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THE FARMER'S ADVOCATE

AND HOME MAGAZINE



Director Central Exp. Farm
8 Dec 31, 16

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

Vol. LI.

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LONDON, ONTARIO, DECEMBER 7, 1916.

No. 1263

Greetings



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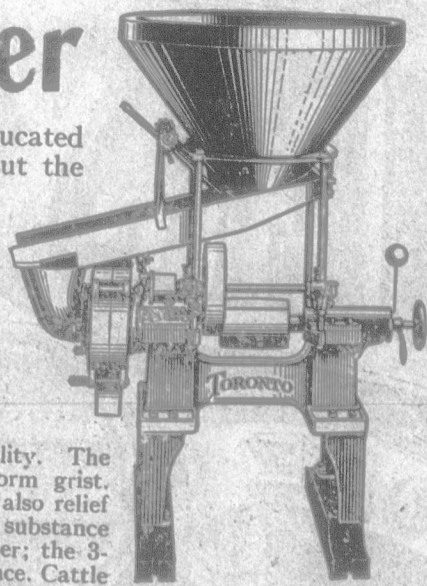
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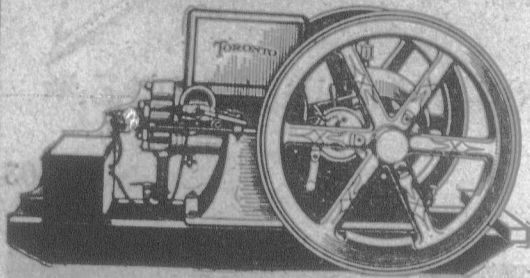
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Christmas, 1916



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Remit the amount, \$1.50, to us with the name and address of the person to whom you wish the paper sent, and we will forward a beautifully colored card on the style shown above, but done in red, buff, brown and green, conveying a seasonable greeting **with your name inserted at the foot.**

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LI.

LONDON, ONTARIO, DECEMBER 7, 1916.

1263

EDITORIAL.

Feed regularly and save feed.

Have you secured your seed for 1917?

Regular exercise for the stock prevents losses.

Winter is here but the farmer who farms well is still busy.

Sinking hospital ships is getting to be a favorite pastime of the Huns.

By attempting to enslave the Belgians the Germans can never win the war.

Do not eliminate the bacon hog because of one year of high-priced concentrates.

We agree with the correspondent who says that the heavy horse is the horse for the farmer.

An organization or firm which does not make use of the proper channels of publicity never accomplishes what it might.

Next week readers will be treated to a change, in the form of our annual Christmas Number. We hope it will please.

Interest in Farmers' Club meetings can only be maintained by large attendance and keen discussion. Do your part.

People are reading our automobile and farm machinery department. Help it, along by suggestions and articles on engines and farm machinery.

The political parties in Canada are squaring away for an election. Each voter should remember that he is an independent Canadian citizen.

The grower of sugar beets in Canada has not reaped much benefit in enhanced prices compared with that of the sugar manufacturers who have manufactured their beets.

Keep the stock off the meadow late this fall and early next spring. Fields have been eaten very bare and the grass may not start as well as it otherwise would next spring. Give it a chance.

Many farmers could not get their fall work completed with the help available. This will have an effect upon production next year. A campaign for more men for the farms might help.

A few of Canada's young farmers tell how they have profited from the lessons of the season in this issue. They are setting a good example for some of the older men by telling others of their work through these columns.

The week following our Christmas Number we hope to be able to publish some interesting accounts of the value of a Literary Society in a community. Tell others about the one in which you work and from which you get so much good.

The Dominion chemist says re spontaneous combustion in fires which break out in barns: "The initial and essential cause is the storage of the hay in a damp or moist condition." Very little hay that was not bone dry was stored this year.

The Price of Your Paper.

During the past few months the increased cost of producing papers and periodicals has been the subject of much comment. The Dominion Government put on a campaign asking the people to save old papers. The price of paper to the consumer has gone up to such a high level that many papers have been forced to increase their subscription rates considerably. Over in England the situation is even more acute, and the London Times, which formerly sold for two cents, we are told is now seven cents. Papers in the United States are contemplating raising the subscription price, some of them one hundred per cent., at the beginning of 1917. A large number of country weeklies in Canada have been forced to raise their subscription rates from \$1.00 to \$1.50, and still there is no assurance that a further advance may not be absolutely necessary. At the present time, extended contracts for paper cannot be made and prices to the publishers may go still higher. It looks as if it would cost at least twice as much for many papers to publish in 1917 as it has done in the past year and no one knows how much more. We are just drawing attention to the situation that our readers may take advantage of the opportunity of getting in their subscriptions to this paper early. For the present the subscription rate to "The Farmer's Advocate and Home Magazine" will not be increased, but the paper situation and conditions in other branches of the publishing business are such that we cannot promise to maintain the low price of \$1.50 per annum many months ahead. Every endeavor will be put forth to keep the price as it is and no advance will be made unless it is absolutely necessary. We are prepared to maintain the quality of our publication at the old subscription rate as long as we possibly can, but we, at the same time, advise all our subscribers to renew at once and thus be sure that they get their paper for another year, at least, at the present rate of \$1.50. Yesterday we received \$6.00 from one subscriber who is paying four years in advance. The day before a subscriber sent in \$4.50 for the paper three years. Subscribers paying for more than one year in advance will get the paper at the rate of \$1.50 per year for the amount of money sent in. One thing is certain, the subscription price will not be lower. We hope that we may be able to maintain it at the present rate, but can make no promises. Hundreds of publications are increasing their subscription prices. It would be good policy for Farmer's Advocate subscribers to make sure of their farm paper at the present rate. We are always desirous of helping our subscribers and we hope that many of them will be benefited by this little hint. Those who subscribe early will be safe, whether or not we are forced to raise the price. We say again that we hope to be able to avoid an increase in subscription rates, but as we are unable to get a definite quotation from the paper manufacturers we can give no assurance. At any rate readers will know that we shall not increase the price unless it is absolutely necessary. In the meantime safeguard yourselves by sending in your subscriptions.

The Sugar Beet Question.

The price of sugar has given cause for concern in many a Canadian household during the past few months, and judging from a letter from a correspondent which appears in the Farm Department of this issue the price of sugar beets in comparison to the price of sugar has aroused farmers who grow these roots to action. Wholesale grocers in London and other cities have pointed out the fact that at present prices of sugar, farmers who grow sugar beets in Western Ontario should be getting ten dollars per ton for their beets, provided they carry an average degree of sugar. Ten years ago, as pointed out by our correspondent, the price which the grower got for sugar beets was \$3.50 or more per ton. The price this year is \$5.00 per ton with a fifty-

cent bonus. Our correspondent shows that it costs in the neighborhood of \$41.00 per acre to produce beets. Investigation in certain counties in Western Ontario reveals the fact that the average crop of sugar beets during the past few years has been eight tons (certainly not more than 9 tons) per acre. Our correspondent figures his profits on a ten-ton crop, but at \$5.50 per ton for the beets, which includes the bonus, an eight-ton crop, or an average crop, would return only \$44 per acre, just \$3.00 more than our correspondent claims after ten years' experience, that it costs him to produce an acre of beets. Even if the farmer should succeed in producing the heavier crop and did make a profit of from \$14.50 to \$19.50 per acre, as outlined by our correspondent, only a comparatively small acreage of the crop can be handled on one farm and the aggregate of profits from the crop to each farmer would not be large. On the other hand the sugar company, according to our correspondent's figures, is able to make \$23.80 from each ton of raw beets, or \$238 per acre from a ten-ton crop of beets testing 17.4. Even from a lower test of 12 to 15 per cent. there would seem to be room for more than living profits. We are not sure as to the exact cost of manufacture. Our correspondent states that it is understood that the by-products are almost if not quite sufficient to meet the cost. Other writers on the subject have stated that the maximum cost would certainly not be over one cent per pound, and some of these have figured out that the actual cost of granulated beet sugar for market would not be more than 3½ cents per pound, even if only 12 per cent. sugar can be saved from the beet. It would look as if the sugar company operating in Western Ontario was making a rather high profit, and some have suggested that an Inland Revenue tax should be placed on sugar, that the Government might get a part, at least, of these profits and still not affect the price of sugar to the consumer, nor lower the price of beets to the farmer.

When the beet-sugar industry was started in Western Ontario the retail price of sugar was around 4 cents per pound, and the promoters thought well enough of the project at that time to go into it on rather an extensive scale. If there was profit in buying beets at from \$3.50 to \$5.00 per ton and manufacturing them into sugar to retail at 4 cents per pound, surely there must be more profit in manufacturing the article when beets are bought from \$5.50 to a little over \$6.00 per ton, and sugar is more than twice the price. Our correspondent points out that when beets advanced one dollar per ton the sugar company got an advance of \$9.00 on the sugar made from one ton of raw beets. The price of sugar is regulated not by what can be produced in Western Ontario, but by the cost of foreign raw sugar plus the cost of manufacturing. A scarcity of foreign raw sugar since the war has forced the price up, and the Dominion Sugar Company has had advantage of the increased price while the producer of the beets got very little extra, although each year it costs more to produce an acre of the crop. In fact, this year the producer would have received far greater profits had he grown turnips, which have been selling as high as 50 cents per bushel or \$20 per ton and which may be grown with far less labor and at smaller expense.

In 1914, factories at Berlin and Wallaceburg produced 29,000,000 pounds of refined sugar, and in 1915, 37,000,000 pounds. The crop was smaller this year, but if we place it at 25,000,000 pounds, the Government could collect a substantial revenue by a tax on the output and at the same time the Company would make profits large enough to pay the higher price for beets which the farmers think they should get. One thing is certain, compared with the price of sugar the producer of the beets has not been receiving the price which he should have been paid, and no one will blame growers for organizing.

