high, clay land, some places gravelly. I purpose seeding to clover or something in the spring. Was thinking of alfalfa, too. Would you advise seeding a mixture of clover and timothy with alfalfa? B. M.

Ans.-1. This is possibly stringhalt. See answer to this question in recent issues.

2. Alfalfa alone should do well on the high, clay land. It may not do so well on the gravelly portion. If for pasture, mix; if for hay, sow alfalfa separately.

Persian Lamb.

Regarding the fur commonly known as Persian lamb, I would like to enquire, what kind of animals produce such fur? Are they domestic animals? If so, where could I get some of them? J. G. B.

Ans.-The fur, "Persian lamb," is that of lambs bred in Persia. Most of the lamb wools known to the trade, come from Russia, Persia, and Afghanistan. Persian lambs are a rusty black in color, and the size of the skins is about 18x9 inches, as they are killed before the wool has time to develop beyond the flat, wavy state. All the skins are dyed to give the shiny, black lustre. Some of the finest of opera cloaks and gloves are made from the skins of still-born lambs. The finer the curl, and the closer, the greater the value. We presume these skins are produced by domesticated sheep. Whether or not they would succeed here we cannot say.

Leaf Mold and Miscellaneous Queries.

1. I am sending you in a small box, under separate cover, a sample of leaf-mold of which I have found a large deposit on my farm, some acres in extent, and two to three feet deep, and would ask what you think of it for this sandy soil? What crops would benefit most by using it, and how best to use, thick spreading or thin, alone or with a little manure? Is it good for garden? Would it pay to use it at all?

2. If I cut horns on six-months-old calves, will they grow again? How old must calf be before cutting horns to stop growth?

3. In this locality (Joliette County, Quebec), do you think I could grow two crops on same field (well manured), of peas and oats, to cut green for hay?

4. What quantities of seed to sow?

5. What do you think of Awnless Brome for hay for milch cows, and horses? Does it make good pasture for milking cows? When is best time to sow, and at what time to cut for hay?

6. Does water freeze quicker in iron pipe or wooden, and why? C. S. N.

Ans.-1. The sample sent was very dry. It should make a good stable absorbent, and we would have no hesitancy in applying to land to grow crops. Leaves contain considerable fertilizer. It would likely be even better on a loam or heavier soil. Garden crops would be benefited by its use. It is also valuable in preparing kotbeds. Try it as an experiment, and see if results do not justify its further use.

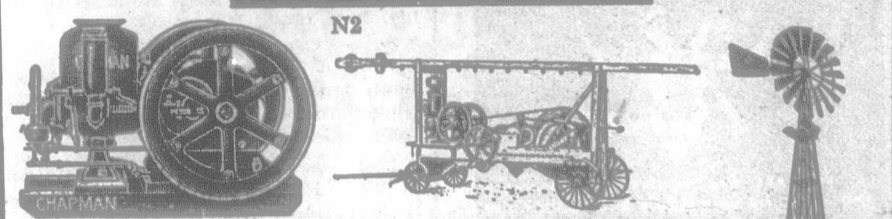
2. No; not if properly done.
3. It would scarcely be wise. One good crop would pay better than two poor ones.

4. About 1 1/2 bushels of each, if the peas are large; fewer peas if a small variety is sown.

5. There are several better-known grasses which would give better results for hay and pasture. A mixture of red clover, orchard grass, alsike clover, meadow fescue, and timothy, makes a good pasture. Good timothy and red clover mixture, with a little orchard grass added, is splendid for hay.

6. In an iron pipe, because iron is a better conductor of heat than wood.

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10 SHORTHORN BULLS 10


If in need of a bull those that we are offering should interest you. They range from 8 to 16 months old, and are nearly all bred direct from imported stock. We also have females of all ages. Bell 'phone. Burlington Junction, G. T. R. **W. G. PETTIT & SONS, Freeman, Ontario.**

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One High-class Imported yearling bull. 10 bull calves, from 7 to 16 months old. 40 heifers and young cows, all by imported sires. Also some imp. yearling heifers. **MITCHELL BROS., BURLINGTON, ONT.** Farm 1/4-mile from Burlington Junction.

