

6. 1916
PUBLISHED EVERY WEEK. \$1.50 PER YEAR.



VOL. LI.

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LONDON, ONTARIO, JANUARY 13, 1916.

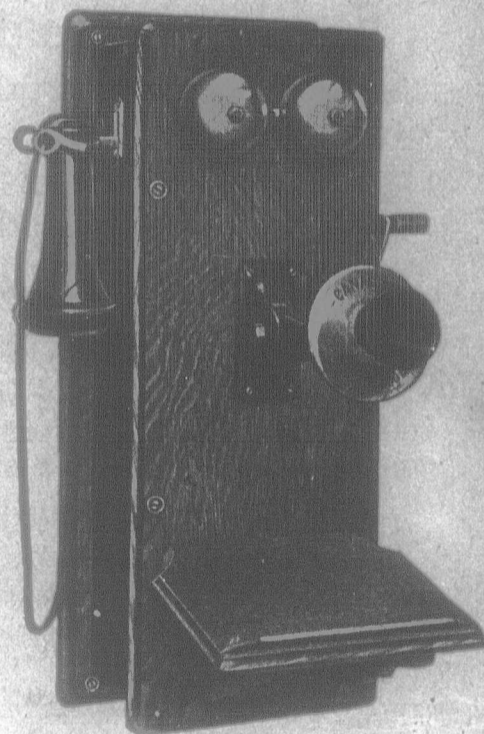
No. 1216

Be Sure and Get Our Prices

WE desire to express our sincere appreciation of the generous patronage and strong support given us by the Independent telephone systems and their subscribers during 1915. We wish you all a very happy 1916. We hope that the readers of this publication will enjoy a year of splendid prosperity. We trust, also, that this year will see the end of the Great War.

On account of the war, conditions in the steel, iron, copper, nickle and zinc markets remain to a certain degree unsettled. There are bound to be changes in prices of telephone construction materials. It will be advisable for purchasers of telephone supplies to be more than ever alert this year, and to be sure and get our quotations. If you are in the market for construction materials at present, it will pay you to get our prices. Large contracts that we made several months ago place us in a position to do very well for our customers.

We are in a better position than ever to supply, promptly, everything



in telephones and construction materials. Quick shipments are a specialty with us.

As a matter of business policy, we will continue to supply first quality telephones and materials, and to guarantee everything we sell. Our reputation for high quality will be sustained to the fullest extent during 1916

Information on all telephone subjects will be cheerfully and promptly given to inquirers. Our Bulletins, Nos. 3 and 4, are free. Write for them

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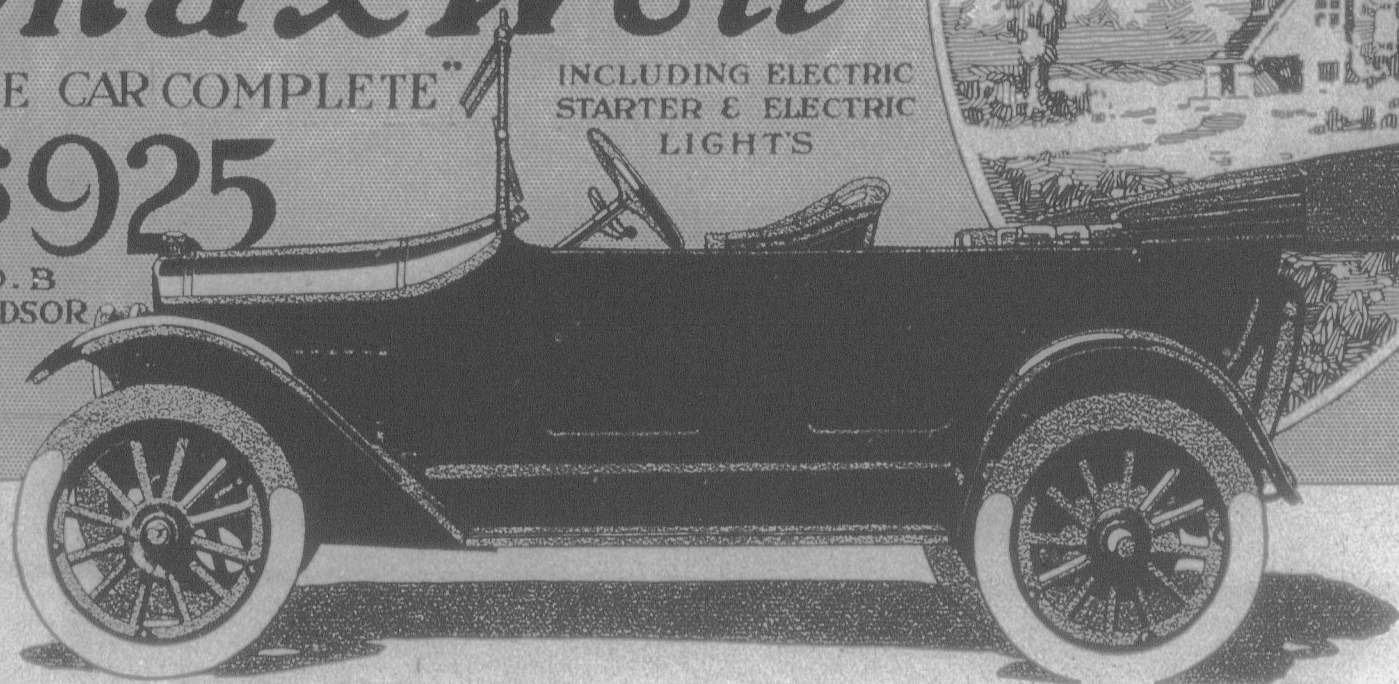
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owners, the Maxwell has established undisputed supremacy for low gasoline consumption—low oil consumption—excess tire mileage—low repair bills.

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MOTOR—Four-cylinder, L-head type, cast en bloc. Bore 3½ in.; stroke 4½ in.; detachable head; oil reservoir of aluminum; valves completely enclosed.
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It grows each year because it gives the best value at a reasonable charge.

It contains twice as much practical reading matter as any other Canadian farm publication.

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Subscribers pay up promptly to keep abreast of the times.

They tell us we are leaders in agricultural ideas, we are.

They pay their money; brag about the value they get, and our advertisers sell them what they need.

We have no fake circulation methods; our subscribers are the men who buy and pay promptly.

Our Annual Christmas Number goes free; it stands unequalled in size and quality, and is in a class by itself.

The Farmer's Advocate is a **practical** paper.

It is a farm paper, edited by farmers well grounded in practical knowledge, rounded out by theoretical training.

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It answers over 3,000 direct questions yearly for subscribers, and all farm problems are solved through its columns.

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The editorial staff is not muzzled by any party, clique or class. It speaks the truth fearlessly, as it has done for 50 years.

The Home Magazine alone contains more instructive and entertaining reading than can be got elsewhere for \$1.50.

No progressive farmer can afford to be without the Farmer's Advocate.

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A new era dawns; new plans are laid; our aim is to go ahead, and by pith, push and progress to give better quality and better value.

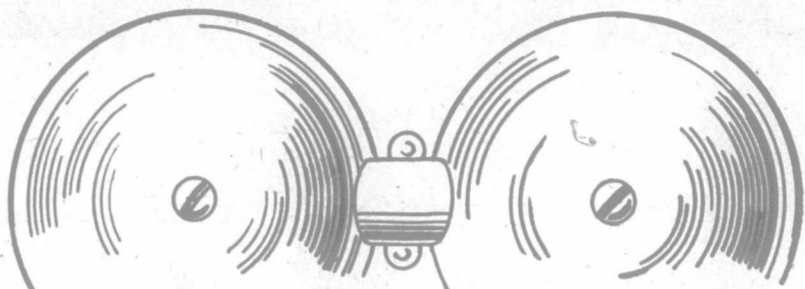
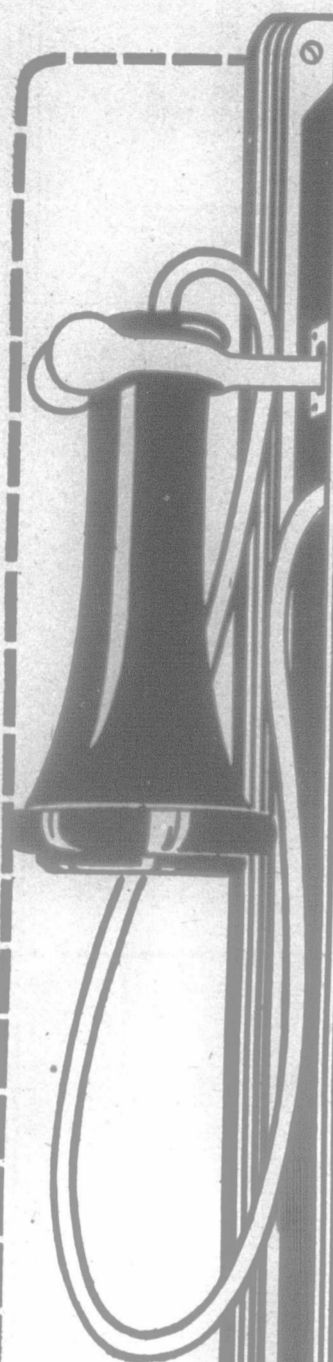
Join hands with us; all hands to the wheel; the advantage is mutual.

If you have not already done so, renew now for 1916 by sending us two new subscribers.

Advertisers, reserve your space.

"Persevere and Succeed"—Our Motto.

The William Weld Co. Ltd., London, Canada



The Biggest thing on the farm

Think, man, what you miss when your farm lacks the telephone!

You miss up-to-the-minute market reports that your competitors in the next township get every day. That costs you money—real money time and again, when shrewd men who **know** the market take advantage of your isolation.

You miss the **economy** of being able to telephone for supplies. Instead you must take a horse and man from work to go on errands. Think how often that has cost you half a day for man and beast. The telephone would save you that loss.

You miss the **safety** of being able to telephone for help in case of fire—for the doctor in case of illness. Somewhere every day the telephone saves property and life—farmers who have it call the telephone "the shining little friend of humanity."

You miss the sociability that only the telephone can bring into a community—the sociability that keeps your wife from heart-breaking loneliness and your children from the "city-fever."

You miss all this, that nearly 125,000 families on farms in Canada have found they cannot do without.

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Not when you consider that you can make it earn its low annual cost nearly every month in money saved and satisfaction gained—not when you realize the pleasure and convenience it will bring you—the anxiety and loneliness it will remove from your wife.

Why, listen friend, folks who have the telephone say

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If you want to see your community forge ahead and your own farm make more money, just start the movement for telephones right now. It only needs a little leadership to make the whole community realize the value of the telephone. We'll send you a book that will make you an authority on the subject. We'll send it free, and asking for it won't obligate you in any way. So write today.

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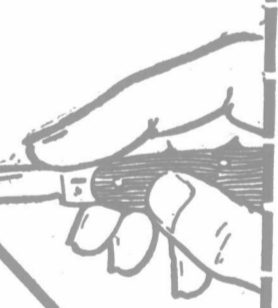
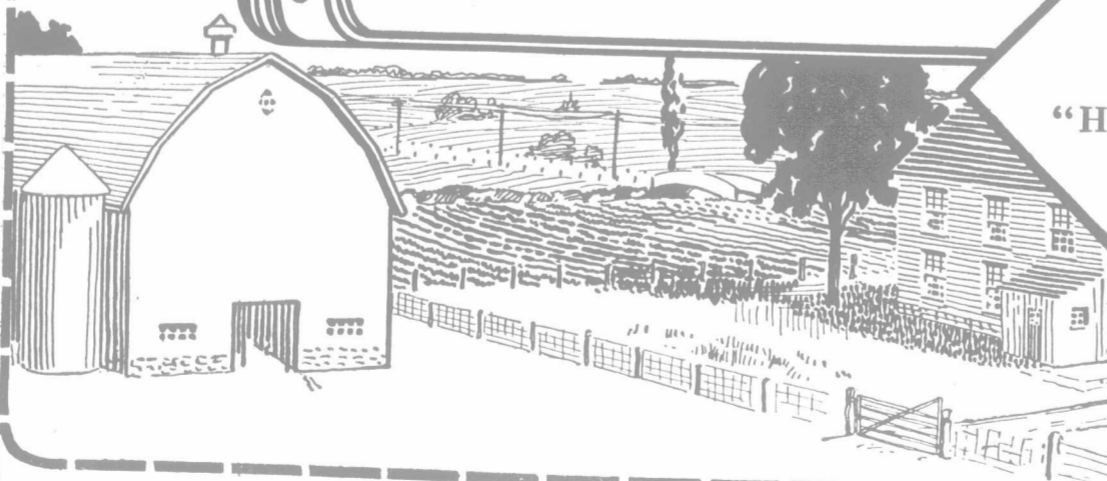
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L.I.

LONDON, ONTARIO, JANUARY 13, 1916.

1216

EDITORIAL.

It costs money to feed vermin on the stock or poultry. Kill them quick.

Regularity in feeding and milking goes a long way toward big milk cheques.

German frightfulness has not abated. Sinking of innocent women and children goes on.

Canada and the United States sowed a smaller winter wheat crop last fall. Spring grains should increase accordingly.

Canada's need will always be best met by a well-balanced agriculture—not all wheat, nor all stock, but mixed farming.

Our markets handled very large numbers of veal calves in 1915. Surely more of the good calves should be matured.

Still, sinking passenger liners where they can get them! Notes do not seem to have much effect upon the baby killers.

A cow that will not give more than 3,000 lbs. of milk in a year is generally worth more as a "canner" than as a dairy cow.

Do not fail to read the reports of conventions in this and future issues. "The Farmer's Advocate" reports them fully and promptly.

Canada has only one beef animal per square mile of territory. What are you doing to increase the number of good cattle kept in your district?

Following the slump of 1914 the hog market was active through 1915, particularly in the closing months, and hogs are almost certain to continue in good demand.

Horsemen begin to show signs of hope for the future of the Canadian horse market. How soon will army horse buying be general in this country? Who will be the first to answer?

Other readers would like to hear of the success you are making of your feeding operations this year. Tell them, through these columns, how you feed, and what gains your cattle make.

Read the special article from Prof. R. Harcourt in this issue. It is on lime, and likely your soil needs lime. At any rate, every reader should understand the importance of liming the soil.

The man who manages well should be a winner in 1916, as he always is, but this year his margin over the poor manager should be greater, for hired help is going to be harder to obtain, which will leave more obstacles in the way.

Canada is called upon to raise 500,000 troops. This means one in every fourteen of our population. The nation fights for its existence. All the element of adventure and sentiment is out of this fight. Shall Canada live as Canada, or become subjected to the Prussian heel. More than 500,000 sturdy sons of freedom's soil will answer, with their lives if need be, that Canada shall go on through glorious victory to lasting freedom.

The Outlook which the Stock Breeder Must Face.

R. Goldwin Smith, in the Toronto Globe's annual financial survey, gives some interesting figures regarding live-stock marketing in Canada during 1915, which was a record year. It would seem, from this resume of conditions, that the problem of distribution has been, to some extent, solved, and that producers must now increase their efforts to maintain and increase the supply of live stock for the market in order that Canada may hold the trade which has been established in 1915.

Canada Behind in Beef.

Exports of beef alive and dressed were practically doubled in 1915 as compared with those of 1914, and this had a stiffening effect upon the market. The question arises, can Canadian stockmen keep it up? Certainly, and increase the output immensely, but to accomplish it more attention must be paid to the breeding of greater numbers and higher quality of live stock in this Dominion. Comparatively speaking, Canada is poorly stocked with beef cattle. Canada, with a population of three people per square mile, has only one beef animal per square mile. The United States has thirty-three people per square mile, and twenty beef cattle. The United States has eleven times the number of people per square mile but twenty times as many beef cattle to the same area, or, per capita, nearly twice as many beef cattle, and yet we are continually hearing complaints of a shortage of beef cattle in the United States, where production of this class of stock is said to be less than in 1870, while the increase in population has been very rapid. The United States, once the leader in meat exports, has gradually been forced, through decreased supplies in comparison with consumption at home, to fall out of a large part of the market abroad, which has been taken by the Argentine and Australia. Australia suffers from seasons of drouth which deal hard blows to the cattle business, and the Argentine is already struggling to cope with the increased demand. The surplus beef which Europe consumes comes, and must continue to come, largely from the Americas and Australasia. Canada must get some of the market and hold it. Our cattle, after feeding our own people, must either go to Europe or must supply a part of the demand in the United States that other cattle may go to Europe. The beef cattle market cannot be overstocked in a few months. It takes years to breed up herds and commence marketing on a very large scale.

But to get back to the Canadian markets of 1915. Official figures tell us that the number of cattle in Canada increased some thousands last year, but Canadian herds have decreased in the last five years by over 850,000 head, and Canada is now credited with 3,399,155 head of beef cattle and 2,666,846 milk cows. Just compare these figures with those of some other countries and note Canada's deficiency in cattle. According to figures recently published in a Chicago market paper Australasia has 20,000,000 head, India 106,000,000 head, Russia 51,000,000 head, United States, 58,000,000 head, Argentina, 29,000,000 head, and Brazil 25,000,000 head. Canada, comparatively, does not seem to be overstocked, and yet there were more cattle and more other meat animals marketed in Canada in 1915 than in 1914 or any immediately previous year.

What is the outlook? The British Government has contracted for the Australasian output. The Argentine cannot cope with the demand and has sold heavily. The United States has such an increasing demand at home that she cannot relieve matters much. There appears to be a world shortage of beef. The output from Canadian farms was larger last year. It is more than likely that it will increase again this year. The question is this: Are we selling too many cows and heifers for beef when they should be retained in the breeding herds, and are too many valuable calves being vealed? We do not know, but one thing seems certain, there is not going to be, for some years to come, as many beef cattle per capita in Canada as in the other countries named, and there is sure to be a world shortage for some time to come. We are not foreshadowing high prices. They may not be as high as they have been during the past year, but we believe beef-raising will prove profitable, for, when the war is over, grains and feeding stuffs are almost sure to drop in price and perhaps very appreciably, and then, even at lower than present prices, beef-raising will pay. We would caution against rushing good breeding cows to market from two to five years before their period of usefulness as breeders is past. There is a big demand for canners and cutters to supply war orders, and they are being cleaned out. The price for canners is generally around 2½ cents to 3 cents per lb. That is, to the farmer. If a cow is a good breeder and will raise two or three good calves and then bring the same price per pound, it might pay to keep her for the sake of getting the calves. And, too, we would not advise the wholesale fattening of promising heifers. The business must be kept up in years to come, and the good heifers and heifer calves are the only safe method of increase. If we are to continue to market more, we must have more breeding stock. If it is not imported, increased marketing does not point to a very rapid increase in breeding stock unless better and more productive methods of breeding are practiced. The stock cannot be sold for beef and added to the breeding herd at the same time. Producers seem to have a good chance now. There would seem to be a bright future ahead. Enough stock should be produced to hold the market now being established. The average price for choice steers on Toronto market for all 1915 was \$8.12 per cwt., and for handyweight butchers \$7.47. Prices were highest in July at \$9.10. These prices do not include fancy Christmas beef. All kinds of cattle have found ready sale. Coarse cattle have been cleaned up for army purposes. Breeders should not sell themselves short of cattle.

The Scarcity of Sheep.

There was a decrease in the numbers of sheep in Canada in 1915 of nearly 20,000 head. We predict nothing but good times for sheepmen. The demand for lambs never was so insistent in Canada as it was throughout 1915. The great record of \$10.50 to \$12.50 per hundredweight was recorded for lambs last June. Yearlings averaged \$8.65 per hundredweight for the year. Western Canada could not get mutton from Australia, so took it from Toronto. Canada has far too few sheep, and present indications do not point to a rapid increase in this stock. We were in a man's yard a short time ago and saw fifteen shearing ewes, which, without special effort or feeding, had been sold for \$20 each. Of course, they were

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.
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registered, but it only goes to show that there is demand and a good market for pure-bred stock as well as for sheep for the block. Wool is high and lamb and mutton are high. Canada has few sheep. Prices should be sufficiently high to make sheep breeding pay.

Stand by the Bacon Hog.

Pig breeding, like everything else, has its ups and downs. The year 1915 was an "up" year. The Toronto market had its best year in hogs, handling 500,000 head. Swine stock in Canada decreased by over 300,000 head. The West practically went out of hogs after the experience of the fall of 1914. The export of hog products increased by 80,000,000 pounds in 1915 over that of 1914, the bulk of exports being choice bacon. In October, the high record of \$10.50 per hundredweight for hogs fed and watered, was registered on Toronto market. Hog tops averaged \$8.83 per hundredweight, alive, for the entire year. Recent issues of this paper have explained the rapid decrease of hog raising in Denmark, the practical annihilation of the hog-breeding industry of Germany and the grave losses of hogs in the countries trampled over by armed hosts. Canada, if her hog breeders stick to the bacon hog of uniform, high-quality type, can capture and keep a market for the bacon hog in the Old Land which will be practically insatiable. Keep away from the lard-hog type. Our cousins to the south can produce thick-fat hogs more cheaply than it can be done in Canada. Canadian breeders, if they will stand by and improve the bacon hog until we have one type and one quality, and that high, can produce the best bacon in the world at the lowest cost. Now is the time to act.

There is Room for More Dairy Cows.

What of the dairy cow—the mortgage lifter on many farms—the source of milk and cream cheques, butter and cheese pay-slips, as well as the producer of the pig-raiser's most valuable by-product? What of her? There can be nothing but a bright future for the good dairy cow in Can-

ada. The poor producer should not be kept. Good, grade dairy cows sold in 1915 from \$100 to \$125 each on Toronto market, and \$75 to \$100 was a common price. Many of our readers remember when \$30 was a big price for a good dairy cow. That is only the price of a present-day canner.

Prof. Dean, in an article in our half-century issue, estimated the number of pure-bred dairy cows in Canada at 100,000. The census of 1911 gave the number as 51,000 for eight breeds. We have already given the total number of dairy cattle, grade and pure-bred, at slightly over two and one-half millions. The price of dairy products has been high and will surely continue to be profitable. Canada can feed and care for more dairy cattle. Cheese has been phenomenally high in price. Butter pays well. Whole milk and cream for city trade must meet a growing demand. Milk products of other classes consume much of the supply. Every good dairy calf should be saved, well cared for and placed in the breeding herd. The production of bacon depends, to no small degree, upon the dairy cow. May there be more of her and may her average output increase, as it will, with still better breeding and more careful management.

Produce Good Goods.

We have not prognosticated prices. No man can. All indications point to a bright future for the live-stock breeder, who bases his operations on good stock well cared for. Now is the time for the Canadian live-stock man to establish his goods in the markets of his own country and of the world. The marketing commission should not have much trouble in locating a market for all the live stock Canadian farmers can produce within the next few years. We must establish a market, and through good goods hold that market. The farmer must produce these good goods.

Simplify—Systematize— Co-operate.

An important duty of winter on the farm is to plan for the coming spring and summer. Under ordinary circumstances this deserves our careful attention, but doubly so in the season of 1916, because of conditions and uncertainties arising out of the war. A year ago many were cheerfully skeptical of Kitchener's three-year prediction, but their dreams have vanished. Germany and her brutal accomplices, like wolfish thieves, will not, until dragged off, relinquish their clutch upon their victims in Belgium, France, Serbia and Poland. The recent sinking of merchant boats in the Mediterranean with hundreds of innocent non-combatants discloses no change of spirit or method from the early outrages in Belgium, the yet unredressed Lusitania slaughter, or the murder of nurse Cavell. Humanely viewed, the grinding of the mills of the gods seems hardly yet begun, but the armies of the Allies, the weapons and munitions of justice, in magnitude and power undreamed of a year ago, are assembling for the final act in this terrific drama. With a battle area thousands of miles in extent, lands untilled, and millions of workers in the war service with its unparalleled waste, the call for food production of 1915 will be heard again this year, and perhaps intensified.

One has only to move about in close touch with young and old in almost any Canadian farm community, to realize how the deep spirit and import of the conflict has gripped them, and is drawing young men from all directions into the ranks. Slow to move at first, the countryside gathers powerful momentum when it does start, and it is backed by moral purposes which the rural church has been cultivating. These young men are now not to be held back, and this brings to view one of the problems of the new year. Our lands under-populated and undermanned before the war began have now a double onus laid upon them, and these winter nights, by the fire-side or at the Farmers' Club, is the time to think and plan how to save labor, eliminate waste, and sustain the production of 1916.

Difficulties, burdens and sympathies in common will draw the neighborhood people together as nothing else will. Already they are reverting

to the old-time way of working together, and this year will see more of it in the press of seeding, haying, harvesting, silo filling, and orcharding. It will do people good in more ways than simply getting extra work done at the proper time. It may be also, as in England and France, that more women will be seen assisting at outdoor labor, but this is not as yet urged. In many districts there might be an effort made in the direction of economy by re-establishing milk routes instead of so many individual patrons spending valuable time on the road hauling their own milk. In many directions the co-operative method can, with advantage, be put in motion.

By eliminating some needless fencing and lengthening fields, tillage and other cropping operations can be simplified and hastened. Horse-flesh will, relatively, be more plentiful than man power. Utilize it to the full. Counsel is hardly needed favoring the use of implements that will save manual labor and time, both in the field and stabling. This winter many are again installing effective engines and grinders that will save days and days of time on the road, with greater wear and tear, going miles often during bad weather to a chopping mill. Properly placed the power does the wood sawing and other laborious and time-consuming jobs.

The policy of seeding down to clovers and grass, steadily growing in favor, is likely to gain more disciples, for in a pinch it enables the farmer to resort to greater pasturage. The favorable outlook for dairying and stock feeding will sustain and perhaps increase the corn area, the possibilities of which, are not yet fully reached.

In the poultry yard some minor economies of time, effort and worry can be instituted by reducing the number of classes of stock kept from often four to one or two, and specializing on these. The outlook for choice eggs and table birds was probably never better, and more satisfactory returns with less labor on the part of the women of the home, on whom this branch often falls, will be secured by sticking to a couple of sorts and keeping them up to a high standard. Choose those which your conditions and preferences are likely to make most successful.

This winter, by means of cow testing and otherwise, there might be a systematic campaign in nearly every stable to discover and discard the low-producing cow and the ill-doing "critter." Get them ready for the butcher or the canner without delay, and let them go "to their own place," which is not on the farm in times like these when every hour and every pull of the muscle counts. Fewer cows, only the best kept, will lighten the day's work and increase net profit. What folly to toil and stuff good silage and mill feed into these hungry old dead beats? Always unprofitable, this year they become an intolerable burden and a deadly hindrance when every weight must be cast aside.

Lime and Soil Fertility.

No farmer can pass over the question of liming the land without giving it some consideration. The more we know of lime the more are we convinced of its value in soil culture. Without hesitation we say that, in this issue, Prof. R. Harcourt, of the Ontario Agricultural College, Guelph, gives our readers the best information on the various forms of lime and their uses in agriculture that it has been our privilege to read anywhere. Read the article. If you have poor success with clover your land may need lime. If crops are not up to the mark, liming may help you. It is well to test the soil anyway. The article tells how. It is advisable to know the right forms of lime to apply. A great deal depends upon the cost of transportation. See what Prof. Harcourt says about it. Time will be used more and more in Canadian agriculture. So will various forms of artificial fertilizers, which are to be discussed in a special article.

A subscriber asks whether or not we think it would be advisable to get up a "lock" in the morning to feed his fat cattle. We would answer: not unless he is prepared to do it regularly each morning. An hour or two later would do no harm, provided the feeds are not crowded too close together.

way of working together, and more of it in the press of seed-planting, silo filling, and orchard-planting, people good in more ways than extra work done at the proper time, also, as in England and elsewhere, women will be seen assisting in the field, but this is not as yet urged. There might be an effort made to save economy by re-establishing the use of so many individual patrons of time on the road hauling their goods in many directions the co-operative advantage, be put in motion. Some needless fencing and plowing, tillage and other cropping simplified and hastened. Horses, especially, be more plentiful than man to the full. Counsel is hardly the use of implements that will save time and time, both in the field and in the winter many are again using engines and grinders that will save days of time on the road, and tear, going miles often to a chopping mill. Properly used, they does the wood sawing and other time-consuming jobs.

ward some minor economies of labor can be instituted by re-organizing classes of stock kept in one or two, and specializing on one or two for choice eggs and table purposes, never better, and more satisfactory, less labor on the part of the farmer, on whom this branch of the business should be secured by sticking to a few lines, those which your conditions are most likely to make most successful.

means of cow testing and selection might be a systematic campaign to discover and discard the inferior and the ill-doing "critter." Let the butcher or the cannery let them go "to their own homes" on the farm in times like these, and every pull of the plow, only the best kept, and the best work and increase net profit to toil and stuff good silage for these hungry old dead beats? This year they become an annoyance and a deadly hindrance when they are cast aside.

Soil Fertility.

pass over the question of liming, giving it some consideration. We know of lime the more are its value in soil culture. With this in mind, in this issue, Prof. Ontario Agricultural College, offers the best information on lime and their uses in agriculture. It has been our privilege to read this article. If you have poor soil, your land may need lime. If you do not know, liming may help you to test the soil anyway. The best is advisable to know the soil before applying. A great deal of information is available. See what you can get about it. Time will be saved in Canadian agriculture. So many of artificial fertilizers, which are a special article.

whether or not we think it is to get up a block in this fat cattle. We would not be prepared to do it regularly. An hour or two later would be the feeds are not crowded

Nature's Diary.

A. B. Klugh, M.A.

In our consideration of the soil as a plant habitat, the next point which requires notice is the temperature of the soil. Upon this depends the functional activity of the roots, which activity increases as the temperature rises up to an optimum. A plant may wilt in a soil saturated with water if the temperature of the soil sinks below a certain degree, because in such circumstances the roots can absorb no water.

The temperature of the soil depends upon a good many factors, one of the most important being the angle of incidence of the sun's rays, that is, the angle at which these rays strike the earth's surface. The nearer this angle is to a right angle the greater their heating power. This angle depends upon latitude and slope. Another factor is the specific heat of the soil, by which we mean the amount of heat which is required to raise the temperature of the soil one degree centigrade as compared with the amount of heat required to raise the temperature of water one degree centigrade. Taking the specific heat of water as 1, we find that of quartz sand to be .2, and that of peat to be .5, with other soils ranging in between these two. This means that while peat is just twice as easy to heat as water, quartz sand is five times as easy to heat as water. The color of the soil is a factor, dark soil being more speedily heated than lighter soil. It has been found that dark basalt sand attained a temperature of 51 degrees centigrade, while white quartz sand, under exactly the same conditions, attained only 40 degrees. A very porous soil absorbs the sun's rays rapidly and becomes intensely heated at its surface, but not in its lower layers, because the air which it contains is a poor conductor of heat. The factor, however, which has the greatest influence on the temperature of the soil is the amount of water which it contains, because heat is consumed in the heating and evaporation of the water. As we have already seen, water has a far greater specific heat than any kind of soil, and consequently the more water there is in the soil the harder that soil is to heat.

Another factor which we have to consider is the depth of the soil. Depth of the soil affects the temperature, supply of water, amount of nutriment, growth of the roots, etc., and thus has a very great indirect influence.

So far in our discussion of the characteristics of soils we have dealt mainly with the elements of the soil which are derived from the disintegration of rock. There is another, and extremely important element, which is not derived from the decomposition of minerals but from the decomposition of plants and animals. This is known by the general name of humus. Most soils, and all soils which are agriculturally good, contain some humus; but there are some soils which contain such a large proportion as to cause them to be termed humus soils. Such soils are very important when we are dealing with wild plant life, and we shall consider the two main kinds—peat soil and raw humus.

Peat soil is formed very largely of the remains of the peat-moss, Sphagnum, in an only semi-decomposed state. Peat is laid down under water, and under water which is in contact with such quantities of organic matter that any oxygen it may have had has been used up, and little oxygenation and consequently little decay takes place. Under such conditions free acids are also liberated, and they keep out bacteria, which, if admitted, would aid in decomposition. Of all soils peat has the greatest water-capacity, so that it can take up much more than its own weight of water. It swells on the addition of water, but contracts on drying and becomes cracked, without, however, crumbling to pieces. When it is completely dry it becomes extremely loose, almost powdery. Its tenacity is low, only one-tenth that of clay. Its power of raising water exceeds that of all other soils. On account of its dark color peat soil is strongly heated by the sun, but is intensely cooled at night. Neither bacteria that produce nitrates, nor other bacteria, nor earthworms can thrive in peat because of its acid contents.

Raw humus is practically peat produced in the dry, a black or black-brown peat-like mass, which is built up of densely interwoven, incompletely decomposed plant-remains, consisting of roots, root-stocks, leaves, mosses, fungal threads, etc. Certain plants in particular give rise to raw humus, because they bear very thin, numerous, richly-branched roots, which lie at the surface of the soil and weave the plant-remains into a dense felt-work. Such species are the Spruce, and many members of the Heath family. As it forms so dense and tough a layer above the mineral soil, on the one hand, it excludes oxygen from the underlying layers, and on the other hand sucks up water as greedily as a sponge and holds it with great force. Consequently in raw humus, as in peat-soil, free acids are produced in abundance, and bacteria are practically absent.

There is one very important characteristic of humus soils which we shall have to bear careful-

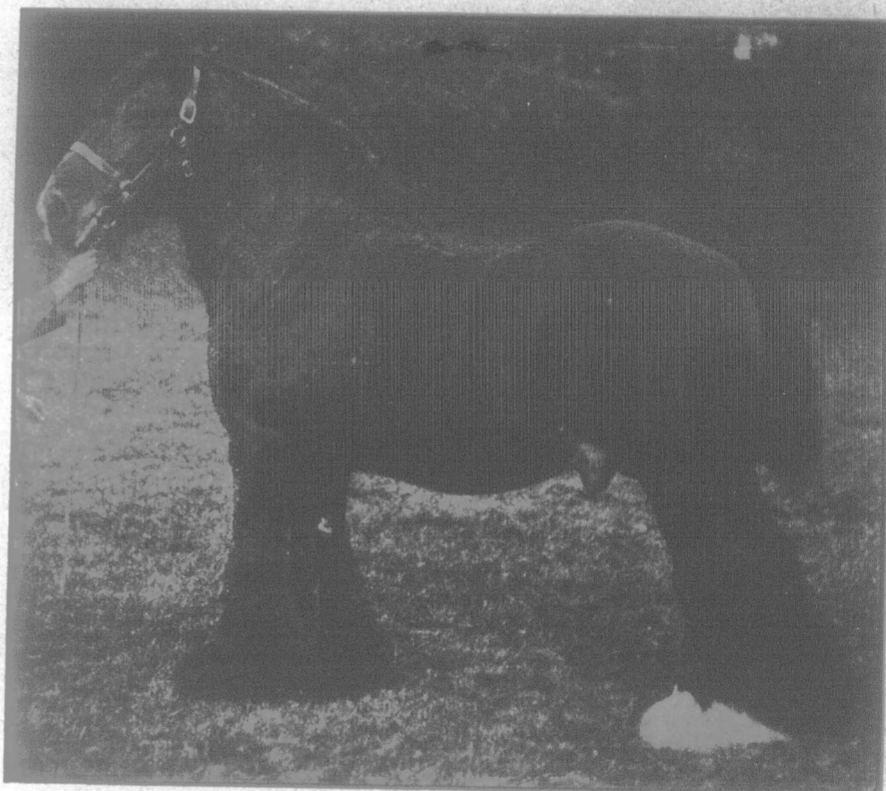
ly in mind when we consider plants which grow in peat-bogs, and that is that though these soils may have an abundance of water in them there is often little of it available to plants. This is partly due to the tenacity with which the water is held by the soil, and partly to the presence of the free acids which have already been referred to. It has been found that a plant in sandy soil wilts only when the water content is reduced to 1.5 per cent. of the weight of the soil, while a plant in peat wilts while the water content is still 48 per cent. of the weight of the soil. Such soils we call "physiologically dry," meaning that the water is there, but is not available for the physiological needs of the plants.

THE HORSE.

Are the Horseman's Interests Looked After?

Editor "The Farmer's Advocate":

In some of the recent issues of "The Farmer's Advocate" I noticed that the frank opinion of farmers and others is invited on our present horse-market conditions. To locate a horse market in Canada one would need a very powerful microscope. Horse-market conditions in this country are the result of the worst impositions ever placed upon the Canadian public. One would have thought, when the Dominion Government, or whoever was responsible for the present Canadian Commissions' appointment, saw the stand taken by them a year ago, that the hand of the Commission would have been forced or another appointment made. Great Britain and her Allies have been buying horses for their armies by thousands, almost constantly in the United



An English Shire Stallion.

States since the outbreak of this war, and with the exception of the fall of 1914 and a short time in the spring 1915, they have not been privileged to buy in Canada. But when the Imperial buyers were here sound horses of every type could be disposed of, and business assumed a hum that is not apparent to-day; and, during the times mentioned, the buyers for the Canadian Commission were not over-taxed nor did they run any danger of being trampled on by horses. If Canadians had been privileged to unload their surplus horses, which had accumulated through crop failures in the West, at the prices the Imperial buyers had to pay for them in the United States, it would have left some room for the younger horses coming up, and would have been some encouragement for farmers to try to produce more that will, in all likelihood be wanted in the next four or five years. But, instead, that market which belonged to Canada and other British colonies was literally thrown or bartered away—and the only ones benefited by so doing were the Canadian grafters and the American horse owners. If a deal like this had been imposed upon Canadians by the Americans or any other neutrals, they would have been sent to St. Helena or some other summer resort long ago. If the appearance of the French horse buyers last fall had been half as well advertised as the sale of the rejected American horses, held in Toronto last fall, which, I understand, sold for from \$5 to \$40 each, the armies of France would have had the opportunity of seeing the best lot of horses that ever stood on French soil.