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 homemakers, of any publication in Canada.
 2. TERMS OF SUBSCRIPTION.—In Canada, England, Ireland, Scotland, Newfoundland and New Zealand, \$1.50 per year, in advance; \$2.00 per year when not paid in advance. United States, \$2.50 per year; all other countries, 12s; in advance.
 3. ADVERTISING RATES.—Single insertion, 25 cents per line, agate. Contract rates furnished on application.
 4. THE FARMER'S ADVOCATE is sent to subscribers until an explicit order is received for its discontinuance. All payments of arrears must be made as required by law.
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 9. WHEN A REPLY BY MAIL IS REQUIRED to Urgent Veterinary or Legal Enquiries, \$1.00 must be enclosed.
 10. LETTERS intended for publication should be written on one side of the paper only.
 11. CHANGE OF ADDRESS.—Subscribers when ordering a change of address should give the old as well as the new P. O. address.
 12. WE INVITE FARMERS to write us on any agricultural topic. We are always pleased to receive practical articles. For such as we consider valuable we will pay ten cents per inch printed matter. Criticisms of Articles, Suggestions How to Improve "The Farmer's Advocate and Home Magazine," Descriptions of New Grains, Roots or Vegetables not generally known, Particulars of Experiments Tried, or Improved Methods of Cultivation, are each and all welcome. Contributions sent us must not be furnished other papers until after they have appeared in our columns. Rejected matter will be returned on receipt of postage.
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- Address—THE FARMER'S ADVOCATE, or
THE WILLIAM WELD COMPANY (Limited),
London, Canada.

Produce the "Better Grades."

Reports of the live stock markets so frequently contain these words: "Demand is for the better grades," that the one great lesson which the man who produces beef, bacon hogs and lambs should take to himself and act upon is that the greatest profit invariably results from producing high-class stock. We do not need to say pure-breds, but the pure-bred must be used as a sire in a well-graded-up herd or flock if the kind of stock which goes to market from that farm is to be classed among the "better grades". There is nothing to hinder the farmer who keeps cattle, sheep or swine from having at least good grades and from using high-class, pure-bred sires, typical of the breed represented in the grade animals with which he mates these sires. The poorly-finished, thin-fleshed, hard-feeding cull is always sold at a disadvantage on the market. The dealer is every time looking for something better, and the best makes the highest profits. The best grades need not necessarily be the heaviest, but they must have quality. The ultimate disposition of all animals raised for meat purposes is made from the block, and market reports, if followed closely, year in and year out, indicate that the demand is for the well-finished, good type of animal which cuts to best advantage and which the consumer asks for when he buys his roasts, steaks, chops, leg-of-mutton, ham and bacon, and no producer needs to be told that demand is a big factor in regulating price and profits.

Do Not Eliminate the Pig.

A correspondent in sending in some notes from his county a few days ago, made the statement that at present prices of grain there is no money in the bacon hog, and that hogs are being eliminated. We have feared all along that high-priced feed would eventually work havoc with the hog industry. Hogs are consumers of concentrates in large quantities, and it requires a careful feeder when concentrates are high in price to make satisfactory profits from hog feeding. The man who has roots and skim-milk is in the best position to make satisfactory returns, but whether or not hogs are produced at very much profit this year, it would

not be good policy to eliminate them from the farm. Only a few years ago price conditions practically drove the hog out of Western Canada, and as soon as the hogs were out went the price and those who retained their breeding stock reaped the benefit. Feed off a few hogs if possible this year and by all means retain the breeding stock. Prices of the finished product are high enough that the skillful feeder even with the high-priced grain should be able to make a reasonable profit, and it is well to always remember that the man who sticks to the different branches of farming in which he is engaged through high prices and low is the one who makes a success of his farming operations. And he who is always going into and out of the various branches of farming is generally in at the wrong time and out when he should be in.

Beginning "The Farmer's Advocate" Second Half Century.

Early in December, one year ago, "The Farmer's Advocate and Home Magazine" celebrated its fiftieth anniversary by sending to its readers a Half-century Number as its annual Christmas present. The paper which has always stood for the rights of the farmer is now one year into its second half-century, and next week, despite the vastly increased cost of producing such an issue, we are mailing to our subscribers a Christmas Number which we feel sure will please them as well as any which they have received in the past. In fact, those who, at the present time know what that issue will contain freely assert that it will prove more popular with readers than any single issue heretofore published.

We simply wish to outline the issue that readers may know what to expect, and yet there will be surprises in store for them when they get it. For upwards of two years Canada has been engaged on the side of humanity in the great world war, and our well-known friend, Peter McArthur, in the opening page, styles this "The Christmas of Great Giving." Peter McArthur always has something worth while for our readers, and in the first article which appears in this Christmas Number and also in one farther back in the issue and entitled "My Boyhood and My Boy's," readers will find the class of reading which they look for at this season.

Horse breeders and farmers generally know the writings of "Scotland Yet," who has contributed to these columns for upwards of twenty-five years, and who has been intimately connected with horse breeding in Scotland for many decades. The article on "The Ups and Downs of the Clydesdale in Scotland," is a historical sketch of the Clydesdale in its homeland which none should fail to read.

The live-stock end of the paper is well looked after. Our English correspondent has put forth his best efforts in a historical sketch entitled, "The Hereford on its Native Heath." This good old beef breed has made history in Britain and is making it in other parts of the world.

Margaret Rain, a native of the Scottish border, familiar with the life of the people of that part of the Homeland, describes, as only one who has been in the homes and has shared the life of the people can, the Life of a Scottish Border Shepherd.

At the present time there is considerable interest in the Argentine, and its live stock, and from the capable pen of that well-know judge, Robert Miller, we are fortunate in being able to produce an intensely interesting and profusely illustrated article on that country and its world-famed live stock.

Two valuable articles dealing with dairying will be read with interest by every dairy farmer; one entitled "The Relation of Science to Dairying," by Professor H. H. Dean, and the other on "Blood Lines in Holsteins and Ayrshires," written by our dairy editor.

Covering the whole field of the relationship between diseases of animals and the health of man, Dr. Charles H. Higgins gives an instructive article which should lead to a better understanding of the subject.

Of articles dealing with general agriculture there are many. First we might mention one by Ernest H. Godfrey on "The British Royal Family and Agriculture." Britain has had many good kings and many good queens, and a number of them have shown a special interest in agriculture.

Our well-known contributor, Sandy Fraser, in Scotch dialect, goes back to the good old "Glenargry School Days."

Education is important, and Dr. S. B. Sinclair, from practical experience in a pioneer district school, gives our readers an idea of some of the delights of his work.

The farm is dependent upon the forest, sometimes more than the average reader realizes. Robson Black goes into the Partnership of Farm and Forest in a way which should put the matter in a new light before many of our readers.

W. D. Albright, a man who has wide experience in newspaper work, and one of the few who has returned to the farm, tells of his return and is quite sure that Farming is what it Seemed.

Down by the sea there is a wonderfully fertile tract of marshland made possible by the use of dikes, and the story of "The Marshlands of the Bay of Fundy," written by one who knows them well, will appeal to all.

Ontario has been making strides in the poultry industry, and the story of the Bred-to-Lay Barred Rock in this Province reads like a fairy tale.

New Ontario is not forgotten, and H. W. Parsons' account from experience of pioneering in that country sets forth the trials and the satisfaction the pioneer has in his work.

This has been a peculiar year, filled with lessons for the Canadian farmer. These lessons are outlined by well-known writers from every Province in the Dominion.

The Home Department is filled with good things. The ideas of prominent Canadians on the Greatest Thing in Life will be read in every home. Canadian poetry is given a prominent place, and there are many other features.

Besides all this there will appear reports of the Chicago International Show and the Ontario Winter Fair at Guelph, and the whole will be illustrated even better than the annual Christmas Number has ever been, and the front cover, appropriate in design and perfect in execution, painted by one of America's leading artists, will touch the hearts of all who see it.

Plan to send an extra copy to your friends. Subscribers get the issue free. Extra copies may be had at the nominal price of 25 cents the copy.

Nature's Diary.

A. B. KLUGH, M.A.

With many of the problems of conservation, far-reaching and important though they are, the farmer is concerned only in an indirect way. But there is one conservation problem with which he is concerned in a very direct and personal way—the conservation of his own wood-lot. From what I have seen of the farm wood-lot in my somewhat extensive travels in various parts of the country, I have no hesitation in saying that the average wood-lot is sadly deteriorating, and that this is the natural result of the lack of any intelligent management being applied to it. It seems to be quite generally overlooked that the timber grown on the farm wood-lot is a crop, and that as other crops need care and systematic management so does the wood crop. The reason that this fact is overlooked may be that timber, unlike other farm crops, requires but a small amount of labor and a long period of years to bring it to maturity. It may be due to the underestimating of the value of this crop, and if this is the case it behooves every owner of a wood-lot to consider the fact as the agricultural areas become more and more deforested the value of the farm wood-lot will increase, and that a properly managed area of timber will furnish material for market at intervals, and will afford a supply of timber and fuel for home use at all times.