5 Shorthorn Bulls 5-We have for sale at moderate prices five Scotch Shorthorn bulls, including one of our herd bulls. Also a number of high-class heifers and heifer calves.
A. J. HOWDEN & CO., Columbus, Ont.
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High-class Ayrshires—If you are wanting a richly-bred young bull out of a 60-lb. a day and over cow, imported or Canadian-bred dam and sire, write me. Females all ages. Prices are easy.

D. A. MACFARLANE, Kelso, Que.

Questions and Answers.
Miscellaneous.

Shrinkage of Wood—Milking.

1. Give me as near an idea as possible, how much 100 cords of good maple wood, cut now, will shrink in a year by drying, it being left where it is cut, the small trees being left around, and thick timber to the north and south of the cut?

2. I saw, some time ago, a statement in "The Farmer's Advocate" (I presume it is correct), to the effect that one should never milk a fresh cow dry. With my limited amount of understanding, I don't know whether it meant a young cow, after her first calf, or any cow at freshening, and did it mean the first milking, the first day, or week, after coming in fresh?

W. J.

Ans.—1. The shrinkage in bulk will not be great. It will decrease considerably in weight, but just how much we could not state.

2. Any freshly-calved cow should not be milked absolutely dry for the first few milkings after calving.

Cedar Block Wall—Floor for Stalls.

1. Have you, or any of your readers, had any experience with cedar blocks, laid in mortar, in building a basement wall for barn, instead of concrete or stone? How do you think it would compare with other walls in point of durability?

2. In fitting up loose pens for feeding steers, would earth floor be all right, or had it better be laid with concrete? Am building basement barn this coming summer, and any information would be thankfully received.

D. B. S.

Ans.—1. A correspondent writing to this paper some years ago, described such a wall, which he laid under his barn, and which was giving good satisfaction. Stonework was used up to about two feet above the ground, and the cedar blocks were laid crosswise of the wall, and built up six feet above the stonework. The correspondent stated that it was much cheaper than stone. He painted his with a paint made of milk and portland cement, and colored. Have any of our readers further experience to give?

2. A hard, clay floor, will do, but on such a floor more bedding is required to keep the stall dry and clean. Cement floors are a saving on straw, and perhaps on liquid manure as well.

Permanent Pasture—Miscellaneous Queries

1. I have a field I want to seed down to permanent pasture. It is light soil, part of it gravelly and part sandy. What would be a good mixture of seeds to sow?

2. Will spelt do well on sod plowed in the spring? How much per acre will I sow?

3. I intend planting onions. How far apart should the rows be, and how far apart should the seed onion be planted?

4. Could it be possible for strawberries to bear fruit from spring to late in the fall?

5. How long will goose eggs keep without spoiling before they are set?

6. How often should they be turned?

7. Would it be wise to mix buckwheat with oats for seeding?

8. Would 1½ bushels of turnips be too much for a cow per day?

9. Do turnips increase the flow of milk?

A. B. C.

Ans.—1. Try orchard grass, 4 lbs.; meadow fescue, 4 lbs.; tall oat grass, 3 lbs.; meadow foxtail, 2 lbs.; timothy, 2 lbs.; alfalfa, 5 lbs.; alsike clover, 2 lbs., and white Dutch clover, 2 lbs., a mixture of 24 lbs. per acre.

2. Do not sow spelt, sow emmer, which is often wrongly called spelt. It is not an extra good crop for sod. Sow about 1 to 1½ bushels per acre.

3. Rows about 15 to 18 inches apart, and 18 seeds to a foot in the rows.

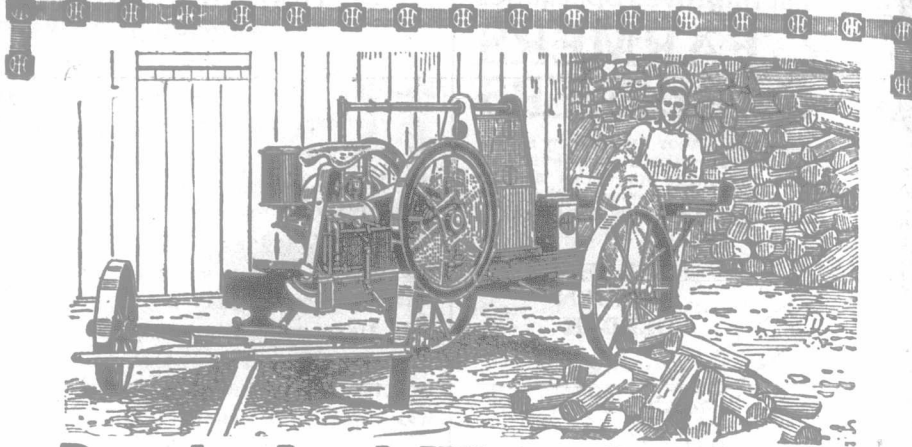
4. Not probable.