I am also rather surprised that our Ontario

Government, which, two or three years ago professed to be so deeply interested in the welfare of Ontario horsemen, should have permitted the dumping in Toronto of so many undesirable horses brought from the United States without the duty being paid. It appears strange to me, when so many Canadian soldiers are required, and the Canadian people will have their share of the burdens of the war to meet later, besides all the public has already donated to Red Cross, relief of the Belgians, machine guns, and other causes, also the war tax already levied on Canadian people, that the only market for the Canadian horse was literally handed out of their reach. Was this done to help recruiting in Canada?

Middlesex Co., Ont. ARTHUR F. O'NEILL.

LIVE STOCK.

The Slaughter of Calves.

In connection with Canada's live-stock industry there are some startling figures concerning the slaughter of calves. These figures apply chiefly to Ontario, or those parts that supply Toronto and Buffalo with meat animals. We must admit that the dairyman is probably working in his own interests when he sells dairy-bred calves as veal. He finds that milk or butter are most profitable when marketed as such commodities rather than in the form of pigs or cattle, which must consume a portion of the product of the milking herd, if a healthy and thrifty growth is to be made while young. Fodder and grain also will probably bring best returns when fed to milking cows, so the dairyman allows the male calves to go to the shambles, and continues to sell milk or milk products. This practice cannot be condemned, or at least we do not care to

do so if the dairyman is satisfied with his methods of conducting his own business. There are a few who vociferously denounce some farmers for allowing the calves to go to the block at such an early age, but up to the present time we have not heard of any one, in an effort to correct the evil, buying up a number of the calves bred in the dairy stables and rearing and feeding them for beef. We do not wish to convey the impression that all dairy-bred cattle are useless for feeding purposes. They are not. While in a stable, recently, where two car loads of steers were being fattened, we saw an animal that was part Holstein standing beside Shorthorn, Hereford and Angus cattle, and the feeder was well pleased with the gains being made by the Holstein grade. There is considerable prejudice entertained against this type of cattle, and it is

strong enough at the present time to send thousands of them to the block while very, very young. In fact, 10,266 calves went from Ontario to the Buffalo market in 1915, and, according to one report, 50,000 found their way to the stock yards at Toronto. According to these figures over 60,000 calves were marketed at Toronto and Buffalo in 1915 from the area in Canada that feeds those two markets. We cannot conceive of any circumstances that would render these figures consistent with good live-stock husbandry at the present time with such a bright future in view for beef.

In some sections in Ontario more calves are being reared than has previously been the case, and it would appear that many have gone into consumption as veal that should have been reared to 18 or 24 months of age and then sold. If these 60,000 calves sold from Ontario farms in 1915 were of very inferior quality perhaps the disposal of them was justifiable, but out of such a number there must have been many that would have made profitable feeders. From Canada and the United States together there were 15,000 more calves marketed at Buffalo in 1915 than in 1914, yet in the country to the south there are persistent rumors of a meat shortage. The calf question must be solved in one of two ways; either more calves must be kept and reared or beef-producing breeds will receive a great impetus in the increasing demand for more meat. The result may be that steer feeding will rise in popularity until the demand is more adequately supplied, but from indications throughout the country it would appear that too many calves have

been sold as such, and more in future will be reared.

There is a chance in this connection to test the advantages of baby-beef production. If the steer calves can be disposed of at from 12 to 15 months of age they will not affect the size of the herd materially, except as regards feed grown on the place. Stabling accommodation

can be provided for the herd when the calves are disposed of at this age. No doubt exists but that an unwanted slaughter of calves has occurred, and prospects at the present time would indicate that some means will be taken to conserve more cattle and build up the live-stock business to figures that appear more consistent with universal demands.

when the steer was ready to be taken to the Fair, it tipped the scales at 1,180 lbs. During transportation and at the Fair the steer lost 60 lbs. in weight.

Counting the animal at 1,180 lbs. it gained almost 2½ lbs. daily, but taking his Guelph weight, which is more fair to others in the class, his gain was 2½ lbs. daily, not considering his weight when born. The increase of 100 lbs. between the eleventh and twelfth months, and the increase of 105 lbs. between the thirteenth and fourteenth months are exceptionally good, and emphasize the rapid gains that can be made by cattle at this age.

Figure 3 is an illustration of the calf standing eighth in the class. It was fed by A. Scott Turnbull, of Waterloo County. This animal's menu card would compare favorably, as regards variety, with cards seen at a first-rate hotel. During the months nearing the finishing period it consumed milk, hay, turnips, green corn, grass and 6 kinds of meal. Skim-milk was calculated at 20 cents per cwt., turnips at 8 cents per bushel, and meal at market prices. The calf was born September 25, 1914, and grass and milk made up its allowance until November, when a

Boys and Baby Beef.

The inter-county baby-beef competition, which constituted a class at the recent Guelph Winter Fair and was supervised by the Ontario Department of Agriculture, should offer two suggestions to farmers; one regarding boys, and the other concerning baby beef. Both are important, and so far as the competition was concerned, we venture to record that baby beef was not the prime object of the class. A move to interest the youths of Ontario in live stock and live-stock feeding was initiated. The results convey con-

finished was reputed by stockmen to be a very good individual.

The steer standing second in the class is illustrated in Figure 2. This animal was fed by John Hossfeld, of Bruce County. It was calved on September 23, 1914, and was kept in a box stall for the first month, but not tied. It was pail-fed on new milk for a short period, and then turned with a cow that had nursed a calf for nine months. About that time it was started on a handful of rolled oats, the same amount of bran, a small quantity of oil cake, a small quantity of molassine meal, along with two handfuls of roots and all the alfalfa it would consume. This was the ration twice a day, and at noon it was fed the same except that oil cake and molassine meal were replaced by pure, ground flaxseed. This quantity of meal was increased gradually, and so long as the animal would clean it up nicely. By the first of April it was getting twice a day about two quarts of rolled oats, a quart of bran, a handful of oil cake, a handful of molassine meal, a shovelful of roots, and all the alfalfa it would eat. The mid-day ration was the same as previously described for the noon feed, only increased in the same proportion. In April the milk of the nurse cow was augmented with skim-milk from a pail. About the first of July the nurse cow went dry, and the calf was turned with a cow more fresh in milk. Roots were also withheld and the calf was allowed to run out on alfalfa pasture at night, but was



Fig. 1—A First-prize Steer.

This animal won first prize in the Baby-beef Competition at Guelph, as well as other honorable positions.

considerable information about baby beef, and at the same time contain facts and figures that will be interesting to old and young alike.

A young lad will take considerable interest in live stock on the farm if any particular animal under his supervision is his own, or will eventually be disposed of in his interests. If there is something in it for the boy, money, reputation or personal aggrandizement of any kind that boy will not require encouragement; it will probably be necessary to restrain him lest his enthusiasm mount too high. Every human being is striving for something in the future, or at least expecting it, whether he strives or not, so when a youth with ultimate gain in view evinces greater interest in something that will be of personal advantage to himself alone, he is not so different from other human beings after all; a boy of this type is, no doubt, considerably like his father. The idea of arousing interest in farm life amongst rural boys by giving them stock to rear has, in most cases, been abortive simply because it was "Johnny's calf and Pa's cow." Farmers should take their children into partnership with them, and make them feel they are really members of the firm by allowing them to earn and retain, as their own, some portion of the receipts.

The connection between boys and baby beef, if readers will allow the reference, is simply this: A calf from fairly-well-bred stock can be fed and finished into baby beef in from 12 to 15 months. The youth in that time can exercise his skill and ability in live-stock husbandry, and he can also put into practice the advice of his parent. At the end of twelve months it will be possible to realize on the feed, care, labor and youthful enthusiasm that went to make the animal a finished product, ready for the market. Quick turnovers are most pleasing to young lads. They like to realize quickly on their projects. In this regard, producing baby beef is an appropriate enterprise, and it teaches the technique and art of feeding as well. There are some lessons to be learned from the feeding operations that produced the winners in the recent competition. The cost of production, their ages, weights, etc., are interesting. The illustrations used are from photographs taken by J. S. Knapp, District Representative for Waterloo County.

The winning steer illustrated in Figure 1, and fed by Wm. Guthrie, of Waterloo County, was a well-bred Shorthorn. At a few days over thirteen months of age it weighed 1,100 pounds, and sold for 15 cents per pound, after being shown at Guelph. This does not, of course, represent the exact value of the ordinary baby beef that will be put on to the market. The staff at Guelph was exceptionally good and commanded enhanced prices. Between 2½ and 2¾ lbs. of gain daily from time of birth, not considering weight when born, was made by this steer, which when

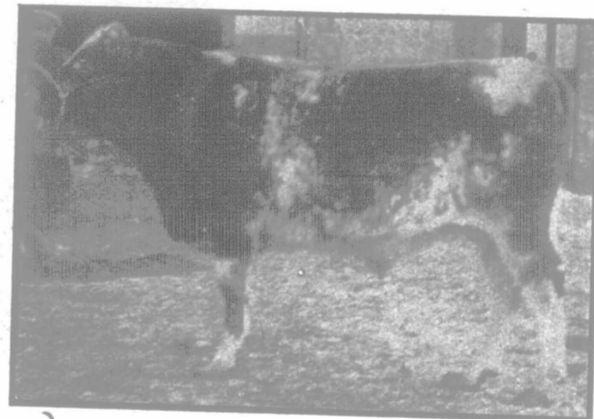


Fig. 2—A Well-bred Fellow.

This illustrates the calf winning second place in the Baby-beef Competition.

kept in during the day. While on grass it would only consume about one-third of the quantity of feed taken when it was in the stall. By the first of October the calf was kept in the stall continuously and fed about three quarts of rolled oats, one quart of bran, two handfuls of oil cake, one of molassine meal, and 9 lbs of turnips, together with all the red and alsike clover that it would clean up. This was the feed twice a day. At noon a similar quantity was fed, with



Fig. 4—Three Young Feeders and Their Steers.

the exception that oil cake, molassine meal and bran were replaced by ground flaxseed. This was the ration until the latter part of October, when about three-quarters of a quart of equal parts of ground oats, wheat, and peas was added three times a day. At 6 months of age the calf weighed 505 lbs., at 7 months it weighed 602 lbs., at 8 months 700 lbs., at 9 months 760 lbs., at 10 months 807 lbs., at 11 months 880 lbs., at 12 months 980 lbs., at 13 months 1,050 lbs., at 14 months 1,155 lbs., and eight days later,

arrived at concerning the amounts. The white-faced steer in the centre of figure 4 was fourth in the class, and in 438 days of its life-time consumed 6,205 lbs. milk, 1,568 lbs. chop, 110 lbs. bran, 190 lbs. oil cake, and 110 lbs. black-strap, (a crude form of molasses). The weight of this steer after being shown was 1,010 lbs., showing an average daily gain, not counting weight at time of birth, of almost 2.1-3 lbs. The steer standing to the left of the illustration was Aberdeen-Angus bred.

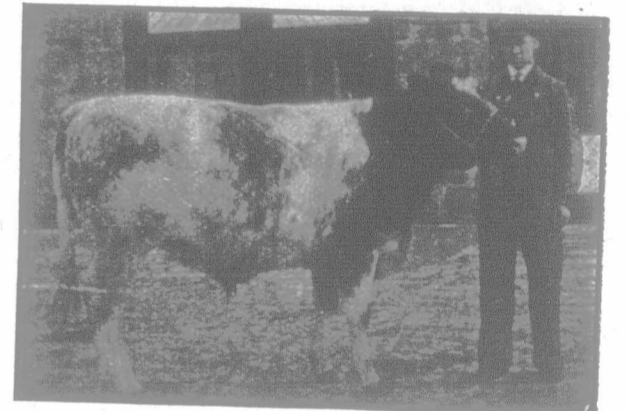


Fig. 3—Another Baby Beef.

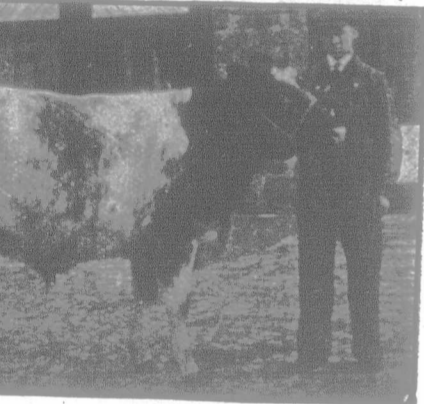
meal ration, consisting of linseed meal, bran and shorts, was given. Corn meal was added to this mixture in February when the calf was between four and five months old, and at this age it was consuming about one gallon of meal each day. During the early spring months the calf ran on grass, but in June it was kept inside and allowed to run out at night. In the spring and until green corn was ready to feed, one-half bushel of silage was fed each day. It cost \$51.90 to rear the calf, according to this treatment and for a period of 441 days. A brother, Leslie W. Turnbull, fed the calf which won third place in the competition, and it, under treatment similar in detail to that received by the animal just described, cost \$50.15. Together the two calves weighed 1,860 lbs. when shown at Guelph. They sold at ten and one-tenth cents per lb., or \$187.86. The average age of each calf was 436 days, showing a daily gain of slightly over 2 pounds each from time of birth, not considering their respective weights when born.

In figure 4 may be seen the illustration of three boys and their three steers. The young lads are brothers, and sons of Allan Fried, of Oxford County. Hanging on the wall in their home are a great number of ribbons, a large majority of which are red, that have been won by their father in the show-ring with animals of his own feeding and fitting. These trophies have probably enthused the boys to try their skill at the

show game, and the competition between the young fellows at home was almost as interesting to them as was the final meet at Guelph. The three steers received very much the same treatment as regards feed. They were allowed to run with cows until a fortnight before being shown. The chop which they were given was made up of one-third corn and two-thirds oats. The milk from the cows was weighed once per month so a fair estimate could be

er was ready to be taken to the scales at 1,180 lbs. During the Fair the steer lost 60 lbs. The animal at 1,180 lbs. it gained 2 lbs. daily, but taking his Guelph is more fair to others in the class, 2 1/2 lbs. daily, not considering his birth. The increase of 100 lbs. between the twelfth and thirteenth months, and the 105 lbs. between the thirteenth and fourteenth months are exceptionally good, and show rapid gains that can be made by age.

is an illustration of the calf standing in the class. It was fed by A. Scott of Waterloo County. This animal's record compares favorably, as regards gains, with a first-rate noted calf seen at a first-rate hotel. The calf was finished in 10 months, during the finishing period it received hay, turnips, green corn, grass and meal. Skim-milk was calculated at 10 cents per cwt., turnips at 8 cents per cwt. at market prices. The calf was born on 25, 1914, and grass and milk allowance until November, when a



3—Another Baby Beef.

consisting of linseed meal, bran and corn meal was added to this ration. The calf was between 10 and 12 months old, and at this age it was given one gallon of meal each day. In the spring months the calf ran on hay and was kept inside and allowed to graze at night. In the spring and until the calf was ready to feed, one-half bushel of meal was given each day. It cost \$51.90 to rear the calf to this treatment and for a year. A brother, Leslie W. Turner, of which won third place in the class, under treatment similar to that received by the animal just described. Together the two calves won 100 lbs. when shown at Guelph. They received one and one-tenth cents per lb., or an average age of each calf was 436 days, and a daily gain of slightly over 2 pounds per day, not considering their weight when born.

As can be seen the illustration of the calf standing in the class. The young lads of the sons of Allan Fried, of Oxford County, Ontario, a large majority of which have been won by their own raising with animals of his own raising. These trophies have proved to the boys to try their skill at the show game, and the competition between the young fellows at home was almost as interesting to them as was the final meet at Guelph. The three steers received very much the same treatment as regards feed. They were allowed to run with cows until a fortnight before being shown. The chop which they were given was made up of one-third corn and two-thirds oats. The milk from the cows was weighed once per month so a fair estimate could be made of the amounts.

The calf in the centre of figure in the class, and in its life-time consumed 6,205 lbs. chop, 110 lbs. bran, 190 lbs. black-strap, (a crude form of molasses), and a total weight of this steer after being finished at 1,180 lbs., showing an average daily gain of 2 1/2 lbs. The steer standing to the left was Aberdeen-Angus bred.

It consumed 5,600 lbs. milk, 1,728 lbs. chop, 106 lbs. bran, 247 lbs. oil cake, and 145 lbs. black-strap. This animal tipped the scales at 950 lbs., making an average daily gain of slightly over 2 lbs. per day. The steer on the right in the same illustration received 5,276 lbs. milk, 1,591 lbs. chop, 184 lbs. oil cake, 112 lbs. bran, and 102 lbs. black-strap.

It might be interesting, in this connection, to compare with these weights the gains made by the champion animals shown at the great Smithfield Show, in London, England. Feeders who fit entries for that event probably cannot be excelled on either side of the ocean, yet the animals brought out varied in age between two and three years, and did not, for their entire feeding period, show as favorable a daily gain as do the animals mentioned previously in this article. Windsor Gem, the supreme champion of the recent Smithfield Show weighed 1,794 lbs. at 945 days of age, or a daily gain of 1.8 lbs. Stamp, an Angus grade that stood reserve, weighed 2,014 lbs. when 1,002 days old, which means approximately 2 lbs. gain each day. The champion Galloway and second reserve fat animal of the Show at the end of 910 days weighed 1,639 lbs., making an average daily gain of 1.8 lbs. The Hereford champion was 917 days old and weighed 1,856 lbs., or very nearly 2 lbs. for each day of its life. The Sussex champion was only 671 days old and weighed 1,704 lbs., which means an average daily gain of approximately 2 1/2 lbs. These figures are sufficient to show that Laby beeves make very rapid gains, for the animals described early in this article show greater increases on the average than do London winners, which are older, even when brought out by some of the best feeders and fitters in the British Empire. There is an opportunity for much study and many tests in connection with beef production in Canada. The young men have a chance here to show what may be done.

Feeding Silage.

The increasing number of silos in the country, shows that their value as storage of cheap, succulent feed for use, either winter or summer, is being recognized by more farmers each year. The expression is frequently heard, "I do not know how I got along without the silo." But, after years of feeding silage, men have different ideas as to how it should be fed. Some claim the best results from feeding clear silage, while others are strong in their belief that cut straw or hay should be mixed with it in order to obtain maximum returns. The cattle appear to eat the silage as well one way as the other. Mixing straw with silage may not increase the feeding value of the silage, but it makes the straw more palatable, and it is more readily eaten by the stock than if fed alone. By mixing silage and cut straw in equal proportions, according to bulk, more feeding value is secured from the straw, and it is a question if the silage is not better for the stock. At any rate, by mixing the cut straw and silage the silage goes farther than if fed alone. If a few feet is left in the silo after the stock are turned to grass it is no loss, as the cattle will eat it readily during the summer months when the pasture is short and dry.

FARM.

Stock-taking on the Farm.

Go into any store or business place during January or February and it will be noticed that the proprietor and clerks are busy taking an inventory of the stock on hand, in order that the exact profits for the year may be ascertained. If it is necessary for the business man, why is it not a good thing for the farmer? Farming is a more complicated business than that of the merchant, and should be managed in a business-like way. But, sad to relate, few farmers keep as complete a set of books as they should. If it is thought to be too much trouble to keep a separate account for each department of the farm work, at least a book showing receipts and expenditures should be kept.

Then, on the same date each year, an inventory of the farm, stock, implements, etc., should be taken in order to arrive at the exact profit or loss, over the previous year. Farm land may have increased in value; there may have been an increase in live stock; new implements may have been purchased; the implements and farm may have depreciated in value; or the price of a certain class of live stock may have lowered during the year. This is particularly noticeable this year, with no market for horses, but a good market for cattle and hogs. The cash value counts for more than numbers. The farmer who has not made a practice of valuing his farm and equipment according to the existing market each year, would make no mistake in starting this year, and continuing. By



At Pasture—The Way the Brood Sows are Kept in England.

so doing it will give an idea of the standing of the farm business from year to year. The beginning of the New Year is a good time to balance up books, but it may be done at any season so long as the same date is used in succeeding years. After the spring seeding is completed is the time some farmers make an inventory of their place. At that time the rough feed and grain is pretty much all fed, thus making it easier to estimate the value of feed on hand.

Make a study of the markets, and value everything at actual market prices. There is nothing to be gained by under-valuing or over-valuing. An inventory is to show in figures what the business is worth according to the market. Farming is the biggest business in the country, and should be handled in the most business-like way by each of its many managers.

Should Imperfect Humans Die?

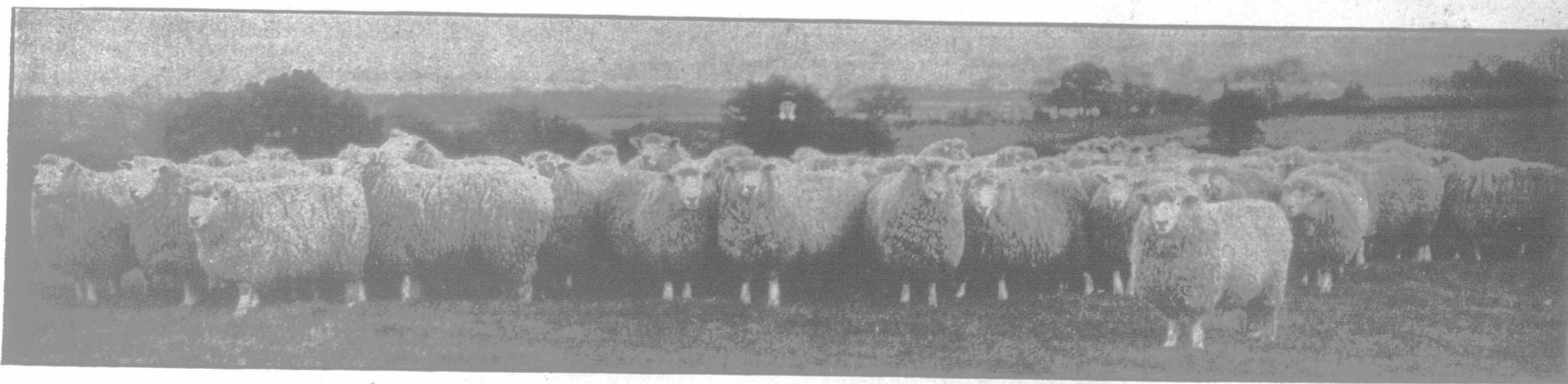
Editor "The Farmer's Advocate":
The other night as I was sittin' by the fire readin' the paper tae the auld wumman an' listenin' tae her comments on the Kaiser, or onything else that happened tae roose her interest, I cam' across an' account o' that wee baby that ye na doot hae been readin' about, as I see it has been noticed by a' the papers in the country since. Onyway it's that one that the doctor permitted tae dee, because it was no' juist what ye nicht ca' a perfect specimn o' humanity. It seems that an operation had hae saved the wee bairn's life, but the doctor wouldna' perform it because he thought the child wouldna' likely grow up tae be ony guid onyway.
"Weel Jean," says I, "what dae ye think o' that? Ye hae been expressin' yer opinion about the soldiers an' the politicians, noo let us hear what ye think about oor up-to-date doctors."
"Weel," says Jean, "was the bairn a'richt in its mind, does it say?"
"They dinna' seem tae be very sure about that," I replied, "but it wisna' likely tae grow up tae be o' muckle guid tae itself or onyone else, ye ken. It was deformed an' crippled, an' a' that an' wad only drag oot a miserable existence as a burden tae its friends, an' a sort o' general nuisance."
"Sae far as that goes," sayt Jean, "it's no for the fun o' the thing that maist o' us are goin' through life. Because a mon is in misery

o' ony kind is no guid reason why he should commit suicide. Frae what I hae seen, those wha hae the hardest time vera aften mak' the best people in the end. Where are ye gaein' tae stap once ye begin that sort o' thing?"
"Weel," says I, "ye ken that when onything happen ony o' oor domestic animals, such as their gettin' a leg broken, or when they get some incurable disease, we dinna' think twice about it, but we juist get rid o' them in some way or fither, tae pit them oot o' their misery as we say. Why would ye no' do as muckle for puir humanity?"

"Because humanity has an intellect that can be developed," says Jean, "an' brocht tae the point where it will help the individual tae overcome his physical handicaps sae that he may win oot in the race o' life an' be juist as guid a mon, or maybe better, than he wad otherwise hae been. Tak' some o' the great men that hae lived in the past," she went on. "Look at Shakespeare for example. He was sic' a miserable baby that they had no hope o' his growin' up an' they didna' seem tae care muckle whether he died or not. They pit him in the care o' an auld hag o' a nurse that tried tae kill him they say, but he pulled through some way, an' gin there's onything better in literature than some o' Shakespeare's plays, I dinna' ken about it. An' he wisna' the only one in the same line that got off tae a bad start. The poet Byron was sic' lame that he had tae tak' twa steps wi' ane leg for ilka step he took wi' the fither. An' Sir Walter Scott wis but little better. Then look at Milton and Cowper. One wis blind an' the ither was crazy part o' the time, but they baith did guid wark that the world wad be poorer wi'oot. An' tak' anither case that we hear about at the present time. Gin onybody ever had a poor chance tae amount tae onything, ye wad say it was Helen Keller. She wis blind an' deaf an' dumb frae the time she wis a few months auld, but she hae developed intae ane o' the brightest an' brainiest women in America. Gin they were killin' a' the imperfect specimns o' humanity at the time she wis born, Helen Keller wad hae gone wi' the rest, no' mistak' about that. An' then, gin ye let one bairn dee for what ye think is a guid reason, what is tae hinder ony ither parents frae daein' the same, though their reason for their action may no' seem reasonable tae onyone but themselves. An' it wouldna' be likely tae stap wi' the bairns. As soon as a mon or wumman got over auld tae wark there wad be someone tae propose knockin' them in the head tae end their misery, an' tae mak' room for ither that were able tae pay for their board. The upshot o' the hale thing wad be that human life wad soon be wi'oot value, except frae the material or money point of view, an' gin that's a' that man is in the world for he might juist as weel dee an' be done wi' it, a' thegither."

Noo, I dinna want ye tae think," says Jean, "that I dinna value a guid, healthy body. It's next in importance tae a healthy mind, an' where the twa go together ye hae what Nature intended. But if, through the mistak' o' Nature, or for some ither reason, ye haena' got the healthy body, it's no reason that ye should go an' destroy the mind."
"Dae ye think it's possible tae dae that Jean," says I. "Weel, I dinna' ken that is, Sandy," she replied, "but it juist gae tae prove that we haena' ony idea o' what we are daein' when we interfere wi' the laws that govern oor world. Ten chances tae one we'll mak' bad worse instead of improvin' things. It's a'richt tae tak' ony steps that we can toward the physical welfare o' posterity, but once the individual gets here, I'm thinkin' he has a richt tae stay, an' it's up tae us tae mak' the best o' him."

SANDY FRASER.



Forty-four Yearling Romney Rams, Bred by A. J. Hickman, Kent, England, and Exported to South America.

The Value of Lime in Agriculture.

By Prof. R. Harcourt.

The natural chemical changes that take place in a cultivated soil tend to bring its insoluble plant food constituents into a soluble form. These changes are essential to render the food available to the plant. But, among these food constituents, lime, at least, is rendered soluble faster than is necessary for food purposes. Naturally, unless it is again taken up in an insoluble form, it must gradually be carried downward with the water that sinks into the soil. For this reason the water of wells, of many springs, and of our rivers is hard or limey. For the same reason a subsoil contains more lime than a surface soil, and the latter may become so leached that it does not contain lime to neutralize the acids formed in the decay of the organic matter when the soil becomes acid or "sour." It is well to remember that the richer the soil is in decaying vegetable matter and the more thorough the cultivation, the faster the lime will be rendered soluble and leached away. For the same reason, the longer the land has been under cultivation the more likely it is to need lime. Thus it is many years since some of the lands of England and Scotland needed lime. The same is true of much of the land in the States to the south of us, and now our, comparatively speaking, newer lands are reaching the same condition.

MANY SOILS REQUIRE LIME.

During the past season's work, on the soil survey, we have had abundance of evidence that these changes have progressed far enough to render the application of lime a necessity in many districts. In the course of the summer's work thousands of borings were made in the soils of the counties studied. In most cases the surface soils were acid to litmus paper, and there was not enough carbonate of lime present to cause any apparent effervescence until a depth of 20 to 24 inches was reached. In some cases there was none even at 40 inches. The only surface soil calcareous enough to give an effervescence was found in Lampton County, and that was of comparatively small area. On such a soil it would naturally be useless to apply lime. In some other places, as in the neighborhood of Guelph, the soil is not yet in need of lime, but the supply is working downward, while in other districts there is great immediate need. All these data we hope to have clearly mapped when we get farther on with the work of our soil survey.

Some soils, by reason of their origin, are well supplied with lime. These are almost invariably strong, productive soils, and stock fed on their crops are thrifty, with plenty of bone. On the other hand, clays, silts and mucks are usually poor in lime from the outset, and these, under cultivation, become poorer and poorer in this constituent. If the soils are wet, low-lying and ill-drained they are especially apt to become sour, probably due to the fact that there is little chance for the acid materials to drain away. Light, sandy soils, because of their free, open nature and consequent rapid oxidation of organic matter, are usually slightly acid. On all these soils lime is needed, as many of our farm crops cannot make their best growth in an acid soil. In the case of legumes, an abundance of lime is essential. In fact, it is quite probable that the frequent failure of clover to come through the first winter is due to lack of lime in the soil.

TESTS FOR ACIDITY

Many methods have been derived for determining the amount of acid in a soil, but none of these are suitable for field use. In most cases it is sufficient to ascertain the fact that the soil is acid. For this purpose a fairly satisfactory test can be made with blue litmus paper, which can be purchased at almost any drug store. It is sold in sheets or in little "books" which contain about twenty-five or fifty strips of the paper, about one-half inch wide and two or three inches long. This is the most convenient form in which to have the test paper. If the sheets are purchased, they may be cut into strips the size of those in the books and placed in a clean, dry, wide-mouthed, well-corked bottle to keep them from acid fumes. When this paper comes in contact with an acid it turns red.

A very simple method and a very satisfactory one, in our experience of applying the test, is to make a ball of damp soil, break it open and lay the paper on the broken surface, then squeeze the parts together again and allow to stand from three to five minutes. On opening the ball, if the paper has turned red, we may conclude that the soil is sour and in need of lime. It is apparent that the hands must be free from acid, and the soil damp enough to press into shape. Unless the soil is very dry, we have usually found that by getting a sample three or four inches below the surface there was enough moisture to answer the purpose. In bulletin No. 80, Dominion Experiment Farms, Ottawa, Dr. Shutt describes two methods which are not difficult to carry out, and may give more reliable results, especially where the soil is dry. These are as follows:

1. "Take up, by means of a spade or trowel, a little of the surface soil from say, half a dozen places on the area to be examined and mix well, using the trowel or a clean piece of board. Do not handle the soil. Take a small quantity (a few ounces) of the mixed soil, and, putting it in a clean cup or tumbler, pour on a little boiled water and stir with a clean piece of stick or spoon until the mass is of the consistency of a very thick paste. Into this "mud" press a piece of blue litmus paper by means of a small stick or the back of the knife, inserting the paper until one-half to two-thirds of its length is within the pasty mass. At the end of fifteen minutes, carefully draw out the paper and note if the part that has been in contact with the soil has turned red. If so, the soil is acid."

2. "Place a strip of blue litmus paper in the bottom of a clean, dry glass tumbler (preferably flat-bottomed) and over it place a round "filter paper" (purchasable at a druggist's) or, if such is not readily obtainable, a piece of clean, white blotting paper cut to fit the bottom of the tumbler. On this put a few ounces of the soil to be tested, collected and mixed as already described, and pour on sufficient boiled water to moisten or wet the soil thoroughly throughout its mass, but no more, and set aside for half an hour or longer. To examine the litmus paper, the tumbler is inverted; viewed through the bottom of the glass, its color will be well brought out against the white filter paper. As a check and to ensure that any change in color may not be due to acidity of the water or filter paper used, a blank test should be made in the same manner, but using no soil."

LIME INFLUENCES SOIL TEXTURE.

But the addition of lime does a great deal more than simply neutralize the acid of a soil. It influences the tilth or texture of a soil. This is most marked and most beneficial in the case of clays and clay loams, rendering them less tenacious when wet and more friable and mellow when dry. This it does by causing the fine particles of the clay to gather into larger units, and makes the soil act more like one made up of larger particles. This flocculation can be readily shown by carrying out the following experiment: Take two glass cylinders or jars and place in each about a tablespoonful of clay soil and nearly fill with soft water. To one cylinder or jar add about a teaspoonful of slaked lime, then thoroughly mix the contents of each jar by shaking and turning upside down and shaking. Allow to stand and settle. Note the difference in the size of the particles, and the rate of settling. The flocculation does away with the stiff, waxy, impervious nature common in clays deficient in lime and renders them drier, warmer, better aerated, with a larger content of moisture available for plant growth. It also brings about a more favorable condition for root development; improves drainage, and permits the farmer to cultivate his clay soil earlier in the spring with all the advantages that naturally follow.

The action of lime on sandy soils is somewhat similar to that on clay, that is, it binds or cements the sand particles together; but the effect on the soil is different. It renders the soil closer in texture and thus, being less open and porous, it does not dry out so readily in seasons of drought.

LIME CAUSES BENEFICIAL CHEMICAL REACTIONS.

In addition to neutralizing the acid of soils and improving their physical condition, lime is also credited with causing certain chemical reactions in the soil, whereby the inert potash and phosphoric acid are brought into an available form. In fact, the carbonate of lime appears to be the mainspring of many beneficial reactions occurring in the soil. Most of our soils contain immense quantities of potash in an insoluble form. Through the action of lime compounds these insoluble potash compounds are broken up, the lime taking the place of the potash which is liberated in a form that plants can assimilate. In this way lime compounds may act as an indirect potassic fertilizer, which gives lime a double value at the present time when potash materials are so scarce and expensive. This effect is naturally most noticeable on clays, and more crops which have the greatest difficulty in securing their supply of potash from the soil.

Phosphoric acid is largely held in the soil in combination with iron and aluminum in compounds that are very slowly rendered soluble. The lime reacts with these with the formation of phosphate of lime, which is more readily rendered available to the plants. Thus, while lime does not directly supply either potash or phosphoric acid, it does help to bring that which is in the soil into an available form. Furthermore, it is generally considered that soils destitute of lime

have little power of retaining plant food constituents when applied to the soil as fertilizers in the form of salts of strong acid.

LIME AIDS BACTERIAL ACTION.

Thus far we have credited lime with neutralizing the acids of soils, improving the physical condition and liberating mineral plant food from insoluble forms of combination. But it has still other uses in the soil. A soil worthy of the name must contain a supply of decaying organic matter—humus or humus-forming material—which is the source and the storehouse of nitrogen, which is the most important and the most costly element of plant food. In this form, however, the nitrogen is not available as a plant nutrient, the material must undergo further changes with the formation of nitrates. The process by which this is brought about is known as nitrification, and is the life work of certain vegetable nitro-organisms or bacteria within the soil. As these nitrifying organisms flourish only in a neutral, or rather a slightly alkaline soil, it is essential that some such substance as lime be present to neutralize the acids that are formed in the decay of the organic matter. The nitrate of lime thus formed is the principal, direct source of nitrogen to the plant.

Then, there is another class of bacteria whose function is to fix atmospheric nitrogen within the soil. This is one of the micro-organisms which Professor Bottomley claims performs such an important function in his HUMOGEN which has recently come into prominence. These organisms known as Azotobacter, are, so far as we know, present in all fertile soils. They have apparently a very important function to perform in adding to the soil's store of nitrogen, a function they cannot perform in an acid medium. Hence, again we have a reason for the use of lime.

A third class of bacteria important in agriculture is the nitrogen-gathering bacteria associated with the legumes. The value of this agent in increasing the productiveness of soils is now well recognized; but it, like the other classes of bacteria mentioned, cannot perform its important function in an acid soil. This is doubtless one of the reasons why an application of lime so beneficially influences the growth of legumes.

Taking into consideration, then, all the important functions which lime has to perform in the soil, and the fact that our soils are steadily losing their lime, it is evident why the application of this material is so important. Fortunately, we have abundance of the lime in our own country and it is not a costly material.

DIFFERENT FORMS OF LIME.

In the above discussion, we have used the term "lime" without designating any particular form. It now remains for us to deal with the various forms of this material on the market.

Lime, (meaning the fresh lime, or quick lime), air-slaked lime, hydrated lime, and ground limestone are the common forms of lime offered for sale.

QUICK LIME must be slaked before it can be evenly distributed over the ground. The best plan is to distribute over the field in small heaps such as is done with stable manure. Forty pounds of fifty pounds each is an application of approximately one ton per acre. If water amounting to one-third the weight of the lime be added and the heap covered with about an inch of soil, the lime will soon slake, when it may be spread with a shovel. This latter operation is not a pleasant one, but if the slaked lime is mixed with earth and a damp day chosen for the work, it may be accomplished without any great inconvenience.

HYDRATED LIME is simply the quick lime slaked, screened and bagged. It is consequently more expensive, but its action in the soil will be the same as the quick lime slaked in the field.

AIR-SLAKED LIME is quick lime that has been allowed to slake without the direct addition of water. It differs from the freshly-slaked lime in that it has taken up some carbon dioxide from the air, and part of the lime has passed back into the carbonate condition. The amount that has been thus changed will depend upon the length of time the lime has been exposed to the air.

GROUND LIMESTONE is simply the limestone rock, similar to that which is burned in the preparation of quick lime, finely pulverized. Naturally the more finely it is ground the quicker it will react in the soil. The coarser-ground material will remain an active agent for a longer time in the soil. Consequently it is not essential that the whole of the material be very fine. Generally speaking, if the rock is so pulverized that the larger particles are no bigger than flax seed and all the fine material that would naturally be formed in the process of grinding remain in it, it will be fine enough. The very finely-pulverized material costs more to prepare and is more difficult to handle, and does not serve

To justify them in their reluctance to enlist they have not only a possible dread of military service, but also self interest, a sense that others will unjustly benefit by their sacrifices, and the past assurance of the Government that by producing more they will be showing a worthy form of patriotism. To overcome these things it is necessary for the Government to show that danger is imminent, that those who avoid service must make sacrifices commensurate with those of the men who enlist, and that production is no longer an adequate expression of loyalty.