The deterioration of the wood-lot is due mainly to two causes—careless cutting, and the pasturing of the wood-lot. By careless cutting the best species are removed, and the inferior left, not only to grow themselves but to seed up the spaces previously occupied by the better species. This naturally results eventually in a wood-lot composed entirely of the less-desirable species. The matter as to what are the best species depends upon several factors and also upon the part of the country under consideration, and this matter I shall take up later. Pasturing of the wood-lot is a very general practice which is very seldom defensible. One characteristic of the pastured wood-lot is the almost complete absence of thrifty, young growth. What young growth does exist is usually in small, ragged patches and consists of broken and scrubby stuff. Cattle, horses and sheep eat the young seedlings, particularly the hardwoods, trample them out, or brush against them and break them off. Hogs eat the seed, dig out the young seedlings, and expose the roots of the trees. The amount of damage done depends largely, of course, on the number of stock and the size of the wood-lot. I have recently examined a large wood-lot, consisting of over two hundred acres, in which there were but ten sheep, and the amount of damage which these few head had done was surprising. In some of the more open places there was scarcely a young tree which was not more or less injured. In another place I inspected a lot in which hogs have run for some years, and found that there was absolutely no reproduction of timber going on, that practically all the superficial roots of the trees were exposed and that the large trees were dying. Another way in which stock injures the wood-lot is by tramping and compacting the soil, so as to render it almost impervious to water, making it too hard to act as a good seed-bed. A further fact which shows that the pasturing of the wood-lot is not a paying proposition is the very meagre supply of forage to be found in a good wood-lot. Grass in the wood-lot is an infallible indication that the wood-lot is not fully stocked with timber, or is being mismanaged. Grass will not flourish without strong sunlight, and in a wood-lot in good condition very little sunlight reaches the forest floor. It is perfectly clear that pasturing and timber production cannot be practiced on the same area, except to the mutual disadvantage of each, and that the combination of the two will not be as remunerative to the owner as the practice of either one separately. One point of some practical importance which we have not so far considered is the value of the shade afforded by the wood-lot to the stock. This in the hot weather of midsummer is undoubtedly considerable, but this benefit can be fully secured by fencing off a very small portion of the lot and allowing stock in this portion only, thus preserving the main body of the lot in good condition for producing its crop of timber.

In many instances owners of wood-lots permit stock access to them under the impression that it is only the "brush" which is injured by them. They apparently forget that every large tree was once in the "brush"

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stage, and that the "brush" of to-day will be the large timber trees of the future.

In one respect the owner of a wood-lot has a great advantage over the owner of large tracts of forested country—the absence of danger from forest fires. But if fire does occur in the wood-lot its results are as disastrous as in the case of larger areas—the destruction of the young growth; the burning of the fallen leaves, the natural manure of the forest; the exposure of the soil and consequent greater evaporation; and the injuring of the standing timber by burns through the bark which not only lower the value of the butt-log but allow access to rot-producing fungi.

(To be continued.)

THE HORSE.

The Heavier the Better.

We were pleased, in reading one of the articles published in our Young Farmer's Department, to note that the writer had found, from experience, that the heavy horse, and the heavier the better, was the most profitable horse on the farm. He did not go into the question of breeding value, but simply mentioned the fact that for heavy haulage and the heavy farm work the horse with weight and substance is most economical and accomplishes the work to better advantage than lighter animals, more of which would be required to do the same hauling of implements and loads. The heavy horse is bound to weather the competition of automobile and tractor to far better advantage than is the light horse. Of course, some consideration must be paid to the light horse stock of the country, and this should be improved, but, for the farmer with land to work and loads to haul, weight is important. And, bringing up the point of the value of the animals as breeders, the heavy horse is always in better demand than the light horse in boom times as well as in periods of dullness in the horse market. The heavy mare can be managed so as to do her share of the farm work and at the same time raise a colt, and just at this season of the year and more especially when feed is high in price and scarce, it is important that we emphasize the feeding of the draft colts and young horses on the farm. If any of the horses must be "skimped" this winter, let it not be the younger animals, particularly the colts recently weaned. If they are to go on and reach the desirable weight for their respective breeds, it is important that during the first and second winters at least, and particularly the first, they get a sufficient amount of suitable feed. Do not withhold grain. Give rolled oats in sufficient quantities to keep the colts growing and thrifty. An occasional root, carrot or turnip preferred, will help, and feed liberally but judiciously on good clover hay. Exercise is important as it tends to keep the colts healthy, thrifty and growing well. Give them four or five hours each fine day in an open yard. Remember that weight is important, and to get weight the colt must be kept growing. To keep the quality right the animal must be judiciously fed and exercised regularly for a considerable time each day. Because horses are not as ready sale as they might be at the present time, and because feed is high in price, are not sufficient reasons to neglect the colts. Keep them growing.

The Brood Mare.

Much of the success with foals next spring depends upon the care and management of the brood mare during the winter season. We must emphasize exercise. No brood mare can do justice to herself and her offspring if tied by the neck in a narrow stall day in and day out. If she is to raise a strong, healthy foal next May or June, perhaps earlier or later, she must get a reasonable amount of exercise, and the more of it she gets the better, provided it is regular. Each day, if there is no light work or light teaming for her to do, she should be turned out in a yard, not with younger horses or those likely to kick in play, but where she can exercise quietly and unmolested. Four or five hours a day, when the weather is right, will do her good but if she is to be turned out when the hard weather comes she should be kept sharp shod, at least in front. Almost as surely as a mare falls an abortion results. This must be prevented and precautionary measures must be taken early in the season. Some keep their mares shod all around, but, sharp shod behind, there is some danger, particularly with a mare that is inclined to be cross when with foal, of other animals getting kicked. Good rolled oats and clean hay are as good feed as can be given, but the grain ration should not be heavy. Keep the mare in good thriving condition. Some claim that adding a little wheat to the oats helps, but this year wheat is so high in price that very little could be profitably used. Give the mare some roots each day; a good big turnip at noon, or carrots if you have them, will tend to keep her digestive tract in a healthy condition.

Write your member of parliament or the Minister of Agriculture and state your objection to oleomargarine.

LIVE STOCK.

Have the stables been cleaned, disinfected and freshened for another winter's feeding period?

Every load of manure drawn to the fields this fall and winter is that much done towards the spring's work.

Almost any man with tools and lumber can make a colony house for swine. Such will be found a very handy thing on the farm.

There is now an excellent opportunity to derive some revenue from our rough, yet good grazing land. The world-wide shortage of sheep emphasized in articles in this department should act as a suggestion to many. Farm flocks and small ranch flocks should result remuneratively to any with some knowledge of sheep husbandry.

A clean, dry barnyard has many advantages over the wet, miry kind too often seen. Put the manure in a compact pile, or haul it to the fields. Drain the barnyard either with tile or open ditches and if possible fill up the depressions with gravel. Concrete is an excellent thing, but it is rather late now, on account of frost, to put it down.

The Sheep Question in Great Britain.

The sheep-breeding industry of this country is certainly now in a position which calls for "a long pull, a strong pull, and a pull all together" on the part of breeders in order to restore it to the place it once held in the pastoral husbandry of Great Britain. We have been aware for some time that a decline in sheep has for many years past been a world-wide movement, and that the decline has been both absolute (i. e., in actual numbers) and even more so with regard to population. But few persons, however, were, we think, prepared for the startling facts brought out in the latest figures which we have had from the Board of Agriculture, and which show us that during the past forty years the numbers of sheep in England and Wales have decreased by 14 per cent., or from 21,628,896, on the average of the five years 1871-75, to 17,259,694 in 1914. In this period we have thus lost 4,369,000 head of sheep in England and Wales, while in the same period the population has increased from 22,712,266 in 1871 up to 36,075,269 in 1911, or by 13,363,000 souls.



Early Training.

Taking 100 as representing the numbers in 1876-80 of sheep in the quinquennial periods following, and of the population in the census years, the relative numbers are thus given by the Board of Agriculture:

Average for the years	Sheep	Population
1876-80	100	100
1881-85	88	114
1886-90	91	—
1891-95	95	128
1896-00	92	—
1901-05	88	143
1906-10	93	—
1911-14	86	159

Sheep breeders would, we think, do well to study these figures carefully and try to realize what they mean. In all their nakedness the figures tell us that while our sheep stocks in England and Wales have decreased by 14 per cent. absolutely, they have decreased no less than 73 per cent. in their proportion to the population. This is the bald and not very pleasing fact which a very simple arithmetical calculation deduces from the above table of Board of Agriculture figures.

There is one thing that must not be forgotten in connection with these figures, and it is a fact that somewhat mitigates their force. The sheep bred to-day are much superior to those of forty years ago, and by early maturity alone probably produce nearly as much mutton in a given time as did the larger numbers in the late 'seventies. We mention the point only to show that it is not overlooked.

No doubt the causes for this decline in sheep husband-

ry have been both varied and cumulative, and this would open up a subject into which we shall not enter except to touch upon it very briefly. As long ago as 1887 the decline had commenced, and the matter was discussed in the Agricultural Returns for that year. The causes for the decline shown in England were then given as the severe winters which had at that time been experienced, and which caused much mortality among sheep; the reduction in flocks owing to so much land being thrown on owners' hands, and who had not the money to stock it; and to forced sales owing to shortage in keep owing to some summer droughts. No doubt these and similar causes—natural causes—they may be called—have had some influence in bringing about the reduction.

An economic reason is put in the forefront of the causes for the world-wide reduction in the number of sheep in the report on the meat situation which has been recently issued in the United States. This reason is the tendency all over the world to smaller farms—a tendency which, it is claimed, is antagonistic to sheep, animals which do best of all on a large range for grazing. In this report the view is expressed that sheep—though they produce both meat and wool, and so are distinctly dual-purpose animals—are not economic stock on small farms, such as pigs are. In America, where the farms have superseded the range, sheep have enormously declined in numbers, and this appears to be a common result in the development of farming in countries where density of population is increasing. In contradistinction to this the report points out that pigs invariably increase with small holdings, and "the economic strength of swine has been demonstrated by forty centuries of agriculture in China, during which time the reduction of farms to an area of very few acres has permitted the pig, alone of meat animals, to survive."