5 and 6. Several weeks if properly cared for. Keep standing on end in bran or chop, and turn once or twice daily.

7. No.

8. This depends upon the other feed given, and upon the cow. With a good, thrifty cow, and provided too much other feed is not given, no.

9. They should help to.



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Ayrshires and Yorkshires—We now offer at bargain bull calves dropped in July, 1912. All bred from (imp.) sire and from either dams with good records, or their daughters either imported or home-bred. Some choice February pigs; also young pigs.

Stonehouse Ayrshires
Of choicest imported stock and with imp. sires and dams. I am offering young cows, 3, 4 and 5 years of age; a grand bunch of imp. yearling heifers, and a particularly good pair of young bulls.


L.-D. Phone. **HECTOR GORDON, Howick, Que.**

City View Ayrshires—Three young bulls fit for service; females from 3 months to 9 years; all young stock 3 years and under from R. O. P. ancestors. Always something for sale. Bell phone connections; 1½ miles from 5 railroad stations.

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The result of over 100 years' experience with calf-raisers. The only Calf Meal made in an exclusive Calf Meal Factory. As rich as new milk at less than half the cost. Makes rapid growth. Stops scouring. Three calves can be raised on it at the cost of one. Get Bulletin, "How to Raise Calves Cheaply and Successfully Without Milk," by sending a post card to

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If the farmers of the Maritime Provinces, Quebec and Ontario want to make sure of getting the highest possible grade of seed oats for the spring of 1913, apply to us at once. To prevent a repetition of the disaster that befell so many farmers last year by sowing vitalized grain, we have stored at Point Du Chene and Pictou 50,000 bushels of large, selected, separated white seed oats, true to name and free from noxious weed seeds. If will be the farmers' own fault if they do not procure good seed, as the extra yield of these oats pays twice over the cost of the seed. Our firm name is stenciled on every bag. Do not allow the dealers to give you other than Read's oats for seed.

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Aluminum Ear Markers

are the best. Being made of aluminum they are brighter, higher, stronger and more durable than any other. Fit any part of the ear. Nothing to catch on feed trough or other obstacle. Your name, address and any series of numbers on each tag. Sample tag, catalogue and prices mailed free. Ask for them. Address

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6 cows in splendid condition, all large, straight animals and due to freshen before 1st April. Also some young stock of excellent breeding, both sexes.

Collier V. Robbins, Riverbend. Bell Phone.

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Offers young bulls ready for service, one from Calamity Houwtje, winner of 1st prize in cow class at Guelph, 1912; also a half-brother to Pontiac Jessie, sweepstakes heifer under 36 months; also a few females. Prices reasonable.

Write for particulars, or come and make your choice.

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Eastwood Sta., G. T. R. Oxford Centre, Ont.

PURE-BRED REGISTERED Holstein Cattle

The most profitable dairy breed, greatest in size, milk, butter-fat and in itality. Send for FREE illustrated descriptive booklets. **HOLSTEIN-FRIESIAN ASSOCIATION,** F. L. Houghton, Sec., Box 127, Battleboro, Vt.

Glenwood Stock Farm 5 BULL CALVES

fit for service, out of big milking strains, at low figure for quick sale. **THOS. B. CARLAW & SON, WARKWORTH, ONT.,** Campbellford Sta

ADVOCATE ADVERTISEMENTS PAY.

Questions and Answers.

Miscellaneous.

Ditching

I am writing in regard to an open ditch which starts on A's farm and runs across B for seventy rods, forty of which is through high land, for an outlet. A has twenty acres to drain, B has five acres. A wants to tile his twenty acres, and the ditch has to be lowered two feet. Has B got to lower all the ditch across B, or how much? If B wanted to put in tile, has B got to put in tile large enough to carry off all the water, or would A have to do a share and how much? H. S.