A short time ago I received a letter from a farmer who asked if I thought it right that a recruiting officer should call a boy who had declined to enlist "a lily livered coward." I most emphatically do not, and if my correspondent had given the name of the officer who used such an expression while trying to enlist men under the voluntary system, I should have reported him to the authorities. It is greatly to the credit of the head of our military organization, General Sir Sam Hughes, that in none of his reported utterances has there been any trace of insult to those who have not as yet realized their duty to respond to the call of their country. He has never wavered in his faith that the young men of Canada will respond to every demand that is made on them. Up to the present I have never questioned his right to that faith, but since the great demand has been made I have received letters from correspondents in various parts of the country, and have heard protests along the lines indicated above that have con-

vinced me that if the voluntary system is to continue without having recourse to "conscription by intimidation," it will be necessary for him or someone of the highest authority to clarify the situation by an unquestionable statement of our danger and our duty. Personally, I am of the opinion that if Canada is fighting for her life—as she must be to justify a call for five hundred thousand men we should have some form of equal service that will place the resources of all citizens at the disposal of the state, as well as the lives of those fitted for military service. The man who is called upon to offer his life in defence of his country is asked to make the supreme sacrifice, and there is something ghoulish about the thought that others may be enriched while he suffers. There are altogether too many men in the country, farmers as well as business men and manufacturers, who are looking forward to making profits because of the war. They should be promptly jolted out of their selfish dreams. The freedom we enjoy is based on justice, and we must show justice to those whom we ask to die in its defence.

THE DAIRY.

Proposed Amendments Regarding Color Markings of Holsteins.

At the annual meeting of the Holstein-Friesian Association, to be held in the Foresters' Hall, 22 College St., Toronto, on Thursday, February 3, J.W. Richardson gives notice that he will move to

amend Article VI, Section 4 of the Constitution and By-laws, by striking out the last sentence, and substituting the following: "To be eligible for registry, all animals must be black and white in color; disqualifications, being: Solid black, solid white, black switch, solid black with white on the belly only, black on the legs, beginning at feet and extending to knees and hocks, four legs sq marked will debar from registry; black on legs, beginning at feet and extending to knees and hocks, with white interspersed, one leg so marked will debar from registry; gray or mixed black and white generally prevailing, and patches of other colors than black and white."

F. R. Mallory also gives notice that he will move to amend the Record of Merit rules by cancelling the first three paragraphs of the rule, entitled, "Confirming a Record," and substitute, in effect, the following: "That all records of more than fifteen pounds of butter-fat, by junior two-year-olds; seventeen pounds by senior two-year-olds; eighteen pounds by junior three-year-olds; twenty pounds by senior three-year-olds; twenty-one pounds by junior four-year-olds; twenty-two pounds by senior four-year-olds, and twenty-four pounds by mature cows, shall be considered above normal, and shall be subject to re-test. Where a test above normal is reported, the Secretary shall have authority to decide if a re-test is necessary, and arrange to send another supervisor to conduct a new test. The expense of such test to be borne by the Association. If, during any official test, a supervisor finds that the animal is producing butter-fat in excess of the standard, he shall immediately report the facts to the Secretary by wire or registered mail.

The Eastern Ontario Dairymen's Association Convention

At Renfrew, locally known as the "Creamery Town," The Eastern Ontario Dairymen's Association held its thirty-ninth annual convention on January 5 and 6, 1916. The time has come when dairymen of Ontario must awaken to the fact that other provinces and other countries of the world have more advanced methods than are practiced here, and the speakers were even more pronounced at the convention just over, than they were formerly, in favoring some system of grading or paying according to merit. Wonderful has been the influence of the Association in effecting sanitation, and raising the standard of quality throughout Eastern Ontario during the last four decades. Now, they have reached the parting of the way. Will they dally or will they set out at once, on the road leading to excellence and superiority in product, which can be effected only through a system of grading and paying for quality? Those who have studied the subject from a Canadian or international viewpoint are in favor of adopting standards and paying accordingly. They should come out more strongly, and denounce the pooling of products that eliminates all ambitions on the part of patrons to deliver a better article. Custom is a high barrier to overcome, but in this case there must be a sinking of pride and prejudice that will permit of change and improvement.

The convention was not so well attended by patrons and makers as one should like to see. They probably depend upon the good services of the Press to bring them a resume of the proceedings. Dairymen are the losers each year if they fail to be present at these conventions, but those unable to attend will find in the following paragraphs an expression of thoughts very closely relating to their business.

President's Address.

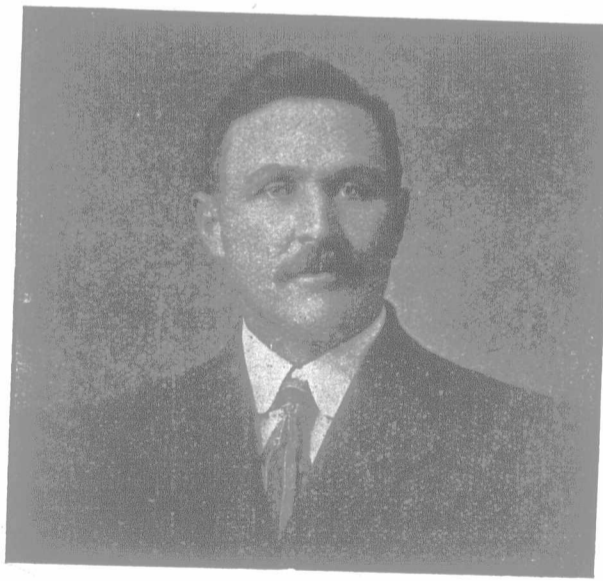
In opening the convention, J. A. Sanderson, of Oxford Station, who, for the past two years, has been President of the Eastern Ontario Dairymen's Association, spoke very favorably of the dairy industry, and said that 1915 had surely been a record year, and furthermore, stated that the results for the past year should be convincing proof that the dairy industry is one, if not the greatest factor, in the wealth production of the Dominion of Canada. Dairy products, as compared with 1914, showed a decrease in butter of about 200,000 pounds, but as the selling price was between 2 and 3 cents per pound higher, the net returns would be about the same. The production of cheese showed an increase of about 15 per cent., or approximately 11,500,000 pounds. The average price received was a fraction over 15 cents per pound, which was 2 cents more than that received in 1914. This growth in production, together with the higher price, would constitute a total increase in value of about \$4 million dollars for the six months, from May 1 to November 1, 1915. In conclusion the President congratulated the dairymen on the success of their efforts for greater production, and for their splendid response to all patriotic calls. He also made an earnest appeal for them to maintain not only the production reached in 1915, but to use their best efforts to make 1916 show a greater increase, for in accomplishing this they would be doing their "bit" to help themselves, their country and the British Empire.

The Dairy Instructor's Report,

The report of the Dairy Instructor for Eastern Ontario, G. C. Publow, is the barometer which records the ups and downs of the industry, and presages future conditions. The instructor, each year, sums

up the work and operations of the cheese factories and creameries throughout all the Eastern counties, and in a concise form brings before the delegates a vision of the importance and significance of the dairy industry in which they are so vitally interested.

During 1915 there were 847 cheese factories in operation in Eastern Ontario, one more than in 1914. Six of these were destroyed by fire, but have been or are being rebuilt. Sanitary conditions were mostly satisfactory. A few owners had to be given warning and a limited time to clean up. All complied, with the exception of one, who suffered to the extent of \$30 and costs. The annual expenditure on improvements and equipment was maintained at its usual high level, 479 owners having expended over \$64,000 in this manner.



J. N. Stone.

President of the Eastern Ontario Dairymen's Association for the ensuing year.

To these factories there was delivered during the six months, May 1 to November 1, a total of 927,000,000 lbs. of milk; there was manufactured over 85,000,000 lbs. of cheese. The yield of milk exceeded the production of the same period of 1914 by some 85,000,000 lbs., and the make of cheese by over 8,000,000 lbs. These figures reduced indicate an increase in the yield of cheese of over 10 per cent., but for the full year the make would, no doubt, exceed 15 per cent. increase, because the amount manufactured after October 31, 1915, was unusually large. During 1915 it took 10.88 lbs. of milk to make each pound of cheese. This is slightly better than in 1914, when the yield was 10.96. The average fat test of the season's milk was 3.58 per cent., or practically the same as in 1914.

Patrons numbering 29,607 furnished milk to Eastern Ontario cheese factories, or some 1,100 more than in the previous year, the high cheese prices evidently having the effect of bringing many back to the cheese factories.

An interesting feature in connection with the production end of the business is the ever increasing number of silos being built, no less than 1,258 new ones going up in 1915. This is an increase of 446 over 1914, so the rate of gain is very encouraging.

The dairymen are rapidly learning the best methods to follow in the production of milk for profit, but many seem slow to realize or appreciate the importance of modern methods in the care of milk after it has been produced. They fail to realize the losses that occur to them annually from not preserving the milk in a sweet, clean condition until it reaches the factory.

A special effort was made last season to further impress these facts, and in each district the instructor devoted two days in demonstrating in a practical manner the increased yield of cheese obtained by properly cooling the milk. On the first day the milk of a number of patrons, cared for in the same way, was tested. Under these conditions the average temperature of the milk, when received, was 76 degrees. On the following day the milk of the same patrons was cooled, after milking, by ice or cold water, so that when it reached the factory the average temperature was 67 degrees. On the first day the yield of cheese per 100 lbs. of milk was 9.02 lbs. On the second day the average yield of cheese per 100 lbs. of milk was 9.28 lbs. In other words, a difference of only 9 degrees in the temperature of the night's milk made an increased yield of over 1-3 lbs. of cheese, which, valued at 15 cents per pound, means a difference of over 5 cents in the value of each 100 lbs. of milk. These results, representing average conditions, proved throughout the whole of Eastern Ontario surely should be a tremendous object lesson to all factory patrons, for while these comparisons were made under average weather and factory conditions, a far greater difference would be found in very hot weather, of which every season has its proportion.

Of such importance did this factor, in the manufacture of cheese, appear to the delegates that a resolution was unanimously carried, to the effect that these results and findings be printed and mailed to every patron in Ontario. Prof. H. H. Dean emphasized the same point, and it was thought well that dairymen should know that they really effect a saving in dollars and cents by properly caring for their milk.

For future improvement in the quality of milk, Mr. Publow thought it a good idea to equip each maker with a sediment test, a fermentation test and a thermometer. Any of these or all of them could be used to discern the actual quality of any milk, regarding which suspicion might be entertained. The maker also should be provided with a number of printed forms, which related particularly to certain defects. These could be mailed without much trouble to the patrons who could ascertain at once the outstanding defects in their product, and how it might be remedied.

During the past season it has been found necessary to continue the testing of milk to detect the result of tampering with the product on the farms. During the season 35 persons were found guilty of supplying skimmed or watered milk, and fines ranging from \$20 to \$50 each, were imposed.

"I do not think the quality of the spring and early summer cheese was ever better," said Mr. Publow. "They were exceptionally good all over the country, and very few defects were noticed. As usual, however, when the hot weather arrived, many of the common defects also appeared, and a limited number of rejections occurred."

The first part of September and the latter part of August seemed to be the most trying period of the year. One of the most noticeable of the special defects, and one regarding which Mr. Publow cautioned all makers, was that due to impure rennet or to the use of too little rennet. The price of this product

VI. Section 4 of the Constitution striking out the last sentence, and the following: "To be eligible animals must be black and white markings, being: Solid black, black switch, solid black with white, black on the legs, beginning at the knees and hocks, four legs clear from registry; black on legs, and extending to knees and interspersed, one leg so marked registry; gray or mixed black and prevailing, and patches of other black and white."

also gives notice that he will the Record of Merit rules by the first three paragraphs of the rule, "Record," and substitute, "That all records of more than 12 pounds by junior two-year-olds by junior three-year-olds; by senior three-year-olds; twenty-four-year-olds; twenty-two-year-olds, and twenty-four-year-olds, shall be considered above and subject to re-test. Where a record is reported, the Secretary is to decide if a re-test is necessary to send another supervisor to test. The expense of such test to the Association. If, during any supervisor finds that the animal is fat in excess of the standard, he shall report the facts to the Secretary by registered mail.

Convention

rapidly learning the best methods of production of milk for profit, but to realize or appreciate the importance of the care of milk after it is produced. They fail to realize the losses annually from not preserving the milk in a condition until it reaches the

was made last season to further and in each district the instructor in demonstrating in a practical way the yield of cheese obtained by the milk. On the first day the milk was cared for in the same way, these conditions the average temperature when received, was 78 degrees. The milk of the same patrons milked, by ice or cold water, so that the factory the average temperature. On the first day the yield of milk was 9.02 lbs. On the second day the yield of cheese per 100 lbs. of milk was 1.15 lbs. In other words, a difference of the temperature of the night's milk of over 1-3 lbs. of cheese, cents per pound, means a difference of value of each 100 lbs. of milk. Making average conditions, proved that Eastern Ontario surely should take lesson to all factory patrons, comparisons were made under average conditions, a far greater difference in very hot weather, of which every

did this factor, in the manufacture to the delegates that a resolution be printed and mailed to every factory. H. H. Dean emphasized that the delegates thought well that dairymen really effect a saving in dollars caring for their milk.

ment in the quality of milk, Mr. Dean good idea to equip each maker with a fermentation test and a thermometer or all of them could be used to quality of any milk, regarding the fermentation. The maker also should have a number of printed forms, to be filled out to certain defects. These forms should be sent to the patrons at once the outstanding defects in the milk might be remedied.

on it has been found necessary to of milk to detect the result of product on the farms. During the summer were found guilty of supplying milk, and fines ranging from \$10 to \$20.

quality of the spring and early summer better," said Mr. Publow. "The only good all over the country, he noticed. As usual, however, arrived, many of the common defects and a limited number of rejections

tember and the latter part of the most trying period of the noticeable of the special defects, Mr. Publow cautioned all to impure rennet or to the use of the price of this product

tempted manufacturers to cheapen the operation at a sacrifice of quality. The use of less rennet with high setting temperatures, also at a sacrifice of quality of their cheese, was noticed. It should be carefully avoided hereafter. Prof. Dean in his address showed, by the results of experimentation, that the decrease of rennet resulted in a loss to the patrons, as it required more pounds of milk to make a pound of cheese when the quantity of rennet was lessened.

The short-sighted policy of shipping green cheese has not lost ground. Again, the Dairy Instructor drew attention to the inadvisability of such action on the part of makers, for they are more liable to suffer from rejections, because cheese are then at their worst age for passing inspection.

The butter industry in Eastern Ontario is of very much smaller proportions than that of cheese. However, 38 regular creameries were operated in 1915, and new ones have been established at Napanee, Cornwall and Arnprior. Twenty-eight are equipped with good cold storage facilities, 12 collect the cream three times a week, and 26 twice a week. Sixteen are using scales for weighing the sample tested with the Babcock test. During the six months, May 1 to October 31, 1915, some 2,800,000 pounds of butter were manufactured, as compared with over 3,000,000 pounds in 1914; a falling off in the total make of over 200,000 pounds. In addition, 119 cheese factories manufactured whey butter, and their total make exceeded 381,000 pounds. Some 4,836 patrons supplied cream to the regular creameries during 1915, or about 100 fewer than in 1914.

An improvement in the quality of the butter and cream was reported, but Mr. Publow said: "There is still much to be desired in this respect, and it seems more evident each year that the proper solution of the better cream problem lies in some method of paying patrons a premium of more money for the highest grades.

Care and Feed of the Dairy Cow.

The dairy industry depends upon the product from thousands of cows on the farms of this country, for they supply the material upon which the whole enterprise depends. Henry Glendinning, of Manilla, Ont., discussed in detail the management of this all-important factor, viz., the dairy cow, and emphasized again the importance of silage and alfalfa. For many years Mr. Glendinning has advocated a more extensive use of these two fodders, for the reason that together they supply all the ingredients that balance a ration, and that satisfactory quantities can be grown per acre. Through all these years Mr. Glendinning has practiced what he has preached, and now expounds his doctrine convincingly, and bases his remarks upon years of experience in which he has found his gospel to be true. He did not forget roots and red clover, for the latter cannot be neglected where some system of rotation is followed, but in this speaker's address and throughout the entire convention, the advisability of growing more corn and more of some kind of clover was strongly advocated.

One must, through it all, pay attention to the source of his stock and the condition of his herd. "Dairymen should, so far as possible, raise their own cows," said the speaker, and in doing so have at the head of the herd a pure-bred sire descended from parents that were noted for a good production of milk, rich in butter-fat. Patrons of the creamery find it more easy to rear the calves than do those who dispose of their milk to the cheese factory. Under the former conditions there is always skim-milk aplenty, and it, after the calf is three weeks of age, can constitute the bulk of the milk allowance.

"It is a good plan," said Mr. Glendinning, "to add a little ground flax seed to the skim-milk to supply the natural fat that has been taken from the milk in the form of cream. In advising ground flax I wish to impress upon my hearers that I do not mean oil cake, as the most of the oil has been taken from the flax in the process of making oil cake. Oil cake and skim-milk have a good deal in common in their composition as feed stuffs. With skim-milk, the green grasses and clovers in the summer and plenty of shade, make calf raising an easy matter. For winter feeding substitute the grasses by using alfalfa or clover hay, silage and roots. If alfalfa cannot be had, use ground oats to take its place."

It is advisable to have young heifers bred so they will drop their first calf at about thirty months of age. If they freshen earlier, in the course of a few generations it has a tendency to weaken the offsprings and make them smaller and less robust.

The speaker pointed out that summer conditions were ideal for milk production and successful winter feeding consisted, in so far as possible, duplicating summer conditions. For winter feed, he said, roots, silage, alfalfa and red clover stand out prominently as roughage, but they should be supplemented with wheat bran, ground oats, cottonseed meal and oil cake. If an abundance of alfalfa hay is to be had there will not be much need of the more expensive meals.

In connection with stable ventilation, Mr. Glendinning emphatically advocated some thorough system. He said that many farmers thought their stables well ventilated, when, in fact, they were not properly ventilated at all. Clean, sanitary milk, which the trade now demands, can only be obtained from healthy cows, good feed, pure water and well-ventilated stables. In connection with the different ways in which ventilation may be effected, the speaker described both the King and Rutherford systems, and said that the ven-

tilation provided in his own stables was so arranged that by a little manipulation he could make use of either the King or the Rutherford idea in providing pure atmosphere, and in carrying off the polluted air. The outlets or shafts, made use of in his stables, started near the floor, going up through the loft and out through the ridge-board of the barn. The necessity was emphasized of having this outlet-channel above the top of the building, else a current of air upwards would not be created, and the stagnant atmosphere of the stable would remain within. The windows were so arranged that they gave an abundance of light, but they were hinged at the bottom so they would open inwards at the top, and thus at the same time act as an inlet for pure air. Openings at the bottom of the wall or at the bottom of the window might allow cold drafts to strike directly upon the udders of the cows, and the speaker thought that garget and inflamed udders in animals which had recently freshened, were, in many cases, due to badly-placed inlets. In a brief discussion which followed his remarks, it was pointed out that windows made of two sashes, with the upper one hinged at the bottom, also made admirable inlets for pure air.

The body of a cow, said Mr. Glendinning, consists of about 50 per cent. water, her milk about 80 per cent., and her blood about 90 per cent., and all her food is carried through the system by the action of water. This emphasizes the significance of a supply of pure water and plenty of it, and the speaker advised having it in front of the cows in the stable where they might drink at will. A cow that gives a large flow of milk must of necessity drink a large quantity of water, and if she is obliged to consume enough at one time to supply her system for a day it is quite possible that she will become chilled, thus checking the secretion of milk until her system regains its normal temperature.

Cement floors and mangers were considered best, both from a sanitary and economic viewpoint, and the stables should be whitewashed every fall. Prof. J. H. Grisdale, Director of Experimental Farms, Ottawa, said in this connection that they had found paint for the walls to be 50 per cent. more economical than whitewash. After several applications it was difficult to make the whitewash stay on the walls, but paint would last for several years, and it could be washed down and kept clean.

With special reference to feeding, Mr. Glendinning gave considerable prominence to corn and alfalfa, for the reasons that corn is seldom a failure, and that alfalfa, if properly cared for, will grow satisfactory crops and will mix well with silage. It was admitted that alfalfa has had a checkered career, but the speaker was strongly of the opinion that nearly every failure can be traced to some cause, which usually can be remedied. Too often, he thought, farmers sowed what dealers call "Northern-grown seed." This, to Mr. Glendinning means "grown anywhere in the Northern Hemisphere," and he said the term was too broad. Ontario variegated alfalfa was recommended as the proper variety to sow here, but another good one was the Grimm variety produced in Wisconsin. Alfalfa seed is being produced in Alberta, but the price will probably make its use prohibitive in Ontario.

What to Grow and How to Grow It.

"The dairyman who depends on what he buys or what happens to come along on his own farm for feed will never be successful," said Prof. J. H. Grisdale, Director of Experimental Farms, Ottawa, "we must depend upon what we can grow on the farm, and, we as farmers, are not getting anywhere near what we should from our land." The Director, during the latter part of last season, had travelled from ocean to ocean, and said that Canada was rolling in the wealth of farm products. Never before, in his experience, had he seen anything like it, either east or west, but the crops of 1915 should be more nearly duplicated every year than they are. Farmers, he said, should produce fifty per cent. more stuff every year than they do. He thought it not probable that such crops, as occurred last season, could be produced every year, but farmers should come very near to it. Too many farmers, he said, farm as their fathers and grandfathers did, but conditions have changed. Soils have become depleted and weedy, and it requires a short rotation of crops to restore them to a productive condition.

Relative to crops, Prof. Grisdale said there were four that were paramount in Eastern Ontario, namely, corn, clover, oats and grass.

These could be combined into suitable rations, and they were crops that did well in Eastern Ontario. Never in thirty-five years had he seen a failure with corn in the Ottawa Valley when it was planted and cared for according to the methods which he advised to the convention. Clover sod was preferable for such a crop, but in case it was not available pasture sod would do. This should be plowed with a shallow furrow, 4 inches deep or less. As for the season, Prof. Grisdale preferred spring plowing for corn. It was necessary, however, when plowed at this season of the year, to follow almost immediately with the roller and harrow, else the sod would become dry, and in the case of clay, hard and baked. The necessity of cultivating and sowing as soon after plowing as possible, was emphasized by the speaker. For varieties in Eastern Ontario, he had found the Wisconsin No. 7, White Cap Yellow Dent, Golden Glow and Leaming were best. He also advised sowing in drills, with the rows 3 feet to 3½ feet apart. He considered that corn planted in rows or drills, 42 inches apart on the average, would produce as much corn as

could be obtained under any circumstances. His reasons for drill planting were that he could plant more speedily, that cultivation was more easily effected, and that harvesting was more satisfactorily conducted. In planting, the large drill was used, and three rows were sown at a time. Henry Glendinning, of Manilla, in this connection, said, that it was difficult to drive straight enough, when three rows were being planted at a time to make cultivation with a two-row cultivator practicable, when only two rows were sown at a time, the two-row cultivator would follow those two satisfactorily, but when one attempted to cultivate the third row of one drive and one row of another drive, some difficulties might be encountered if the rows were not in perfect alignment. The two-row, not the two-horse cultivator, was the implement under discussion. The two-row cultivator finishes two rows each time across the field.

Relative to oats the speaker's words were: "No crop does better in Eastern Ontario than oats, and Banner is the best variety of them all." Oats following a crop of corn do well, and provide an abundance of grain and straw. The Director favored growing alfalfa, yet he was not so enthusiastic regarding it as are some farmers. He thought it an excellent feed, yet he found it difficult to produce alfalfa satisfactorily, and have it not interfere with a short system of rotation. Red or alsike clover, he said, are almost as rich in food constituents as alfalfa. They are sure crops and easier cured. It was advised to grow alfalfa on fields that could be set aside for the permanent production of the crop, as in this way it would not disorganize the rotation.

"No crop should be a crop unto itself," said the Director, the farmer should consider the next crop, and even the next after that. This necessitates a system or a rotation which he very strongly advocated. Two systems have been tried on the Experimental Farms. The three-year rotation, which runs in the order of corn, grain, hay, has been very satisfactory. Another, the four-year rotation, where the three-year system cannot be followed, is next in order of merit. This would run corn, grain, hay, pasture. Each one for a year, or, in a time when fodder was scarce, two crops of hay instead of hay and pasture might be taken.

The corn crop should be grown systematically and carefully, in order to leave the land in perfect condition for subsequent crops. After the corn was removed, he advised that the land be interfered with as little as possible. Good results had been obtained from simply cultivating the land with a disc harrow and then the cultivator. However, some farmers prefer to have the stubble covered, in which case one should plow with a very shallow furrow.

The seeding he advised was 8 lbs. red clover, 2 lbs. alsike, 6 lbs. alfalfa, and 6 lbs. timothy. This has been used on the Experimental Farms, and has been found ideal both for hay and for pasture.

Rotations for the dairy farmer, said Director Grisdale, are an absolute necessity. Under such a system crops can be procured that will maintain from 20 to 50 per cent. more cows than is the custom. Rotations will increase fertility, and will rid the land of weeds.

With special reference to feeding, it was said that not only should sufficient feeds be given, but they should be combined in such a way that they will be palatable or contain such material as will make the cows like them. On 100 lbs. feed a cow will give a certain quantity of milk, but make that feed more palatable or make it so the cow will relish it more, and she will give an increased quantity of milk from the same amount of feed. This can be accomplished by providing plenty of succulency, grain, and such concentrates as are relished.

Some Cow-testing Possibilities.

For several years the cow testing work of the Dairy Branch at Ottawa, has been under the supervision of Chas. E. Whitley. Through the operations of the local cow-testing associations so many good cows have been discovered, which previously were not appreciated, and so many poor cows have been detected in the act of reducing the profits of their stable mates, that Mr. Whitley is enthusiastic in his advocacy of records that tell the truth about every individual in the herd. His address to the convention was replete with evidence that averages were not fair, as the high producer was obliged to raise the boarder type of cow to a tolerable average position. Enlarging on his plea against average results, Mr. Whitley showed on a chart the comparative yields of 9 grade cows of an Eastern Ontario herd. The best cow returned a profit of \$44. The poorest cow netted only \$4; whereas the average net profit of the herd was \$27.38. In connection with this herd the speaker said:

"The lowest yield is from a six-year-old, giving 4,164 lbs. milk, containing 127 lbs. fat, returning a profit of only four dollars. Another six-year-old is a close second to this record. A three-year-old is well up above the average, a four-year-old heads the list, with a yield of 7,786 lbs. milk, and 281 lbs. fat. This means a profit of forty-four dollars, or eleven times as much profit as is made by the six-year-old. Notice the two extremes, one cow giving actually 3,572 lbs. milk more than the other."

"No good dairyman wants to be inveigled into running to cover behind the sheltering average which never discriminates good from poor, nor does his ambition for good yields deserve to be dampened by

a miserable 2,700 lbs. milk trickling in one full lactation period from a so-called dairy cow."

The usefulness of cow testing was further proven by what had been done in many districts after the adoption of such a practice. Almost invariably more cows were maintained, more milk per cow was produced, and greater prosperity was enjoyed. There was always an improvement in the herd after cow testing was begun; a good herd would show a better record, and the poor herd would soon come up to a production that would be more profitable. Space will not permit of the reproductions of the many arguments in this excellent address, but those present could not but feel that the possibilities of cow testing have only begun to reveal themselves.

Suggestions Re the Quality of Butter.

"Nobody can dispute the fact that over-ripe and tainted cream is the main cause of the defects in Ontario creamery butter. Nearly all, if not all the creameries in Ontario are paying just as much per pound of fat for sour, tainted cream as they are for sweet, clean-flavored cream. Are such conditions an incentive to the patrons to produce better cream? Certainly not. And just so long as the creameries pay the same price for tainted, sour cream as they do for sweet-flavored cream, just so long will they receive it, and continue to make a strong-flavored and poor-keeping quality of butter." In these words, George H. Barr, of the Dairy Branch of the Dominion Department of Agriculture, Ottawa, gave voice to his opinions regarding the manufacture and qualities of creamery butter made in Ontario. The title of his address was: "Some Suggestions for Improvement in the Quality of Creamery Butter." This title would imply that the quality of creamery butter in Ontario is not as fine as it might be, and in substantiation of his opinion that it was not, he said that he doubted if butter dealers in Toronto, Montreal, Winnipeg, Calgary or Vancouver would seek a car load of butter in Ontario when they wanted the finest creamery product. He said they would be more likely to seek for it in Quebec, Saskatchewan, or Alberta. To show that cream grading and paying a premium for sweet cream improves the quality of the butter, he drew attention to the results of grading cream in a creamery in Alberta in the season of 1914.

This creamery commenced grading on the fifth of July. For the four weeks prior to the time grading commenced, the output of butter graded 4.2 per cent. specials, 34.9 per cent. first grade, 56.2 per cent. second grade, and 4.7 per cent. off grade. For the first four weeks after grading commenced, the butter graded 49.1 per cent. specials, 47.1 per cent. first grade, 1.9 per cent. second grade, and 1.9 per cent. off grade. For seven weeks after grading commenced, the butter graded 61.7 per cent. specials, 35.5 per cent. first grade, 1.7 per cent. second grade, and 1.1 per cent. off grade. Patrons sending second-grade cream were paid 2 cents less per pound fat than were those sending sweet, clean-flavored cream.

The speaker referred to still more facts regarding the grading of cream in the different provinces. In 1915 about 96 per cent. of the creamery butter in Alberta was made from graded cream; 59 per cent. of this butter graded specials, and only 7 per cent. graded seconds. In Saskatchewan 98 per cent. of the creamery butter was made from graded cream. In Manitoba 61 per cent. was made from graded cream. As a result of grading the cream, these Western Provinces, especially Alberta and Saskatchewan, were able to compete successfully in the Vancouver market with New Zealand butter. An extensive buyer of butter in Vancouver told Mr. Barr that if Alberta and Saskatchewan creamery men made as much improvement in the quality of butter in 1916 as they did in 1915, their butter would be bought in preference to that from New Zealand, and they would control the Vancouver market. It was also stated that Alberta and Saskatchewan butter had practically put Eastern Townships butter out of the Vancouver market.

The Province of Quebec has a dairy act which makes grading cream compulsory. Each grade must be churned separately, and the patrons paid accordingly.

In 1914 the Dairy Division conducted an experiment in pasteurizing cream with a continuous pasteurizer, and a modern cream ripener. Space will not permit of a detailed description of this experiment and the results, but suffice to say that a slight difference was recorded in favor of the butter manufactured from pasteurized cream over that produced from raw cream, when the first score was made, on July 22, shortly after the butter was made, but on November 19, nearly four months later, another score was taken, which showed that the butter from pasteurized cream stood almost two points higher than that from raw cream.

At the dairymen's convention, held in Calgary, Alta., on December 15 and 16, 1915, the following resolution was carried unanimously:

"That we recommend the adoption of pasteurization of cream for butter-making in creameries throughout the province."

Mr. Barr believed that pasteurization would be adopted generally in the creameries of that province in 1916. The Dairy Commissioner of Saskatchewan also remarked to Mr. Barr recently that all government-controlled creameries in his province would pasteurize the cream in 1916. This means about 98 per cent. of the Saskatchewan cream manufactured into butter by the creameries will be pasteurized. The speaker asked the question: "Can the Ontario creamery men afford to continue their present methods?"

Plugs of Cheese and Pats of Butter.

"Assuming that one-tenth of the milk delivered at cheese factories in Eastern Ontario during the season of 1915 was in an over-ripe condition when delivered, that is, had .2 per cent. of acid or over, the loss would equal about 600,000 pounds of cheese, worth to the farmers or patrons of factories, at 15 cents per pound, \$90,000." In this language of dollars and cents, Prof. H. H. Dean, of the Ontario Agricultural College, told the delegates of the loss resulting to them and other patrons through the delivery of over-ripe milk. G. G. Publow in his address stated that sometimes thirty per cent. of the deliveries were over-ripe, and assuming this to be true the loss would be not \$90,000 but \$270,000 annually to the patrons of factories in Eastern Ontario alone. Prof. Dean based his remarks upon the results of tests conducted at the O. A. C. in 1914, which showed that milk delivered in an improper or over-ripe condition lost, on the average, 6.24 pounds of cheese per 1,000 pounds of milk in the process of manufacture. Not only this financial loss, but a loss in quality also was suffered from over-ripe milk.

At a time when rennet is so scarce and expensive as at present, the tendency is to use less rennet, which means loss in quantity and quality of cheese. Work conducted at the College a few years ago in an endeavor to arrive at the proper quantity of rennet, gave the results indicated in the accompanying table:

Rennet.	Lbs. milk.	Lbs. cheese per 1,000 lbs. milk.	Av. % fat in whey.
1 oz. per 1,000.....		92.07	.375
2 oz. per 1,000.....		94.07	.275
3 oz. per 1,000.....		95.10	.192

Besides the losses resulting from the use of insufficient rennet, poorer quality resulted in the cheese, as the result of using less than three ounces of rennet per 1,000 pounds of milk. Prof. Dean recommended that even at five dollars per gallon, it would be economical from the viewpoint of the patron to have ample rennet used by the maker. In this connection, he opined that makers are not being adequately remunerated for their services. Since cheese is now high in price and the cost of manufacture has increased, he thought the industry could well afford to reimburse the maker more liberally for his labor. Relative to the supply of rennet, Prof. Dean said: "If the United States should suddenly prohibit the export of rennet to Canada, it would be a body-blow to the Canadian cheese trade. The speaker entertained grave apprehensions for the future supply. Much of it comes from Russia, and letters from manufacturers and dealers in rennet, which he read to the convention, showed that the exportation of rennet was prohibited at present in all European countries except Denmark, and their surplus was insignificant.

Relative to the pasteurization of milk for cheese-making, Prof. Dean showed that an increase in the number of pounds of cheese from 1,000 pounds of milk resulted from the operation. But there was extra labor entailed, and it was doubtful if the extra yield of cheese would pay for this. However, if pasteurization should become advisable or compulsory, it could be done. It is a live question now in the United States. It is spreading to Canada, and the "germ scare" may get such a grip on the people that pasteurization for cheese making may be necessary.

The effect of salt on curd and cheese was another matter upon which the speaker threw some light, by quoting the results of experimental work. The conclusions drawn were that the heavier salting caused a greater expulsion of the moisture in the curd and green cheese, although they shrank slightly less during the ripening process. The medium-salted lots (2½ lbs. salt for 100 lbs. curd) scored highest in quality. The lots salted 3 lbs. per 100 lbs. curd, were somewhat stiff in texture, and required a longer time to cure or ripen.

Regarding composite cream tests, the speaker expressed the opinion that when properly handled, composite samples gave quite as good results as did tests made each and every day. Sometimes composite samples will mold, and to overcome this the bottles should not be shaken each time a new quantity is added. Shaking the bottle forces the milk up on the side of the glass, making conditions very favorable for the growth of molds. The bottle should be tightly corked and placed in a cool spot, preferably in the cold storage.

Results of tests with raw, versus pasteurized cream for churning, led to the following comments: "The loss of fat in the buttermilk was greater from the pasteurized lots, particularly so in those lots having .4 per cent. acids at the time of heating. The lesson is, have cream sweet or less than .3 per cent. acid.

"The 'overrun' was about 3.3 per cent. less on the pasteurized lots, as compared with the raw cream lots."

"The quality of the butter was better from the lots pasteurized."

Standardization of Cheese and Butter.

A paper submitted to the convention by Frank Hems, of London, Sanitary Inspector and Chief Dairy Instructor for Western Ontario, emphasized the salient points regarding the manufacture and sale of Ontario butter. It was another plea for united efforts on the part of dairymen to give cream and butter grading a trial, and if found advisable to bring about the adoption of the system in Ontario. His thoughts were

conveyed to the convention in the following paragraphs:

Ontario has made rapid strides in creamery butter production during the past seven or eight years; increasing from about 7 million pounds in 1907 to over 23 million pounds in 1914. This increase indicates the difficult problem which has to be dealt with if a change is attempted in methods of payment for cream and handling the butter. Some may feel that the initiative in any proposition of this kind should be taken by the creamery owners and producers, for it is they who are most vitally interested.

Creamery operators who manufacture butter by the pound on the basis of quantity, cannot be expected to take special interest in a grading plan.

Probably the average dealer would just about as soon see the market low as high. Although they (the dealers) may take action by themselves in this matter of standardization, creamery men and others should be in a position to meet them half-way.

The home market has for a number of years absorbed most of the creamery butter manufactured. If the Western Provinces continue to increase their output, a time is likely to come when a surplus for export will again be available. Should future conditions bring about an export trade, further preparation must be made to enter a foreign market on the basis of uniform quality or otherwise sell at a lower price. Should an export trade not develop for Ontario butter, other provinces having adopted a grading plan, which insures a uniform quality of butter reaching the inter-provincial trade, may eventually compete for Eastern markets.

Dealers complain that it is difficult at times to get butter from different creameries of a uniform quality in sufficient quantities to make up large shipments. The creamery instructors could do a great deal more towards standardizing and improving the quality of the butter if a grading system were adopted.

Looking at the matter from almost any viewpoint, it would be seen that a point had been reached in the creamery industry of Ontario when the whole situation should be considered, and an effort made to devise a plan, the operation of which should not only benefit the quality of the butter, but give credit for quality wherever credit is due.