But, whatever natural or economic causes have combined to bring about the reduction, the actual result is to be deplored and calls energetically for alteration. One thing is very certain, and it is that the smaller holdings tendency has not gone far enough in England and Wales to prevent our vales, downs and hills from being stocked at least as extensively as they were forty years ago, and the actual capital needed to bring our flocks back to that level need not be great. We have now some 7 1/4 million lambs in England and Wales each year in June, and if sheep farmers would but add 2 per cent. of the lambs to the number of ewe lambs now kept for breeding, this should add (in round numbers) 150,000 sheep a year to our stocks of about 6 1/2 million breeding ewes, and this over and above the numbers now kept to maintain stocks. Very few flockmasters would miss this from their profit and loss account of their flock, and it would be a very simple and easy way to bring back our sheep stocks to their old level.

There can be little doubt but that such an act of thrift will pay well. However deplorable the figures we have quoted may be with regard to the past, they are full of brilliant hope for the future. With stocks as they are in relation to our growing population, there can be no fear that prices for either mutton or wool will be unremunerative for a good many years to come. Breeders should take advantage of this, and not only bring the numbers in their flocks up to the higher level we have indicated, but also improve their quality by the use of the best stud animals available. Patriotism calls for this as the sheep farmer's contribution to the national food supply. When this is backed up by self-interest as well, there ought to be no difficulty in securing the result desired.—Live Stock Journal.

Wool and Textile Manufacturers Regret the Decrease in Sheep.

Some interesting figures and information are to be gleaned from the Conference, conducted under the auspices of the Philadelphia Wool and Textile Association at that city, on November 23 and 24. All the speakers told the story of a once-paying industry, now vanished or rapidly declining. Professor C. S. Plumb, of the Ohio State University, with regard to wool production said: "If all the wool grown in the United States last year were made into pure, all-wool cloth, and the cloth were cut and divided equally among the men and women of this country, there would be about forty-four square inches of such cloth allotted to each person, and if the present decline in wool production continues for a few years longer there won't be enough to make a respectable breech cloth per capita. He presented the following chart, which sums up the condition in brief form.

Year	Farms	Sheep	Sheep per farm	Sheep per capita
1850	1,449,073	21,773,220	15	.93
1860	2,041,077	22,471,275	10.9	.71
1870	2,659,985	40,853,000	15.3	1.05
1880	4,008,907	40,765,900	10.1	.81
1890	4,564,641	44,336,072	9.7	.70
1900	5,739,657	41,883,065	7.2	.54
1910	6,340,359	51,638,590	8.14	.56

The causes of decadence were enumerated by Professor Plumb under the following heads: First, he placed the fact that our American people as a people do not love farm animals. We keep live stock merely as they fit into our farm plans, but have never regarded them with the same affection as do European farmers, and sheep have been the first to suffer. The second reason was dogs; third, the price of land; fourth, unpopularity of mutton as a food; fifth, stomach parasites;

sixth, lack of co-operation; seventh, competition with dairying; eighth, the tariff. Relative to the prejudice against mutton as a food, it was brought out in discussion that 9,500,000 sheep and lambs were slaughtered for food in the United States in 1907, and 113,000,000 head in 1915. The per capita consumption of mutton and lamb has increased materially.

A Few Words About Hogs.

There is no kind of live stock, we believe, so much affected by panicky conditions as are hogs. It is evident that fewer swine than usual will be fed this winter and fewer sows will be bred to farrow in the spring. There can be no doubt regarding the price of pork next spring and summer. It has been pretty well proven by investigation and practical farmers that a pound of gain can be accomplished with about four pounds of meal. In many cases a pound of gain can be accomplished with less, but, under average conditions, we are safe in saying that four pounds of millfeeds or chop will produce a pound of pork. This being true, it appears that even with the present price of feed, hogs can still be fed at a fair margin, when the farmer does not put too much value on his labor. If prices are as attractive next summer, as conditions indicate they may be, it is likely that the man who feeds hogs this winter may receive a good average return for his efforts.

Some farmers make a practice of wintering young pigs without making any attempt to finish them for spring delivery. They prefer to let them run a while on the grass and finish them in warm weather. It appears that cheaper gains result under summer conditions than in winter. It may be that many farmers with lighter stores than usual should carry their young pigs through the winter in a thrifty, growing condition, and then turn them to grass in the spring until the wheat is threshed if need be. They could then be finished off at weights averaging around 200 pounds, at moderate cost. Farmers should give this matter some consideration for it is poor policy to follow the crowd at a time like this.

THE FARM.

Plans for Fall Fairs.

EDITOR "THE FARMER'S ADVOCATE":

With your permission I would like to add a few statements to the letter of "A. R. Mac.," of Elgin Co., Ont., on the subject of improving the Fall Fairs, in support of which "The Farmer's Advocate" is giving its effectual influence. The directors of these exhibitions should be given credit with a desire to make them useful and successful, and a discussion now, when plans and prize-lists for next season can be properly prepared, is timely. If the subject is not ventilated, exhibition authorities are to that extent deprived of suggestions, and desired reforms perhaps delayed. It is claimed that the people want mainly a recreation and racing event, and the business of the directors is simply to cater to the craving. It is well to look a little farther down. If the people are hankering for this sort of thing who is responsible? Very largely those who educate them. An annual fair may be a valuable educator and a wholesome, economic factor to a community, or it may have the opposite effect. Like a newspaper, the character of an exhibition will depend on the ideals, information and energy of those in control, and its constituency may be educated either up or down.

Now, speed is a proper factor in the development of a high-grade, light horse, but unless regarded as a mere racing machine for betting purposes, is not the most important, and probably will become less regarded, with the ever-increasing application of the motor on the road, the speedway and in the air. A prize-list before me devotes about one-half as much money to race events as it does to six regular classes of horses. The track spreads over acres of ground. A grandstand is provided from which to view the racing, and fences prevent the public from seeing the display and judging of horse classes in which farmers and farmers' sons are really concerned, unless with the aid of a telescope or operaglass, and we are not equipped with such luxuries. At one fall fair which I attended the supply of pens or covers for other live stock was hopelessly inadequate, and in several cases big loads of animals were never removed at all from the wagon racks, and judges had to maul around among them in order to discover their sex or age and distribute the prize tickets. Of what earthly educational value to a locality is that sort of work? Absolutely useless except to the man who secured the premiums. No effort whatever appeared to be made to make a feature of any competition in live stock except the racing which, being spread over most of the afternoon, diverted attention entirely from the more useful events and displays. This surely is an ill-balanced conception of fair management.

At one fair that attracted large numbers of horses and other stock and was attended by several thousand people, the broken-winded pump on the grounds refused to operate, and exhibitors and visitors had to scale fences to borrow water from neighboring wells. The main building space and table room were quite insufficient either to properly display or protect the ex-

hibits from molestation in the afternoon when owners were left to look out for their own. It is probable that a general inspection of local fair grounds and buildings would show a lot of defects and deficiencies which a little forethought and outlay would make good. The lay-out of grounds and buildings and the size and model of tabling on which fruit and other products can be adequately and safely shown for the convenience of judges as well as the public, deserves more systematic attention, and most boards of directors will be ready to avail themselves of plans for the betterment of the exhibitions of 1917.

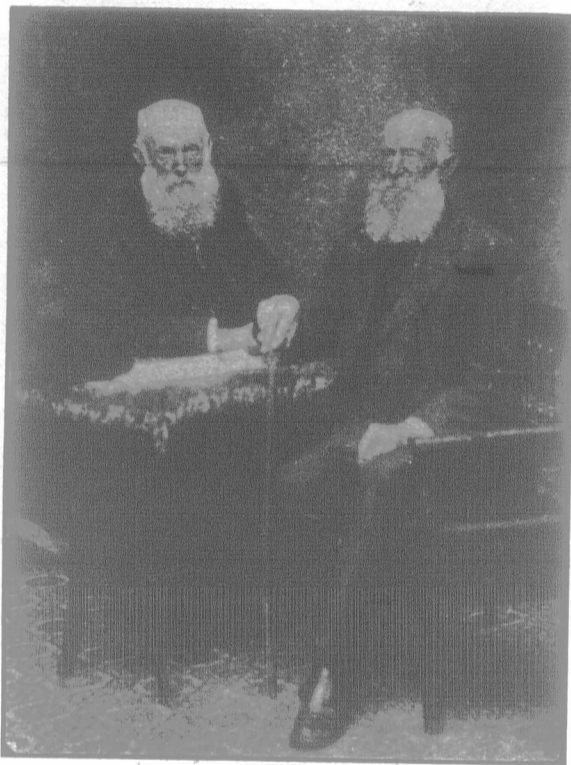
"A. R. Mac." is entitled to the thanks of the public and the authorities for turning his flashlight upon the mischievous mistake of introducing such a feature as a horse race at a public school fair, which is a new educational movement and should be kept right from the start, and it will pave the way for better exhibitions and a better agricultural community. The fall fairs receive grants of public money on the principle that they are educators. Wrong at any time to mispend our resources, it is doubly so in a crisis when the country is called upon by a world conflict to strain every financial nerve for the rescue of human liberty.

ON THE WING.

These Men Have Taken "The Farmer's Advocate" Forty-Three Years.

EDITOR "THE FARMER'S ADVOCATE":

I enclose photo of my father and myself which was taken recently, and I thought it might be of interest enough to be reproduced in "The Farmer's Advocate."