Ans.—The best method to follow in such a case is for the parties concerned to get together and see whether or not they can come to some decision agreeable to both. If they cannot apportion the ditch to suit themselves, the engineer of the municipality should be called upon to make an award. Of course, it seems reasonable that A should help bear the extra expense incurred by B if the latter has to put in larger tile to carry the water from A's farm. Settle the matter between yourselves if possible.

Roots after Millet—Mangels for Stock—Thumps—Ophthalmia

1. I have a field in which I had millet last summer, and I plowed a lot of well-matured seed down last fall—I would think about five or six bushels to the acre—and I would like to put a root crop in it next summer. Do you think the millet seed will grow and cause me a lot of extra hoeing? The land is a flat, sandy, and mucky loam, but well drained. Would you advise me to put my roots in the same field?

2. Are mangels good for sheep just before lambing-time, and how many should each sheep get?

3. In what manner does thumps come on in young pigs, and is there anything to feed the sow to keep them from getting the same? I had a sow which had a litter in January, and they took what some people call thumps, and died. I cut them open, and found that the heart, lungs and liver, were all enlarged to be about four times their natural size.

4. I have an eight-year-old mare, and every little while there is a white, thick scum comes over her eyes, and she is blind for a few days at a time, and then she seems to get all right. She has been like that for a year now. What do you think is the cause of the trouble? She is in a comfortable frame stable, well ventilated. She raised a colt when she was four years old, and one when she was five, and did her share of the work of a good-sized farm besides. Do you think she was over-done, or what is the cause, and what is the cure if there is any? J. F.

Ans.—1. We cannot speak from experience, but would think that there would be considerable trouble in keeping down the millet in a hoed crop. Would be inclined to favor putting the roots in another field this year.

2. Feed roots rather sparingly to in-lamb ewes. After the ewes have yeaned, give them all they will eat, with other things, as clover hay, and grain, to form a ration.

3. Thumps are caused by the pigs becoming too fat, due to over-nutrition. Feed the sow on non-heating feeds, such as oat chop, a little middlings, and some sour milk. Do not feed heavily, and give the young pigs the run of other pens, or the gangways, for exercise.

4. This is likely periodic ophthalmia. It is a constitutional disease, and the attacks cannot be prevented with any degree of certainty. The administration of 20 grains of the disulphate of quinine three times daily, tends to prevent the disease. Treatment for an attack consists in keeping the patient in a comfortable, partially-darkened box stall, feeding lightly, and bathing the eyes three times daily with hot water, and after bathing, putting a few drops of the following lotion into each eye: Sulphate of zinc, 10 grains; fluid extract of belladonna, 20 drops; distilled water, 2 ounces. It is probable that a cataract will soon form on each eye, and the mare will go blind.

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The corrugations are deep and pressed one at a time. This method insures absolute accuracy in fitting and makes the corrugations retain their shape.

Our Corrugated Iron is Fire, Lightning, Rust and Storm proof.

As it requires very little timber to support it and needs no repairs, it is a splendid material for siding or roofing. Write us for free booklet. 705

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SERVICE BULLS AND BULL CALVES FROM A. R. C. DAMS.

Sons of Johanna Concordia Champion, No. 60575, one of the richest bred and best individual bulls of the breed. His granddams, Colantha 4th's Johanna 35.22 per cent. butter, fat 4.32 per cent., and Johanna Colantha 2nd 32.90 per cent. butter, fat 5.02 per cent. Average butter in 7 days 34.06 per cent. Average fat 4.67 per cent. If you want to increase the butter-fat in your herd, let me sell you one of these bulls. I can spare a few good cows and heifers bred to the "Champion." Write me your wants and I will try and please you. **MAPLE AVENUE STOCK FARM, L. E. CONNELL, Prop., FAYETTE, FULTON CO., OHIO, U. S. A.**