If funds are available it seems practical to establish in Ontario, a grading system for butter; beginning in a commercial way to grade the "solids" intended to be shipped outside the Province. Cream grading should be coincident. The standards adopted should not be too many in number, and should conform to national standards. It is time that national standards should be decided upon for Canadian dairy products, at least in so far as conditions in the different Provinces will allow. Many creameries have a large "print" trade, and probably it would not be advisable to attempt, at first, the market grading of print butter. This butter must compete in the open market under the creamery brands, and consumers are rapidly learning the value of these brands.

A grading plan should, in time, establish a reliable standard for Ontario butter, which should secure for the Province a permanent reputation for quality. The extra price received should be an inducement to increase the output of first grade, and correspondingly decrease the inferior grades. It should mean a more uniform product. Flavor is a big factor in butter, but uniformity is a close second.

It could not be expected that all creamery men would immediately fall in line, but there is evidence that a number are anxious to grade cream and pay according to quality, provided it can be shown by practical demonstration that it will not only pay the creamery men but the producers as well.

As a beginning in this work it is suggested that arrangements be made to grade, from an educational standpoint, during all or part of the coming season, the butter from one or more creameries. Having established the fact that, under Ontario conditions, grading is practicable; then if those engaged in the industry will support and co-operate in such a movement, some way may be found to inaugurate a plan of commercial grading. With the information gained by a season's work as a basis on which to proceed a committee should be appointed of representative dealers, creamery men, producers, dairy teachers and officials of the Department of Agriculture, to go into the whole question and agree upon satisfactory and uniform standards for grading both cream and butter.

If, however, upon thorough investigation it is found that a grading system is not in the best interests of the Ontario creamery industry, it will then be definitely known that it is necessary to continue to tend all efforts along the line of the present excellent educational policy and secure the best results possible.

Another Plea for Cream Grading.

The Dairy and Cold Storage Commissioner for Canada, J. A. Ruddick, was not able to attend the convention in person, but through a paper, which was read to the delegates, expressed his opinion that the time was now ripe for concerted action on the part of all those interested in dairying to inaugurate a system of paying for milk and cream on a quality basis that would ensure a bright future for Canadian cheese and butter. His thoughts are expressed in the following paragraphs:

It seems to me that the time has come when we should give some attention to the matter of national standards of quality for the different grades of butter and cheese, and thus put the trading in these articles on a more clearly defined and stable basis. In the days when the chief interest centred in the export trade the

convention in the following para-
 rapid strides in creamery butter
 the past seven or eight years; in-
 7 million pounds in 1907 to over
 in 1914. This increase indicates
 which has to be dealt with if a
 in methods of payment for cream
 butter. Some may feel that the
 proposition of this kind should be
 very owners and producers, for it is
 vitally interested.

ors who manufacture butter by the
 of quantity, cannot be expected
 erest in a grading plan.
 erage dealer would just about as
 low as high. Although they (the
 action by themselves in this mat-
 on, creamery men and others should
 meet them half-way.

et has for a number of years
 the creamery butter manufactured.
 vices continue to increase their
 likely to come when a surplus for
 e available. Should future condi-
 on export trade, further preparation
 nter a foreign market on the basis
 r otherwise sell at a lower price.
 ade not develop for Ontario but-
 having adopted a grading plan,
 orm quality of butter reaching the
 e, may eventually compete for

that it is difficult at times to get
 t creameries of a uniform quality
 es to make up large shipments.
 ctors could do a great deal more
 ng and improving the quality of
 ling system were adopted.
 matter from almost any viewpoint,
 t a point had been reached in the
 Ontario when the whole situation
 , and an effort made to devise a
 of which should not only benefit
 butter, but give credit for quality
 e.

able it seems practical to establish-
 ing system for butter; beginning
 y to grade the "solids" intended
 le the Province. Cream grading
 The standards adopted should
 number, and should conform to
 It is time that national stand-
 upon for Canadian dairy prod-
 ar as conditions in the different
 Many creameries have a large
 probably it would not be advis-
 first, the market grading of print
 must compete in the open mar-
 nery brands, and consumers are
 value of these brands.
 ould, in time, establish a reliable
 butter, which should secure for
 nent reputation for quality. The
 should be an inducement to in-
 first grade, and correspondingly
 grades. It should mean a more
 vior is a big factor in butter, but
 second.

pected that all creamery men
 all in line, but there is evidence
 vious to grade cream and pay
 provided it can be shown by
 on that it will not only pay the
 producers as well.
 this work it is suggested that
 e to grade, from an educational
 or part of the coming season,
 or more creameries. Having
 that, under Ontario conditions,
 then if those engaged in the in-
 and co-operate in such a move-
 be found to inaugurate a plan
 . With the information gained
 s a basis on which to proceed a
 appointed of representative deal-
 producers, dairy teachers and
 ment of Agriculture, to go into
 and agree upon satisfactory and
 grading both cream and butter.
 thorough investigation it is found
 is not in the best interests of
 industry, it will then be definite-
 necessary to continue to tend all
 of the present excellent educa-
 re the best results possible.

for Cream Grading.
 Storage Commissioner for Can-
 as not able to attend the con-
 through a paper, which was read
 sed his opinion that the time was
 action on the part of all those
 to inaugurate a system of pay-
 on a quality basis that would
 for Canadian cheese and butter.
 xpressed in the following para-

at the time has come when we
 ntion to the matter of national
 or the different grades of butter
 and the trading in these articles
 ed and stable basis. In the days
 centred in the export trade the

need for established and recognized standards was not
 so apparent as it is to-day, because the exporters had
 standards of their own which were, and are yet, de-
 termined very largely by the demands of the market
 to which that branch of the industry caters.

When, however, a Canadian dealer makes a sale of
 butter or cheese to another Canadian dealer at some
 distance apart, both are at a disadvantage, owing to
 this lack of definite grading which I have alluded to.
 Probably this desirability is not felt to the same ex-
 tent in Ontario and Quebec, where the influence of the
 export trade is at work, as it is in the other pro-
 vinces, whose whole output finds sale in Canada.

Closely allied to this matter of standards is an-
 other question which demands attention, namely, that
 of purchase and sale on a strictly quality basis. The
 cheese and butter manufacturers do not receive
 sufficient or just reward for turning out high-grade
 goods. Our marketing methods have a tendency to
 average prices for a rather wide range of values, and
 thus we lose the effect of one of the strongest incen-
 tives to the development of the highest possible
 quality in our dairy produce.

Payment all round on a quality basis would be
 more effective in raising the general average of quality
 in our butter and cheese than all other efforts com-
 bined. If this problem were solved, the other prob-
 lems would very largely solve themselves.

New Possibilities in Dairying.

In a well-thought-out address, Wilfrid Sadler, of
 the Dairy Department, Macdonald College, Quebec, enu-
 merated a few possibilities in dairying, which might
 develop into productive enterprises in connection with
 dairying. One of these possibilities was the manufac-
 ture of Devonshire or "clotted cream," and another
 was the making of one-pound cheese, which supply
 a demand that now exists for small cheese with
 no waste. Processes in connection with the manufac-
 ture of these commodities were rather elaborate and
 technical, but it may be found possible in future issues
 to favor our readers with Mr. Sadler's ideas along
 these lines.

Evening Sessions.

At two evening sessions, presided over by Hon.
 Senator Derbyshire and J. R. Dargavel, M. L. A., re-
 spectively, several interesting and instructive addresses
 were delivered. Hon. Geo. P. Graham, M. P., recited
 many reminiscences of the Renfrew District, and re-
 lated how dairying, from a very crude industry, had
 developed into a specialized enterprise of utmost sig-
 nificance. W. Bert Roadhouse, Deputy Minister of
 Agriculture for Ontario, presaged for this province a
 system of agricultural schools similar to those now
 in vogue in the Province of Alberta. These would
 supplement other institutions and other agencies now
 instrumental in bringing agricultural information to
 young men and boys of the Province. A MacLaren,
 Secretary of the Ontario Agricultural College, Y.M.C.
 A., delivered an address on "Community Building and
 Community Builders," which gave the parents consid-
 erable food for thought in the upbringing of their
 children, and in the social work of their districts.

Association Officers.

The officers for the ensuing year are: Pres., J. N.
 Stone, Norham; 1st Vice-Pres., R. G. Leggett, New-
 boro; 2nd Vice-President, Jos. McGrath, Mount
 Chesney; Treas., J. R. Anderson, Mountain View;
 Sec'y., T. A. Thompson, Almonte; Executive Commit-
 tee, Henry Glendinning, Manilla; W. H. Olmstead, Bear
 Brook; Jos. McGrath, Mount Chesney; R. G. Leggett,
 Newboro; J. A. Sanderson, Oxford Station; J. B.
 Ferguson, Renfrew.

HORTICULTURE.

**A Big Program for the Big Conven-
 tion.**

An interesting program has been prepared for the
 annual convention of the Fruit Growers' Association
 of Ontario, to be held at the Hotel Carls-Rite, Tor-
 onto, Jan. 19, 20 and 21. Besides the Presidential
 address, there will be the usual discussion of trans-
 portation problems and an extended discussion of
 packages, taking up berry crates and containers,
 economy crates for apples, baskets, boxes and barrels,
 and questions on tender fruits. An entire morning
 will be devoted to the marketing of tender fruits, with
 special reference to Niagara District, to advertising,
 to precooling, and to other questions which come up
 in this discussion. An afternoon will be devoted to a
 discussion of the Fruit Marks Act, taking up particu-
 larly what constitutes No. 2 apples, the shipping of
 immature fruit, the grading of basket fruits, and
 similar questions on apples. The second morning will
 be devoted to marketing of apples from the stand-
 point of co-operation, bringing up how to get better
 net returns for local associations. Also, the difficul-
 ties members have, and other general questions.

The afternoon will be devoted to marketing
 organizations, and an address by Prof. Caesar on leaf
 rollers. Among the questions for discussion, the fol-
 lowing twenty have been sent out, and they will be
 taken up by some of the best fruit men of the coun-
 try. No fruit man can afford to miss this conven-
 tion:

1. What amount of Ink Spot is allowable on a No. 1 apple?
2. Would barrelled apples sell for more money if they were machine graded?
3. Should Ontario growers attempt to wrap and box their apples, except McIntosh, Snow, Wealthy, King and Duchess?
4. Is the dormant spray of any value where there is no San Jose Scale or Oyster Shell Scales?
5. Of what value are later sprayings in seasons like 1915?
6. Is it profitable to thin apples every season?
7. Are we cultivating our orchards too late in the season?
8. Is it necessary to cultivate the entire surface under the trees in an apple orchard?
9. How low should we aim to keep our trees in our commercial orchards?
10. What have the experts found out about Winter Injury in tender fruits?
11. Shall we continue to intercrop with canning crops at present prices?
12. What prospects have the tender fruit growers for disposing of more of their low-grade fruit in the form of by-products?
13. Has Mr. Caesar or Mr. McCubbin anything new to suggest as a result of the season's sprayings in the Niagara District?
14. Why are not more sweet cherries grown?
15. Could we grow other fruits more profitably on part of the land that is now in sour cherries and plums?
16. What have been the results to date from the Skinner Irrigation at the Horticultural Experiment Station?
17. Should our future plantings include anything except dessert varieties?

18. Would spraying have saved the balance of the grapes this season?
19. Should the grower be compelled to put his name on open as well as closed packages?
20. Shall the blight prevent us from planting more pears?

FARM BULLETIN

The Kilgour Sale.

The auction sale of 50 registered Holstein cat-
 tle, the property of Geo. Kilgour, Mt. Elgin,
 Ont., was held as advertised in this paper. A
 good crowd assembled, and the following list of
 cattle selling at \$100 and over, gives some idea
 of the prices paid:

Ourvilla Calamity Abbekerk, A. D. McGugan	\$175
King Segis of Forest Ridge 10th, E. C. Chambers	150
Delmer Beauty, B. G. Junvey	150
Starlight Beauty Butter Girl, M. Armstrong	135
Calamity Pietertje Beauty, A. Tattersall	145
Zellah, A. Tattersall	165
Homestead Pauline Abbekerk, E. Snyder	165
Duchess De Kol Pietertje, Jas. Langden	160
Calamity De Kol Pietertje, G. E. Wright	185
Colantha Dewdrop, B. G. Junvey	145
Calamity Dewdrop Abbekerk, Wm. H. Johnson	135
Lady Colantha Fairmount, L. H. Lipsit	140
Lady Calamity Abbekerk, E. C. Chambers	150
Maiden Beauty Hengerveld, E. Snyder	140
Ann De Kol, Andrew McGregor	140
Dora De Kol Pietertje, H. Matthews	140
Calamity Charlotte De Kol, J. B. Carmichael	150
Lady Hengerveld Calamity, Harley Johnson	160
Viola Hengerveld Calamity, Wm. H. Johnson	165
Calamity Hengerveld Abbekerk, G. E. Wright	145
Stratford of Campbelltown, M. Armstrong	135
Stratford De Kol, R. J. Kelly	145
Calamity Stratford Abbekerk, A. Dodds	130
Lady Ione Calamity, E. C. Chambers	130
Blossom Calamity Clay 2nd, W. T. Pick	135

Horse Embargo Raised.

It was announced in the Press last week, that the
 Dominion Government has raised the embargo on
 horses, and that horses may now be shipped to the
 United States and to Great Britain and her allies.
 This is a move in the right direction. "The Farmer's
 Advocate" has, for some time been pointing out the
 unfairness of the situation, which has prevailed in
 Canada for months in connection with our horse mar-
 kets. Things should now brighten up, and the Gov-
 ernment could go farther, and take steps to induce
 buyers to buy in this country. Our farmers need
 horse orders just as much as manufacturers need shell
 orders.

Illinois is Still Affected.

An order, under the provisions of the Animal Con-
 tagious Diseases Act, and which came into effect Jan-
 8, permits the importation of stock, hay, straw and
 fodder from all the States of the Union with the ex-
 ception of Illinois, which is still a quarantined area
 so far as Canada is concerned.

Toronto, Montreal, Buffalo, and Other Leading Markets

Toronto.

Receipts at the Union Stock Yards,
 West Toronto, from Saturday, Jan. 8,
 to Monday, Jan. 10, numbered 117 cars,
 comprising 1,581 cattle, 1,508 hogs, 498
 sheep, 63 calves, and 506 horses. Mar-
 ket for cattle was 10c. to 15c. higher.
 Choice, \$7.50 to \$7.75; good, \$7 to
 \$7.25; medium, \$6.50 to \$7; cows, \$5.50
 to \$6.50; bulls, \$5.25 to \$7; stockers
 and feeders, firm; milkers, \$60 to \$100;
 calves, \$5 to \$10.50. Lam's, \$10 to
 \$11.50; sheep, \$7 to \$8.50. Hogs, \$9.50
 fed and watered.

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

	City.	Union.	Total.
Cars	36	339	375
Cattle	451	3,667	4,118
Hogs	630	6,385	7,015
Sheep	341	1,524	1,865
Calves	118	430	548
Horses	—	1,235	1,235

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

	City.	Union.	Total.
Cars	12	113	125
Cattle	275	1,066	1,341
Hogs	235	4,259	4,494
Sheep	167	376	543
Calves	8	201	209
Horses	—	23	23

The combined receipts of live stock at
 the two markets for the past week show
 an increase of 250 cars, 2,777 cattle,
 2,521 hogs, 1,322 sheep, and lambs, 339
 calves, and 1,212 horses, compared with
 the corresponding week of 1915.

REVIEW OF LAST WEEK'S MARKETS

The receipts of butchers' cattle last
 week were very light, totaling only 3,072
 head, but nevertheless they were quite
 equal to the demand, as the general tone
 of the trading was quiet and easy. In
 our previous letter of the holiday week,
 we quoted butchers' steers and heifers
 15c. to 30c. lower, and these prices pre-
 vailed during last four days' marketing
 of last week, but were hard to realize.
 The best of the butchers' sold f.o.b.
 \$6.90 to \$7.50, with the bulk falling be-
 tween \$7 and \$7.25. Outside of this, one
 car of extra well-finished steers fit for
 "show" cattle were brought in by Byron
 E. Hicks, Centralia, and sold at the
 fancy figure of \$8.35. The average
 weight was 1,380 lbs., and the quality
 was a decided credit to the feeder. Fat
 butchers' cows and bulls were extra well
 placed, and firm throughout. Anything
 good in the cows sold in straight loads
 from \$6 to \$6.65, and bulls of class at
 \$6.25 to \$7. A few selected cows and
 bulls put 25c. on these quotations. Can-
 ners were also in demand around 3 1/2c.
 per lb. for the majority. The stocker

and feeder division was quiet, but sev-
 eral firms here have made great changes
 in their staffs, with the special idea of
 handling an increased trade among this
 class in the year just beginning. The
 outlook, therefore, must be promising to
 those well informed. Choice steers alone
 were in demand, and one car of 800-lb.
 reds and roans sold at \$6.60. Milk-
 ers and springers have reverted strongly to
 their old prices before the holidays, and
 the trading is active. Calves of the
 choice veal type were scarce and firm,
 but did not go over 10c. per lb. Lambs
 advanced rapidly all last week, and
 closed strong, up to \$11.35 per cwt. for
 a few, while the range of price for the
 straight decks was \$10.50 to \$11.25.
 Sheep followed suit, and the bulk of the
 light, handy kind, brought \$7.25 to
 \$7.75, with a few topping the market at
 \$8. Hogs had another unsettled week,
 due to outside buying, which raised the
 packers' bid of 9c. per lb., fed and water-
 ed. Sales were recorded up to \$9.35
 in the mid-week, and closed between
 \$9.10 and \$9.25.

Butchers' Cattle.—Choice heavy steers
 at \$7.50 to \$7.75; choice butchers' cat-
 tle at \$7.25 to \$7.40; good at \$6.90 to
 \$7.15; medium at \$6.50 to \$6.85; com-
 mon at \$5.50 to \$6.25; choice cows at
 \$6.25 to \$6.65; good cows at \$5.75 to
 \$6.15; medium cows at \$5 to \$5.50;
 common cows at \$4.25 to \$4.75; canners

and cutters at \$3 to \$4.25; light bulls
 at \$3.75 to \$4.50; heavy bulls at \$5.75
 to \$7.

Stockers and Feeders.—Choice feeders,
 900 to 950 lbs., at \$6 to \$6.50; good
 feeders, 800 to 900 lbs., \$5.50 to \$6;
 stockers, 700 to 800 lbs., at \$5 to
 \$5.50; common stocker steers and heifers
 at \$4 to \$4.75; yearlings; 600 to 650
 lbs., at \$5.75 to \$6.25.

Milkers and Springers.—Choice milkers
 and springers at \$90 to \$100; good cows
 at \$70 to \$85; common cows at \$45
 to \$65.

Veal Calves.—Extra choice veal at \$10
 to \$10.25; best veal calves at \$9 to
 \$9.60; good at \$7.25 to \$8.50; medium
 at \$5.75 to \$6.75; heavy fat calves at
 \$5.75 to \$7; common calves at \$4.75 to
 \$5.25; grassers at \$3.75 to \$4.50.

Sheep and Lambs.—Light sheep, \$6.50
 to \$7.75; heavy and common sheep, \$4
 to \$6; lambs, \$10 to \$11.25; cull lambs,
 \$6.75 to \$8.

Hogs.—Selects, fed and watered, \$9
 to \$9.25; 50c. is being deducted for
 heavy fat hogs and thin light hogs;
 \$2.50 off for sows, and \$4 off for stags,
 from prices paid for selects.

BREADSTUFFS.

Wheat.—Ontario, No. 2 winter, per car
 lot, \$1.04 to \$1.06; slightly sprouted,
 \$1.01 to \$1.04, according to sample;

aprooted, smutty and tough, 92c. to 99c.; feed wheat, 80c. to 85c., according to sample. Manitoba, No. 1 northern, \$1.31, all rail; No. 2 northern, \$1.23, all rail; No. 3 northern, \$1.25, all rail.

Oats.—Ontario, No. 3 white, 39c. to 40c., according to freights outside; No. 2 Canada Western, 50c., all rail; No. 3 Canada Western, 48c., all rail; extra No. 1 feed, 48c., all rail; No. 1 feed, 47c., all rail.

Rye.—No. 1 commercial, 87c. to 88c.; rejected, 70c. to 80c., according to sample.

Buckwheat.—Nominal, car lots, 76c. to 78c., according to freights outside.

Barley.—Ontario, good malting, 58c. to 62c.; feed barley, 50c. to 53c., according to freights outside.

American Corn.—No. 3, new, 79c., track, Toronto.

Canadian Corn.—No. 2 yellow, old, nominal, track, Toronto.

Peas.—No. 2, nominal, per car lot, \$1.90, according to freights outside; sample peas, according to sample, \$1.25 to \$1.75.

Flour.—Ontario, new, winter, \$4.60 to \$4.80, according to sample, seaboard or Toronto freights, in bags, prompt shipment. Manitoba flour—Prices at Toronto were: First patents, \$6.80; second patents, \$6.30 in jute; strong bakers', \$6.10 in jute; in cotton, 10c. more.

Hay.—Baled, car lots, track, Toronto, No. 1, \$17.50 to \$18.50; No. 2, \$13 to \$15, track, Toronto, per ton.

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

Bran.—\$24 in bags, delivered, Montreal freight; shorts, \$25 delivered, Montreal freight; middlings, \$26 delivered, Montreal freight; good feed flour, per bag, \$1.60, Montreal freights.

COUNTRY PRODUCE.

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

Eggs.—New-laid eggs declined slightly on the wholesale, selling at 45c. to 50c. per dozen; cold-storage eggs, 30c. to 33c. per dozen; cold-storage, seconds, 24c. to 25c. per dozen.

Cheese.—New, large, 18c.; twins, 19c. per lb.

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

Beans.—Primes, \$4; hand-picked, \$4.25 per bushel.

Potatoes.—Ontario, per bag, car lot, \$1.40; New Brunswick, per bag, car lot, \$1.60.

Poultry (live weight).—Chickens, 14c. per lb.; fowl, heavy, 13c. per lb.; fowl, light, 11c. per lb.; ducks, 13c. per lb.; geese, 10c. per lb.; turkeys, young, 18c. per lb.; old, 15c. per lb.

HAY AND MILLFEED.

Hay.—Baled, car lots, track, Toronto, No. 1, \$17.50 to \$18.50; No. 2, \$13 to \$15, track, Toronto, per ton.

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

Bran.—\$24 in bags, delivered, Montreal freight; shorts, \$25 delivered, Montreal freight; middlings, \$26 delivered, Montreal freight; good feed flour, per bag, \$1.60, Montreal freights.

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HIDES AND SKINS.

City hides, fat 18c.; country hides, cured, 16c.; country hides, part cured, 15c.; country hides, green, 14c.; calf skins, per lb., 18c.; kip skins, per lb., 16c.; sheep skins, \$1.50 to \$2; lamb skins and pelts, \$1.20 to \$1.35; horse hair, per lb., 37c.; horse hides, No. 1, \$3.50 to \$4.50. Wool, washed, 40c. to 44c. per lb.; wool, rejections, 33c. to 35c. per lb.; wool, unwashed, 28c. to 32c. per lb.

FRUITS AND VEGETABLES.

Apples.—25c. to 35c. per 11-quart basket; Snows, 50c. per 11-quart basket, and \$3 to \$6 per barrel; Sixes, \$1 to \$6 per barrel; Greenings and Baldwins, \$3 to \$4.50 per barrel; Russets, \$3 to \$4.50 per barrel; imported, \$2.25 to \$3 per box; British Columbia, \$2 per box; Ontario, \$1.50 to \$2 per box; California, \$2 to \$2.50 per box.

Montreal.

Live Stock.—Demand for cattle was not very active on the local market last week. Receipts were not very large, but they were rather more than required, and, partly as a result of this, prices declined about 1c. per lb. Some choice steers sold as high as 8c. per lb., while some good line stock, sold at 7c. to 7 1/2c., with good heifers at 6c. to 7c. Extra coarse heavy culls sold as high as 4c. per lb. Canning stock was in fair demand, and prices held at about recent range, viz., 2 1/2c. to 4c. per lb. The market for sheep and lambs was not

quite so strong as it was recently during the time when it struck the top figure for many years. Some Ontario lambs, however, were still selling at 10c. per lb., while Quebec stock ranged from 9c. to 9 1/2c. Calves were also in good demand, and firm. Milk-fed stock sold at 8c. to 9c. per lb., and grass-fed at 4c. to 6c. The market for hogs showed no change, and there was a moderately good demand for selected lots, at 10c. to 10 1/2c. per lb., while sows sold at 8c. to 8 1/2c., and stags ranged about 3c. lower than these figures.

Horses.—There was no change in the market. Quotations follow: Heavy draft horses, weighing 1,500 to 1,700 lbs., \$225 to \$275 each; light draft, 1,400 to 1,500 lbs., \$175 to \$225 each; small horses, \$100 to \$150 each, culls, \$50 to \$75 each, and fine saddle and carriage animals, \$200 to \$250 each.

Dressed Hogs.—The market for dressed hogs held quite firm. The weather was favorable and trade was fairly active. Sales of abattoir-dressed, fresh-killed stock were made at 14c. to 14 1/2c. per lb., while country-dressed, light hogs, were quoted at 12 1/2c. to 13c., and heavies at 11c. to 11 1/2c. per lb.

Poultry.—Weather conditions have not been specially favorable to the poultry trade, temperatures having been quite mild. The present cold snap benefited trade. The market was strong, more especially on turkeys. These advanced 1c. per lb., and sold at 24c. to 25c. per lb. for the choice, fresh-killed stock, while ordinary grades brought 22c. to 25c. Geese were somewhat neglected, and prices were steady, at 14c. to 16c. per lb. Old fowl could be had from 12c. to 14c. per lb., while chickens and ducks ranged from 15c. to 19c., according to quality.

Potatoes.—The market experienced a sharp advance during last week, and prices were higher than they have been for a couple of years past. Supplies were light, and the cold snap was not helpful. Prices were \$1.50 to \$1.60 per 90 lbs., in car lots, while jobbers add 10c. to 20c. to these figures.

Honey and Syrup.—There was a little demand for dark honey. White-clover comb sold at 14c. to 15c., and brown at 12c. to 13c. per lb. White extracted honey was 11c. to 12c., and brown 10c. to 10 1/2c. Buckwheat honey sold at 8c. to 8 1/2c. Maple syrup was steady. Prices in 8-lb. tins were 95c. to 97c. each; 10-lb. tins, \$1.10 to \$1.12 each; 13-lb. tins, \$1.45. Sugar was 12c. per lb.

Eggs.—Almost no new-laid eggs are reaching the market, but the quotation ranged from 48c. to 52c. per dozen. Selected stock was 33c., and No. 1 candled 30c., and No. 2 candled 27c. to 28c.

Butter.—The market held firm and demand was good. Prices were 34c. to 35c. for finest creamery; 33c. to 34c. for fine; 32c. to 33c. for seconds, and 29c. to 30c. for dairy.

Cheese.—Prices were fractionally firmer, at 18 1/2c. to 18 3/4c. for finest colored, 18c. to 18 1/2c. for white, and 17c. to 17 1/2c. for fine Eastern.

Grain.—The wheat market was strong. No. 2 feed oats sold at 45c. per bushel, ex-track, Montreal, and No. 3 Canada West at 48c.

Flour.—The market was unchanged after its recent strength. Manitoba's first patents were \$6.90 per barrel, in bags seconds were \$6.40, and strong bakers' \$6.20. Ontario patents were \$6.50 per barrel, straight rollers being \$5.80 to \$5.90 in wood, and the latter in bags at \$2.80.

Baled Hay.—Prices were unchanged at \$21 per ton for No. 1 hay, carload's ex track; \$20.50 for No. 2 extra good, \$20 for No. 2, and \$18.50 for No. 3.

Seeds.—Dealers quote \$7 to \$10 per bushel of 60 lbs., at country points for alsike, and \$10 to \$13 per bushel for timothy.

Hides.—The market for beef hides fell a cent a pound, and quotations were 20c., 19c. and 18c. for Nos. 1, 2, 3, respectively. Calf skins were 20c. and 18c. for Nos. 1 and 2, while horse hides ranged from \$1.50 to \$3 each, according to quality. Lamb skins advanced to \$2.25 each. Rough tallow was 1c. to 2c. per lb., and rendered 4c.

Buffalo

Cattle.—Demand for cattle at Buffalo last week was strong, as a result of which values held steady to strong, as compared with the week before. Offer-

ings were lighter than the demand, and head, as against 3,225 for the preceding week, and 4,700 head for the corresponding week last year. Quotations:

Shipping Steers.—Choice to prime, natives, \$8.75 to \$9; fair to good, \$8.25 to \$8.50; plain, \$7.75 to \$8; very coarse and common, \$7 to \$7.50; test Canadians, \$8 to \$8.25; fair to good, \$7.25 to \$7.75; common and plain, \$6.50 to \$7.

Butchering Steers.—Choice heavy, \$8 to \$8.25; fair to good, \$7 to \$7.75; best handy, \$7.75 to \$8.25; common to good, \$6.25 to \$7.50; light, thin, \$5.50 to \$6; yearlings, prime, \$8 to \$8.75; yearlings, common to good, \$7 to \$7.50.

Cows and Heifers.—Prime weighty heifers, \$6.75 to \$7.25; best handy butcher heifers, \$6.75 to \$7.25; common to good, \$4.50 to \$6.50; test heavy fat cows, \$6 to \$6.50; good butchering cows, \$5.25 to \$5.75; medium to good, \$4.75 to \$5.25; cutters, \$3.75 to \$4.50; canners, \$3 to \$3.60.

Bulls.—Best heavy, \$6.75 to \$7.

Stockers and Feeders.—Best feeders, \$6.50 to \$7; common to good, \$5.25 to \$6.25; test stockers, \$6 to \$6.50; common to good, \$4.50 to \$5.75; good yearlings, \$6 to \$6.75.

Milkers and Springers.—Good to best, in small lots, \$90 to \$100 in carloads, \$65 to \$75; medium to fair, in small lots, \$55 to \$65; in carloads, \$50 to \$60; common, \$30 to \$45.

Hogs.—Prices at Buffalo last week, notwithstanding the liberal supply, showed a good margin over Western points. On the opening day of the week the top was \$7.40, although the bulk of best grades moved at \$7.35, and pigs landed mostly at \$7.

Sheep and Lambs.—Record-breaking prices for the month of January were paid for lambs at Buffalo last week. Monday, Tuesday and Wednesday, best sort of lots reached up to \$10.65; Thursday bulk moved at \$10.50, and Friday the extreme top was \$10.90, and \$10.90, with the majority going at \$10.75.

Calves.—Market in this department was pretty uniform all last week. Monday, Tuesday, Wednesday and Thursday, the best lots sold up to \$12, and Friday choice veals went at \$12 and \$12.25.

Chicago.

Cattle.—Beaves, \$6.30 to \$9.50; stockers and feeders, \$3.10 to \$8.40; calves, \$7 to \$10.75.

Hogs.—Light, \$6.50 to \$6.90; mixed, \$6.65 to \$7.10; heavy, \$6.65 to \$7.10; rough, \$6.65 to \$6.75; pigs, \$5.50 to \$6.60; bulk of sales, \$6.65 to \$7.

Sheep and Lambs.—Sheep, native, \$6.90 to \$7.50; lambs, native, \$8 to \$10.60.

Gossip.

COMING EVENTS.

Ottawa Winter Fair, January 18-21, 1916.

Convention of the Ontario Fruit Growers' Association at Toronto, January 19, 20 and 21, 1916.

Live Stock Association meetings at Toronto, Jan. 31 to Feb. 4.

SALE DATES CLAIMED.

Jan. 19, 1916.—Jas. Binnie, Erin, Ont.; Aberdeen-Angus cattle and Oxford Down sheep.

Jan. 25, 1916.—Victoria Pure-bred Stock Association, Lindsay, Ont.; A. A. Knight, Secretary.

Jan. 26, 1916.—Brant District Holstein Consignment Sale of Holsteins, Brantford, Ont.; N. P. Sager, St. George, Ont., Secretary.

Jan. 27, 1916.—Bertram Hoskin, Grafton, Ont.; sale of Holsteins at Coburg.

Jan. 27, 1916.—Wm. A. Rife, Hespeler, Ont.; Holsteins.

Feb. 2, 1916.—Canadian Sale of Scotch Shorthorns, Union Stock Yards, Toronto; Robt. Miller, Stouffville, Ont., Manager.

Feb. 8.—Southern Ontario Consignment Sale Company's Annual Sale of Holsteins at Tillsonburg; R. J. Kelly, Culloden, Ont., Secretary.

Feb. 10, 1916.—C. E. Trebilcock, London, Ont.; Holsteins.

Feb. 16, 1916.—Norfolk Holstein Breeders' Sale, at Simcoe; W. A. Mason, Simcoe, Secretary.

March 29, 1916.—Western Ontario Consignment Sale, London; Harry Smith, Hay, Ont., Manager.

April 19.—James Benning, Williams-town, Ont.; Ayrshires.

Gossip.

Attention is directed to the advertisement in this issue of the sale to be held by the Victoria Pure-bred Stock Association at Lindsay, Jan. 25. Some good stock will be offered, and breeders should plan to attend this sale. All are ensured fair treatment. It will be a good place to buy. See the advertisement for particulars.

SALE WILL GO ON.

Since we received the telegram announcing the postponement of the Southern Ontario Consignment Sale, we have received a letter from R. J. Kelly, Secretary, stating that all difficulties had been straightened out and the sale would go on as advertised elsewhere in this issue.

The weakness of the common schools in American rural communities shows itself in their failure to educate the marginal people of the community; in their failure to train average men and women for life in that community; in their robbing the community of leadership by training those on whom their influence is strongest, so that they go out from the community never to return; and in their general disloyalty to the local community with its needs and problems.—Wilson, in "Evolution of a Country Community."

A BIG HOLSTEIN OFFERING.

Wm. Rife, breeder of Holstein cattle, has a new advertisement in this issue which Holstein men should see. About the lot, Mr. Rife writes:

"The offering consists of cows, heifers, calves, and several choice bulls, mostly descendants of Lady Wayne Norine, 22.08 lbs. butter in seven days. She has more high-record granddaughters and great-granddaughters, winners in Provincial dairy tests, than any cow in Canada. Among her granddaughters and great-granddaughters are Queen Butter Baron, 33.17 lbs., former Canadian champion; Calamity Starlight Butter Girl, Buffalo Girl Butter Maid, Calamity Posch Wayne 3rd, Colantha Butter Girl, all winners at Guelph; also Duchess Wayne Calamity 2nd, champion two-year-old in R. O. P., milk one year 16,714 lbs., butter 846.25 lbs. One son, one daughter, several granddaughters and great-granddaughters of Lady Wayne Norine will be in the sale; also a daughter of Count Calamity Mercedes, the first bull in Canada to sire a 20-lb. two-year-old daughter. Another is Pussie Boutsie De Kol, a cow of choice breeding, a daughter of Prince Posch Pietertje, son of Boutsie C. Pietertje De Kol, 20,778 lbs. milk in one year. Her dam is a 19.31 lbs. daughter of Victor De Kol Pietertje. Bittina 3rd, a cow of size, constitution and capacity, a daughter of Pet Lady Posch Prince, a brother to Pet Posch De Kol, 38.54 lbs. butter in seven days; also brother to sire of May Echo Sylvia, 36.33 lbs., and 131 lbs. milk in one day, will be sold. Her dam is Bittina 2nd, a sister to Lady Smith Daisy, milk one day 112 lbs., one year 25,596 lbs. Another is Pussie Poutsie Wayne, a 17.68-lb. two-year-old daughter of Pietertje Mercedes Wayne, son of Lady Wayne Norine and Pussie Boutsie De Kol; Pietertje Boutsie Wayne, full sister to Pussie Boutsie Wayne, a splendid yearling of good size and great promise; also others equally well bred, mostly from R. O. M. sires or dams. First of the herd sires, Pontiac Wayne Korndyke, son of Lady Wayne Norine, who was also dam of Brookbank Butter Baron and Count Calamity Wayne, sires of 40 A. R. O. daughters, including Queen Butter Baroness, 33.17 lbs., Calamity Wayne Pauline, 30.25 lbs., is a great bull. His sire is the son of Pontiac Korndyke, 119 A. R. O. daughters, 11 over 80 lbs. His sire's dam is a 32.17-lb. daughter of the same sire. She sold in the "Dollar" sale for \$4,100. Pontiac Segis Avondale is another, sired by King Pontiac Artis Canada, a son of King of the Pontiacs, 164 A. R. O. daughters, 10 over 30 lbs. His sire's dam is a 31.71-lb. daughter of Hengerveld De Kol, 116 A. R. O. daughters, 9 over 30 lbs. His dam is a 26.44-lb. four-year-old daughter of King Pietertje, son of Blanche Lyons De Kol, 33.31 lbs., and Countess Segis, a 31.70-lb. daughter of King Segis, 86 A. R. O. daughters, 8 over 30 lbs." Look up the advertisement.

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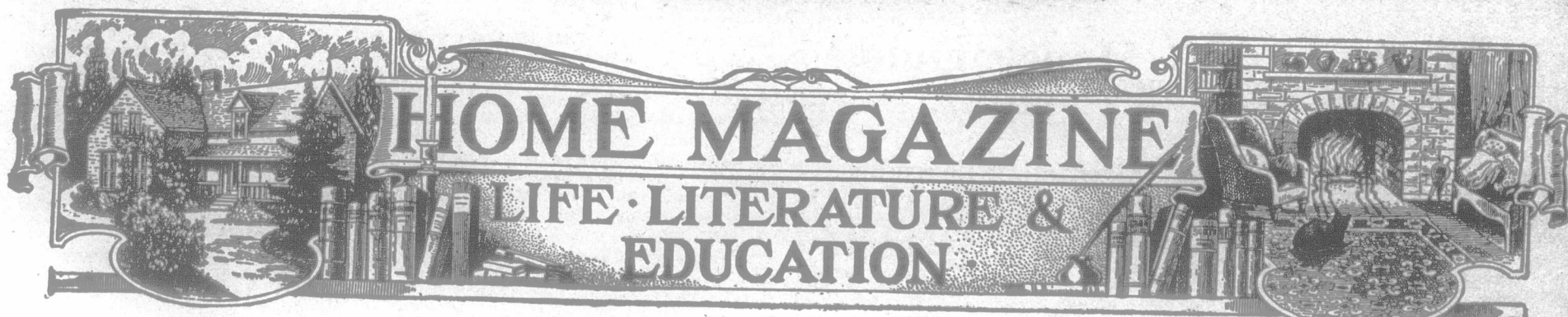
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Candle-Light.