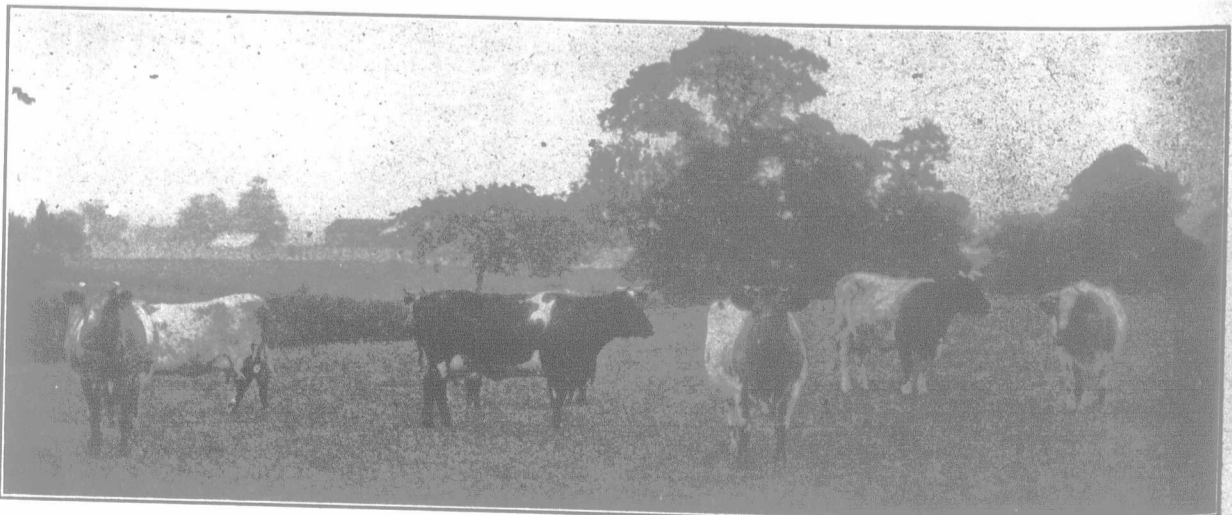
J. H. and P. P. Fowler.
Father and son.

Your paper has come to our house regularly for forty-three years. The first numbers had no colored cover. Father always admired the distinguished writers of the Advocate in years gone by, as well as the present writers, such as Peter McArthur and Sandy Fraser.

As we have always lived together and conducted business as J. H. & P. P. Fowler, we have had many amusing incidents on account of looking so much alike. We often hear our acquaintances remark "there go the brothers," or "which is the older man?" And quite often in recent years we have been taken the one for the other. Probably we appear really more alike than we look. Father is eighty-six and I am sixty-three, so I am still called the young fellow.

Shefford Co., Que.

P. P. FOWLER.



Shorthorns at Home.

What of the Sugar Beet, the Sugar Companies and the Price of Sugar?

EDITOR "THE FARMER'S ADVOCATE":

Seeing the article in your issue of Nov. 16 on sugar-beet growing, and as some figures do not exactly tally with our own figures, I am taking the liberty of sending you figures collected during ten years of sugar-beet growing. In starting I might say our land is a clay loam, and that our longest haul of beets to the shipping point is about three-quarters of a mile, also that the land is nearly all tiled every six rods.

In 1906, when we grew our first beets, the price per ton was \$3.50, delivered on cars. At that time Wallaceburg factory was the only factory in the field. However, during the last few years Crosswell and Marine City firms, operating in Michigan, have taken part of the acreage offered, and, as competition always helps business, we are getting this year \$5.00 per ton and free seed, and the company has promised a bonus of 50 cents per ton. There is also another contract used, called the percentage system. A 12 per cent. sugar beet is worth \$4.75 a ton, and 33 1/2 cents for every per cent. over that. In 1914 we shipped some cars of beets percentage and the beets tested as high as 18.9, but we had to pay for seed and also freight to factory. This year, on account of the late spring, the cars we have shipped so far have tested from 15.9 to 17.4 per cent. of sugar.

Now, I will give you figures on the growing part. There is absolutely no use sowing beets on ridges of any sort, so we must use our best land. We use a special drill and a team cultivator, as the beets are sowed mostly in 20-inch or 22-inch rows.

The following table will explain itself:

Rent of land plowed in fall.....	\$12	per acre
Discing and sowing.....	2	" "
Cultivating 5 times (for season).....	3	" "
Thinning, hoeing and topping (done mostly by Belgians).....	18	" "
Lifting with team and lifter.....	2	" "
Drawing 4 two-ton loads (for 8-ton crop).....	4	" "
Total expense.....	\$41	per acre

Your article placed the expense at about \$30 an acre, so there is some difference. We have averaged about 10 tons per acre most years. So we shall see some of the facts of what the company pays.

A 15 per cent. beet will run 300 lbs. refined sugar to the ton. Beets testing 17.4 per cent. (which we received for one car) should make 340 lbs. refined sugar, which at \$7 per hundred should bring \$23.80 from each ton of raw beets. There is also another by-product, beet meal, made by drying twenty tons of the green pulp down to one ton of dry meal, retailing at \$30 per ton at present. There is also a low-grade molasses left after refining. It is reported that the beet meal and low-grade molasses pay cost of operating the factory, leaving a good, wide margin of profit.

A ten-ton crop, with expense of \$41 for growing, if sold at \$5.50, the present price, would bring \$55.50. Taking off \$41 for growing, leaves \$14.50 per acre of profit. On a percentage contract, with beets testing 17.4, the beets would bring \$6.55 plus bonus of 50 cents, or \$7.05 per ton. Freight would be about 85 cents and seed 15 cents per ton, leaving \$6.05 per ton, or for 10 tons at \$6.05 equals \$60.50. This minus \$41 expense leaves \$19.50 per acre, where the company gets \$23.80 multiplied by \$10 or \$238 for sugar alone, not to mention meal and molasses. Last winter a prominent member of the Wallaceburg Sugar Company stated that the Company had never paid less than 23 per cent. on capital invested and had laid up a surplus of \$1,200,000 with which they are building a new 1,200-ton-capacity factory at Chatham. I might also add that for every ton of sugar-beet sugar refined they are entitled to one ton of cane sugar free of duty.

However, the sugar-beet growers of Kent and Essex were not satisfied with the price, and a public meeting of beet growers was called in Harrison Hall, Chatham, on October 28, to consider some action to get nearer a square deal. After much discussion they decided to organize each shipping station and get members to pledge themselves not to contract for less than \$7 a ton. Before the meeting adjourned they decided to

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have a meeting of delegates on the following Saturday, October 4. They also sent invitations to Lambton beet growers to co-operate with them. Strong clubs were immediately formed, and five delegates sent to Chatham on October 4. At this meeting the Ontario Beet Growers' Association was formed and officers elected. Prices recommended were \$7.25 delivered at factory, or \$7.00 delivered at siding (seed not to exceed 15 cents per pound). It was stated at this meeting that, whereas beets had advanced \$1 per ton, sugar had gone up \$9 on 1 ton of raw beets. The President, Vice-President and Secretary-Treasurer and four delegates were appointed to meet the Dominion Sugar Company officers and present the farmers' side of the case. It has been no trouble to organize the farmers this time, as they are tired growing sugar beets for present prices. There is not one-quarter the acreage of beets grown in this

vicinity that there were four years ago, and unless prices advance considerably there is going to be less. Belgian labor is demanding \$21 per acre for next year, and other crops pay almost as well with less work, and that at a more reasonable time of the year. They also throw fall ploughing back too late, and they have the same effect on land as corn, leaving a tight bottom for the next ploughing.

We do not desire to boost the price of sugar as that is high enough now.

Lambton Co., Ont.

A LAMBTON GROWER.

How to Kill Bindweed.

EDITOR "THE FARMER'S ADVOCATE":

I notice from time to time farmers are making in-

quiries how to kill bindweed or wild morning glory. I had some experience with this weed some years ago, and in a deep soil there is but one way to fight it. The patch of bindweed which grew on my farm was about six rods square. The land is a deep, clay loam favorable to the weed. I manured this plot thoroughly, and extended it two rods longer to make sure I got it all. Then gave it a light plowing. The following spring I sowed it to oats and seeded it down with timothy. I cut this patch with the mower the first week in July each year, and for the first three years it was a race between the timothy and bindweed for possession of the land, eventually the bindweed weakened, and when the sixth crop was cut no trace of the weed could be found. I cropped this field afterwards and could find no trace of bindweed.

Middlesex Co., Ont.

J. T. N.

The Causes of Barn Fires and How to Avoid Them.

Barn fires have been unusually numerous in Ontario this year and most strange does it seem that certain localities have suffered many severe losses while other localities have escaped. It is difficult also to believe that spontaneous combustion should be more prevalent in a year of extreme drouth at harvest than it was in 1915 a year of unprecedented deluge during haying and harvest. All kinds of theories have been advanced regarding the cause of these numerous conflagrations; some of them ridiculous, some of them sensible, many possible, but few probable. It might be well for our readers to know the extent of fires and the losses, as well as to have an intelligent idea of the causes of, what has been advanced as the origin of a considerable percentage of the fires, viz., spontaneous combustion.

During the months of August, September and October, the three months during which barn fires are usually most prevalent, there were, according to the Provincial Fire Marshal's records, 182 barn fires in Ontario. The barns, with their contents, were worth approximately \$417,000, about two-thirds covered by insurance. In the three months forty-four special investigations were made into the causes of forty-four different barn fires. Investigations were made only where the causes of fires were reported to the Fire Marshal's Department as unknown or suspicious and as a result of the investigations the following causes were assigned: spontaneous combustion, 18; incendiary, 7; smoking and careless use of matches, 5; sparks from thresher, 1; unknown, 11; lightning, 1; sparks from railway engine, 1.