FAIRVIEW FARM'S HERD OFFERS

sons of Pontiac Korndyke 25983, the greatest sire that ever lived, and the only bull that ever sired 13 daughters that have made 7-day records above 30 pounds each. Do you want your next bull to be a brother to such cows as Pontiac Lady Korndyke (38.02), Pontiac Pet (37.67), Pontiac Clothilde De Kol 2nd (37.21), Sadie Vale Korndyke (36.20), and eight others above 30 pounds? If you do, write me for price on a son of Pontiac Korndyke. I also have sons of Rag Apple Korndyke and Sir Johanna Colantha Gladi. **E. H. DOLLAR, HEUVELTON, NEW YORK, Near Prescott.**

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We are now testing some of the daughters of Count Hengerveld Fenne De Kol, and they are running from 16½ lbs. with first calf to 20 lbs. with second calf. There are still a few young bulls from these heifers that we are offering at half their value, in order to make room. They are sired by Dutchland Colantha Sir Mona. Come to the farm and see the dams of these bulls and their dams.

E. F. OSLER, BRONTE ONTARIO

Summer Hill Holsteins

Would you like your next bull to be from the same sire as the heifer that holds the world's record for yearly work, and the same sire as the Champion Cow of Canada in the seven day work, and the same sire as the Champion four-year-old of Canada in the thirty day work? We have bulls of this breeding to offer whose dams have records of over 27 lbs. We have also some extra choice heifers bred to our junior herd bull whose dam has a record of 34.60 lbs. butter in seven days and 111 lbs. milk a day. Yorkshires of all ages. **D. C. FLATT & SON, R. R. No. 2, Hamilton, Ont.**

Holsteins : \$250 buys two 2-year-old Reg. Holstein heifers, bred to freshen in September. A. Watson & Sons, R.R. No. 1, St. Thomas, Ont.

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Herd headed by King Segis Pontiac Lad, whose sire's dam is the champion cow of the world. Sire's sire is the only bull that has sired five four-year-olds that average 30 lbs. each. Dam's sire is the bull that has sired two 30-lb. three-year-olds. His two great grand sires are the only bulls in the world that have sired two 37-lb. cows. Bulls and bull calves for sale. **A. KENNEDY, AYR, ONT.**

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For sale: A few choice young bull calves and females, all ages; good enough for foundation stock

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For Sale: Choice Bull Calves

FOUR MONTHS AND under, from high-testing dams, and sired by our great stock getter, Grace

Fayne 2nd Sir Colantha; also young females. Satisfaction guaranteed. **M. L. HALEY and M. H. HALEY, Springford, Ontario**

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Special offering: Bulls from 1 to 15 months old. The growthy kind that will give good service. One from a son of Evergreen March, and all from Record of Merit dams. Write for particulars. **G. W. CLEMONS, St. George, Ont.** Bell telephone.

When writing please mention The Advocate

The Maples Holsteins

I am now offering for sale 10 young bulls, official record backing on both sire's and dam's side. They are old enough for service, and my prices should soon sell them.

WALBURN RIVERS, Foldens, Ont.
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THE PEERLESS
Braced Like a Steel Bridge

JUST as the engineer strengthens the points of strain in a big, mighty bridge, so we have designed braces, stronger than was necessary, to make our gates stiff and rigid. They can't sag—they can't twist—they are a great improvement over gates made the old way.

Peerless Gates are made of first-class material. Frame work of 1½ inch steel tubing electrically welded together. Peerless pipe braced gates are all filled with heavy No. 9 Open Hearth galvanized steel wire—built for strength and durability—weather proof and stock proof.

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SOUTH DOWNS
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The best in their respective breeds. Write for information to:

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Phone. R.R. Stn. and Tel. Office, London.

Quality Oxford Downs Winners, bred from Imp. and prize-winning stock. 1 and 2 shear rams and ewes, ram and ewe lambs; many winners among them, the highest types of the breed.
E. BARBOUR, Erin P.O. & Sta. L.D. Phone.

Oxford Down Sheep, Shorthorn Cattle, Yorkshire Hogs—Present offering: Lambs of either sex. For prices, etc., write to **John Cousins & Sons, Bazaar Vista Farm, Harriston, Ont.**

Newcastle Tamworths and Shorthorns
Present offering. Seven boars from 6 to 10 months old; boars and sows pigs 6 weeks to 4 months; so we bred and others ready to breed, from such noted stock as Colwill's Choice, Canada's champion boar, 1901, '02 '06 and '05, and Imp. Cholderton Golden Secret. Also a few choice Shorthorn heifers in calf; beef and milk combined. Show stock a specialty.
Prices right. L. D. Phone **A. A. COLWILL, Newcastle, Ontario.**

SWINE OF ALL BREEDS FOR SALE. Yorkshires, Tamworths, Berkshires, Hampshires, Chester Whites, Poland-Chinas, and Duroc-Jerseys. I have constantly in hand both sexes of all ages. Show stock a specialty.
JOHN HARVEY, Frelighsburg, Que.