By Thomas S. Jones, Jr.

As in old days of mellow candle-light, A little flame of gold beside the pane Where icy branches blowing in the rain Seem specter figures of a ghostly night; Yet on the hearth the fire is warm and bright, The homely kettle steams a soft refrain, And to one's mind old things rush back again, Sweet tender things still young in death's despoise.

So, when the winter blasts across life's sea Do beat about my door and shake the walls Until the house must sink upon the sand, Then on some magic wind of memory, Borne swiftly to my heart a whisper fall— And on my arm the pressure of your hand!

The Iron Crag.

By Madison Cawein.

Upon the iron crags of War I heard his terrible daughters In battle speak while at their feet, In gulfs of human waters, A voice, intoning, "Where is God?" in ceaseless sorrow beat: And to my heart, in doubt, I said, "God?—God's above the storm! O heart, be brave, be comforted, And keep your hearthstone warm For her who breasts the storm— God's Peace, the fair of form."

I heard the Battle Angels cry above the slain's red mountains, While from their wings the lightnings hurled And Death's destroying fountains, And thunder of their revels rolled around a ruined world: Still to my heart, in fear, I cried, "God?—God is watching there! My heart—O, keep the doorway wide Here in your House of Care, For her who wanders there, God's Peace, with happy hair."

The darkness and the battle passed: and rushing on wild pinions The hosts of Havoc shrieked their hate And fled to Hell's dominions— And, lo! I heard, out in the night, a knocking at the gate: And one who cried aloud to me: "The night and storm are gone! Oh, open wide the door and see Who waits here in the dawn! Peace, with God's splendor on Back to the sad world drawn!"

Browsings Among The Books.

ON BEING INTERRUPTED.

[From "Along the Road," by A. C. Benson. Published by G. P. Putnam's Sons, The Knickerbocker Press, New York.]

The important thing is not to lose our hold upon life; it is a great temptation to busy and energetic people to overvalue their work and to undervalue their relations with others. But routine work is not necessarily valuable, except in so far as it is a discipline against restlessness, in so far as it steadies and strengthens character. No one can avoid drudgery, but on the other hand, mere purposeless drudgery is not valuable at all; it consumes energy and diminishes vitality. Nothing is so clearly stated in the Gospel as the principle that we ought

not to get immersed in the details of life so as to lose sight of higher and wider things; and a man who gets so attached to routine work that he cannot bear the smallest deviation from it, is little better than the miser who can think of nothing but his money; both the drudge and the miser are infected by a perverted virtue: the one begins by believing in economy, and both end by becoming mere machines.

Interruptions, then, are often but the influx of the tide of humanity into the ordered life. The danger nowadays is that we all tend to become specialists; and specialism unduly pursued means a loss of due proportion. A father who is so busy that he cannot find time to see anything of his children, however exalted a view he may take of the dignity and importance of work, is really not doing his duty at all, but sacrificing duty to inclination. Horace says that it is pleasant to play the fool in reason; it is not only pleasant, it is a plain Christian duty to cultivate affectionate relations with others, and to contribute one's share to the general current of the world. I remember an excellent schoolmaster who was very anxious on principle to make friends with his boys, but if an old pupil dropped in to see him, he fidgeted in his chair, hummed and hawed, glanced at his watch, kept the papers he was correcting in his hand, and gave such a sense that his precious time was being wasted that the attempt was seldom made a second time. The other day I had a severe lesson myself, which I hope to take to heart. A colleague of my own at Cambridge said to me that an undergraduate would like to consult me on a small matter. I said, "Why does he not come to see me?" The reply was, "He would like to, but he is afraid of interrupting you." I quite appreciated the courtesy and consideration of the young man; but for all that I look upon it as a severe and probably merited criticism, and I do not relish a compliment to my industry at the expense of my humanity.

(From A. C. Benson's "Along the Road.") "Life is full of interesting, exciting and amusing things, and one is meant to enjoy them heartily."

"I do not think there is a more beautiful or a happier gift than the power of seeing past the surface of things into their inner realities."

"Stale gossip, old stories, the weather, the last railway accident, cautious and incomplete views of politics—these are the heavy matters, liturgically recited, which make conversation insupportable. But if a companion has interests, views, prejudices, preferences, and if he will discuss them, not merely state them, and show a decent interest in one's own views, then any talk becomes interesting."

"There is much in the Gospel about love and helpfulness and conciliation, and not much about inflexible adherence to doctrine or despotic intolerance."

"We have a dreary belief that it is everyone's duty to get on, to make money, to win consideration, to be respected. I am not sure that these ambitions are not absolutely wrong; a man ought to have work and to enjoy it, and after that he ought to desire to be innocently happy, and to be loved; consideration and respect generally mean that a man is thought to know how to secure and how to retain a larger share of the conveniences of life than other people, and to be in no hurry to part with them."

Charles Kingsley was once travelling in the United States and met a newspaper editor who said to him: "Mr. Kingsley, I hear you are a Democrat. Well, so am I. My motto is, 'Whenever you see a head above the crowd, hit it.'"



Serbian Sufferers.

These fled in advance of the Teutons, and have returned to the place where their homes once stood.—Photo by Underwood & Underwood.

The gist of the whole matter is that we must teach ourselves to regard interruptions not as necessary evils, but as welcome links with the world. We must court them rather than resent them, and we must practice, as far as we can, the art of never being preoccupied or hurried or snappish, remembering that however important our work and occupation may seem, we are human beings first, and that no ideal, however zealously pursued, can supersede the claims and the duties and the amenities of life.

"Good heavens!" said Kingsley, commenting upon the remark, "What a ghastly conception of human equality, to attempt not to raise everyone to the level of the best, but to boycott all force, all originality, all nobility, and to reduce all to a dead level! If that is Democracy, I am no Democrat!"

"I think it is probable that in the days to come men will think with a bewildered compassion of the time when

war was an accepted practice. They will say to themselves that it is incredible that men should ever have thought it a noble thing to let the brute passions loose. They will see that the gift of God is life and health, and happy labor and joyful union; and that man should have thought it admirable to spill each other's blood for vainglory and for passion and for greed, will seem as inconceivable and an intolerable thing."

The Windrow.

Sir Douglas Haig, who succeeded General French as commander of the British forces in France and Belgium, is fifty-four years of age. He distinguished himself during the South African war, and was General French's right-hand man during the earlier part of the present war.

The farthest line of defence about Salonika has been placed at about twenty miles from the city, about half way to the Serbian border. Beyond this the country has been laid waste by the French and British, and all tunnels and bridges which might be of use to the Teutons have been torn up. The Allies have promised recompense to Greece for all such necessary devastation.

Major Robert R. Moton, a close friend of the late Booker T. Washington, has been elected principal of the Tuskegee Institute.

The boys of the Manual Training Department of one of the schools at Klamath Falls, Oregon, are busy erecting their own building, which is 25 by 45 feet ground measure, and 16 feet high. They are very much interested in the work. "Instead of going off to play at the hour of dismissal, they stay on the job, with a strong disregard of union hours; until sent home by the instructor at supper time."—All of which goes to show that the chief factor in the education of the child is to interest him.

Paul Koenig, arrested on a charge of having plotted to destroy the Welland Canal, is believed to be the head of Germany's secret service in New York. He held the position of Chief of Police for the Hamburg-American Steamship Company at the eastern ports of the United States. The papers seized when he was arrested contain the names of nearly 100 men who are believed to be his agents.

Before the war the European medical schools gave no encouragement to women to study in them. Now regrets are expressed everywhere that more women physicians are not available. The end of the war will inevitably bring new facilities to women everywhere to study in medical colleges and practice in hospitals.

"After the world had knocked and battered me around sufficiently, I came to look on every critic as a friend; the more he railed, the more I thanked him. For I discovered that every broadside of condemnation hit a weak spot in my character or equipment, and by marking these vulnerable spots I could strengthen my battle-front. Any public service that I may now render has been largely due to the unconscious kindness of my enemies. How to arrive somewhere;

Let your critic be your guide."—Edward Earle Purinton.

One of the bravest exploits of the war was the self-sacrifice of two companies of an Irish regiment, the Inniskillings, who gave their lives in Serbia to save the rest of the army. Though armed only with rifles, and short of ammunition, they held the crest of a hell all one morning against a heavy bombardment, until the lines behind them could be strengthened. "Hardly a man of them escaped." The withdrawal of the Allied forces from the Vardar Valley was due to the fact that they were outnumbered ten to one.

The rector and curate of St. Stephen's, Bristol, Eng., have advertised in the London Times for women who are willing to take as husbands the crippled soldiers who are now coming back from France and the Gallipoli Peninsula. It is proposed to establish a "League for the Marrying of Wounded Heroes." A very practical magazine suggests that if the pensions are high enough there will be no lack of women volunteers for this work of patriotism.

A regular railroad service, according to The Independent, has been established between Berlin and Constantinople, two trains a week running each way. So far, also, the Germans have a clear way over the Asiatic running from Scutari, on the Asiatic side of the Bosphorus across from Constantinople, to a point north of Aleppo where it branches, one line running to Jerusalem and the other towards Bagdad. Of the latter, about 150 miles remain to be constructed before it reaches the Tigris. The British reverse in that vicinity a few weeks ago was no doubt due to the arrival of German reinforcements sent on by this railway, sufficient in number to overpower the British force, which had worked its way up from the Persian Gulf. It is rumored that an army of Turks is being trained in Palestine for an attack on Egypt, also that the Jerusalem railway has been extended, and double-tracked, to the Egyptian frontier.

Dr. Frederick Adams Woods, in his painstaking attempt to answer the question, "Is War Diminishing?" gives us a statistical table showing that since 1450 the European nations have spent approximately half their time in waging war. Have they sacrificed half of their populations and destroyed half or more of their wealth? Who knows? We do not even know whether by systematic research it would be possible now to learn even roughly what the sacrifice has been. . . . But it is time to begin research, determined, costly, scientific, exhaustive, to ascertain, in the scientific man's sense of the word, what is the cause, or what are the causes of war. Until this research has brought forth a positive, unimpeachable result, our efforts to prevent war are likely to be but sentimental and visionary.—The Independent.

Suits Free!

Remarkable Cloth that Won't Wear Out! Now readers, would you like a suit or pair of pants absolutely free! A most astounding offer is being made by a well-known English firm! They have discovered a remarkable Holeproof Cloth. You can't tear it! Yet it looks just the same as \$20 suiting. You can't wear it out no matter how hard you wear it, for if during six months of solid hard grinding work every day of the week (not just Sundays), you wear the smallest hole, another garment will be given free! The firm will send a written guarantee in every parcel. Think, readers, just \$6.50 for a man's suit, and only \$2.25 for a pair of pants, sent to you all charges and postage paid, and guarantee for six months' solid grinding wear. Now, don't think because you are miles away you cannot test these remarkable cloths, for you simply send a 2-cent postal card to The Holeproof Clothing Co., 56, Theobalds Road, London, W.C., Eng., for large range of patterns, easy self-measure chart and instructions. These are absolutely free, and postage paid. Send 2-cent postal card at once! Mention "The Advocate."

Hope's Quiet Hour.

Grenfell of Labrador.

Among the books which I bought to give away at Christmas was "Grenfell of Labrador," by James Johnston. As Doctor Grenfell is a man of world-wide renown, you can hardly fail to be interested in his doings; so I am going to give you to-day some extracts from the book. We can all gain inspiration from a man whose life has been "one, long, ceaseless effort to uplift and help the men whose lot he has made his own, and whose perils and hardships he has ever since been sharing."

When the Doctor was a lad of eighteen, studying medicine at the London Hospital, he was attracted by a huge crowd going into a large tent in the slums of Stepney. Curiosity led him inside, and he came out, later, with the feeling that his religious life was a humbug. He says: "I vowed in future that I would either give it up or make it real. It was obviously not a thing to be played with."

Nine years afterwards, in 1892, he started on his great mission to Labrador. "Since that date, in the face of hardship, peril, and prejudice, he has, with a light heart and strong purpose, healed the sick, preached the Word, clothed the naked, fed the starving, given shelter to them that had no roof, championed the wronged." Certainly his religion has been a real thing, and he has shown his faith by his works.

"Dr. Grenfell's practical mind and unconquerable will have accomplished wonders. To-day, the record includes four hospitals, each some 200 miles or more apart . . . humble wood buildings, where a qualified doctor and trained nurse reside, and where they have a dozen beds for sick people . . . these are refuges to which anyone and everyone is expected to come in sickness or any other kind of trouble."

"In the winter of 1905, Dr. Grenfell travelled 1,500 miles with his dog teams, and in the following summer and winter, twice this distance in the modest Mission boat. . . . Prior to Dr. Grenfell's despatch by the Mission (to Deep-Sea Fishermen) the only medical aid provided for these 30,000 forgotten souls around Labrador was a physician stationed on the mail-boat. Consequently, when Grenfell appeared with a hospital ship and a nursing staff, curing without fee and laboring without stint, their first thought was that he was crazy, and their second, that he had some sinister purpose in this seeming kindness." But he soon won their confidence and deep affection, as he well deserved, for his work has been a joy to him. He describes, on one occasion, how his little "Strathcona" looked after a season's "roughing-it" along the coast. The paint and varnish were scraped off, and the flag fluttered in tatters from an impromptu staff. "Her toilworn features spoke of things accomplished." He thought of the thousand and more people who had found help aboard her during the summer, of the libraries distributed along the bookless coast line, the casks of food and drugs for men and dogs deposited in well-known places along the line of water travel—making long dog journeys possible. "And, beyond all the physical aid that had been rendered, one remembered the many sorrowful hearts to which she had carried messages of comfort and cheer."

The skipper remarked: "Doesn't look exactly like a pleasure yacht, Doctor, does she?"

"Indeed she doesn't," was the earnest answer of Dr. Grenfell, who felt that the very idea of the mission steamer being a "pleasure yacht" grated on his feelings. The servants of the Master are not spending their lives in pleasure seeking.

"Dr. Grenfell has helped hundreds, by judicious advances of food and fishing-gear, to make an independent livelihood, and in November, 1905, he was able to announce, for the first time on record, that nobody along Labrador would be in danger of starvation during the winter."

Serious illness has declared that fear of the sea was unapproachable to this man, who braved the wildest storms on

countless occasions. "He is, to be sure, a man altogether unafraid. It seems to me that his heart can never have known the throb of fear. Perhaps that is, in part, because he has a blessed lack of imagination; in part, perhaps, because he has a body as sound as ever God gave to a man, and has used it as a man should; but it is chiefly because of his simple and splendid faith that he is an instrument in God's hands—'God's to do with as He will,' as he would say. His faith is exceptional, I am sure—childlike, steady, overmastering, and healthy. It takes something such as the faith he has to move a man to run a little steamer at full speed in a fog, when there is ice on every hand. It is hardly credible, but quite true, and short of the truth: neither wind, nor ice, nor fog, nor all combined, can keep the 'Strathcona' in harbor when there comes a call for help from beyond. The Doctor clammers cheerfully out on the bowsprit and keeps both eyes open. 'As the Lord wills,' says he, 'whether for wreck or service, I am about His business.'"

"Had Dr. Grenfell been a weakling, he would long ago have died on the coast; had he been a coward, a multitude of terrors would long ago have driven him to a life ashore. . . . Scarcely is it necessary to add that the number of patients who seek the help of the good Doctor and his friends are only limited by the accommodation and distance, while the benefit resulting is as practical and as Christian as if the sufferers had all been picked up 'naked and wounded' by the side of the road to Jericho.

Miss Huling—a visitor in Labrador—writes: "When I was at Battle Harbour I heard a little girl on the hill call, 'Grenfell's coming!' and in came the Strathcona at full speed . . . with a big deck-load of wood, and Dr. Grenfell on the forward end of it. The next day being Sunday I went to two services with the hospital people. At both, Dr. Grenfell preached. I never in my life heard any sermon so picturesquely practical. He spoke to the seamen in the story of Jonah as, if they were Newfoundland fishermen in oilskins and sea-boots. . . . To sit there among the fishermen in the bare, clean little church, dimly lit by the long, blue, northern twilight, and hear the Bible story applied directly to the Labrador fishermen, was a scene I shall never forget."

Here is a message which comes to us from the Doctor himself: "I've never been sorry a moment for the choice I made. There's a reward in it. I used to have a different idea of Christian reward—the kind with a halo in it and a pair of wings. That didn't appeal to me. But I am getting a reward that is worth while, getting it every day—the reward of satisfaction there is in doing things that help people, and the reward of knowing that this is something that the Master approves. That is what He did when He was here—helped people, and if we want to follow Him, that's what we have to do too." And he says again: "I can only say for myself and my fellow-workers that we would change places with no one. The opportunities for service for the Master are so obvious and so numerous that every day brings the sweetest of all joys—the opportunity of doing something for others."

The personality of the hero of Labrador was thus described by "J. R. M." in the "Toronto News":

"Do you want to see a man out of the Bible? Go to hear Grenfell of Labrador. All your life long maybe you have wondered how men looked and spoke who 'left all and followed Christ.' You can see the bearing of such a man to-day. Have you never known people to whom life is really simple, and who see everything in a white light, who march like soldiers all day long and every day in the year, who work miracles because they give up everything else, and eat, breathe, think, and pray for Africa, Labrador, or the submerged tenth, the one desire of their hearts? If you have, then you have known Grenfell. . . . He is happier than anyone else can be with the exception of people who are doing the same kind of work in their own way. . . . the eyes, the voice, the step, belong to a man whose soul is satisfied."

We can all try to copy Dr. Grenfell in his determination to "see how much good I can do," and so make our lives worth while wherever God has called us to live

and serve. I saw in the papers that the famous doctor of the foregoing sketch had sought a new field of service, and was going "to the front." He seems to be a man who is ready to "welcome each rebuff that turns earth's smoothness rough"—a born fighter who is bound to push his way where the need is greatest. May God prosper him.

DORA FARNCOMB.

News of the Week

A movement is afoot in Toronto to have women take over positions occupied by young men, who may thus be released to enlist.

One thousand skilled workmen who went to England with the Canadian troops, have been released, at Lloyd George's request, to work in the munitions factories. Lloyd George declares that the length of the war will depend on the amount of munitions turned out by British workmen.

The Quebec Anti-Liquor League is asking the Provincial Government to enact a no-trading law, shorten hours of sale, and otherwise restrict the liquor traffic.

The Right Hon. Arthur Henderson, leader of the Labor party in the British House of Commons, and two other Labor representatives, have resigned from the Coalition Ministry.

Major Winston Churchill will command a battalion of Royal Scots Fusiliers.

Troops had to be sent to quell striking rioters in the steel mills, Youngstown, Ohio.

The presence of Prince Hohenzollern in Switzerland has given rise to rumors that Germany is trying to conclude a separate peace with France and Russia.

A British submarine made its way from the Sea of Marmora into the Golden Horn and attacked an arsenal, doing considerable damage.

Germany is said to be making up for shortage of men by automatic rifles and machine guns placed in concrete shelters, and by equipping her men in the trenches with field-glasses.

An Italian steamer from Brindisi, with 425 Monte egrin recruits from the United States on board, struck a mine in the Adriatic and sank with a loss of 200.

Five million four hundred thousand men have offered themselves voluntarily for the British army, leaving only 350,000 to be touched by conscription, if it is enforced.

In return for the dropping of bombs on Salonika by Austro-German airmen, Allied aviators destroyed the enemy's aviation sheds at Gievghel.

The Serbian army now being refitted in Albania by Italians, is reported to number 100,000 men.

The Ontario Military Hospital at Orpington, Kent, England, will be completed by the end of January. It is the gift of the people of Ontario, and will accommodate 1,040 patients.

Russia has announced that the sale of vodka will not be resumed after the war, so great has been the advancement of the country because of its absence.

At time of going to press no attack has been made on Salonika; but the Bulgars are said to be massing in Bulgarian Thrace.

The Dollar Chain

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

Contributions from Dec. 31st to Jan. 6th: Alfred Lamm, St. Ola, Ont., \$1.00; L. G. M., South Durham, Que., \$2.00; Neil McKillop, Parkhill, Ont., \$1.00; Wm. Fallick, Middlemiss, Ont., \$2.00; A. Friend, Drayton, Ont., \$5.00; Roy Aitchison, Lucan, Ont., \$1.00; "Toronto," \$2.00.

Amount previously acknowledged . . . \$1,939.10

Total to Jan. 6th . . . \$1,953.10
Kindly address contributions to "The Farmer's Advocate and Home Magazine," London, Ont.

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Right Hon. Arthur Henderson, of the Labor party in the British House of Commons, and two other Labor representatives, have resigned from the Ministry.

Winston Churchill will command the 10th Battalion of Royal Scots Fusiliers.

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The Ingle Nook.

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

Flotsam and Jetsam.

Dear Ingle Nook Friends,—Nothing continuous, and connected, and "heavy with thought" this morning. (This is being written on Dec. 28th.) When you have eaten three Christmas dinners in two days, when you have just got into harness after holidays, when you have spent nine hours on a train journey that should take six, when you are stiff after an unaccustomed bout of snow-shoeing, when you have—but enough said to explain why this morning's talk shall consist of pick-ups, just flotsam and jetsam lumbering along and caught up haphazard.

First of all, have you yet taken to measuring the years by the Christmas and New Year season? It seems to me that I have,—either then or the mid-summer holiday time—perhaps because they mean meeting with "ain folk." And how the years are speeding into the past! As a friend of mine often says at such milestones, "We'll soon all be spirits." It's true, and it's all right so long as we live long enough and keep well enough to make the development we want to make, and do the work we aim to do before it is time to step out to new adventures.

During the holidays my small nephew enticed me off to the woods for a snow-shoe tramp. To say the least, for me it was strenuous,—heavy snow, unaccustomed muscles, a problem of getting out to solid road again when one had reached a point a mile or more from it,—but it's worth while to visit the woods in winter. At no other time can one so discern the character of the different trees; then there are the nests, and the various "tracks"—stories in the snow—with the great muffled silence everywhere. My small nephew saw every nest and every track. In the heart of the woods he seemed to produce a dozen eyes all at once. His interest was a delightful thing to see. "Don't you wish you could live here always, auntie?" he inquired, "and have work that you liked, you know."—Little philosopher!

I tried to get him to promise that he would pay me a long visit in the city. He didn't want to hurt my feelings, and proceeded to make all sorts of excuses. Finally he conceded that he would come to see me, of course, but that he would rather not stay very long—"because, you know, I haven't much use for the city."

As he trudged along ahead of me I could just see him, ten years hence, forging ahead through some great forest of the north,—a surveyor and naturalist at eleven years of age must be one always; and the words came to me, "Blessed is he who has found his work; let him ask no other blessedness."—Now, that isn't in the Bible. It came from the pen of a prophet more modern than the ancient Sages,—the good old Sage of Chelsea, and Ecclefechan.—Don't you remember?

Have you ever noticed how friendly people become in a storm? I walked down to the office this morning in the midst of a fairly considerable blizzard, not cold enough to "freeze the word upon the lip," but with snap enough in the air, and wind enough, and blowing snow enough to make going forward a conscious progression. I met half a dozen people who, ordinarily, would have passed with the conventional "How do you do." Not one of them who didn't smile broadly and call out a cheery greeting—such as country folk habitually give as they drive by. Subconsciously, no doubt, there was the feeling of a common obstacle and a common overcoming. To a greater degree than usual in the midst of our hard-shelled

civilization, barriers disappeared and men became brothers.

One can understand how some such feeling as this, but intensified a thousand fold, must animate the men who stand side by side in the trenches. In the face of so great a common danger friendships must be forming that will defy the deadening influences of time, and so in this, if in nothing else, the Great War will do some good; the growth of even one undying friendship is not a matter to be passed over lightly. It may exist when all else has passed. It may be a matter of moment in the Universe.

A girl said to me this morning, "One resolution I have made for the New Year,—that I will stay in more and read more." Another said, a day or so ago, that she had made up her mind to worry less during the next year, and complain less. Some say that New Year resolutions are of no use—that one always breaks them; but surely it is better to make them than not. One thinks seriously before one makes a resolution at all, and thoughts are forces. Each resolution should be an impetus towards improvement. It is true, of course, that in a weak moment one may forget, but there is no law to prevent resolving—renewing and solidifying one's determination—over and over and over again, if necessary, every day or every week in the year. It is better to climb that way than to slip back altogether. Only so can we become strong. "Did you know," says Will Levington Comfort, "that without the upward spread of wings there can be no song from the skylark?"

Just here I am reminded of something that Booker T. Washington, said in Portland some time ago. Dr. Washington, you will remember, was the greatest colored man America has yet known. Born about 1858 in a little Virginia shack, a slave, without money, position, influence or education, he battled his way through life, attained education and culture, founded the Tuskegee Institute—the University of the colored people—and became renowned throughout the world as a great educator and a great philanthropist. By his lectures he raised \$160,000 annually to be devoted to the work of the Institute. No wonder that four of the Presidents of the United States were proud to own him as a personal friend, and that when he died a few weeks ago his passing was mourned by thousands of the most cultured minds of the world.—Booker T. Washington, once a little waif who was glad to sleep under a sidewalk! "Of course, it is difficult actually to enumerate the essentials of human greatness," was said at the time of his death, "but if Dr. Washington was not a great man, then no man is great."

But to return—speaking in Portland some time ago, Dr. Washington said, "I would not belong to a race that did not have a problem to work out. The one thing worth living and dying for is the uplifting of mankind, the privilege of making others 'happier and more useful.'"

Is there a race on earth that has not a problem to work out? Is there an individual who has not?—and not one problem but many? After the war it is inevitable that problem shall be piled upon problem. With this New Year shall we not determine to have the courage to face and to surmount? And shall we not often remember Booker T. Washington and his self-appointed mission to make others "happier and more useful." *****

I hope you haven't wasted your Christmas tree, but that you have decorated it with things that birds like, and put it out for a continuous feast for them, and source of delight for yourself in watching them. Perhaps it isn't too late to do it yet; but if you act on the suggestion be sure to tie your tree high on a fence, where only the birds can come.

Yesterday morning some of us smiled broadly. The mother of the small nephew of whom I have spoken, suggested that he and she trim the tree in this way, and so the two of them set to work tying bits of bread and suet to the branches. With infinite care the tree was taken out, a hole dug, the trunk inserted and snow banked about to keep it upright—all this right op-

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Geneva Feed (crushed corn, oats and barley).....	1.80
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We pay railway freight on \$25.00 order or more, in Ontario and Quebec.
Allow 30c. for each cotton bag required.
We have a small quantity of Grimm or Variegated Alfalfa. If interested, write for prices.
We are buyers of Red, Alsike and Alfalfa Clovers and Timothy Seed.
Write us and send samples.

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posite the window, so that people would have nothing to do but sway in rocking chairs inside and watch the birds regaling themselves.

The idea was fine, for just fifteen minutes; then, looking through the window we discovered Roughie, the dog,—and a big, long dog he is, too,—standing on his hind legs, joyfully picking off all the bits of suet. . . . By this time, no doubt, the tree has found a better place on the fence.

And this reminds me,—why not start the school children at making bird-boxes during the winter? In order that the birds may be coaxed to use them, they must be made in certain ways, with openings of the right size, and so forth, but I understand that Prof. Crow, of the O. A. C., will supply printed directions to those who apply for them. The cost I do not know, but it will be very little.

We cannot afford to be without the bird-songs, can we? And we need the little insect-eaters themselves for the sake of our crops.

I told you this would be a flotsam and jetsam. . . . Wishing you all a happy and useful year, this 1916.

Sincerely yours,

JUNIA.

Subjects for Discussion.

I have been thinking that the introduction of a few set topics for discussion in the Ingle Nook might inspire a few of you to give expression to your opinions during these long winter evenings. If any of you would like to talk for a while on any of the following we shall all be very glad:

1. What does my neighborhood need to improve it?
2. What has been the greatest influence in my life?
3. Should bachelors be especially taxed?
4. Did Dr. Haiselden do right in permitting the terribly deformed Bollinger baby—which would certainly have been an idiot—to die?
5. Should medical certificates be required before people are permitted to marry?

If there is a good response to the above subjects others will be set. Please write your thoughts within a week, so that there will be no waiting.

A New Patriotic Song.

The many musical folk among our readers who are anxious to secure new patriotic songs at this time, will be glad to hear of one that has just been published, "Canadian Forever." The words were written by the late Dr. Drummond, of Montreal, famous as the poet of "habitant"; the music was set by the poet of the "habitant"; the music was set years ago by St. Paul's Cathedral, London, Ont., whose sudden death last autumn was lamented by a host of friends and admirers.

The song has been published by Mrs. Sippi, and in accordance with the intention which death only prevented her late husband from fulfilling himself, she has paid all the charges on the first issue of 1,000 copies, reserving no profit whatever for herself. The entire profits from these will be devoted to the work that is being done for the soldiers of Canada.

The song is highly praised by musical critics, and upon its own merits, as well as because of the cause for which it is offered, will, no doubt, meet with a large sale. The price is 25 cents per copy. Mrs. Boemer—the "H. A. B." who contributed for many years to the pages of "The Farmer's Advocate and Home Magazine"—will be pleased to receive orders. Her address is 513 Dundas St., London, Ont.

AN INSPIRED BACHELOR.

To Junia,—Just by accident I noticed Mrs. Taylor's letter in the Ingle Nook Department of Dec. 16th, going in raptures over a baby, and wondered if any bachelors ever visited the Ingle Nook, thinking, no doubt, they would be badly disappointed after reading her letter, or disgusted at her choice of the best thing in life. Well, she, at least, caught one bachelor, but did not cause him to feel very badly. Most of us have been in close touch with babies, and I have never known a bachelor to

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...ly yours.
JUNIA.

have a special dislike for them. I am on very intimate terms with all the babies in the neighborhood. Some have called me papa. Of course, it is not true, and I would caution all babies to be very careful when and how they apply the word.

Bachelors are not a selfish lot as some seem to think. Very often we do not marry because we are unselfish and give most of our lives to helping others, baby brothers or sisters, for instance. But if we miss the joys of a baby we miss the sorrows too. What about the babies in the trenches to-night, and the many more whose bodies are buried in France. Are they not a great sorrow to parents? And what of the after-life? The churches teach a God of Love, in fact, claim that God is Love, but they also preach a lake of fire where all unsaved are to spend eternity. Now, about one-third of the population of the earth are professing Christians. What about the other two-thirds? They are someone's babies are they not? Now, I will stop preaching, or I will have Miss Farncomb after me, (is she not a splendid lady?). Besides, I do not believe the above-mentioned doctrine, so, ladies, don't cut it out on that account. I am not trying to put forth an argument in favor of no babies, but I claim if they bring joy they also bring sorrow, and Mrs. Taylor has not got it all on us after all.

Perhaps it is just the spirit of adventure that has prompted me to write and face the Ingle Nook. I have never known of a bachelor attempting it before. Wonder if I am the first. Tell me, Junia, please, if you are not disgusted with having a bachelor write. Of course, we are a conceited lot, and believe we don't need to be bachelors if we don't wish to be. I am still about middle life, feel like a boy, look as young as a Peel County war horse (without the paint) and leap year just a few days off. If that doesn't do the trick, I may swoop down on the Ingle Nook again and resort to conscription.

A BACHELOR.

Oh, Bachelor! Bachelor! it is only very primitive and out-of-date preachers who

COWAN'S Perfection COCOA

Before retiring
at night — have
it brought to
you



Little
Miss
MAIDEN
CANADA

387

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

preach a "lake of fire"—real, literal fire—now. Where on earth do you live? I don't know one who believes to-day in that awful relic of Dark Ages literalism.—And don't you think that there are many, many real Christians who make no profession except by what they do? All people do not wear their hearts on their sleeves, or tell all that they think, or confuse orthodoxy with religion. You are to be congratulated for cutting loose from any doctrine that is unreasonable and unchristian.

No, you are not the first bachelor to appear in the Ingle Nook. One or two ventured before, and found a seat in the Ingle Nook, too.

YARN FOR THE SOLDIERS.

Dear Junia,—Could you tell me where I could get yarn free to knit socks for the soldiers? Also if I could get cloth free, I would do any sewing for the Red Cross war work. I am really anxious to help, but cannot afford to buy the yarn or cloth myself.

"ONE WHO IS ANXIOUS TO HELP."
Apply to your nearest Red Cross branch for yarn and flannel. There is a branch in almost every town.

AN APPRECIATED LETTER.

To the Dear Old Farmer's Advocate,—So you have really reached the Jubilee Year. Don't I well remember the semi-weekly edition. Yes, I have been a reader for over 40 years, in the parental home, and now in my own, and I think the reading of it is likely to go on down, as my son very much approves of it in preference to all other farm magazines. It surely is worthy, and this Christmas Jubilee Number is just super-excellent. I wish to thank the person that told us of Helponabit's demise. I did miss her so. Then I am glad to see Lankshire Lass is still with us, and Hope is truly God's own messenger of help and cheer. Peter McArthur, we do enjoy you immensely. You are just no. 1. How do you get time to write and farm, too? And your planting of the wood lot! That is great, and yet as we drive along the highways we see grand old elms that

for Discussion.

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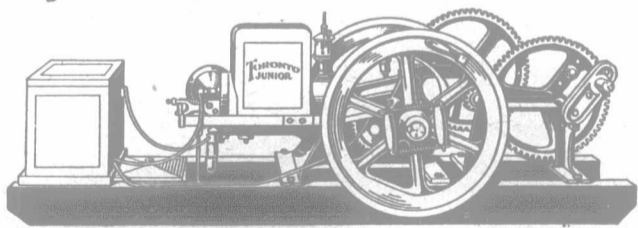
many years to the

mer's Advocate and

30 Days' FREE Trial At Our Expense

We will pay the freight on this engine if you buy direct from the factory during this month. We will also give you our lowest CASH price and a GUARANTEE that the engine is of faultless construction, that it will generate its full rated brake test horse-power and do all the work that any engine of its size can do. We will ship it on thirty days' trial FREE. We could not afford to make this offer if we did not know the engine was "A1 and O K," steady, powerful and a light fuel user.

TORONTO Junior



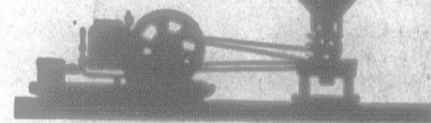
\$65.00 Cut Out
The Coupon

The coupon attached is convenient when ordering, as it embodies our "guarantee" and gives shipping destination. Please use it. The price—\$65—is a special inducement with our prepaid freight guarantee, 30 DAYS' FREE TRIAL. We absolutely know our goods are all we claim them to be, and no farmer or power user can get better goods or better service or better terms than from this old-fashioned house. If you require a more powerful engine, it would be a good plan to give us the size of your farm, number of cattle, etc., and kinds of work, besides pumping, you could use an engine for. This will enable us to judge the size of engine you require, and we may be able to give you some pointers that will save you money.

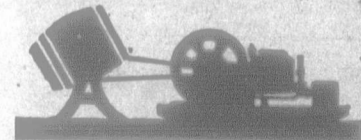
The TORONTO Jr. will pump all the water required for house, barn, stable and garden. For water systems, it is fully adequate, and we recommend it.



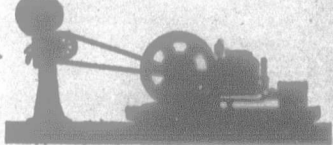
While we do not recommend so light an engine as the 1 1/2 h.-p. TORONTO Jr. for grinders, we have heavier styles with capacity up to 8 h.-p.



Turning the churn is a regular drudgery which can be turned over with perfect satisfaction to the TORONTO Jr.



Cream separators are turned at any speed desired by the TORONTO Jr.



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Dear Sirs:—Please ship me, on 30 days' FREE Trial, freight prepaid, one TORONTO Jr., 1 1/2 h.-p. Gasoline Engine as per description, terms and guarantee in this advertisement, to my nearest R. R. station, as given here. It is understood that at the end of 30 days I am to send cheque or money order for \$65, or return the engine, "freight collect" at Toronto.

Name Address

Nearest R. R. Station

Please also send me catalogue and particulars of the following additional farm machinery:

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New Strength for the Weak and Ill.

To increase your strength and energy, to invigorate your nervous system, to renew your health in the shortest possible time — there is nothing so efficacious as a "course" of Sanatogen.

Thousands of men and women have gratefully acknowledged this fact. For example, Sir Gilbert Parker, M.P., the Canadian-born novelist and statesman, writes:—"I have used Sanatogen with extraordinary benefit. It is a true tonic-food, feeding the nerves, increasing the energy, and giving fresh vigour to the overworked body and mind." And Mr. Arnold Bennett, whose novels and plays have brought him world-wide fame, writes: "The tonic effect of Sanatogen on me is simply wonderful!"

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THE FOOD-TONIC

Sanatogen is no secret remedy; its composition—albumin and phosphorus in true organic union—is known and approved by every doctor in the world; and it produces no reaction or other ill effects.

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Please send me a Free Booklet.