These are the causes assigned by the Fire Marshal's Department for 44 out of the 182 barn fires in the three months named. Barn fires were unusually numerous in November and more investigations were made. Spontaneous combustion is assigned as the cause of so many that we believe farmers would like to understand this phenomenon more thoroughly.

Accordingly we publish the following interesting and instructive letter from Dr. Frank T. Shutt, Dominion chemist:

How Spontaneous Combustion is Brought About.

BY DR. F. T. SHUTT, DOMINION CHEMIST.

Combustion, as it is ordinarily known and recognized, results from the union or chemical combination of combustible (inflammable) matter with the oxygen of the air, the union being accompanied by the giving out of heat and, frequently, light. When the union takes place rapidly the heat evolved is intense and the organic combustible matter may burst into flame, but when slowly, there is no flame and the heat produced may be almost imperceptible to the sense, though the sum total of the heat evolved may be the same in both cases. The heat of our bodies is maintained by a process of "slow combustion" (which may be considered as the evolution of heat unaccompanied by flame), resulting from the union of the organic matter of our food with the oxygen of the air we breathe. Flame is really burning gas and for its generation and ignition the ordinary combustible materials require a somewhat intense heat.

Spontaneous combustion or the ignition of inflammable material without contact with flame, occurs when the union with the oxygen (oxidation) is sufficiently rapid to raise the temperature of the gases produced to the point of ignition.

The spontaneous fires which break out in barns, or more particularly in mows or compartments where hay or sheaf grain is stored, are due primarily to fermentation, which chemically considered is a form or process of oxidation. Fermentation is due to the growth and rapid multiplication of bacteria (microscopic plants always present in the air). They feed upon the organic matter of the hay, etc., and rapidly develop when moisture is present, and the material and the enclosed air are not too cold. If the process proceeds slowly, (conditions of moisture, air and temperatures not being favorable to rapid development of the bacteria,) the process is one of "slow combustion" and there is no flame or fire. Such is the process that causes the blackened and charred masses occasionally found in the interior of hay stacks, manure heaps, etc. There has been no outward burning of the material, but it has nevertheless been carbonized by this process of fermentation.

Fermentation being a process of oxidation, it follows as a natural result that it produces heat. In other words the bacteria by their growth on the organic matter evolve heat. With the right degree of moisture present and a sufficiency of air to provide the bacteria

with the necessary oxygen, the growth of the bacteria is rapid and more and more heat is generated until, if the hay etc., is in a confined and poorly ventilated space, the temperature is reached at which the gases produced take fire and the material and the building in which it is stored are burned. It may be weeks or even months after the hay is put in before this firing of the material takes place.

The initial and essential cause therefore of these cases of spontaneous combustion is the storage of the hay in a damp or moist condition. Hay containing a preponderating proportion of clover appears to "heat" or ferment more readily than that which is largely composed of timothy. If circumstances necessitate the putting away of the hay in a moist condition, salt it well. Salt is a preventive of fermentation; it retards bacterial development and hence has the effect of checking or preventing a rapid rise in temperature. Thorough ventilation of the barn is another preventive of fires from this cause, the current of air carrying off the heat as it is evolved, or at all events not allowing it to become so intense as to raise the hay to its burning temperature.

The fire-fanging of manure heaps is due to a process of much the same character, greatly lessening the value of the manure even if the destructive changes do not result in the ignition of the mass.

Two causes of spontaneous combustion not due to bacterial growth, may be briefly referred to, though they are not so frequently productive of fires as that due to fermentation. They are purely chemical in nature. One is the accidental slaking of quick lime. Two instances have come under the writer's notice in which barrels of quick lime left uncovered in a leaky building became slaked by the rain and the heat so generated was sufficient to ignite the surrounding wood work. The prevention of such cases is obvious—store quick lime in a dry, protected place.

Woolen and cotton materials saturated with oil, such as waste for cleaning engines and machinery, oiled stook covers etc., thrown into corners, empty barrels etc., are frequently the cause of spontaneous fires.

The explanation of this phenomenon is that these materials are capable of readily and quickly absorbing oxygen from the air, the oxidation proceeding with such rapidity that the temperature of the oily goods is raised to the ignition point—a comparatively low temperature for such substances. Fires in the holds of vessels, in mills, etc., due to this rapid absorption of oxygen by organic matter, are not of infrequent occurrence and occasionally barns have been set on fire from the same cause.

Take Precautions Against Fire.

Readers will go over the explanation of the Dominion chemist carefully. It will be noted that fires from spontaneous combustion may take place "weeks or even months after the hay is put in". It will be noted also that where the process takes place slowly ("conditions of moisture, air and temperature not being favorable to rapid development of bacteria") slow combustion results and charring without flame or fire. According to Dr. Shutt, the bacteria causing combustion can only develop rapidly when "moisture is present" and the initial cause of spontaneous combustion is "the storage of the hay in a damp or moist condition." It is a well-known fact that sappy clover is more likely to heat in the mow than is other hay, but this year comparatively little of the hay and grain was stored damp either from rain or sap. It was the driest haying and harvest on record. Some of it may have gone in a little too soon because of the dry weather, people believing that it could not be too damp, but the whole crop went in the barns drier than usual.

Attention should be paid to the paragraphs in Dr. Shutt's letter relating to two chemical causes of spontaneous combustion, viz.: accidental slaking of quicklime and oil- or grease-saturated rags or woolen waste such as used for engine wiping. The latter has been assigned as the cause of some of the fires investigated by the Fire Marshal's Department. Engines and machinery are yearly becoming more common on farms, and it would be well to take every precaution against fire from oily rags used for wiping, or oily waste in the barns. The only things the farmer can do to prevent

spontaneous combustion are, to store hay and grain as dry as possible, ventilate the barns well and take precautions against quicklime and oily rags.

Other precautions against fire should be taken. Five of the forty-four fires investigated were laid to smoking and the careless use of matches. There is a lesson in this. Do not carry matches loose in your pockets; allow no one to smoke in your outbuildings, never light lanterns in or around the barns.

Sparks from threshers should be guarded against by seeing that the proper screens to prevent their escape are used.

To prevent lightning strokes, buildings should be properly rodged. When we say properly we mean that the best rods should be used and these put down into the ground to permanent moisture.

For incendiary fires the best cure is apprehension of the guilty party, who should be summarily and severely dealt with.

It is the large number of fires of incendiary and unknown origin occurring in bunches in certain districts that have caused most alarm this fall. In one case at least, an arrest has been made. In another case a degenerate has been placed under proper surveillance, but this does not explain all. Some fires have broken out in the early morning; some in the dead of night. In some cases the owner had just left the buildings apparently all as usual, and upon turning around a few minutes later the entire barn was in flames. Some of the fires seem to break out all at once and all over the buildings, and to consume everything. There are dozens of theories regarding their origin, which we do not need to recount here. Farmers scout the idea of spontaneous combustion in so many cases. Granting that it has caused the fires assigned to it there are so many "incendiary" and "unknown" as to add mystery to the whole.

We advise farmers to take every precaution against those forms of spontaneous combustion which are preventable, to be careful of smoking, lanterns, and matches, to insist upon threshers being careful to screen their engine smoke-stacks and if barns burn from unknown or suspicious causes to inform the Fire Marshal, Parliament Buildings, Toronto, and have an investigation. It is a good time now to take precautions. Do not repeat idle gossip, but get the facts, and if they reveal any plotting, locally or from the outside, lay plans to get the plotter. In the meantime watch the matches, the smoker, the lantern, the threshing engine and destroy oily rags and waste, keep the barn ventilated, and if necessary watch the barn.

Horse-Power.

Can the accurate horse-power of an engine be figured out by the bore, stroke and revolutions per minute? If so, what is the horse-power of the following two sizes? No. 1, 5½-inch bore, 5½ stroke, 435 revolutions per minute; No. 2, 6-inch bore, 8 stroke, 400 revolutions per minute.

X. Y. Z.

There are several rules for estimating the horse-power of gasoline engines. For four-cycle engines, square the diameter of the piston in inches, multiply by the number of cylinders, the length of stroke in inches, the revolutions per minute, and divide by 18,000. For a two-cycle engine divide by 21,000 instead of 18,000. According to this rule the horse-power of No. 1 engine, providing it is two-cycle, would be practically six and three-quarters, and of No. 2 engine eleven horse-power. For a four-cycle engine the horse-power can be easily figured by the rule given.

Farmers Buy Autos.

It is said that sixty per cent. of the automobiles made in America last year were sold to farmers. Roughly, a million cars costing eight hundred million dollars, were purchased by Canadian and American farmers in the automobile year ending the 31st. of July, 1916. Manufacturers estimate that about the same percentage of cars made this year will go to the farms, and as the number of cars made is expected to show an increase of about 25 per cent. over the output of 1916, the money spent on this continent by farmers for motor cars in the automobile year of 1916-17 will come very close to a billion dollars.

Canada's Young Farmers and Future Leaders.

Experience With Potatoes.

EDITOR "THE FARMER'S ADVOCATE":

It would appear from the scarcity of potatoes in Ontario this year that they were a difficult crop to raise. In this district, from what I hear, farmers pay very little attention to the cultivation of this particular crop, many planting only a few rows, feeling satisfied if they have enough for their own families. The belief seems to be common that regardless of whether the weather is cold or warm, wet or dry, potatoes should be planted not later than May 24 and earlier if possible. Many years there is not the proper warmth or growth in the ground for potatoes before the first or second week in June. The ground does not get the proper cultivation before planting, and very often less after. When the leaves are nearly all stripped off the plants a heavy application of Paris green is used, which at that stage does more to kill the plants perhaps than the bugs.