"I have here a handy article that sells for 10 cents," began the caller.

"Don't want it," snapped the woman.

"I didn't think you would buy it," said the caller as he turned to go.

"The lady across the street told me your husband never gave you any money."

"She did, eh?" exploded the woman.

"Give me five of those things you are selling. My husband gives me more money in a day than that old cat gets in a month."



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DEALER
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SNAP
THE HANDY HAND CLEANER

Keep a can at your office, workshop or home. Always useful, antiseptic. Good for your hands. All Dealers sell Snap.

SNAP COMPANY, LIMITED, - Montreal.

Questions and Answers.

Miscellaneous.

Abortion.

1. A number of our cows have aborted. They stand in the stable all winter, on cement floor, water always before them, fed on hay, sheaf oats, and straw. Those milking get bran, ground oats, and gluten feed, mixed. Stable is white-washed with lime and carbolic. What will prevent the rest of the herd from aborting?

2. Will it pay to continue milking the cows which have aborted? They are about six months pregnant. D. M.

Ans.—1. It is quite probable that you have contagious abortion in your herd. If so, some difficulty will be experienced in stamping it out. Isolate all those infected. Disinfect all stables, and the hind quarters and outer generative organs of all cows which abort. There is a serum which may be given which is said to make the cows immune. It is necessary to have a veterinarian to administer. Some have reported good results with the carbolic treatment so often outlined in these columns, but it is not always successful. Feed some silage or roots if possible, keep well bedded to prevent injury from slipping on the cement.

2. They may come to their milk and be profitable. Contagious abortion runs out in from two to three years.

Belgian Horses.

Have been watching for something to give me a knowledge of the history and breeding of the Belgian horse. If you consider it advisable, I would like to read it in your columns, and also how or what is the result of crossing with Clyde mares? There are some very fine Belgian horses coming into our country. R. J. L.

Ans.—The Belgian horse, as his name implies, had its origin in Belgium, a country whose horse-breeding history dates back to remote times. About 1850, the Belgian Government took up the work of horse-breeding and established a stud, and since then the Belgian draft horse has been greatly improved. In 1886 the Official Draft Horse Society of Belgium was formed. Large shows are held, and substantial prizes offered by the Government to promote the draft horse. The first Belgian horses to come to America were brought over in 1866. The Belgian is a very thick, heavy type of horse. Some good cross-bred Belgians may be seen in several States of the Union, but if a first-class Clydesdale stallion was available, better results would likely follow breeding Clydesdale mares to him than by crossing with a Belgian. Avoid real good Belgian might be preferable to crossing where possible. Of course, a scrub Clydesdale.

Sod for Corn and Mangels—Silo Queries.

1. I have a piece of old sod that has been pastured for twenty years. Would this be suitable for corn without any manure, or would it be better to take a crop of oats off first year?

2. Have another piece of old sod which the barnyard water runs on. Would this be a suitable place to sow mangels? Would you advise sowing on flat, or drilling? The land is to be plowed in the spring?

3. I am thinking of building a silo. Which do you prefer, a wood silo or a cement one?

4. Are the ——— good silos, and what would be the cost of building one, 12 x 25 feet?

5. How many head of cattle would a silo 12 x 25 feet feed, for five months, fed thirty pounds daily? J. W.

Ans.—1. Corn does well on an old sod. This field should be fairly rich, and, likely, in a good season, with the crop properly cultivated, good results would be obtained without manure. Of course, if manure is available, apply it.

2. Mangels should do all right on this soil. They are gross feeders. Sown on the flat they are not so easily worked, but slightly better yields are obtained.