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Write for our large photo-illustrated Catalogue No. 7—it's free to you.
THE ADAMS FURNITURE CO., Limited
Toronto, Ontario

The Proprietor of the Patent No. 12141 relating to "Air Current Interrupter" desires to license or to grant license to others on reasonable terms with a view to the working of the patent in Canada. Applications addressed to the patent agent, Mjölkningsmaskin Omega, Plea Sweden.

are hewn down and stumps left. If I had the power I would like to sentence the man to prison for the rest of his life that so brutally cut down trees. It surely takes away the value of a farm to leave it bare of any tree shelter or beauty. To our queen of the Ingle Nook Junia, a happy New Year, and thanks for all your helpful hints.

ONLOOKER.

We all thank you very much, Onlooker, for your kind word.

OLEANDER, CACTUS.

Kindly tell me, through your valuable paper, what to do with my oleander bush. I have only had it two seasons. It is an old bush, and they say it flowered beautifully a year ago, but last summer it hadn't a blossom. I kept it in the dining-room all winter, and it kept growing; has that anything to do with it not flowering? I also have a Christmas cactus that hasn't bloomed for five years; could you suggest a remedy? It drops its foliage almost as fast as it grows.

W. E. A.

Perhaps I cannot do better in regard to your oleander than quote you from Eben Rexford: "If you have an old plant," he says, "put it in the cellar over winter and plant it out on the lawn in summer, where it will bloom beautifully. In fall the plant can be taken up, its roots crowded into an old box or tub, and stored away in the cellar for use another year. It is well to winter your oleanders in the cellar, because they are not winter bloomers, strictly speaking, though they often bloom at that time of the year; they get a chance to rest while in the dark. . . . Give oleanders a rich soil, made up of loam, sand and old manure; re-pot each spring (unless set out in the garden). Watch the stock and foliage, and if you notice a scale take an old tooth brush and apply water containing lemon or fir-tree oil." While resting, by the way, the plant requires very little water.

In regard to the cactus, Bailey says: "In preparing soil for cacti use one-half good, fibrous loam, and one-half very old lime rubbish, secured from some old, torn-down, brick building, taking care to sift from it the fine, dusty particles to ensure material of perfect drainage. To this may be added good, clean sand. It is better to select pots of a rather larger size than the body of the plant. When potting fill the pot one-third with rough lumps of coke or other such material, on the top of which put a liberal supply of finely-broken crockery. Now, add the soil, taking care to put the coarsest soil directly on top of the crockery, and then the finer on which to plant the cuttings or plants. Take care to plant very little below the surface. Be sure that the soil is fairly dry, and carefully abstain from watering for some time unless the weather is very warm and bright, when a very light syringing may be given once a day until the plant shows signs of growth. . . . It is a mistake to repot cacti very often unless the roots have become infested with mealy bug or other pests. Should this occur the plant must be turned out of the pot, roots thoroughly washed, and planted in a new pot and in new soil. The condition of the soil in each pot should be constantly and carefully examined, and if the slightest sign of imperfect drainage is manifest, the case should receive prompt attention.

"In the summer season some persons turn their plants out of pots into the open borders. . . . It will be found a much safer practice to plunge the plants, in their pots, in late spring, or as soon as the cold, spring rains are over. Any warm, well-drained bed or border may be selected for this purpose, when they may receive sunlight and perfect ventilation."

From the above you may, perhaps, gather what is wrong with your cactus. Perhaps all it needs is plunging out of doors in summer. By "plunging" is meant simply "planting" pot and all in a border so that the earth comes all around the pot.

Things to Eat.

Wash about 1/2 pint of 14 pints whole wheat flour, 1 1/2 tea-spoon soda mixed with 2 teaspoon cream of tartar, 2 eggs, 1/2 pint cold water. Sift the flour and soda together, then add the cream of tartar and water. Place

GRAND PRIZE (ONLY HIGHEST AWARD)



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Tile Drain Contracting
An Independent Business



Suitable for the farmer, and sure of work ten months in every year. Thousands of miles to be put in afford unequalled opportunity for active men. Here is one who has found an ample field and made a success:

"The machine cut 3,075 rods of ditch, averaging 29 in. deep in 22 days of ten hours each. For this I received 19¢ per rod on an average, except for two outlets ditches, \$137.88, leaving me a total net profit of \$463.32, or 21.15 per day. In one week with my Buckeye I cut 1,000 rods. At the average price of 19 cents per rod, this totaled \$190.00 and allowing \$40.00 for expenses, I netted \$150.00."
J. C. HOFFMAN.

"A Perfect Trench at One Cut"
BUCKEYE
Traction Ditcher

has proved itself equal to every test and a money-maker for its owners. Works perfectly and economically through any soil, leaving a trench ready for the tile in perfect grade, and with finely pulverized dirt easily replaced. Hundreds of farmers and contractors are getting excellent service.

LET THESE MEN TELL THEIR OWN STORIES:

Riga, Mich., Jan. 22, 1915.
"I am sending you a record of my Ditcher that I have made in 115 days. The expense of running the machine was \$206.35 for gas and repairs, and for the labor I paid \$230.00. I paid my man \$2.00 a day. That made my total expenses \$436.35 for running the machine. I dug 13,312 rods of ditch and the work came to \$2,945.26 that I received, so that left me for my work \$2,508.91, and my machine was just as good when I got through as it was when I got it."
JOHN GOLL, JR.

Upper Sandusky, O., July 9, 1915.
On one job I cut 598 rods in five days, for which I received at 20¢ per rod \$119.60. My expense for this time was \$35.00 or \$7.00 per day. Deducting this expense of \$35.00 from the total money received, \$119.60, left me clear \$84.60 or \$16.92 clear profit per day. This was very pleasing to me and I would, indeed, have been satisfied with \$10.00 clear per day. On another piece of work I cut 2,000 ever in obtaining all the work my machine can possibly do."
E. H. WENTZ.

You may duplicate their successes yourself. Write to us for full particulars, catalog, and many testimonials of farmers who have found it profitable for individual use and contractors who have made good returns for their efforts.

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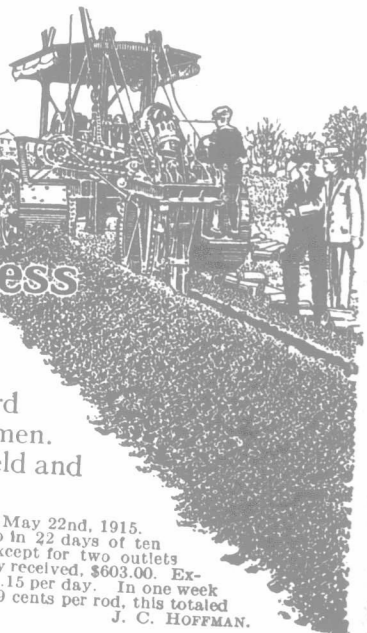
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**Cut
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ey-maker for its owners
aving a trench ready for the
asily replaced, Hundreds of

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E. H. WENTZ.

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GOITRE

Our Home Treatment for thick neck is a most satisfactory and reliable one. We have used it successfully for many years, and strongly recommend it for eliminating the trouble. Write now for particulars and copies of genuine testimonials.

Describe trouble fully when writing.

SUPERFLUOUS HAIR

is an affliction that makes every girl or woman so troubled a most unhappy person. We treat such growth, assuring absolute satisfaction by Electrolysis, also MOLES, WARTS, RED VEINS, etc. Arrange to come for treatment during the holidays if you live out of town. Booklet "F" mailed on request with sample toilet cream.

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We give free, one bottle of our Northern Brand Animal Attractor with every shipment of \$10.00 or over.

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PRICE LIST, SPORTSMEN'S CATALOG AND TRAPPERS' GUIDE, FREE FOR THE ASKING
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No. 3 HALLAM BUILDING - TORONTO

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SAVE Time—Save Labor—Save Expense
Our new catalogue describes every kind of device for money making and labor saving on farms. Write to:
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Sent free for one month's trial. Write for particulars.
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Smooth, Hard, Clean-Cut.
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WRITE TO DAY FOR FREE SAMPLE & PRICES
MAPLE LEAF OIL CAKE MEAL
DAILY TO ALL LIVE STOCK
THE CANADA LINSEED OIL MILLS, LTD
TORONTO & MONTREAL

Please mention "The Farmer's Advocate."

in a well-greased tin, cover with buttered paper, and steam for one hour over constantly boiling water. Remove from the steamer and bake for ¼ hour in a slow oven. This makes a delicious and wholesome bread.

Raisin Bread.—Four cups flour, 4 teaspoons baking powder, ¼ cup sugar, 1 teaspoon salt, 1 cup Sultana raisins, 1 egg, 2 cups milk. Sift baking powder and flour together, add sugar, salt and raisins. Beat up the egg, add the milk to it, pour them among the dry ingredients, and mix very thoroughly. Put in a greased pan, cover, and let rise for 20 minutes. Bake for about one hour, covered with an oiled paper.

Creamed Carrots.—Simmer sliced carrots in salted water. Fry a tablespoonful or two of minced onion in butter, and when done add 1 cup rich, brown gravy, 1 teaspoon chopped parsley, and the drained carrots. Simmer for 15 minutes, and serve very hot. Parsley may be grown in the house in winter.

Irish Potato Cakes.—Take as many cold, mashed, potatoes as needed, put on a floured bake-board, season with pepper and salt, and mix in a little flour. Roll out half an inch thick, cut in cakes and put in a very hot oven. Bake a light brown, butter and serve very hot for supper.

Vegetable Harebit.—Peel and slice 6 onions, and put in a frying pan with ½ cup boiling water, ½ tablespoon dripping or butter. Cook slowly 1 hour, then add 1 cup canned tomatoes, leave the cover off and cook for 20 minutes. Turn into a buttered dish, slice cheese on top and bake until it melts. Serve very hot on hot biscuits halved and buttered.

Fricassee of Potatoes.—Into a saucepan put 1 tablespoon of butter and 2 of flour; add 1 pint raw potatoes cut in small dice; stir well and cook for 10 minutes, covered. Next, add 1 pint boiling water, and pepper and salt to taste. Cover and simmer for 15 minutes, stirring frequently. Serve very hot for supper.

Dumplings to Serve With Stewed Chicken.—Mix and sift 3 level teaspoons baking powder, and ½ level teaspoon salt, with 2 cups flour. Add enough milk to make a soft dough. Roll lightly on a floured board and cut into very small biscuits. Place on a greased pie plate in a steamer, and cook 20 minutes. Do not move or uncover the steamer while the dumplings are cooking, and be sure to keep the water boiling all the time. Do not start to make the dumplings until the chicken is tender, as they must be served immediately when cooked.

Apple Tarts.—Line a shallow dish with rich pie-crust. Put in the stewed apples (cooled). Roll out some paste, wet it slightly with the yolk of an egg beaten with a little milk and a tablespoon of powdered sugar; cut the paste into narrow strips and cross-bar it over the tart. Lay another strip around the edge, after wetting the edge paste slightly, press down, and snip with the scissors to decorate. Bake in a quick oven. If preferred small, individual tarts may be made. Instead of cross-barring serve cold, covered with whipped cream, flavored with lemon and decorated with a dot of currant jelly.

Chocolate Pudding.—Take 1½ squares chocolate, ¼ cup butter, ½ cup sugar, 2 eggs, ½ cup milk, 1 cup flour, 1 teaspoon baking powder, 1 teaspoon vanilla extract. Cream the butter and sugar together, add the yolks of the eggs, well beaten, the milk and chocolate grated and dissolved, the baking powder, vanilla, and whites of eggs stiffly beaten. Pour into a buttered mould, cover with a buttered paper, and steam steadily for 1 hour. Serve with lemon sauce.

Lemon Sauce.—Mix 1 tablespoon butter with 1 tablespoon flour in a small saucepan over the fire; add 1 cup sugar, 1 cup water, and the grated rind and juice of half a lemon. Stir and boil for 5 minutes.

Chocolate Bread Pudding.—Two squares chocolate, 2 cups bread crumbs, 4 cups scalded milk, 2-3 cup sugar, 2 eggs, ½ teaspoon salt, 1 teaspoon vanilla, ½ cup chopped English walnut meats. Melt the chocolate over hot water. Soak the bread in the milk for ½ hour, then add the sugar, chocolate, salt, vanilla, nuts and the eggs well-beaten. Turn into a buttered pudding-dish, and bake in a moderate oven for half an hour. Serve with cream.

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CALDWELL'S MOLASSES MEAL

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POWER ON THE FARM BRINGS PROSPERITY TO THE FARMER

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The high grade of materials and workmanship employed in the manufacture of the Lister Engine, its superior construction, equipment and finish, combined with its great simplicity, render it THE MOST ECONOMICAL AND RELIABLE POWER AVAILABLE FOR THE USE OF THE CANADIAN FARMER.

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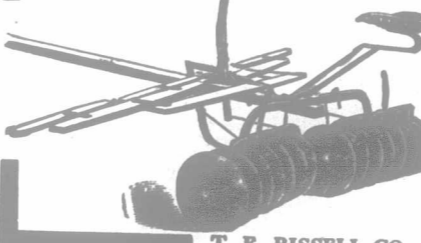
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For full information, as to terms, regulations and settlers' rates, write to

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Sizes for 2, 3 and 4 horses.

THE BISSELL DISK



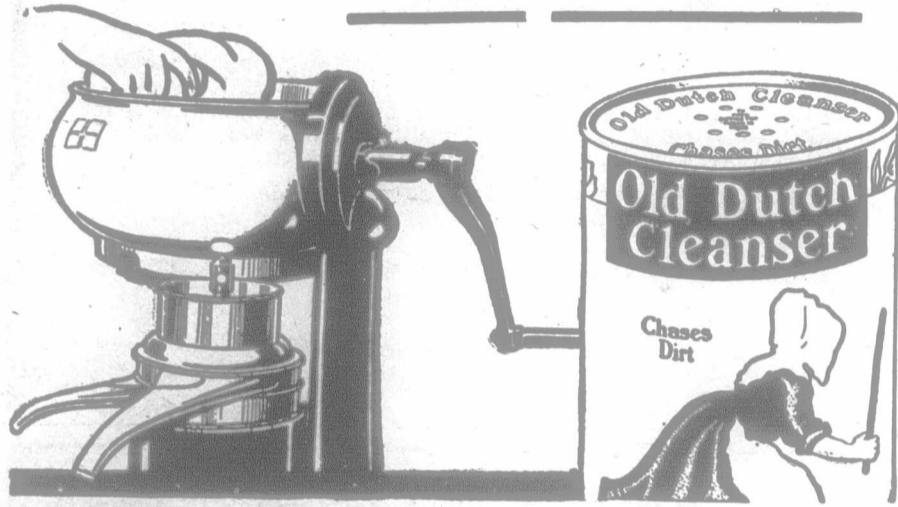
has made a great record throughout all Canada. There are good reasons why this is so. Balanced Right—Does not hump up. Improved Plate—Cuts and turns soil over. Hitches well Back—Easy draught. This Disk has several imitators, but no equal. None genuine without the name "BISSELL." Test trials given on hard land with anything that cultivates. Write Dept. W for free Catalogue. 92

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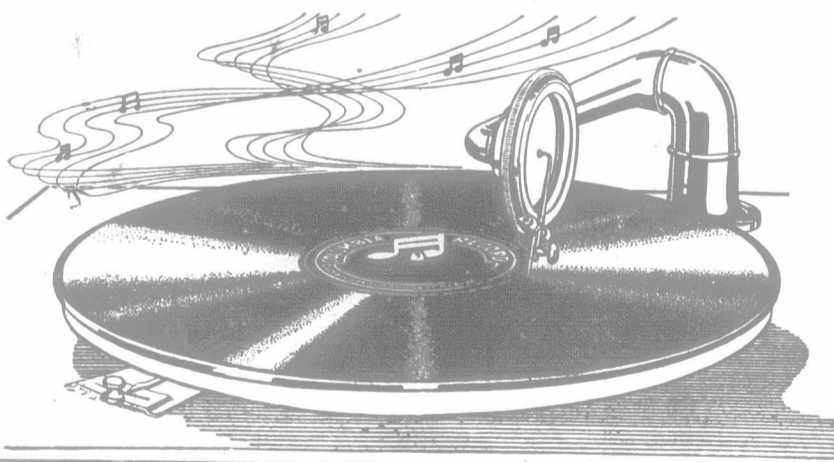
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ON THE ROAD TO HAPPINESS. Albert von Tilzer. Sam Ash, tenor. Orchestra accompaniment.

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The Scrap Bag.

A HANDY RACK.

A very handy, home-made rack for kettle covers may be easily made with a piece of board and two or three slats. Nail two slats crosswise of the board and near the ends of it, then nail two or three horizontally to these, and far enough apart so that the covers will not interfere when slipped in. Covers with knobs should be used so that they will catch on the slats. Hang the rack close to the stove, and so save time spent in walking about and looking for covers.

BOILING POTATOES, TURNIPS, ETC.

Potatoes, turnips, carrots, etc., may be freshened, when necessary, by soaking them for several hours in cold water. Always boil them gently, partly uncovered, and remove them just as soon as done, as too long cooking darkens them and gives them a strong flavor. Potatoes cooked even two or three minutes too long are likely to be soggy. When cooking them add a tablespoonful of salt for every dozen, and boil continuously. At the end of 30 minutes drain dry and set on the back of the range with the cover partly off. If they must wait, cover with folds of cheesecloth. A still better way of cooking potatoes is to scrub them well with a brush and bake them.

TO WASH FLANNELS.

In order that they may not shrink and become hard and stiff, flannels should be washed and dried very quickly. They should never be left lying wet for any length of time.

For washing them the water should be warm but not hot, and while drying they should not be hung either in too hot or too cold a place. To put them so close to a stove to dry that the steam rises from them is a sure plan for shrinking them. Always dry them, if possible, in an airy, moderately-warm place where the temperature is even.

Never rub soap directly upon woollen articles; melt it first in a little hot water, and then pour it into the tub. A little ammonia will help in the cleansing. Do not rub fine articles on a board, but squeeze and knead them in the water, using a fresh lather for a second washing if necessary.

Rinse all flannels very thoroughly in clear, warm water, each a little warmer than the last. Put them through the wringer, then shake out well.

To whiten white flannel that has turned yellow, soak the articles for 2 or 3 hours in a bath made of 1/2 lb. good soap jelly, 2 tablespoons carbonate of ammonia, and 2 tablespoons powdered borax, all dissolved in 5 or 6 gallons soft water.

WASTEFUL COOKING.

"Brutal cooking" and similar terms are used by one of the greatest doctors of the world to describe the form of cooking which removes from foods, vegetables in particular, what are called the "nutrient salts." The law has gone after the manufacturer who does this in his processes.

These nutrient salts are the iron, the phosphorus, and other minerals in our foods, which are of vital importance to body processes. Their absence results in anemia, often taking fatal forms, and in all those forms of debilitation which leave the body the victim of any assailant. Food may be demineralized in the cooking, and people who eat such are often spoken of as demineralized.

Most of the minerals are soluble in water, so watery cooking, the water thrown away, demineralizes foods. It is not water which is the most effective in softening foods, as some cooks seem to think, but heat, which softens. A good soup can be made by cooking meat three hours, but the bone yields its qualities, gelatin, etc., only after 12 hours. Even a ram's horn can be cooked soft, as it used to be for gelatin. The inside of peas and beans may often be cooked soft in as little as an hour and a half, and any of them in three hours, after soaking in hot water for an hour or two, but the skins should be sieved out for sensitive eaters. Some eaters have acid eruptions after eating beans baked 12 hours, because of the skins. The skins cannot be digested, but can be decomposed. Intestinal decomposition is always an evil.

Peas and beans are among the most

POULTRY AND EGGS

Condensed advertisements will be inserted under this heading at three cents per word each insertion. Each initial counts for one word and figures for two words. Names and addresses are counted. Cash must always accompany the order for any advertisement under this heading. Parties having good pure-bred poultry and eggs for sale will find plenty of customers by using our advertising columns. No advertisements inserted for less than 50 cents.

BRAHMAS, Black Spanish, Partridge Rocks, Partridge Wyandottes, Indian Runner Ducks, Choice trios at five dollars. White Leghorn cockerels, \$1, bred from winners at Guelph, Ottawa and Detroit. John Annesser, Tilbury, Ont.

BARRED Rock cockerels and Pekin ducks of high-grade stock. Prices low. Leslie Kerns, Freeman, Ont.

BARRED Rocks, laying strain, prize-winners. Cockerels, \$1.50 to \$2.00. Females \$1.25 to \$1.50. Central Poultry Yards, Colborne, Ont.

FOR Sale. Anything in "Snowflake" White Leghorns. Two to five dollars. E. W. Burt, Paris, Ont.

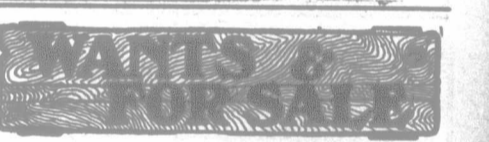
FOR quick sale: large Toulouse and Embden geese, two seventy five each. Wallace Tufts, Welland, Ont.

FOR SALE—Embden Gander, Rouen ducks and drakes. C. Maier & Son, Riverview Farm, Delaware, Ont.

WHITE Wyandottes (Martin strain) Prize Winners. Dunc. McTavish, Chesley, Ont.

WHITE Wyandotte Cockerels. Dandies. Two Dollars each. Thos. K. Hand, R. R. No. 3, Mansfield, Ont.

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



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

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

BOY age thirteen will do chores in return for board. Must go to school. Box "D", Farmer's Advocate, Toronto.

FOR Sale—Farm of 100 acres. Lot 15, Con. 2, West Oxford. Good buildings; one of the most desirable farms in West Oxford. Close to condensing factory, cheese factory, church and school. Present owner wishing to retire. For further particulars apply on the premises of address: John Leigh, R. R. 5, Ingersoll, Ont. No Agents need apply.

FARM Property—good 200 acre farm for sale in the county of Perth and the Township of Elma. Good buildings; well watered, fenced and drained; soil, clay loam. Wm. Fisher, R. R. No. 1, Atwood, Ontario.

WANTED—Married man to work on farm. W. C. Good, Paris, Ont.

WANTED by married man with family, situation on fruit farm. Could run a farm, must be near small fruit. Disengaged beginning of March. Box H, Farmer's Advocate, London, Ont.

J. VICAR MUNRO, ARCHITECT and C. E. Now is the time to have your plans and specifications drawn. Obtain competitive estimates and save money. Homes, churches and schools. No extra. Address Room 54, Bank of Toronto Building, London, Canada

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

Double your Brain Power—by a systematic course of Mind and Memory training. Free booklet on request. Canadian Correspondence College, Limited, Dept. E. E., Toronto, Canada.

BUTTER WANTED

Highest price paid for dairy butter and new-laid eggs.
J. D. Arsenault, 142 Sanguinet St., Montreal

THE IMPORTED CLYDESDALE STALLION PRESENT FASHION

This horse is a sure stock getter and the sire of some of the best horses in Ontario. One pure bred Aberdeen Angus Bull twelve months old; one pure bred Aberdeen Angus cow seven year old, to calve in March; one yearling and one calf, Aberdeen Angus. The above animals are all registered and will be sold at the stock sale on Jan. 25th, 1916 at the Royal Oak Farm, Lot 8, Con. 5, Garafraxa, Tp., Fergus, Ont., C.P.R. & G.T.R. Belwood, Fergus P.O., C.P.R. J. Ransom, Prop.

Mention this Paper

common world. meat. nitrogen proteid, European Peas and of veget also con food elem pends fo albumin muscles; with pow the nutri these thin tations. which in bark of have live their di lated by get some them.

Shall w starch an our beans softening tically no tened by

CANN During t be canned very conve of surpris Be got in Jars wit best, and ilized by b mediately of the righ salt, and required, b solidly pac the wash-b with hay l to come al and have on each. water com hours, add When done rubbers, w warm wate the jars o water when boiler. P way, or m in the jars, and poured

Even the growing-roo everything Rhubarb, as be grown in cess is mos the roots in dark place, where they plant them place them will soon fo and it will weeks before or pull. R the food je The same p gus. Mushr work, and f idea of havin though there on the day Horse manur be prepared put in the c is at the p spawned, and weeks mushr ture is to be certain crop professional. From Suburb

A piano's w extreme heat two may be r ary judgment by using six gum. Wrap tissue paper, cloth, and tie top of the pl side of its b to tie these that are not astion. Ivory keys

PULTRY AND EGGS

Advertisements will be inserted under three cents per word each insertion for one word and figures for names and addresses are counted as one word each. Parties having poultry and eggs for sale will find it profitable by using our advertising advertisements inserted for less

Black Spanish, Partridge Rock, Wyandottes, Indian Runner Ducks five dollars. White Leghorn cockerons winners at Guelph, Ottawa and Anneser, Tilbury, Ont.

Black cockerels and Pekin ducks of stock. Prices low. Leslie Kerna.

Black, laying strain, prize-winner. \$1.50 to \$2.00. Females \$1.25 to Poultry Yards, Colborne, Ont.

Anything in "Snowflake" White Two to five dollars. E. W. Burt.

Large Toulouse and Embden seventy five each. Wallace Tufts.

Embden Gander, Rouen ducks and Maier & Son, Riverview Farm.

Embden (Martin strain) Prize Winner. McTavish, Chesley, Ont.

Embden Cockerels. Dandies. Two each. Thos. K. Hand, R. R. No. 3.

Stockmen and Poultrymen, our page illustrated booklet on feeding; how to construct a house which will hold 100 hens, gives dimensions and every piece of lumber required, common diseases of stock and poultry. Tells how to cure roup in chickens full information about Royal Poultry Foods and Remedies. JENKINS MFG. COMPANY London, Canada

Advertisements will be inserted under three cents per word each insertion for one word and figures for names and addresses are counted as one word each. Parties having poultry and eggs for sale will find it profitable by using our advertising advertisements inserted for less than 50 cents.

Advertisements will do chores in return for board and school. Box "D", Toronto.

Advertisements of 100 acres. Lot 15, Con. 2, Good buildings; one of the farms in West Oxford. Close to cheese factory, church and owner wishing to retire. For particulars apply on the premises of Eigh, R. R. 5, Ingersoll, Ont. Apply.

Advertisements of 200 acre farm for sale in Perth and the Township of Ingersoll; well watered, fenced and loam. Wm. Fisher, R. R. No. 1.

Advertisements of man to work on farm. W. Harris, Ont.

Advertisements of man with family, situation could run a farm, must be near beginning of March. Box 100, London, Ont.

Advertisements of ARCHITECT and C. E. have your plans and specifications drawn competitively, reasonable prices and save money and time. No extra. Bank of Toronto Building, London, Canada

Advertisements of Hides and skins for robes and coats; skins and furs. Send them to me and soft and pliable. Address: HELL, Delhi, Ont.

Advertisements of Brain Power—by a systematic of Mind and Memory training. Canadian Correspondent, Dept. E. E., Toronto.

WANTED

Advertisements of price paid for dairy and new-laid eggs.

Advertisements of 42 Sanguinet St., Montreal

Advertisements of CLYDESDALE STALLION FASHION

Advertisements of stock getter and the sire of sires in Ontario. One pure bred bull twelve months old; one pure cow seven year old; one pure heifer and one calf, Aberdeen animals are all registered and stock sale on Jan. 26th, 1916 at Lot 8, Con 5.

Advertisements of rgus, Ont., C.P.R. & G.T.R. O., C.P.R. J. Ransom, Prop.

Advertisements of this Paper

common and inexpensive foods of the world. They are in truth vegetable meat. Meat is made up of fat and a nitrogenous product commonly called proteid, or albumin is the word the European dietitians most use for it. Peas and beans contain huge quantities of vegetable albumin or proteid. They also contain starch (carbohydrate) the food element upon which man mainly depends for muscular energy. With albumin man builds and mends his muscles; with starches he supplies them with power to work. There are also the nutrient salts. But it is none of these things which cause the acid eruptions. It is the skin of the bean, which in composition is not unlike the bark of a tree. In extremity people have lived on roots and bark because their digestive powers were so stimulated by fierce hunger that they could get some nourishment, some starch from them.

Shall we wash all but parts of the starch and some of the albumin out of our beans and peas for the sake of softening something that contains practically no nourishment when it is softened by the longest cooking?—Sel.

CANNING FISH AND MEAT.

During the winter fish and meat may be canned at home, and will be found very convenient to have on hand in case of surprise visits, when extra meals must be got in a hurry.

Jars with snap-down covers are the best, and must be very thoroughly sterilized by boiling. When ready, fill immediately with the meat, cut in pieces of the right size to pack, sprinkled with salt, and spices if liked. No water is required, but the meat should be very solidly packed. Put a layer of hay in the wash-boiler, and set the jars on it with hay between. Pour in cold water to come almost to the top of the jars, and have the lids of jars lying loosely on each. Put on the boiler lid, let the water come to a boil, and then boil 4 hours, adding more water if required. When done take out the jars, adjust the rubbers, which have been soaking in warm water, and seal at once. Place the jars on a cloth wrung out of hot water when they are taken from the boiler. Poultry may be done in this way, or may be stewed first, then put in the jars, with the stock boiled down and poured on boiling hot.

CELLAR GARDENING.

Even the cellar can be turned into a growing-room during the winter, when everything outdoors is frozen up. Rhubarb, asparagus and mushrooms can be grown in the ordinary cellar. Success is most sure with rhubarb. Dig the roots in fall and store them in a cool, dark place, in damp sand or in soil, where they can rest. To force them, plant them in a box or half-barrel, and place them near the furnace. The heat will soon force the roots into growth, and it will be a matter of only a few weeks before the stalks are ready to cut or pull. Rich soil is not a necessity; the food is already stored in the roots. The same plan is followed for asparagus. Mushroom growing involves more work, and few people really like the idea of having manure in the cellar, although there is no odor from it except on the day when it is put in the cellar. Horse manure should be used and should be prepared outdoors, and, when ready, put in the cellar. As soon as the bed is at the proper temperature, it is spawned, and the bed cased in. In a few weeks mushrooms will appear if the venture is to be a success. It is an uncertain crop for the amateur, and even professional gardeners sometimes fail.—From Suburban Life.

PIANO POINTERS.

A piano's worst enemies are dampness, extreme heat and moths. The first two may be avoided by exercising ordinary judgment, and the third overcome by using six five-cent cubes of camphor gum. Wrap these separately in a thin tissue paper, then in a very thin cheese-cloth, and tie three on the inside of the top of the piano, and three on the inside of its base. Care must be taken to tie these packages to inside parts that are not involved in the piano's action.

Ivory keys may be easily kept clean

Give YOUR Home this Added Distinction—YOURSELF

No need to live in rooms whose dullness crowd you in these stay-in days when beauty such as this can be had so easily. You'll be surprised how you yourself can make any room more livable, more enjoyable to all, with the lasting charm

PEDLAR'S PERFECT METAL CEILINGS AND WALLS

will bring it. Take the stately "Colonial" style for instance. Think of giving your most important room the delicacy and distinction that makes the true "Colonial" admired by all. There are designs that represent any Period, and Period styles to go with any room. Pedlar's Perfect Metal Ceilings and Walls are moulded sharp and clear on steel dies. Made to fit with such accuracy no joints can show or come apart. There are Pedlar designs that will harmonize with the particular height and size of all rooms in your home. They can be painted any tint or shade, and will last as long as your house—dust proof, vermin proof, fireproof and sanitary. Bring to your home—NOW—that cheeriness and charm that will make these long dull days in doors seem shorter? Bring to it a lasting beauty you will come to cherish more and more as years go by. Send us a rough plan of any rooms you wish. Our experts will make you helpful suggestions free of charge. Shall we send you too the fine Wall and Ceiling Catalogue L. F., showing many of the 2,000 designs and Period styles to select from? Ask us today. Address Nearest Branch: **THE PEDLAR PEOPLE, Limited** ESTABLISHED 1881 Executive Office and Factories: **Oshawa, Ontario** Branches: **Montreal, Ottawa, Toronto, London, Winnipeg**

The Colonial Period Style

PEDLAR'S PERFECT METAL CEILINGS

CANADIAN PACIFIC

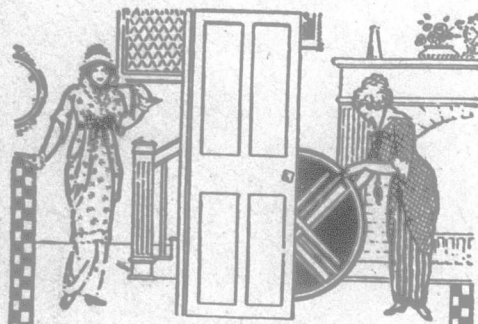
The "Rideau" to Ottawa
Popular Afternoon Train
via LAKE ONTARIO SHORE
Leaves Toronto 1.45 p.m. for Whitby, Oshawa, Bowmanville, Port Hope, Cobourg, Trenton, Belleville, Kingston, arrives OTTAWA 10.00 p. m.
CENTRAL STATION
Sparks Street, at Chateau Laurier.
THE "YORK"
Leaves Ottawa 1.15 p.m.
Arrives Toronto 9.30 p.m.

The "Transcanada"
From TORONTO Daily 6.40 p.m.
PORT ARTHUR
FORT WILLIAM
WINNIPEG
VANCOUVER
Through Equipment
Electric Lighted Compartment Observation Car, Standard and Tourist Sleepers, Dining Car, First-class Coaches.
"The Frequent C.P.R. Service passing through the Business Centre of each City is an asset to the Traveller."

ATTRACTIVE WINTER TOURS
To CALIFORNIA, FLORIDA, ETC.
Limited Trains connect at Detroit with through Sleepers to Florida; also connection via Buffalo, Washington and Cincinnati.
Improved service via C. P. R. and M. C. R. to Chicago connects with all through service Chicago to California.
Particulars from Canadian Pacific Ticket Agent, or write M. G. MURPHY, D.P.A., Toronto. 513

OTHELLO TREASURE
THE WONDER BAKER
LARGEST RANGE ON THE MARKET
WRITE FOR BOOKLET
The D. Moore Company
Hamilton, Canada

THE Sherlock-Manning 20th Century Piano
IS
"Canada's Biggest Piano Value"
SAVE \$100
Write Dept. 18 for Catalogue "T" which tells how
THE SHERLOCK-MANNING PIANO CO.,
London, - Canada
(No Street Address Necessary) 63
Cedar Posts For Sale: 1200 good sound fence posts cut last winter, 8 ft. long and from four to eight inches diameter at top; also green posts can be supplied in carload lots. CHAS. A. CALDER, R.R. No. 1, Warren, Ont., Norwood, C.P.R.
Please mention "The Farmer's Advocate".



HOW CONVENIENT!

CAN you imagine anything more convenient than a light, strong, graceful folding table, which may be set up, at a moment's notice, anywhere? You have need of such a table in your home. It is the

PEERLESS FOLDING TABLE

—the table of manifold uses. Everyone who sees one, wants one. It's uses multiply. It is never in the way, because it may be folded up when not in use, and tucked away behind the door. Your furniture dealer has it, or will get it for you. Ask him.

MADE IN CANADA

Write for FREE Booklet G describing our "Peerless" and "Elite" Tables

HOUD & CO., LIMITED

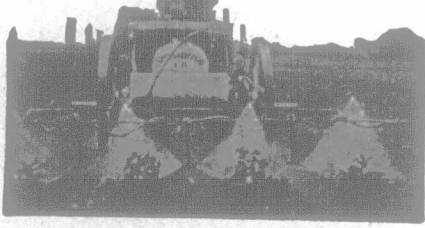
Sole Licensees and Manufacturers LONDON, ONTARIO

FREE Write us, giving some idea of your spraying needs and we will forward absolutely free, a copy of our valuable illustrated work on Crop Diseases, also full particulars of a

Spramotor

It isn't a SPRAMOTOR unless we made it. best suited to your requirements. We make SPRAMOTORS from \$6 up. Write us to-day. Made in Canada. No duty to pay.

B. H. Heard 2723 King St.,
Spramotor London, Canada



AUCTION SALE

35 Registered Holsteins
25 Female and 10 Bulls

At the King Edward Hotel stables, Cobourg
Thursday, January 27th, 1916
Sale at 1 o'clock

The cattle are all young and bred from some of the best families of the breed. Send for a catalogue and come to the sale.

Terms cash or 9 months time given on approved joint notes bearing interest at 6 per cent.

**Bertram Hoskin, R. R. No. 1,
Grafton, Ont., Owner**
Norman Montgomery Auctioneer,
Brighton, Ont.

GRAND TRUNK RAILWAY SYSTEM Winter Resorts

SPECIAL ROUND TRIP FARES

Long Limit — Stopovers

Asheville and Hot Springs, N. C.; Charleston, S. C.; Nassau, N. P.; Hot Springs, Ark.; French Lick Springs, Ind.; Jacksonville and all Florida points; Havana, Cuba, and New Orleans, La., via New York and rail for steamer, according to destination) or via Buffalo, Detroit or Chicago

Bermuda and West Indies

Other Health Resorts:

Mount Clemens, Mich.; Battle Creek, Mich.; St. Catharines, Welland County, Ont.; Preston Springs, Ont.

Further particulars on application to Grand Trunk agents.

by occasionally rubbing them with a soft cloth dipped in a mixture of ordinary powdered whiting and alcohol. The whiting may be purchased at any drug store. This should not be smeared on the black keys.

It is an easy task to mend all sheet music by the use of the transparent stitching tape, which may be purchased on spools.

If a blue cast forms on the outside of the piano case, you may risk washing it briskly with a soft sponge dipped in tepid water and mild soap, followed immediately by a brisk rubbing with a cured chamois. In this operation only a small portion of the surface should be washed at a time.

Our Serial Story

"THE CHAPERON."

By C. N. and A. M. Williamson.

Copyrighted.

RONALD LESTER STARR'S POINT OF VIEW.

(Continued.)

Chapter XXXI.