I might briefly outline my plan of raising potatoes this year. The potatoes for planting were Delawares of a medium size, cut into good-sized sets, no set having less than two eyes. The ground, slightly rolling clay loam, was plowed and harrowed early in the spring, then plowed, harrowed and rolled and a liberal coat of barnyard manure put on with a spreader; the potatoes were dropped in a furrow made by the plow, set from 12 to 16 inches apart. Every third furrow the potatoes were planted, thus making the rows approximately one yard apart. Right away after planting the ground was well harrowed to make it fine and even and conserve the moisture. The ground was harrowed every few days until the potatoes were probably three or four inches high. Then the scuffler was used quite frequently until the frost killed the stalks toward the end of September.

The potatoes could be seen all across the field three weeks after they were planted. The large, striped bugs were picked several times before the plants were large enough to spray with Paris green. They received two applications, a heaping tablespoonful being used to a fourteen-quart pail of water, applied with a compressed-air, hand sprayer. I noticed after the last spraying the plants began dying. The two sprayings were close together and no rain having fallen the whole application remained on the leaves and proved too strong. On August 15 two months after the potatoes were planted, we began using them. They were a fair size but for a week or so were damp and soft, but began getting quite dry and mealy. We dug on October 11 two full wagon-box loads of potatoes of a good quality, but not as large as they would have been had there been more rain and less extremely hot weather. The ground on which they were grown was slightly over one-half acre.

I am not relating these facts as anything wonderful for many have beaten this yield, but simply to show that potatoes planted as late as June 15 may even, in a very adverse year, yield a reasonable crop if given a fair amount of cultivation and care, while potatoes planted several weeks earlier and lacking medium care may produce almost nothing. I am much interested in potatoes, and am considering going into the crop quite extensively as I think it is remunerative.

Huron Co., Ont.

G. H. MAGEE.

An Idea for the Garden.

EDITOR "THE FARMER'S ADVOCATE":

We, like other farmers, had difficulties during the past season with raising our crops. Our land is clay, well manured and rich, but the incessant rains packed the ground so hard that when the very dry weather came we could not cultivate nor hoe to advantage. We feared we were going to have a poor crop, so I thought I would experiment a little, so about July 20 I took an axe and applied it vigorously to the soil. With considerable hard labor I at last succeeded in getting some soil loosened up. Then I made holes about two feet across and eighteen inches deep. I put into these holes some well-rotted manure. Next I put a six-inch tile on this, upright, then I covered the manure outside of the tile with about two inches of the pulverized earth. On this I planted potatoes and covered them with four or five inches of loose soil. Every evening I would fill this tile with water. You should have seen those potatoes grow. That was a lovely green spot in the garden all the rest of the summer, and when the frost came and cut the vines I dug the potatoes. They were a bigger crop and larger than the ones which were planted two months previously. Of course, they were not ripe, but were good flavor and cooked nicely.

This is a good plan to follow when preparing the hills for cucumbers, melons, etc. If they are to be raised in rows place tile six or eight feet apart in the rows, and then when dry weather comes it is a great help to the crop if water is poured into the tile. The water thus gets at the roots well under ground, if watered above ground little rootlets form near the top and when the sun comes out hot these little rootlets are burned and the crop suffers. This would be considerable labor to apply upon a large scale, but farmers need a garden as well as field crops, and this plan could be put into practice in the garden and would yield good returns for the extra trouble.

Oxford Co., Ont.

PAT.

Underdrain, and Seed Down on Fertile Fields.

EDITOR "THE FARMER'S ADVOCATE":

Every farmer will agree, that the season just passed, was the most trying, in some respects at least, that the farmers of Ontario have ever experienced. The seeding of 1916 will be long remembered by your readers, as being the wettest and most disagreeable in their experience, especially is this the case with myself, being my first year on my own account.

Some of the farmers in this vicinity got pretty blue, when it continued to rain day after day, but, being quite an optimist, I did not worry much, perhaps, because there were plenty of jobs to do around the house as every young man will know, who has just started up house-keeping. It is always easy for me to find a job for a rainy day, not having Peter McArthur's hankering after the village on a wet day, (as described in a recent issue.) The trouble is to keep from doing rainy day jobs on fine days. But, as I must stick to facts, I will try to tell your readers, some of my mistakes and difficulties, for they both were many.

My first mistake was in waiting, as in other years, for the ground to become reasonably dry before commencing to cultivate, when I should have gone contrary to previous rule, and mudded it in, although some years this is not a good plan. But last year was an exception, as the first piece, about two acres, which I cultivated and sowed on May 8, was in better condition, and yielded more, in both grain and straw of superior quality, than the last piece, about nine acres, sown on June 12.

It is in connection with this same nine-acre field, that I made the greatest mistake. It was a field with a southern slope and one that should have raised a good crop, but the previous owner of the farm had taken two crops of timothy hay off it in succession, consequently it was low in fertility. It was also badly in need of some underdrains, but, as it was almost impossible to get men to do digging last spring, I allowed it to go undrained. As a result, when we finished sowing it, on June 12 there were places, which would nearly mire a team. In some seasons it might have come through fairly well, but, last year the grain hardly covered the ground, when the hot, dry weather came on, and those wet places simply baked as hard as a rock.

Another mistake I made was in attempting to seed this field, which aside from being poorly drained, was not in condition on which to risk a seeding of grass seed, and, as I sowed about twelve pounds to the acre you can see it was quite a costly mistake, but not having any manure, at least not having time to draw it, I thought that being seeded would raise its fertility.

The proper course to have followed, considering the lateness of the season, would have been to have got it drained, and then plowed, summer-fallowed and manured it in readiness for fall wheat.

It is an old saying, but true, that experience is a good teacher, but we pay her a big salary. However, I have learned two lessons, which may also be helpful to others, which are:

1. Never for the price of a few tile and a few days labor, be bothered with a wet field, as the difference in the returns for one year will more than recompense you.

2. Never attempt to seed down a field, as I did, that is low in fertility, for you are almost sure of a failure, which will cost you dearly. Wait another year, when, perhaps you can spare some sort of fertilizer.

Oxford Co., Ont.

E. J. G.

Profiting by Mistakes of the Year.

EDITOR "THE FARMER'S ADVOCATE":

Although the year 1916 was a lean year it revealed many lessons for the wide-awake farmer. Probably the most noticeable was the benefit of tile draining. The tile this year not only took off the surplus moisture but it also prevented the land from cracking and baking later on. The crops also showed that four rods apart was not too close for parallel drains. Early-sown grains also showed up more favorably than the latter in most cases. For a crop like potatoes we intend in the future to make two plantings and reduce the risk of failure, such as the late planting produced this year.

This year also showed the advantage of having a summer silo or soiling crops to supplement the dry pastures. We decided next year to sow a three-acre field of peas, oats and clover and turn the cows on it about the first of July, if the pasture falls off if not we will cut it for grain. We could have a fair growth of aftermath clover if the pasture dries up later in August. Owing to the lack of silage or fodder corn we allowed the cows to fail in flesh and consequently in milk flow, even when feeding a liberal amount of hay night and morning on clover pasture. This shows the necessity of feeding grain or corn to the cows in the fall. The farmer who kept some oats in the granary from the 1915 bumper crop may also see the advantage of keeping hay in the mow from the 1916 bumper crop instead of pressing it for eight dollars a ton.

Middlesex Co., Ont.

NORMAN McCUTCHEON.

Broadcast the Seed in Wet Seasons.

EDITOR "THE FARMER'S ADVOCATE":

This has certainly been a very strange season. March was like April weather, April was like May, and May like April, and June like what May usually is. However, the season has gone and winter is here again. We cannot help but see some of the mistakes we made, and by noticing these mistakes, we ought to try and benefit by them.

One thing I learned from the wet seeding was not to try and get too large a field ready to sow at once. If the season is dry it is different, but if it is wet get part of the field ready, sow it, then go on with the rest. Another lesson learned from experience was, not to sow the grain too deeply. If I ever experience another season like the last I will sow the oats broadcast, for this reason: when I was drilling in one field last spring I missed a little corner by the fence. I took some seed out of the drill, scattered it broadcast and covered it with the harrow. That little corner was up two days earlier and was ahead of the rest all the season through. It stands to reason when the ground is wet and cold the nearer to the surface the grain is the more warmth and air it will receive.

Another point I learned was the importance of good, strong seed. If we ever needed good seed of strong germinating power it was last spring, and it ought to be a lesson to all of us to have our seed grain plump, well dried and of good color ready for next spring; and the sooner we secure what we expect to need so much the better. We could not help but see where tile drains were needed. We had little patches in some of our crops this year where a short tap of three-inch tile would have paid for themselves the one season. These points not only refer to the spring seeding but to the planting as well.

Elgin Co., Ont.

STEWART L. PEARCE.

Fall Plowing Essential.

EDITOR "THE FARMER'S ADVOCATE":

The past season has been the most difficult in years. The spring was wet so continually that low land could not be sown until June, while high and light land was seeded fairly early and gave a better crop, although the hot, dry summer reduced yields all round. The light land that was fall-plowed and seeded early certainly made the best showing as it had a good start before the drouth, which teaches us that the plowing should always be done in the fall if possible. Then there is a good chance to have it sown early. If the summer is dry it has a better chance, and if there is abundant rainfall all the better. Clay land that was fall-plowed, and well ridged up and water-furrowed made a noticeably better showing than the spring-plowed or poorly furrowed fields.