3. Span-wall cement.

4. We believe they give good results. Write the manufacturers for prices.

5. Between 20 x 25 head.

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Free Plans

If you are interested, send us a postcard with the word "Roofing" and your name and address -- then we will send you valuable information about your

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This fall I have the best lot of lambs I ever bred. I have plenty of show material, bred from the best stock procurable in England. Order early if you want the best. Ram lambs, shearings and ewe lambs. Yorkshires of all ages.

J. A. Carswell, Bond Head P. O., Ontario
Bradford or Beeton stations. Long-distance phone.

Belmont Shropshires, Southdowns

I have a grand lot of rams and ewes for sale, both breeds. Anyone wanting a good ram, or a few good breeding ewes, should write me at once and get the first choice.

C. Hodgson, Brantford, Ont.

Shropshire and Cotswold Ewes at greatly reduced prices. They are all registered and in lamb to good rams. Are going to be sold; whoever gets order in first will get the choice.
John Mitler, Jr., Blairgowrie Farm, Ashburn

Woodburn Berkshires

are founded on the famous old Sally tribe, noted for big size, length of body and strength of bone. We can supply pairs and trios not akin. Show stock a specialty. Also high-class Cotswolds, ram and ewe lambs, shearings.

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MEADOW LAWN SHORTHORNS of richest and most fashionable Scotch Claret, Roan Ladys, Mildreds, Stamfords, etc.
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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, toofer at reasonable prices. Guaranteed satisfaction.

Joseph Featherston & Son, Streetsville, Ont.

Large White Yorkshires Have a choice lot of sows in pig. Boars ready for service and young pigs of both sexes supplied not akin, at reasonable prices. All breeding stock imported, or from imported stock from the best G.T.R. Long-distance phone. **H. J. DAVIS, Woodstock, Ont. C.P.R. and**

Duroc Jersey Swine AND JERSEY CATTLE
Grand stock, either sex, constantly for sale. Price reasonable. **MAC CAMPBELL & SONS, Northwood, Ontario.**

MORRISTON TAMWORTHS AND SHORTHORNS
Bred from the Prize-winning herds of England; have a choice lot of young pigs, both sexes, pairs not akin; and also the dual-purpose Short horns. Satisfaction guaranteed. **C. Currie, Morriston.**

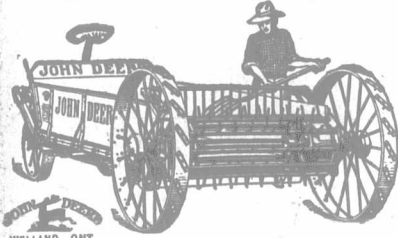
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Cloverdale Berkshires—Present offering: Sows bred both sexes. Prices reasonable.
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ELMHURST LARGE ENGLISH BERKSHIRES
Present offering: Select sows. Choice boars ready for service; also younger stock, the get of Duke of Somerset, imp., and out of imported dams. Satisfaction and safe delivery guaranteed. **H. M. VANDERLIP, Breeder and Importer, GAINSVILLE P.O., Langford station, Brantford and Hamilton Radial.**

John Deere Spreader

The Spreader with the Beater on the Axle



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

The Beater on the Axle

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

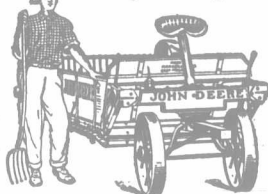
Power to drive the beater is taken from the rear axle through a planetary transmission (like that on automobiles). It is positive, runs in oil, and does not get out of order.

Few Working Parts

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

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

Only "Hip-High"



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

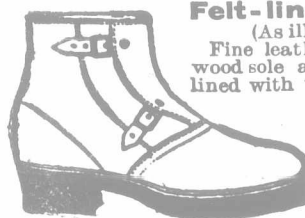
Roller bearings, few working parts, the center of the load comparatively near the horses, and the weight distributed over four wheels, make the John Deere Spreader light draft.

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

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—make interlocking sections which—

—a man clamps—

—into complete culverts—

—over which the road is built.

In Toncan Metal

Pedlar Culverts are not made in ordinary metal, and do not corrode. Toncan is a peculiar anti-rusting metal. It is used only in Pedlar Culverts. It makes the culvert good for years to come.