When a man sacrifices himself for a woman, he naturally likes to have the satisfaction of knowing that he has made a success; and I felt that a melancholy pleasure would be mine should I learn that Phyllis had profited by my kindness. It would have been flattering to my self-esteem, also, though perhaps disastrous to my ribs, if Robert van Buren had thrown himself upon my bosom, thanking me for his deliverance from bondage. I had to remind myself that he could not possibly know what he owed me, or I should have been unjust enough to accuse him of ingratitude.

A heavy shower came on while we were driving in open cabs through Amsterdam, therefore the moment we arrived at the well-remembered hotel of our last visit, the various members of the band had to scurry off to their rooms and change their drenched garments. As no plan of campaign had been arranged for the rest of the day—it was then past five—we did not meet again, as a party, until dinner-time, when we all came together with the exception of Brederode, who absented himself to dine with a friend.

It was the first time that he had been away, and to my surprise I discovered that, when a Mariner has carried an Albatross about with him week after week, he actually misses the creature if he mislays it. Somehow, we seemed to be at loose ends without Brederode. Lacking an organizer, nobody knew what to do; and if he had wished to enhance his value, he couldn't have chosen a better way. As if at a loss for any other subject of common interest, we fell to talking of the absent one—all save Nell, who listened in silence, not once joining in until Freule Menela capped an anecdote of Robert's in praise of his hero, by remarking—

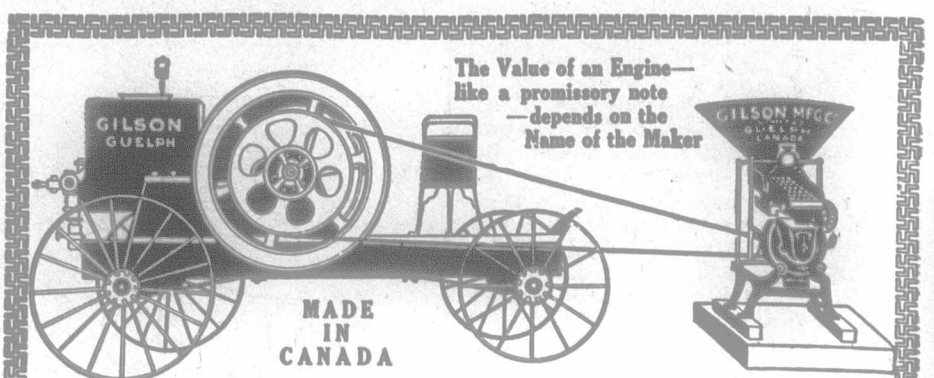
"Of course Rudolph's brave enough; but that's no particular credit to him. All Brederodes have been brave, since the days of the Water Beggar. But I'm afraid he's quite aware of that, and all his other perfections. He is rather conceited, and as for obstinacy—"

Then at last Nell had something to say for herself. "Doesn't it strike you," she asked with elaborate sweetness, "that a person may have self-respect and firmness without being either obstinate or conceited?"

"Well!" exclaimed Robert, in the pause which followed, "that's the first time I've ever heard you defend Rudolph, Cousin Helen."

"He has proved himself such a faithful skipper that it's my duty, as the owner of the boat, to defend the good qualities which have served us best," replied Nell, looking so brightly pretty, with her flushed cheeks and sparkling eyes, that I felt there might still be consolations in life for me, if only I could attain them.

The situation was now becoming strained on all sides. Not that it was made so by the conversation I have just set down, but by the peculiar relations of several persons in the party.



The Value of an Engine—
like a promissory note
—depends on the
Name of the Maker

MADE
IN
CANADA

POWER plus Service

Mr. H. TUTTON, of Brantford, Ont., writes:

Gentlemen:—I have had my Gilson 6 h.p. Engine for eight years and it is equally as good as new now, after doing all our work. In all this time, I have had absolutely no expense for repairs. I would not be without it for anything. I can chop a bag of the heaviest grain in four minutes—mixed grain and oats in less time. I also use it on the circular saw, rip saw, cutting box, etc. All these jobs it handles easily, with great strength. Compared with other makes around me, I am perfectly satisfied with its economy of fuel.

When you buy a "GILSON" Engine, you buy reliable power plus service. We point with pride to the many GILSON Engines, turned out in the early part of our career, that to-day are running as smoothly and giving the same reliable service as when they left our factory.

The owners of these engines will tell you frankly that their engines have actually cost them less and given them more service than engines which could have been bought at a far lower first cost. Durability—dependability—Service to the Buyer are the watchwords of the GILSON factory.

GILSON

Farm Engines
Ensilage Cutters
Silos, Grinders, etc.

"STANDARD OF THE WORLD"



THE WONDERFUL
"GILSON PAPER"

GUARANTEED

to cut and elevate more ensilage with the same power than any other Blower Cutter.

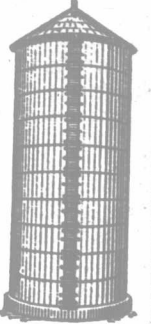
Gentlemen—My No. 13 GILSON PAPER CUTTER is so superior to other blowers that it cannot be placed in the same class. For ease of feeding, and the amount of stuff it will put through with my 8 h.p. GILSON Engine it is a marvel. We have never yet been able to plug the blower pipe.

GEORGE L. BUELL,
Maxville, Ont.

THE HYLO SILO

The Mortgage Lifter

SWEET FRESH ENSILAGE down to the last forkful. The Hylo Silo is perfectly air-tight. No frozen or spoiled ensilage around the walls. Convenient and perfect fitting doors, that you can adjust without hammer or wrench. Made of guaranteed Southern Long Leaf Yellow Pine. Built to last a lifetime. Stands rigid when empty.



Gentlemen—I received my 30 ft. HYLO SILO in A-1 condition, and am well satisfied with it. Two of us put it up in twelve hours, and I certainly was surprised at how easily it went together.

CHAS. RUMFORD,
Warmisther, Ont.

Every man who gets a GILSON product secures for himself SAFETY, SERVICE and SATISFACTION. Write for Catalogues. (1)

THE GILSON MFG. CO., Limited - 259 York St., GUELPH, Ont.

DISPERSION AUCTION SALE

30 Head Registered Holsteins

AT HESPELER, ONTARIO, ON

Thursday, January 27th, 1916

The offering consists of cows, heifers, calves and several choice bulls. Among the lot are one son and one daughter, several grand-daughters and great grand-daughters of "Lady Wayne Norine," whose grand-daughter and great grand-daughter include "Queen Butter Baroness," 33.17 lbs., former Canadian champion and a sweepstakes cow at Guelph. "Calamity Starlight Butter Girl," "Buffalo Girl Butter Maid," "Calamity Posch Wayne 3rd" and "Colantha Butter Girl," all winners at Guelph dairy tests; also "Duchess Wayne Calamity 2nd," champion two-year-old in R. O. P., milk, one year 16,714 lbs., butter 846.25 lbs. The herd sires: "Pontiac Wayne Korndyke," 119 A. R. O. daughters, 11 over 30 lbs. His sire's dam a 32.17 lbs. daughter of the same sire sold in the Dollar Sale for \$4,100. "Pontiac Segis Avondale," by "King Pontiac Artis Canada," son of "King of the Pontiacs," 164 A.R.O. daughters, 10 over 30 lbs., sire's dam a 31.71 lbs. daughter of "Hengerveld De Kol," 116 A.R.O. daughters, nine over 30 lbs. His dam a 26.44 lb. 4-year-old daughter of "King Pieter," son of "Blanche Lyons De Kol," 33.31 lbs., and "Countess Segis," a 31.70-lb. daughter of "King Segis," 86 A.R.O. daughters, 8 over 30 lbs.

TERMS—Cash or eight months' time with interest at 6% on approved joint notes. Farm situated 15 minutes' walk from C.P.R. & G.T.R. stations. Sale at 1 o'clock sharp. For catalogues apply to:

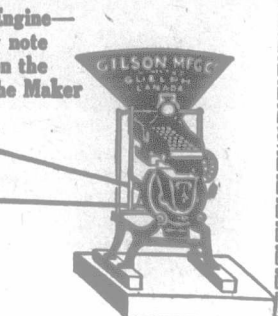
T. MERRIT MOORE, Auctioneer
Springfield, Ont.

WM. A. RIFE,
Hesperia, Ont.

A complete set of Holstein-Friesian Herd Books will be sold.

Cedar Posts for Sale—Good sound, dry timber, no bark. Anchor "V" braces. Line posts cut to your order, any length or size. Write, anyhow.
J. J. Cameron, Box 502, New Liskeard, Ont.

Cedar Posts Car Lots Green 4 1/2 ins. under 7 ins. by 8 ft. 9c., 7 ins. and up by 8 ft. 15c., 7 ins. and up by 9 ft. 22c. All bargains. Terms—Cash. Stamps for replies.
Box 52, Gooderham, Ont.



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...t years and it is
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...ing box, etc. All
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...res for himself
...or Catalogues.

...GUELPH, Ont.

SALE
Holsteins

1916

...several choice bulls.
...grand-daughters and
...grand-daughter and
...s, 33.17 lbs., former
...Calamity Starlight
...Posch Wayne 3rd
...tests; also "Duchess
...P., milk, one year
...c Wayne Korndyke,"
...tiac Korndyke," 119
...2.17 lbs. daughter of
...tiac Segis Avondale,"
...ontiacs," 164 A.R.O.
...hter of "Hengerveld
...dam a 26.44 lb. 4-yr-
...De Kol," 33.31 lbs.,
...Segis," 86 A.R.O.

...at 6% on approved
...R. & G.T.R. stations.

...M. A. RIFE,
...Hespeler, Ont.
...will be sold.

...Car Lots Green 4 1/2 ins.
...under 7 ins. by 8 ft. 9c.,
...1.18c., 7 ins. and up by 9ft.,
...Terms:—Cash. Stamps for
...Box 52, Gooderham, Ont.

The original plan of the Robert-Menela-Twins visit was that, having arrived at Utrecht, they should be taken on by us to Rotterdam before "Mascotte" and "Waterspin" bore us northward again to Zeeland. This roundabout way of journeying was the penalty of our beautiful day on the Vecht; because, to see the Vecht after Utrecht, we were obliged to land at Amsterdam; and as there was no nearer way of reaching Zeeland than by passing Rotterdam, we were not going out of our way in landing the van Buren party so near home. But to go by canal from Amsterdam to Rotterdam would take us one long day; and as we had a pair of severed lovers among us, that long day's association, on a small boat, would be awkward.

The obvious thing was for Robert to invent a pretext and vanish. But Robert, no doubt, had his own reasons for wishing to stay, and besides, he had the excuse that he could not go without taking his sisters. If his sisters went, they could not well leave the friend they had brought with them; neither did it seem practicable for her to depart in their company as she had just jilted their brother, who would have to act as escort for all three. This difficulty must have presented itself to Freule Menela, for she gave no indication of a desire to leave us. Perhaps she thought it better to endure the ills she knew than fly to others she knew not; and by way of accustoming herself to those ills, she kept unremittingly near me, when, after dinner, we assembled in "Aunt Fay's" inevitable sitting-room.

If I were a woman I should have been on the verge of hysterics, but being handicapped by manhood, I merely yearned to bash some one on the head as a relief to my feelings; and lest that some one should be Freule Menela, at last I got to my feet and announced my intention of taking a walk in the rain. "What wouldn't I give to go with you!" exclaimed the young lady. "It's so close here, and I've had no exercise to-day. I am fond of walking in the rain."

"I will chaperon you," said the L.C.P. "Oh, we need not trouble you, Lady MacNairne," protested Menela. "It might give you rheumatism; and girls in Holland are allowed to be very independent."

My heart sank. How could even the ever resourceful L.C.P. get round that sharp corner?

She was equal to it. "You are very considerate," she replied, "but I am old-fashioned and used to Scotch ways; and in Scotland even elderly persons like myself are used also to walking in the rain, otherwise we should seldom walk at all. Indeed, we rather like rain, in pleasant company."

With this, she got up briskly, and it was as a trio that we had our wet walk through the streets of Amsterdam. The shops were still bright, however, and I stopped my two companions under their dripping umbrellas, in front of a window blazing with a display of jewelry.

"Now, what should you say was the most beautiful thing of the lot?" I asked.

"That ring," promptly answered Menela, pointing to a pigeon-blood cabuchon ruby, of heart shape, set with clear white diamonds.

It was a ring for a lover to offer to his lady.

"You are right," agreed the L.C.P. "There's nothing else in the window to touch that."

"Let's go in and buy it, then," I said. "I have a friend to whom I should like to make a little present."

"Little present!" echoed Menela. "It will cost you three thousand gulden at the least."

"That is not too costly, considering everything," said I, mysteriously. And I was bubbling with malicious joy, as, by right of purchase, the ring became mine. "Each one of them considers it as good as hers," I said to myself. "To-morrow evening, at Rotterdam, if I am safely spared from Freule Menela, and she is gone out of my life forever, that ring may change hands; but it won't go to The Hague."

I dreamed all night that I was pursued by Robert's escaped fiancée, and dodging her, ran into the arms of Sir Alec MacNairne, who denounced me fiercely as a murderer. Nor was there much relief in awaking; for I knew that

City Conveniences for Country Homes—Write!



Why not have a first-class bathroom like this in your home, with plenty of running hot and cold water, and a handy kitchen sink with the same conveniences—all fitted up complete.

Every member of the family will welcome the change and benefit by the improved conditions.

Prices complete, \$225 and upwards

The unsanitary cesspool outdoors is a constant danger to health, and means exposure to cold and disease. Why go on putting up with miserable conditions that belong to the Middle Ages? Let us send you particulars. There is an

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that will meet your every requirement. The cost is moderate—the work will be first-class—the time, health and labor saved will repay the cost in short order—the improvement will be permanent.

Our outfits won diploma at the Western Fair this year. We have installed many in all parts of the country. Write us to-day for complete catalogue. Estimates free,

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This saw will cut 10% more timber, same time and labor being used, than any other brand of Cross-Cut Saw made. This guarantee has stood for thirty years.

There are two reasons for the superiority of the Simonds Saw, grinding and steel.

A saw that does not bind in the kerf cuts easy; a saw that binds is a bother. Crescent grinding insures saws ground so that the teeth are all of even thickness throughout the length of the saw and the blade tapered for clearance to the greatest degree, consistent with a strength of blade which enables the operator to push as well as pull the saw. Crescent grinding is an exclusive process used only on Simonds' Cross-Cut Saws.

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Always buy a saw with a sharp cutting edge—not a soft saw—because the former lasts longer and keeps its edge better.

Simonds Steel will take a temper to hold a cutting edge and stay sharp for a longer time than any saw not made of Simonds Steel.

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Superior quality makes your cutting as easy as cutting can be.

The price is moderate for the saw value given. It is about the same as you would pay for an inferior saw, therefore, why not get the best for your money—a saw with the manufacturer's name, "Simonds" on it? It is your guarantee and your protection. The saw illustrated, Simonds Crescent Ground Saw No 22, is the most satisfactory saw for all usual sawing purposes. Insist on your hardware dealer supplying you with Simonds Saws. Write to the factory for further particulars.

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The back that is
throbbing
with pain—



Thermogene Curative Wadding as applied for the relief of Sciatica, Lumbago, etc.

—can quickly be eased and comforted by the application of THERMOGENE. THERMOGENE has no equal in its wonderful pain-dispelling and curative effects. It creates a soothing, healing warmth which goes right to the seat of the trouble—allays the inflammation, and—away goes the pain!

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CURATIVE WADDING

—is a light, dry, fleecy wadding—far better than poultices and plasters. Invaluable in all cases of Backache, Lumbago, Rheumatism, Pneumonia, etc. Can be worn under the underclothing without discomfort, day or night. Ask your Druggist for THERMOGENE.

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To introduce THERMOGENE we will mail anywhere in Canada a trial package. Write to-day to the Thermogene Bureau, Dept. M, 10; McCaul St., Toronto, enclosing 10c. for packing and mailing. State your name and address clearly.

in her room, divided from me only by a friendly wall or two, Freule Menela lay planning how to trap me.

"If I am to be saved," I said to myself, "I'm afraid it won't be by my own courage or resource. I must look to my aunt. She fought for me nobly all day; but there are still twelve hours of danger. With her and Menela it's a case of Greek meeting Greek. Will she be clever enough to pull me through?" (To be continued.)

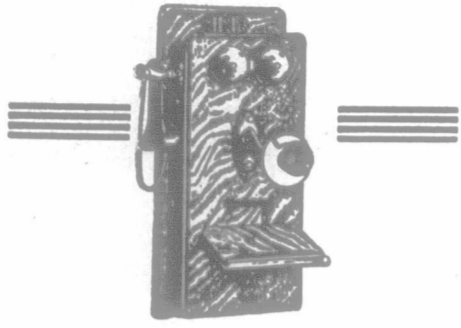
Gossip.

Geo. Gier & Son, Waldemar, Ont., breeders of Shorthorn cattle, report their stock doing well, especially the young bulls offered for sale. These are big, thick, sappy fellows, and growing fast. Some choice heifers, one- and two-year-olds, the latter due to calve this winter, and yearlings not bred yet, are included. Calves from the present stock bull, Oscana Champion, are a promising lot. Breeders are invited to see the stock. "No business, no harm." Messrs. Gier can show a nice bunch of young things. Let them know a few days ahead and they will meet you at Waldemar.

British Industries Fair.

In view of the great success of the British Industries Fair, held at the Agricultural Hall, London-England, May 10 to 21, 1914, the Imperial Board of Trade have decided to hold the second Fair at Victoria and Albert Museum, Kensington, London, Feb. 21, 1916. The Fair will last twelve days. The Fair is for the Trade only. The general public is not admitted. Manufacturers only will be allowed to exhibit, and buyers will have an opportunity of seeing the goods and buying quickly. Toys, glassware, fancy goods, earthenware, china, and printing stationery will be exhibited. Buyers from Canada should communicate with the Director, British Industries Fair, 32 Cheapside, London, E. C. Notify the Canadian office, 3 Beaver Hall Square, Montreal, addressing C. R. Woods, Assistant to H. M. Trade Commissioner in Canada and Newfoundland.

When Writing Please Mention Advocate



Which Telephone?

There are several thousand farmers scattered throughout Canada who have decided to establish telephone connection with their neighbors and with the outside world—to get in close touch with buyers, commission agents, the doctor and the stores. To ensure their complete satisfaction, their installation MUST measure up to the efficiency of

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Inferior apparatus is not worth installation—an instrument that does not reproduce the message clearly would cause endless trouble. Stromberg-Carlson Telephones, throughout North America, in City, Factory and Farm, are daily serving millions.

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This book contains valuable information for you and will be sent free upon request. Do not hesitate to ask for estimates and assistance. Address—

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FORTNIGHTLY SAILINGS
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FLANNEL SHIRTS are most essential for the outdoor life. Deacon Shirts are made of the best quality—in plain greys—blues—khaki or fancy Scotch flannels—coat style or closed body—high military collars attached or separate, or with reversible collar.

With one or two pockets, made in regular or over size—fit and workmanship guaranteed.

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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 pain y written, on one side of the paper on y, 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.

Superphosphate.

I am wishing to get in correspondence with some firm that handles superphosphate. Would you kindly give me the addresses of some firms who handle it, through the columns of "The Farmer's Advocate"?

Ans.—Any of the firms which advertise fertilizers in these columns would be able to supply you with superphosphate. Watch our advertising columns. Fertilizer firms will soon be taking large space.

Corn for Parry Sound District.

We would like to try the drilled-in corn as per your trial on your farm. What kind would you recommend? Last year we had frost June 10th and Sept. 6th. For 1916, crop will have good, strong land.

Ans.—You should select an early-maturing variety. Golden Glow is an early Dent, and should give good results. Bailey or White Cap might suit all right. Compton's Early, Longfellow, and Salzer's North Dakota, are among the best flints.

Holidays for Hired Man.

1. I have a hired man; what holidays is he entitled to?

2. Can he leave without any general cause or reason?

Ans.—1. A hired man can claim as holidays: New Year's Day, Good Friday, Easter Monday, Victoria Day, Dominion Day, Labor Day, Thanksgiving Day, Christmas Day, and any other day or days officially set apart as holidays.

2. He cannot leave without just cause or provocation if under contract for a certain time. However, if he desires to get away, it would likely be more profitable to let him go.

Estate Matters.

A man dies leaving one son and four daughters, and in his will leaves son everything, conditional, on his paying all expenses and each daughter a stated amount, payable to the eldest in one year after his death; second daughter in two years; third daughter in three years, and fourth in four years. First daughter, wanting hers at once, executor paid her, getting a receipt signed by her.

1. Should her husband have signed receipt also?

2. If so, why?

3. Can executors probate will without employing a solicitor?

4. If so, how?

5. Could the estate be settled, according to the terms of the will, in any other manner, and give son title at once?

Ontario. SUBSCRIBER.
Ans.—1 and 2. No.
3 and 4. No.
5. No.

Dismissing Teacher.

Has an Inspector of public schools any right to dismiss a teacher from a school when teacher is holding a third-class Normal with five-year permit, after only teaching four months on said certificate, the teacher being a first-class, good teacher, and everyone in the section being satisfied?

Ontario. SUBSCRIBER.
Ans.—The provisions of The Public Schools Act that are in point are as follows:

Revised Statutes of Ontario, 1914, Sec. 88. "(6) The Inspector may suspend the certificate of any teacher in his inspection for inefficiency, misconduct, or a violation of this Act or of the Regulations or for wilful neglect or refusal to carry on his agreement with a board, and he shall notify in writing the Minister, the board concerned, and the teacher of such suspension, and of the reasons therefor. (7) The teacher may appeal to the Minister, who may make such order or orders with regard to the suspension as he deems proper." By "Minister," is, of course, meant the Minister of Education at Toronto.

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YOU ARE SAYING TO YOURSELF—
"If I only knew of something to stop that Backache—help my Rheumatism—cure my Neuralgia, I would send and get it at once."
Get It. Gombault's Caustic Balsam will give you immediate Relief. A Marvelous Human Flesh Healer and a never failing remedy for every known pain that can be relieved or cured by external applications. Thousands testify to the wonderful healing and curing powers of this great French Remedy. A Liniment that will soothe, heal and cure your every day pains, wounds and bruises.

Gombault's Caustic Balsam The Great French Remedy Will Do It

It Helps Nature to Heal and Cure. Penetrates, acts quickly, yet is perfectly harmless. Kills all Germs and prevents Blood Poison. Nothing so good known as an application for Sores, Wounds, Felons, Exterior Cancers, Burns, Carbuncles and Swellings.

"I had a bad hand with four running sores on it. The more I doctored the worse it got. I used Caustic Balsam and never needed a doctor after that."
—Ed. Rosenburg, St. Ansgat, Ia.

Mrs. James McKenzie, Edina, Mo., says: "Just ten applications of Caustic Balsam relieved me of goitre. My husband also cured eczema with it, and we use it for corns, bunions, colds, sore throat and pain in the chest."

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To be held in BUTLER HOUSE YARDS, LINDSAY, ONT., on
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24 Shorthorn Bulls, 4 Clydesdale Mares, 10 Shorthorn Heifers and Cows, 1 Clydesdale Stallion, 1 Aberdeen-Angus Bull

TERMS:—Cash or ten month's credit will be allowed on approved joint notes, all notes to bear interest at the rate of 6 per cent per annum from date of sale.

Customers wishing to settle by cheque should bring either a marked cheque, or a letter of credit from their banker.

Catalogue mailed on application to the Secretary. Sale under cover, if stormy. Good train service, both G.T.R. and C.P.R. going either East or West after the sale. Reduced fares applied for.

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Secretary, A. A. KNIGHT, Lindsay, Ont.
Vice-President, A. E. SWAIN
Auctioneer, W. F. MARQUIS

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a big selection of stallions.

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 Chest Cold, Backache,
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allowed on approved joint
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Dr. O. T. Atwell, Zanesville, Ohio, writes: "Having
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John E. Lingo & Son, Sparmakers, Yard and Office,
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 Horse Works as Usual Winter or Sum-
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 Shoulder, Knee, Ankle, Stoop or
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 BUT WRITE, and we will send our 96-page "SAVE-
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 Drugists Every where sell Save-The-Horse with CON-
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Any person, however inexperienced,
 can readily cure either disease with
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 Central Hotel, Elmvale, Ontario
 Formerly at Staynor and Meaford
 For Sale—Clydesdale Stallion, registered, sired by
 Lord March, out of Pomona Matron, No. 33676.
 Black, 4 white stockings and blaze. An exception-
 ally well built and promising horse. Price reason-
 able. Further particulars from
 Pomona Farm, Cobourg, Ontario

Questions and Answers. Miscellaneous.

Taxes
 Unfortunately I invested in two West-
 ern town lots and the taxes are due
 now. As I do not wish to sink any
 more money in them, could I let tax go
 against value of property, or must it be
 paid yearly?
 C. W. T.
 Ontario.

Ans.—Yes, but you would be taking the
 risk of being sued by the municipal cor-
 poration for the amount of the arrears
 and costs. Such action on the part of
 the municipality would be unusual, but
 possible.

Accident to Child.
 School road fence is removed; child
 gets on the road and gets hurt in some
 way, either by cattle running at large,
 or by running in front of an auto-
 mobile.

1. Are the trustees responsible in any way?
 2. Is the teacher responsible in any way?
 3. Who is responsible for what damage is done?
- E. L. C.
 Ontario.

Ans.—The foregoing statement of facts
 does not disclose sufficient to bring re-
 sponsibility for the accident home to
 anybody.

Small Silo.
 I see a good deal in your paper in
 regard to silos, but have never seen
 them discussed in regard to how small
 a silo in diameter would give satisfac-
 tion. I am interested in this, as I have
 a small place (13 acres), and keep two
 cows. My ground is well adapted for
 the corn crop, and I grow about one
 acre, but find a good deal of waste in
 feeding from now until spring. Kindly
 give dimensions of a small silo, to hold
 one good acre of corn.
 G. J. F.

Ans.—A silo for one acre of corn is not
 practicable. The diameter of the silo
 must be such that at least one inch of
 silage is removed from the entire surface
 each day in feeding, else wastage is very
 great. You can readily see that your
 silo would be so small as not to be
 practicable.

Dislocation of the Patella.
 I have a valuable colt, rising one year
 old, which is wrong in the stifle from a
 fall received last summer. It is quite
 lame now, and appears to be very sore
 after getting up. We hear a noise in
 the stifle when walking as if the cap was
 shifting. What is a cure?
 S. M.

Ans.—Apply a blister made of 1½ drams
 each of biniodide of mercury and can-
 tharides, and mix with 2 ounces of vasa-
 line. Clip the hair off the front and
 inside of the joint, and rub the blister
 well in. Tie the colt so he cannot bite
 the parts. In 24 hours rub well again
 with the blister. After 24 hours longer,
 wash off and apply sweet oil. It is best
 to keep the colt as quiet as possible in a
 well-bedded box stall, and apply the
 sweet oil every day. It may be neces-
 sary to apply the blister as outlined
 once a month for four or five months.

A Sheep Farm.
 I have bought a sheep farm in this
 district, and intend going into the sheep
 business. Would you kindly tell me
 which kind of sheep would give me the
 most profit, and the ones that will
 stand the hardships of our north coun-
 try? Is it not better that they should
 lamb in May, so they can lamb in field
 and open air?
 J. L. W.

Ans.—We cannot recommend one breed
 over another, but to stand hardship it
 is generally conceded that a short-
 woolled breed is preferable to the coarse,
 open-wooled breeds. If you have a
 preference for Southdowns, Shropshires,
 Hampshires or Oxfords, try any one of
 them. The first named may be a little
 harder than the others, but all are good
 sheep. The Cheviot is a good rustler,
 and the Dorset is a close-wooled breed.
 If the climate is not too severe, any of
 the long-wooled breeds should do well,
 Cotswolds, Leicesters, Lincolns, etc.
 We would prefer lambing on grass under such
 conditions. Do not start on too big a
 scale until you are familiar with the
 business.

PEERLESS PERFECTION

The Knot That Locks the Bars
The Fence That Always Stays "Put"

Strong enough to keep your own live stock where they belong and your neighbor's out. The best way to hold neighborly friendships is to fence to prevent trespassing. The fence that "locks the bars," that "stays put" is the

Peerless Farm Fence

Made of Open Hearth steel wire—heavily galvanized in such a thorough manner that it will not flake, chip or peel off. The wires are tough, elastic and springy and will not snap or break under sudden shocks or quick atmospheric changes. The joints are securely held with the "Peerless Lock," which will successfully withstand shocks and strains and yet it can be erected on the most hilly and uneven ground without buckling, snapping or kinking. We also build a full line of poultry fences, ornamental fence and gates. Agents nearly everywhere—see want others in open territory.

THE DANWELL-ROXIE WIRE FENCE COMPANY, Ltd.,
 Winnipeg, Man., Hamilton, Ont.

DISPERSION SALE OF Aberdeen-Angus Cattle Oxford Down Sheep, Etc.

Having sold my farm, I will sell by PUBLIC AUCTION on
Wednesday, January 19th, 1916
 absolutely without reserve, the "Innerleithen" herd of Aberdeen-Angus
 cattle, consisting of some 18 females and 4 young bulls; also a number of
 pure-bred steers and grades. A choice flock of 20 Registered Oxford Down
 sheep and my stock of horses, swine, implements, etc.
 TERMS—12 months on bankable paper; 5% off for cash.
 Conveyances will meet morning trains at Erin, C.P.R., on day of sale.
 Catalogue on application. See Gossip in this issue.
JAMES BINNIE, Erin, Wellington Co., Ontario
 W. HULL, Auctioneer

ABERDEEN ANGUS Calves Sired by Prince Bravo imp. 4503

We are offering at reasonable prices a few Bull Calves up to one year old, sired by
 Prince Bravo, Imp. 4503 the Champion Bull of the breed at the Canadian National
 Exhibition, 1914, and sire of the Grand Champion Bull 1915. These calves are out of
 Imported Dams. Also a few Heifers and Calves.
 Come and make your own selection from a large herd. Correspondence solicited.
CLYDESDALE TEAMS LARKIN FARMS QUEENSTON ONTARIO
 Prices Reasonable

ORCHARD GROVE HEREFORDS

Have several young bulls and heifers for sale. Satisfaction guaranteed.
L. O. CLIFFORD, Oshawa, Ont.

The Maples Herefords.

For this season we are offering, without a
 doubt, the best bunch of young stuff we
 ever handled, both sexes, including our imported herd bull, 3 years old, undefeated
 this year, and a sure stock-getter. Prices right.
W. H. & J. S. HUNTER, Orangeville, Ontario

ELM PARK FARM

Aberdeen-Angus Cattle, Suffolk Down
 Sheep. Present offering: Young bulls
 and some useful heifers and young
 cows, bred to our prize-winning bulls. Ram lambs from our Champion flock.
JAMES BOWMAN Box 14 GUELPH, ONT.

MAPLE SHADE FARM SHORTHORNS

The products of this herd have been in very strong demand.
 There's a reason. Can always supply a good young bull at a price
 which will make him well worth the money. Not many females
 for sale but can show a few which should interest you.
W. A. DRYDEN, Maple Shade Farm, Brooklin, Ont.
 Brooklin, G. T. R., C. N. R. Myrtle, C. P. R.

Shorthorns

Still Pays the Freight—And he is offering in Shorthorns some of the best
 young bulls and heifers that can be produced. Young bulls fit for service,
 some younger still; heifers fit for service and younger, and some in calf. They are of the best
 Scotch families, and some of them from great milking families. They are in good condition and
 made right, just what you want to make a proper foundation for a good herd, and suitable to im-
 prove any herd in the land. They will be priced so that you can afford to buy, if you will tell me
 what you want. Our business has been established 79 years, and still it grows. There is a reason.
ROBERT MILLER Stouffville, Ontario
 RICH IN BREEDING, HIGH IN QUALITY
 My herd of Scotch and Scotch-topped Shorthorns
 was never stronger in number nor in quality than
 now. I have the most fashionable blood of the
 breed in pure Scotch, as well as the greatest milking blood strains. Visit the herd. Also some right
 choice Yorkshires, both sexes. A. J. Howden, Myrtle, C. P. R.; Brooklin, G. T. R.; Columbus, R. M. D.

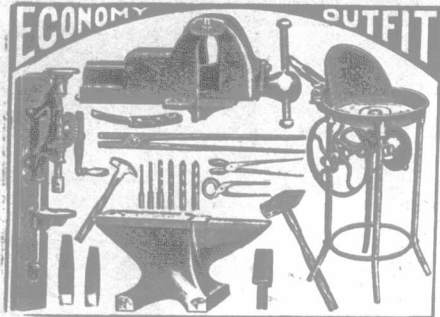
10 Shorthorn Bulls

and 40 females. Shropshire and Cots-
 wold ewes for sale at prices within the
 reach of all.
JOHN MILLER, Ashburn, Ont., Myrtle Station, C. P. R. and G. T. R.
SHORTHORNS AND CLYDESDALES
 10 Bulls serviceable age, all good ones (some herd headers) and are offering females of all ages. Have
 a choice lot of heifers bred to Clansman—87809—; also four choice fillies all from imported stock.
 A. B. & T. W. DOUGLAS Long-Distance Phone STRATHROY, ONTARIO

PLEASANT VALLEY FARM SHORTHORNS

Your opportunity to buy a good shorthorn bull as a herd header, or to raise better steers is right now.
 We have ten good ones for either purpose by imp. Loyal Scot, also several cows and heifers. Write us
 before buying. **GEO. AMOS & SONS, Moffat Station, Ont., C.P.R.** (11 miles east of Guelph.)

BUY NOW AND SAVE 6.15



GET READY FOR SPRING SPECIAL OFFER \$20.85
Regular Store Value \$27.00, \$30.00

- BOOK OF INSTRUCTIONS FREE**
- 1 Champion 8 in. Fan Lever Forge.
 - 1 Champion Post Drill.
 - 1 Oval Slide Vise, 3 1/2 in. jaws, weight 18 pounds.
 - 1 Champion Anvil, weight 50 pounds, with hardie.
 - 1 Blacksmith Hammer. 1 Farriers Hammer.
 - 1 Farriers Knife. 1 pair Forging Tongs.
 - 1 pair Shoe Tongs. 1 pair Farriers Pincers.
 - 1 Hot Cutter Head. 1 Cold Cutter Head.
 - 1 each 1/2 in. Round Shank Drills 3/16, 1/4, 5/16, 3/8, 7/16 and 1/2 in.

ALL EXACTLY AS ILLUSTRATED
WE SHIP C. O. D. ON APPROVAL
Freight paid Old Ontario for **\$20.85**.
Add One Dollar for New Ontario, also west of Winnipeg and Maritime Provinces.
Catalogue Free. Write to-day Dept. A
THE HALLIDAY COMPANY, LIMITED
FACTORY DISTRIBUTORS
HAMILTON, CANADA

THOUSANDS

of farms and city properties for sale or exchange. Send to us for our catalogues—Free.

A number of Western farms to exchange for Ontario property. Tell us your wants.

THE WESTERN REAL ESTATE EXCHANGE, Limited
78 Dundas St. London, Ont.

Middlebrook A. Angus—For Sale are several choice prize-winning sons of my 1915 gr. champion bull, Black Abbot Prince, and his Toronto and London 1st prize 1/2 brother, also winning daughters of the same. John Lowe, Elora, Ont., R. M. D.

Balmedie Aberdeen Angus
Get a high-class Angus bull and breed the champion steers. I have show-ring quality bulls from 10 to 24 mths. of age, also choice 1 and 2-yr-old heifers. T. B. BROADFOOT FERGUS, ONT.

Aberdeen-Angus The cattle now in demand. So many choice heifers and a few young bulls from the imported sire, "Prada". Apply to: A. DINSMORE, Manager "Grape Grange" Farm, Clarksburg, Ontario

Tweedhill—Aberdeen-Angus. Choice young bulls of serviceable age; also females. If you want anything in this line write: James Sharp, R. R. 1, Terra Cotta, Ontario Cheltenham, C.P.R. & G.T.R.

Shorthorns high class young bulls from 7 to 18 months, 15 young cows and heifers, straight, smooth big kinds of choicest breeding including several families that have produced dairy test winners. I never was in a better position to supply you with a good young bull at a more reasonable price. Write me or come and see them.

Stewart M. Graham
Long distance Phone, Lindsay, Ont.

Lynnore Stock Farm

Imported Dairy Shorthorn Stock. Imported English Berkshires. Young pigs now on hand for sale.

F. W. Cockshutt, Brantford, Ont.

1854—Maple Lodge Stock Farm—1915 SHORTHORNS AND LEICESTERS

We have now for sale one Red bull, eleven months from one of our record cows. Also some younger ones, very desirable stock. Two ram lambs and four ewe lambs remain for sale. Choice ones at very moderate prices.

MISS G. SMITH, Clandeboye, R. R. 1, Ont. Lucan Crossing one mile east of farm.

Scotch Shorthorns—Bred direct from imp. stock. Six bulls from 8 to 10 months old, from heavy-milking dams, cows and heifers due to calve in March and April at prices that will please the buyer.

L. K. WEBER, Hawkesville, Ontario

FLETCHER'S SHORTHORNS
Our herd of pure Scotch shorthorns are mostly direct from imp. stock. Three very choice bulls for sale, also females. GEO. B. FLETCHER, R. R. 1, Erin, Ont. L. D. Phone Erin Sta. C.P.R.

Shorthorns—Bulls, females, reds, roans, size, quality. Breeding julkers over 40 years. Cows milking 30 lbs. a day. Fat, fleshy cows that will nurse calves right. Processors write: Thomas Graham, R. R. 3, Port Perry, Ont.

"That handsome woman over there is the widow of one of the dairy brothers."

"Which brother is she the widow of?"

"The dead one."

Questions and Answers. Miscellaneous.

Curing Sheep Skins.

Kindly publish a recipe for curing sheep skins. J. S.

Ans.—Spread the skins out while fresh, and sprinkle them with plenty of salt. After the salt has had time to affect the skin, stretch it on the side of a building to dry. It is not well to keep sheep skins too long.

Red Water.

I have a cow due to calve in three weeks which passes red water. The water has been red for some time, but is gradually getting worse. Otherwise the cow appears in good health. What is the remedy? T. I.

Ans.—Give a good quality of feed. Purge with 1 pound Epsom salts and 1 ounce ginger, and follow up with 2 drams sulphate of iron and 3 drams chlorate of potassium three times daily until the urine becomes clear.

Seed of White Cockle.

Please identify the enclosed weed seeds. J. H. M.

Ans.—The small seeds enclosed, with slight protuberances all over them, have been produced by one of the cockle family. White cockle, night-flowering catchfly and bladder campion, all have seed shaped very similarly. Bladder campion is more noxious in character than are either of the other two. However, the seeds received at this office are more like those of the white cockle, but they are somewhat immature.

Gossip.

SALE POSTPONED.

The fifth annual sale of the Southern Ontario Consignment Sale Company has been postponed, and will not take place at Tillsonburg on February 8, 1916, as advertised in our issue of January 6.

Do not overlook the Shorthorn sale at Toronto. Read the advertisement, ask for catalogue, and arrange your time so that you can attend. We are assured that the cattle will be a valuable lot, and they are every one right, and in good condition for the buyer. This is a great event in Shorthorn circles, and as it comes on the day after the annual Shorthorn meeting, you should attend both. Many of the best show and breeding animals in the country have been sold there, and this sale will be equal to its predecessors. You will see good cattle sold, and you will be treated right.

THE BINNIE SALE.

This is the last call for the Binnie dispersion sale of Aberdeen-Angus cattle and Oxford Down sheep, to be held Wednesday, January 19, as advertised in this issue, when there will be sold, without reserve, some 25 head of cattle,—four bulls, nine to eighteen months, an excellent lot, and fifteen females, of which nine are in calf, including some extra ones by Elm Park Ringleader 7th 2861, sweepstakes bull, at Calgary, 1915. The cows are bred to, and the younger cattle are sired by Glenmar Lad 5732, a son of the sweepstakes bull, Elm Park Wizard 4169, and possessing, as they do, a liberal infusion of the blood of such sires as Logie the Laird 3rd 862 (imp.), Waterside Standard 3374 (imp.), and Prince of Benton 828 (imp.), they will commend themselves to those who appreciate a "good family connection." Every care will be taken in shipping, and with the half-rates accorded by the railways to pure-bred stock, they may be transported with little expense. The sheep consist of some twenty registered ewes of the Arkell-Barbour strain. Conveyances will meet morning trains at Erin, C. P. R., on day of sale, and catalogue may be had on application to James Binnie, Erin, Wellington Co., Ont.

The Widder—"I am sorry, Hiram, but I cannot be your wife."

Hiram—"Wal, then, couldn't you lend me a boss till I kinda ketch up with my work? I'm terrible behind this year."

The Great Canadian Annual Sale of
Scotch Shorthorns

Will be held at the Union Stock Yards, Toronto, Ont., on
Wednesday, February 2nd, 1916

Sale commences promptly at 12 (noon).

There are 25 breeders' bulls, bred in the purple, the product of the greatest breeders' art. There are 40 females, fit for any herd, of different ages, many with calves at foot or near calving to great sires. They are bred right and made right. There are Lavenders, Clippers, Roan Ladys, Orange Blossoms, Lovelys, Rosewoods, Northern Belles, Missies, Clarets, Minas, Mayflowers, Lady Dorothys, Princesses Royals and others. From four of the best herds in the land.

The consignors are: Robert Miller, Stouffville, Ont.; J. A. Watt, Elora, Ont.; Kyle Bros.; Drumbo, Ont., and John Miller, Jr., Ashburn, Ont.

Auctioneers: CAPT. ROBSON and GEORGE JACKSON.

Write for catalogue now, to:

Robert Miller, Stouffville, Ont., Manager of Sale

20 IMPORTED BULLS

These imported bulls, along with 10 home bred bulls may now be seen at our farms. There are some choice ones among them. We also imported four cows and a heifer, all of which are forward in calf. An invitation is extended to anyone interested in this class of stock to visit us at any time. Correspondence will receive our most careful attention.

Burlington Jct. G. T. R.

J. A. & H. M. PETTIT,

Burlington phone or telegraph.

Freeman, Ont.

Escana Farm Shorthorns

For Sale—15 bulls 8 to 14 months old, several of them prize-winners at Toronto and London, sired by the noted Imported bulls Right Sort and Raphael. Also for sale—20 heifers and cows of choice breeding and quality for show or foundation purposes. State your wants and we will send copy of pedigree and prices. Mail orders a specialty, satisfaction guaranteed.

MITCHELL BROS.

Burlington P.O., Ontario

Jos. McCrudden, Manager. Farm 1/4 mile from Burlington Jct.

The Salem Shorthorns

One of the largest collections of Scotch Shorthorns in America. Can suit you in either sex, at prices you can afford to pay.

J. A. WATT, ELORA, ONT.

Spring Valley Shorthorns

Herd headed by the two great breeding bulls, Newton Ringleader (imp.) 73783, and Nonpareil

Ramsden 83422. Can supply a few of either sex.

KYLE BROS., Drumbo Ont. 'Phone and telegraph via Ayr.

Oakland—67 Shorthorns (milk strains). Present offering is 10 choice bulls from 8 to 16 months old; also many fine heifers and young cows, nearly all sired by one of Ontario's best bulls (still at head of herd). Good cattle and no big prices. Write your wants to

JNO. ELDER & SONS, Hensall, Ont.

H. SMITH

HAY P. O., ONT.

21 SHORTHORN BULLS and as many heifers for sale. Write your wants. You know the Harry Smith Standard.

SHORTHORNS YORKSHIRES SHROPSHIRE

We have a choice selection in young shorthorn bulls. Young Yorkshires of both sexes, shearing ewes ram and ewe lambs. We aim to please by shipping quality. Write us your wants.

RICHARDSON BROS.

Columbus, Ont

SHORTHORNS AND SHIRES

For Sale—a few choice young bulls, cows and heifers, of high-class quality, choice breeding and from splendid milking dams. Also two young stallions and a few mares and fillies. Prices reasonable.

JOHN GARDHOUSE & SONS, Weston, Ont. C.P.R., G.T.R. & Electric Railway L-D Phone.

GLENGOW SHORTHORNS AND COTSWOLDS

Pure Scotch in breeding we have an exceptionally choice lot of bulls for this season's trade, ranging in age from 8 to 15 months; big mellow fellows and bred in the purple.

Also Ram and Ewe lambs of first quality.

Wm. Smith & Son, Columbus, Ont. Myrtle, C.P.R., Brooklin, G.T.R., Oshawa, C.N.R.

QUALITY AND PRODUCTION are combined in the dams of the young bulls for sale; dams average from 25 to 31 lbs. butter in 7 days. Also females of all ages for sale.

M. L. HALEY

SPRINGFORD, ONT.

M. H. HALEY

SHORTHORNS and SHROPSHIRE

T. L. MERCER

With 125 head to select from, we can supply young cows in calf, heifers from calves up and young bulls from 9 to 18 mos. of age, richly bred and well fleshed. In Shropshires we have a large number of ram and ewe lambs by a Toronto 1st prize ram, a high-class lot.

Woodholme Shorthorns For Sale—Four bulls sired by imp. Lord Gordon, fit to head from good milking families. Also a few good heifers in nice condition that I can sell worth the money. Mail orders filled with greatest care. Write your wants.

G. M. FORSYTH, Claremont, Ontario

SHORTHORNS OF SHOW-RING QUALITY

We have this year the best lot of young bulls we ever bred ring calibre.

GEO. GIER & SON,

R.M.D. WALDEMAR, ONT., P.O. AND STATION

Annual Sale of Cattle and Hogs

at Toronto, Ont., on
January 2nd, 1916
12 (noon).

In the purple, the
procre are 40 females, fit for
h calves at foot or near
right and made right.
Ladys, Orange Blossoms,
Missies, Clarets, Minas,
Ses Royals and others.

er, Stouffville, Ont.; J.
umbo, Ont., and John

GEORGE JACKSON.

, Manager of Sale

BULLS

seen at our farms. There are some
a heifer, all of which are forward in
class of stock to visit us at any time.

J. A. & H. M. PETTIT,
Freeman, Ont.

Northorns

ners at Toronto and London, sired by
sale—20 heifers and cows of choice
our wants and we will send copy of
nteed.

Burlington P.O., Ontario
om Burlington Jct.

one of the largest collections of Scotch
orthorns in America. Can suit you
either sex, at prices you can afford
pay.

—Herd headed by the two great
breeding bulls, Newton Ringleader
(Imp.) 73783, and Nonpareil

Phone and telegraph via Ayr.

offering is 10 choice bulls from 8
many fine heifers and young cows,
erd). Good cattle and no big prices.

R. & Sons, Hensall, Ont.

P. O., Ont.

For sale. Write your wants.
Standard.

SHROPSHIRE

shires of both sexes, shearing ewes
write us your wants.

Columbus, Ont

HIRES

ss quality, choice breeding and from
ares and fillies. Prices reasonable.

R. & Electric Railway L-D Phone.

AND COTSWOLDS

choice lot of bulls for this season's
ow fellows and bred in the purple.

R., Brooklin, G.T.R., Oshawa, C.N.R

the dams of the young bulls
in 7 days. Also females of

M. H. HALEY

S T. L. MERCER
Markdale, Ontario
n calf, heifers from calves up and
bs by a Toronto 1st prize ram, a

l by imp. Lord Gordon, fit to head
r of cheap bulls for graded herds,
ndition that I can sell worth the

Market the Milk
Raise your calves and get the bigger money to which you are entitled. But do not feed the calf whole milk, with butter fat worth \$600 a ton.

RAISE YOUR CALVES WITH BLATCHFORD'S CALF MEAL

Blatchford's Calf Meal
The Recognized Milk Equal
You get 100 gallons of rich milk feed from 100 pounds of Blatchford's Calf Meal, and it costs you only one-fourth as much. It will make your calf grow fast and well. Blatchford's Calf Meal is composed of the elements of the young calf's milk in the most trying period of its life: is thoroughly steam cooked—prevents bowel troubles and other ill effects from impure milk substitutes. Blatchford's Calf Meal insures quick, steady growth of young pigs at weaning time without setback or falling off.

Write us for our Free Book on "How to Raise Calves Cheaply and Successfully Without Milk."
Steele, Briggs Seed Co., Toronto, Ont.

L. C. Beard, Rogers, town, Md., writes: "I can say Blatchford's Calf Meal will pay anyone 100 pct. that has calves to raise."



\$15.95 UPWARD ON TRIAL
Fully Guaranteed

American Cream Separator

A SOLID PROPOSITION to send a new, well made, easy running, perfect skimming separator for \$15.95. Skims warm or cold milk; making heavy or light cream.

ABSOLUTELY ON APPROVAL
Bowl a sanitary marvel, easily cleaned. Different from picture which illustrates our large capacity machines. Shipments made promptly from Winnipeg, Man., Toronto, Ont., and St. John, N.B. Whether dairy is large or small, write for handsome free catalog. Address: AMERICAN SEPARATOR CO., Box 3200, Balmbridge, N. Y.



MAIL CONTRACT

SEALED TENDERS, addressed to the Postmaster-General, will be received at Ottawa until noon on Friday, the 21st day of January, 1916, for the conveyance of His Majesty's Mails on a proposed contract for four years, six times per week, over Dorchester Station, No. 1, Rural Route, from the 1st of April, 1916, next.

Printed notices containing further information as to conditions of proposed contract may be seen and blank forms of tender may be obtained at the Post Offices of Dorchester Station, Ingersoll and London, and at the office of the Post Office Inspector, London.

G. C. ANDERSON, Superintendent,
Post Office Department, Canada, Mail Service Branch, Ottawa, 10th December, 1915.



The "Challenge" WATERPROOF all-linen COLLAR

THE CHOICE OF PARTICULAR MEN
SMART—STYLISH—ECONOMICAL
NO LAUNDRY BILLS TO PAY

AT YOUR DEALER'S, OR DIRECT, 25c

THE ARLINGTON CO., 54-56 PRINCE AVE. TORONTO
MADE IN CANADA



Insist on "GOOD LUCK" Brand
COTTON SEED MEAL

41 to 48 per cent. Protein
IT MAKES RICH MILK

Write for feeding directions and prices to
Crampsey & Kelly Dovercourt Toronto
Road

HOLSTEINS

A 29-lb. bull by a son of "Pontiac Korndyke," and he out of a 25-lb. 3-year-old, and two bulls over a year old, three more fit for service.

Two sons of "Rag Apple Korndyke 8th" (May), and several sons of "King Segis Pontiac Duplicate," one of the best.

R. M. HOLTBY R.R. 4, Port Perry, Ont.

Pedigreed Holstein Bull

for sale, 15 months old. Apply
HEROLD'S FARMS Beamsville, Ont.

Please mention "The Farmer's Advocate."

Questions and Answers.

Miscellaneous.

Garget.

Would you inform me as to the cause of garget in cows, and the most satisfactory treatment?

A. S.

Ans.—Garget in cows may result from an injury received, by a cow in the adjoining stall tramping on the udder. A cold floor, or a chill will sometimes bring on the trouble. As soon as it is noticed, it is good practice to give a purgative of 1 pound Epsom salts and a teaspoonful of saltpetre dissolved in a quart of warm water and given as a drench. Bathe the part of the udder affected with hot water, dry, and rub well with a mixture of spirits of turpentine and goose oil or lard. It is best to milk out all you can get from the affected quarter at each bathing.

Stone versus Frame Hog Pen.

1. Where building stones are plentiful, how would they compare as to cost with lumber for building a hog-pen?

2. Will pigs do as well in a stone building as they will in one built of lumber?

G. P. A.

Ans.—1. The cost would depend largely on local conditions. The amount of handling of the stone, the cost of masonry work, and the cost and distance to haul the lumber, would have to be considered. However, with the stone on the place, it is believed a stone wall could be built for somewhat less than a frame building.

2. Dampness collects on a stone or cement wall in the winter. This is detrimental to the most successful hog-raising. A wooden wall constructed in such a way as to form a complete dead-air space is considered better.

Warts on Cows Teats.

I have a heifer coming two years old, in calf. On one of her teats she has a warty growth which covers that part, and has enlarged it so it appears like three. One of her other teats also appears to be the seat of two small warts, which are just starting.

1. Is it advisable to keep her?

2. Will her teats get all right?

3. What treatment should I try in order to free the heifer of these growths? I can tie nothing around the warts, as they cover the whole teat.

M. C.

Ans.—1 and 2. Some animals are predisposed to these warty excrescences, and although they can be taken off, they are liable to reappear. Unless the heifer is particularly well bred and promises great things, it would be just as well to have another in her place.

3. People have reported success from the use of castor oil, being rubbed frequently on the warts, but such a case as this will probably require a caustic. Apply butter of antimony with a feather to the warty surfaces once daily for a few days, or until they disappear. The corroded surface should be picked off occasionally before applying the fresh dressing.

Mixture for Hay—Millet—Scaly Leg.

1. If a mixture of oats and vetches is sown and cut early for hay, will they grow up a second time for pasture?

2. About what time should millet or Hungarian grass be sown, and how much seed per acre?

3. Some of our hens have a kind of scale on their legs. What is the cause, and what will cure it?

J. W. G.

Ans.—1. For the hay to have the most feeding value, it would be necessary for oats to be in the milk stage before cutting, consequently there would be very little second growth for pasture.

2. Hungarian grass is sown at the rate of about 25 lbs. per acre. The largest yields are obtainable by sowing from June 1st to the 15th.

3. The scale on the hens' legs is due to a mite which grows beneath the scales on the legs and feet. The fowl usually get these from infested houses, or from infested birds. In order to kill the mite, wash the legs thoroughly in warm water and soap, using a stiff brush to loosen the scale, then grease with lard and sulphur, using a teaspoonful of lard to a teaspoonful of sulphur. One washing, and two or three applications of grease, about two weeks apart, should remove the trouble.

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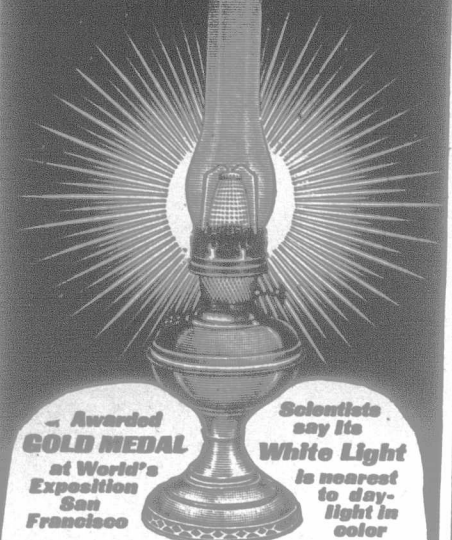
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Mention Advocate.

Questions and Answers. Miscellaneous.

Vicious Mare.
I have a well-bred mare in foal, and for some time past I could hardly pass a certain horse with her without her trying to kick; still, the other horse, a stallion, never seemed to notice her. To-day and yesterday she has started the same thing with another horse, a gelding. What is the cause of it, and what can I do to prevent her kicking?
I. L. W.

Ans.—This vicious condition is no doubt due to the mare being pregnant. The only thing to do at present is to be gentle with her, and keep her away from the other horses. After foaling she will probably be all right again.

Fertilizer for Muck Land.
Would you kindly publish what would be the best kind of fertilizer for black-muck land?
J. H.

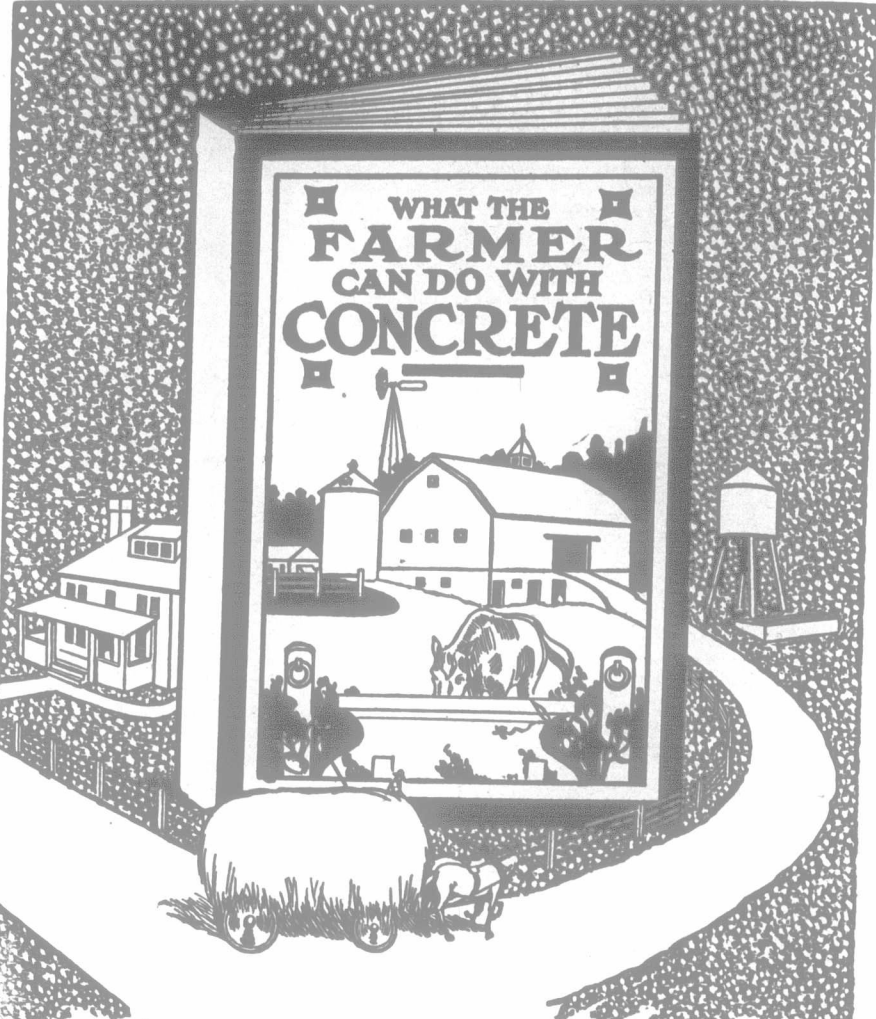
Ans.—Muck soils vary in character. Some are deep, and consist almost entirely of organic matter; these soils, especially when resting upon a sandy subsoil, are often benefited by an application of potash and phosphoric acid in various forms. When the muck is shallow and has become mixed with the subsoil, particularly when the subsoil is clay, it will probably produce fair crops without any fertilizer at all. Lime alone will often correct the soil to such an extent that it will not require any direct fertilizer. In almost every case, barnyard manure has proven of great benefit where tried, in spite of the fact that a great proportion of muck soils is already organic matter. Considering all these circumstances, it seems impossible and unwise to recommend any particular mixture for this soil, which we know nothing about, except that it is muck soil. Read the article on lime in this issue, and be sure that the soil is well supplied with that ingredient. Try basic slag, bone meal, or some form of phosphatic manure, but from present indications it appears quite out of the question to attempt any application of potash. It will probably be possible, though, to purchase a mixed fertilizer, with a fair percentage of potash in its composition. Try these in test plots this coming season on different crops, which require different amounts of nitrogen, potash and phosphoric acid. That is the only practical way to determine the requirements of a soil.

Condition Powder—Fertilizer for Orchard.

1. Kindly give me a good, tested recipe, for condition powders (invigorator) for horses.
2. Would you give me instructions as to fertilizer for orchard? Should it be sown before plowing or after in the spring? Which will give best results?
ENQUIRER.

Ans.—1. We have more faith in good, clean hay and grain, than in drugs. Proper care and feeding, with sufficient and regular exercise, are the best conditioners of a horse. However, if it is desirable to feed a tonic that will stimulate the appetite and aid digestion, mix together 2 ounces each of ferric sulphate, pulverized gentian, pulverized gaultheria and nitrate of soda; of this, give a teaspoonful night and morning in ground oats or bran. Also twice a week give a feed of boiled oats, and to the regular grain ration add a little oil cake, which is a laxative and aids digestion.

2. Fertilizer firms sell brands of fertilizers prepared especially for the orchard, and since potash is almost unobtainable this season, it might be well to obtain a quantity from one of these sources. Hardwood unbleached ashes supply potash, and some lime; they give good results in the orchard. About 150 lbs. of nitrate of soda, 400 lbs. acid phosphate, and 180 lbs. of muriate of potash, make a good orchard mixture, but ashes possibly could be purchased in place of the potash. Basic slag instead of the acid phosphate would carry to the soil considerable lime, along with the phosphoric acid for which it is used. A light application of manure is also a good thing for an orchard. Plant food works down into the soil rapidly enough. Sow the fertilizer on the plowed land, and harrow or cultivate it into the soil.



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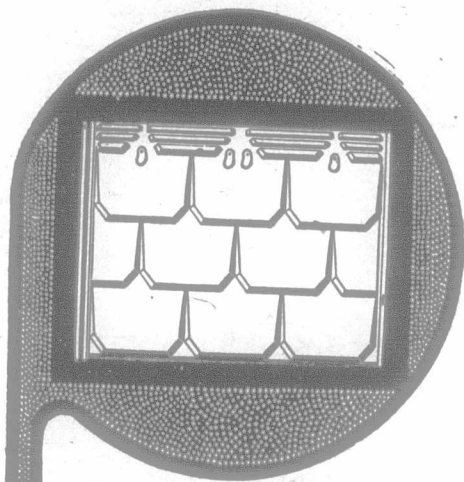
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R. H. McKENNA, 219 Robert St., Toronto.

Pine Grove Berkshires—Sows bred and ready to breed. Boars fit for service. Young things, both sexes, from my prize-winning herd.
W. W. Brownridge, R. R. 3, Georgetown, Ont

Questions and Answers. Miscellaneous.

Cold Storage.

Would you please tell me, through your valuable paper, a cheap method of building a cold-storage house large enough for two quarters of beef? Ice is very plentiful, and I have no bother in getting it.

J. S. R.

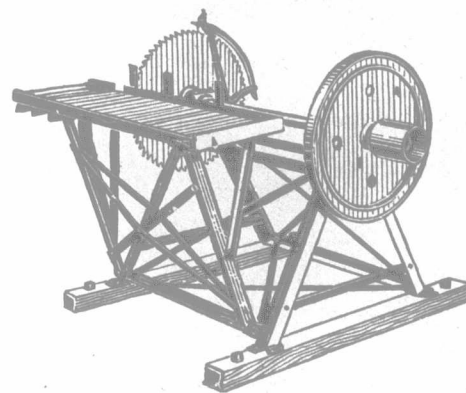
Ans.—The same principles of construction would have to be complied with in building a cold-storage to hold two quarters of beef as would be used in a large cold-storage building. To have the walls properly insulated is the main thing. In order to maintain a constant low temperature, it would be necessary to have three rooms—one at the end for ice, then the cold room, and an ante-room through which to enter the cold room in order to prevent the direct influence of the outside temperature. It would be necessary to have the building 12 feet long, 4 feet wide by 7 feet high, on the inside. This would give an ice-box 2 feet 6 inches by 4 feet, a cold room 4 feet by 4 feet, and an ante-room 4 feet by 4 feet, leaving 1 foot 6 inches for center partitions. The walls, ceiling and partitions should be built of spruce, as follows: Tongued and grooved sheathing on outside, followed by damp-proof paper, and tongued and grooved boarding then 2-inch by 6-inch studding. On the inside of the studding two thicknesses of boards and one of felt paper are used. Between the studding the space is filled with planing-mill shavings. The building will be more permanent if set on a cement foundation. The space between joists should be filled with shavings, and the floor made of two layers of boards. The floor under the ice-box should be covered with galvanized iron sloping in one direction, with a gutter at the lowest edge to carry off the water from the melting ice. Openings must be made at the top and bottom of the partition between the ice-box and cold room to allow for the circulation of air. Particular attention should be paid to keeping the doors perfectly air-tight. A cushion of felt for the doors to close against is a good thing.

Concrete for Wall and Stable.

I expect to rebuild the barn on the "old farm" this coming summer, and would be greatly obliged if you would advise me, through the columns of your valuable paper, the number of barrels of cement and yards of gravel required to build foundation wall and lay floor. Size of building, 35 x 75 feet. Wall to be 2 feet high and 1 foot thick. Floor plan to accommodate 24 head of cattle in double row, 4 horses, box stalls, etc., all to be concrete. There is a fine gravel-pit within a short distance, so sand and crushed stone would not be needed.

W. E. C.

Ans.—For walls of this nature, builders use concrete made in the proportion of one to eight, one to nine, and some use one to ten. Taking the average, one part of cement to nine of gravel, for this wall, it would require 44 bags or cubic feet of cement and 14 1/2 yards of gravel. Small stones can be used in the wall as fillers, but they should not come within 1 1/2 or 2 inches of either surface. Whatever quantity of stones is used, will, of course, reduce the amounts of cement and gravel stated above. It is customary to put in a foundation that will go down slightly below the frost line, and this would mean at least two feet more of wall. Mixed in the proportion of one to ten, such foundation would require 40 bags of cement and about 15 yards of gravel. A goodly percentage of stone could be used in the foundation wall, or it could, perhaps, be made with slightly more gravel and less cement. This depends, however, on the quality of the gravel. In "The Farmer's Advocate," issue of May 6, 1915, an article describes in detail the interior construction of a stable, with especial reference to the concrete work, plans, proportions, etc. Without knowing the lay-out of the stable, it would be difficult to calculate very approximately the amounts required for mangers, curbs, gutters, walks, stands, etc. However, a floor of this area, 4 inches thick, would require 109 bags of cement and 28 yards of gravel. Refer to the article in the issue of May 6, 1915, and calculate the quantities on the proportions recommended there.



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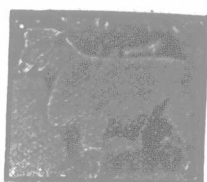
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Alderly Edge Yorkshires

Young pigs both sexes born in September and March. Price right.
J. R. KENNEDY, KNOWLTON, QUEBEC.

Questions and Answers. Miscellaneous.

Selling Poultry.

1. Should common poultry be presented for sale with heads on or off?
2. Should dressed turkeys have their heads off?
3. Should geese and ducks have heads on or off?

Ans.—1, 2 and 3. There are, of course, different customs followed on different markets, but the general rule is to leave the heads on all dressed poultry. In fact, they should be left on.

Breeding for Beef and Milk—The Use of Lime.

As I consider you one of the best authorities on agricultural topics, I would like to ask a few questions through your Questions and Answers columns.

1. Do you consider it a good practice to mate Holstein cows with a Hereford bull, thus combining dairying and beef?
2. Would naturally strong clay loam land, which will produce 40 bushels of wheat per acre, and other crops equally as well, be greatly benefited by an application of lime?
3. Is it true that red clover will produce good crops of hay for more than one year if the soil is sweetened by lime?
4. Is lime of much benefit to apple orchards?

Ans.—1. Our reply to this query is, briefly, no. Success very rarely accompanies such a practice. In some cases, perhaps, the first cross might result in a fairly good individual, but subsequent matings of the offspring will produce disappointments. We would advise milking Shorthorns where both milk and beef are desired. Cows of the Bates strain of the Shorthorn breed can be procured that will produce a liberal amount of milk and still retain their beef conformation and proclivities.

2. Land that will produce such crops is, no doubt, in very good tilth, and probably supplied with sufficient lime. However, an application of lime might produce further improvements. Read the article on lime in this issue and apply the tests.

3. Red clover cannot be depended upon to give a good crop the year following its main-crop cutting. It is a biennial plant, and unless it seeds itself it is usually thin in the hay the next year. However, we have seen considerable clover in mixed hay the second year.

4. Lime on orchard land might render available considerable plant food which otherwise could not be utilized. Potash, particularly, might be rendered more abundant, and this would manifest itself in the fruit.

Piles in Pigs—Retention of Afterbirth—Horse Forging.

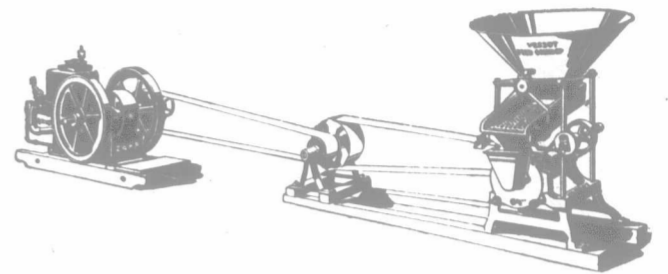
1. Kindly publish a cure for piles in small pigs.
2. Please tell us something to feed or do to prevent cows holding their afterbirth.

I saw in a recent issue where someone was asking for some information about horses forging. I have cured a couple for myself, and several others shoe with a good toe calk and no heel calk behind. Shoe the ordinary way in front, and keep them well shod, for when the calk wears off they may forge again, but as long as they are well shod you will have no trouble with them.

Ans.—1. Give each pig 10 to 15 grains aloes and 6 to 8 grains calomel. When this operates it will relieve the congestion, and will often effect a cure. If not, open the tumors and squeeze out the blood and matter, and dress with a mixture of 20 grains tannic acid, 1 ounce glycerine, and 1 ounce water. A little of this should be applied twice a day. Cold water injected into the anus several times each day will often relieve the inflammation. The animal should be fed on laxative feeds.

2. Retention of the afterbirth occurs in cows under practically all conditions. No medicinal agents have yet been found that will prevent the trouble in every case. Give the animals good care, keep them comfortable, give only warm drinks for a day after parturition, and when the membranes are not expelled inside of 48 hours after calving they should be removed by hand. This is the most practical treatment that can be recommended at the present time.

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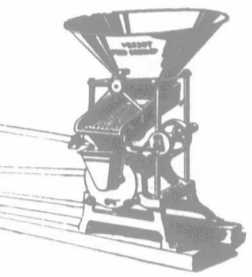
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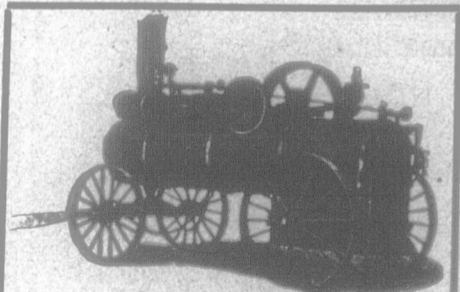


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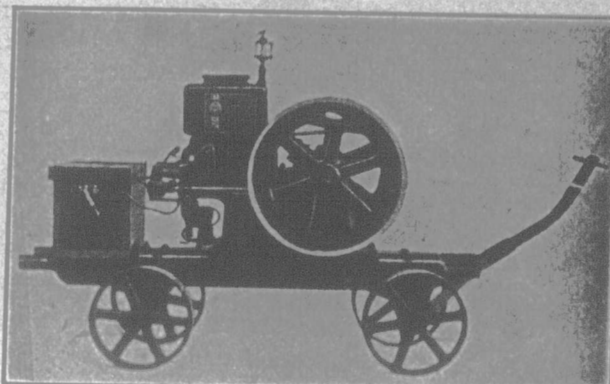
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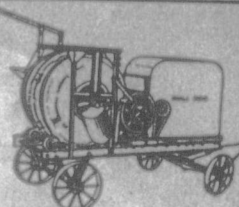
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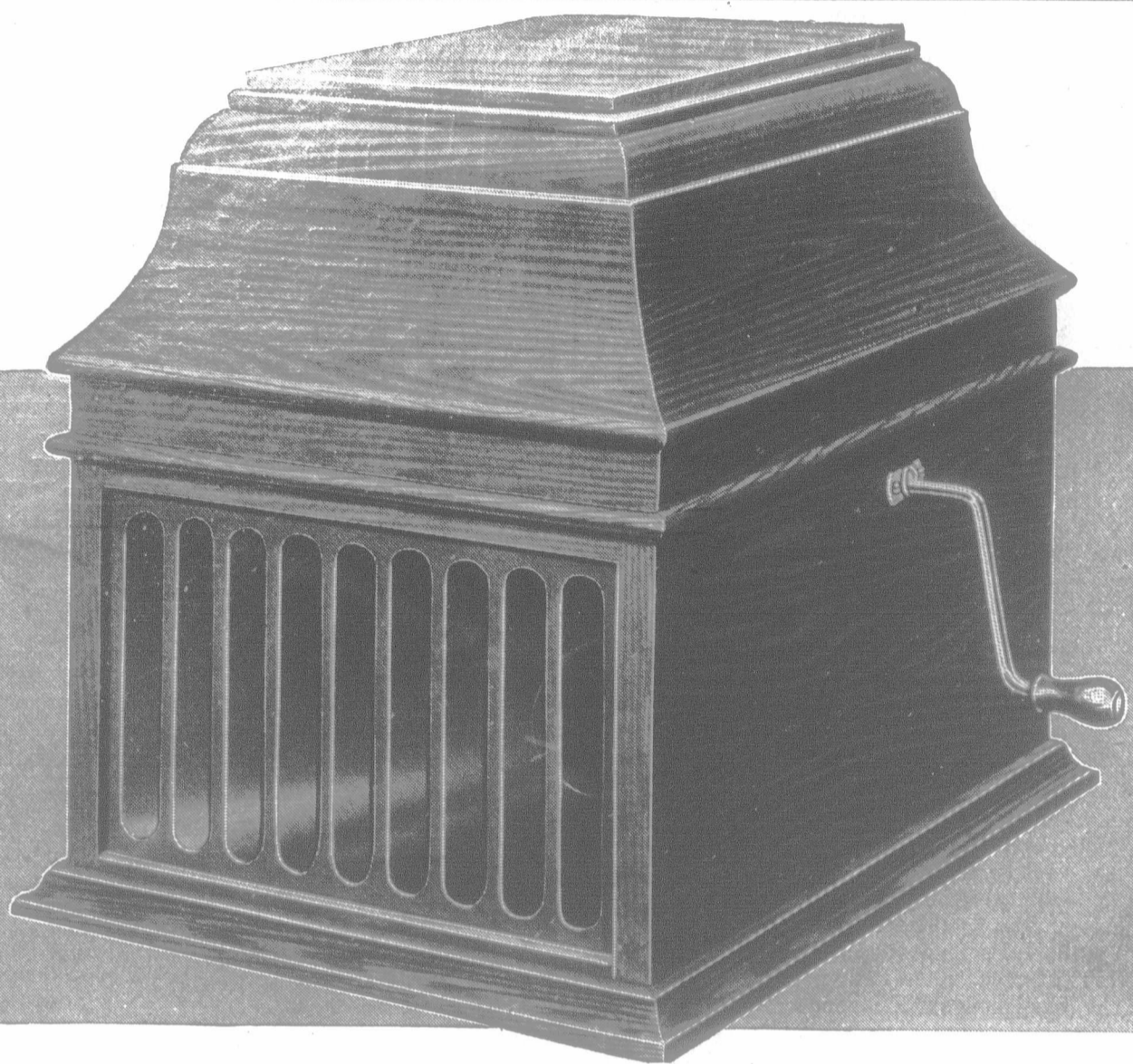
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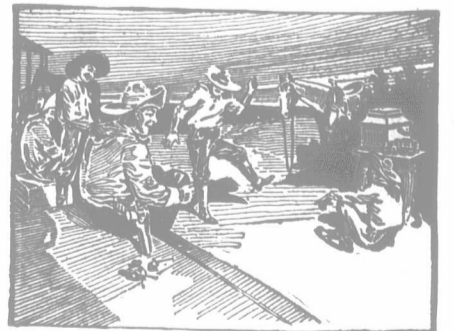
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