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The Advantages of Oliver Plows

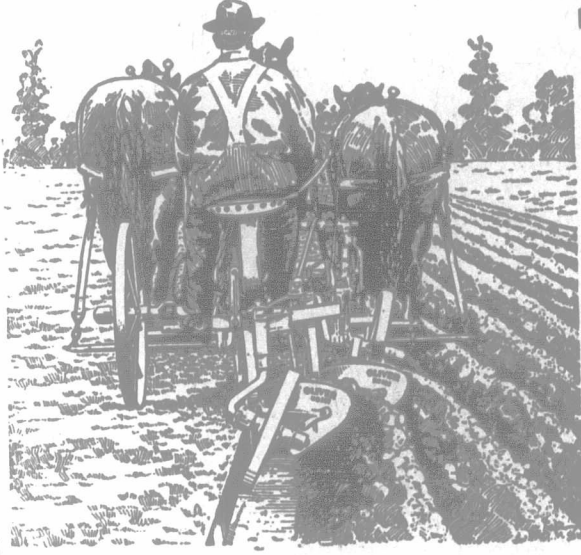
A REPUTATION for quality, such as is enjoyed by Oliver plows, is built up through many years of careful attention to details. No one of these details may seem very important of itself but the combination of many of them makes the difference between a plow that does good work and gives satisfactory service, and one that does not.

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can furnish at once an Oliver plow that will do your work the way you want it done.

See the IHC local agent, or, write the nearest branch house for catalogues and full information.

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"With no fertilizer I raised 510 bushels of mangels per acre, with a low-grade fertilizer I raised 591 bushels, and with a 10% POTASH Fertilizer I raised 842 bushels."

JOHN A. RIGGS,
Merton, Ont.



"With my ground not fertilized I ordinarily raised 64½ bushels of corn, with a low-grade fertilizer I increased this to 103 bushels per acre, but with a proper 10% POTASH Fertilizer I still further increased this to 135 bushels per acre."

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"I raised 81 bushels of potatoes per acre on my farm with no fertilizer, with a low-grade fertilizer I increased this to 165 bushels, but with my 10% POTASH Fertilizer I brought this yield up to 204 bushels per acre."

G. E. FOSTER,
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E. W. ...
Glenora, Ont.

THIS is a story that can be told by hundreds of happy farmers in Canada who have used a 10% POTASH Fertilizer. One farmer in Nova Scotia who ordinarily raised a crop of 120 bushels of potatoes with no fertilizer, managed to raise 302 bushels with a low-grade fertilizer, but with a 10% POTASH Fertilizer he raised 442 bushels per acre off his land. We can tell you of many other cases just like this.

If you want to do the same on your farm, you must learn quickly that

POTASH PAYS

Every crop you raise takes from your land just so much nitrogen, phosphoric Acid and POTASH. This is the food the plants eat. You must help nature put back this plant food into your soil if you wish to raise good crops each year. You probably understand this, and it is likely you use some sort of fertilizer, but **if you are not using a 10% POTASH Fertilizer you are not getting the best crops from your land.** This is because every plant eats three times as much POTASH as it does phosphoric acid. Ordinary low-grade fertilizers contain from 6 to 8% phosphoric acid and but 2% POTASH. Certainly this is not three times as much POTASH. Therefore, you want to raise this percentage to 10% of POTASH.

If **YOU** want to raise a bumper crop this year, do this: Insist that your dealer provide you with a 10% POTASH Fertilizer. If he cannot do this, and you have to buy a low-grade fertilizer, add enough POTASH to it to raise it to 10% POTASH. We will tell you exactly how to do this, free. You can mix your own fertilizer at home if you want to, and our experts will tell you how to do this too, without charge.

Get in touch with your fertilizer dealer **NOW**, so that he will be sure to have POTASH on hand for you when you need it. Send us your dealer's name, and we will send you a free booklet telling how to properly raise the kind of crops you deal in. It is written by some of the very best agricultural experts in the world, and will surely be of great interest to you. Simply write us, stating your dealer's name and telling us the kind of crops you raise.

If you want your POTASH now, and your dealer has not got it, we will sell it to you direct. Simply let us know your requirements. The main thing to do is to

ACT NOW. Write us to-day.

German Potash Works, Inc., Building Temple Toronto, Ontario

Best quality and Sulphate of POTASH stored ready for immediate shipment
at St. John, N. B., Montreal and Toronto