Farmers who took a lesson from last season and have their plowing done have better prospects for a good crop in 1917. They will be able to cultivate and sow as soon as the land is dry, so the corn and roots will not be delayed the way they were on most farms last spring. While cereal crops suffered severely the hardest hit by the drouth were the corn and roots. These crops got practically no rain when they should have done the bulk of their growing.

It was an excellent year to prove that constant cultivation retains the moisture and many farmers by so doing had fairly good corn. Mangels sown early on land that had been manured and plowed the fall before did fairly well. This should help us in preparation for the crop of 1917.

Bruce Co., Ont.

J. MORLEY HANBIDGE.

Make Improvements in Bad Weather.

EDITOR "THE FARMER'S ADVOCATE":

Last spring the land was very wet in most districts, and, as the spring was rather late, farmers were anxious to get their spring grain sown. The greatest difficulty confronting them was not being able to get on the land at all, and perhaps the next was having to work it so many times on account of the rain.

There were also a great many mistakes made, for instance, I know a neighbor who trailed his implements around in the wet ground, and when it came time for fall ploughing his land was so hard that the rain had hardly affected it. Then I noticed another mistake which was made on our own farm. Soon after the corn crop was sown there came a heavy rain that packed the ground, then when dry weather came it got so hard that cultivating was very difficult. I think it was a mistake not to loosen up the land after the rain, as it would not have hurt the corn but would have kept the ground much softer and moister.

When it was too wet to work the land many farmers would "hang around" the village telling stories. I think it would have been better for them to have spent more of their time trying to drain their wet fields, or in making improvements around their buildings.

Wentworth Co., Ont.

RAYMOND MCKNIGHT.

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He Cleaned Out the Open Ditches.

EDITOR "THE FARMER'S ADVOCATE":

You have invited us to discuss the "Mistakes and Difficulties of the Season," which have been more numerous this season than they have been for fifty years, according to some of the old residents. Owing to the lateness of the seeding, in a general way, we did not get on to our first field until the first of May, and we had the seed-bed prepared twice and the third time we got the seed down, on the eleventh of May, but not as it should have been sown. It took an extra long time to come up, and when it did come up it was patchy. One big mistake we made was not to have all the tile drains opened up into the main ditches. One little piece of sod that we had to plow, late in the spring for peas, was rather low, and as the drains were not opened up the horses sank to their fetlocks every step. The result was that the horses sank so deep into the bottom of the furrow that they moved some of the tile out of their places, thus making the drains useless. We sowed our peas on May 27, but we didn't harvest them. The continued wet weather turned them yellow and they eventually died, which proved that peas do not thrive with wet feet. But this fall, after harvest, when we couldn't plow we borrowed the township road scraper, the little scoop affair, and cleared out all our main ditches, thus giving us a good outlet to our tile drains, the dry weather giving us the best opportunity to do the work. The lesson we learned from this was: always keep your main ditches clear and the mouths of your tile drains open.

Owing to the wet weather during the planting of the roots we found it very difficult to work the ground into the proper condition, the result being that things were much delayed and mucked in. We planted our potatoes on June 14, planting five bags. We harvested them on October 27, having 22 sacks full. The mangel crop was sown in very poor condition on June 19 but it was a failure, as we had only two big loads of three-quarters of an acre of ground. We learned from this that it is no use sowing mangels late.

Turnips, like the rest of the season's crop, were late, owing to the delay in getting the ground in condition. Our first sowing was June 22, then came a heavy down-pour of rain, and it was with difficulty we managed to get the remainder, which was about half the patch, sown on June 27. However, the last sown came up first and were ready for hoeing first. The weather turned very dry, and those of the first sowing had such a heavy crust over them that we had to run the heavy land roller over them lengthwise of the drills or rows to break the crust and make them much easier to hoe. Although many of the larger plants seemed to be crushed considerably yet they soon revived and grew faster than they did before. The later-sown turnips were the better at digging time. A lesson we learned was that rolling did a great deal of good to the crusted turnips. After all we had a fair crop, having about a thousand bushels off about four acres. The soil is heavy clay loam.

We all make mistakes. The old saying is, "The man that never made a mistake never made anything," and by discussing our mistakes we may make fewer of them in the future.

Wellington Co., Ont.

D. W. TOLTON.

A Twenty-Year-Old Farmer Who Went Back.

EDITOR "THE FARMER'S ADVOCATE":

The spring of 1916 found me planning and striving to get the crop in so that I might expect a reasonable harvest. Our farm is situated somewhat higher than the surrounding country, giving a natural drainage which was an advantage during the wet weather last spring, but even with this advantage I had my difficulties. But farming, with all the ups and downs, is the best occupation, because it makes it necessary to live in the country, which is the grandest, freest and healthiest life. I am not saying this because it is to be printed in a farmers' magazine, but because I have found it out by my own experience.

The first sixteen years of my life were lived on the farm, then father sold the farm and his new calling made it necessary for us to move to one of our Ontario cities. There I worked for a few years as an apprentice in a hardware store, and while there I noticed that the men who were making a success of business were working early and late just as the successful farmers were. It is true the great majority of city men go to work at seven and get off at six o'clock, but remember, these are only cogs in a great wheel and when the wheel stops the cogs are idle, so if we are to be the future leaders of Canada we must be the wheels, working early and late, physically and mentally. I do not mean to say by this that we should deprive ourselves of all amusements and recreations, but, like the seasoning which is put into our food, they should be judiciously chosen and sparingly used.

When I had found this stepping stone to success I told my father I wanted to go back to the country and would like him to get me a farm. After some consideration he purchased one containing ninety-three acres, which I work alone and intend to call my own some day. This year was my first crop, and, considering the season, I have no reason to complain although it did not come up to my expectations. I had all my plowing done in the fall of 1915, which helped me out last spring considerably. I found that cultivating once and harrowing twice produced a good seed-bed, it was then sown with a disc drill and harrowed again. I used a stiff-tooth cultivator with nine teeth, drawn by a three-horse team. But it drew heavily

because of the condition the land was in last spring and the horses could not be kept going steadily, so I took one tooth off each side. I favor the disc drill because if it is necessary to drive through mud, as it was for many of us last spring, there is no danger of clogging the spouts. It also pulverizes the soil more than the hoe drill. I sowed ten acres with a mixture of timothy, red and alsike clover seed. The first four acres were sown in front of the grain spouts on the drill, and it is a somewhat better catch than the rest which was sown behind the grain spouts where it fell into the creases and grew with the grain and some must have been chocked out.

About two acres in one field was somewhat flat and did not dry off until I was almost through seeding. One evening I cultivated it, then sowed and harrowed once. The oats and thistles grew up together with less than half a crop of oats, teaching me one lesson: not to do things in halves. I think that if the land is thoroughly prepared it will more than make up for the difference in the time. I left five acres for summer-fallow after being plowed. It was manured, and when I came to cultivating the manure into the land it gave me considerable trouble by clogging in front of the teeth. I removed the front row and put the wide points on the five teeth remaining. It then did satisfactory work although it left the land in ridges, but these were easily harrowed down.

Next came haying. I got a high school student to help me off with this crop, and with the implements, mower, side-delivery rake and hayloader we harvested thirty-five loads. Of course, we used a track to unload in order to save time and labor. I like the side-delivery rake because of the cleaner job it makes, and if care is taken the field will not need to be raked the second time. It also has the advantage of being used as a tedder. The drum type hayloader will also leave the windrow cleaner under all circumstances than the rake-bar hayloader. I use the double-harpoon hay fork for unloading. One objection I have to using the slings for hay is that considerable time is lost in putting them in proper shape in the field.

The grain crop was taken off with the help of a man when I was drawing in. I have finished the plowing for this fall, and am now waiting for the breath of spring to waken the earth from her winter's cold and blustering sleep.

Wellington Co., Ont.

SAM PAGE.

A Mistake in Intensified Farming.

EDITOR "THE FARMER'S ADVOCATE":

In this very exceptional year of wet spring and dry summer, it has been much easier for a farmer to make mistakes than in ordinary years, and what in those years would have been mistakes of minor importance, teaching a lesson at only a slight cost, have this year stood out much more prominently and taught a more expensive lesson.

When we bought our farm, part of it had been uncropped and uncultivated for several years, and the weeds had been allowed to run riot over the place. Here we planted an apple orchard, and last year the ground was cultivated for the first time. This year we planted on the same land, between the trees, two acres of carrots, an acre of beets, and an acre and a half of onions. The land was a sandy loam, so the planting was not delayed by the wet weather of the spring months to such an extent as it would have been on clay land, and by the end of May the carrots and onions began to come up. As I mentioned before, the land had been cultivated only one year, and that had not been enough to kill out the weeds that had been multiplying for the four or five years previous, so when the carrots and onions began to show the weeds began to show, and as fast as the carrots and onions grew faster grew the weeds so that in a short time we found it was more than we could do to keep ahead of them. We had sown the rows two feet apart, in order that we could cultivate between them with a horse, and for a time we were able to keep the space between the rows clean with wheel-hoes and a spike-tooth cultivator. But the weeds in the rows themselves were almost as thick as the carrots and onions, and we could not hand-weed them fast enough to get ahead of them. The worst weed was bindweed, which spread from row to row and formed a mat through which we could not put the cultivator, as it only dragged the roots and weeds instead of pulling them out. Lamb's quarter was second in the list of weeds we had to contend with. Finally we were forced to admit that we could not clean the whole patch, so we went over it and pulled out the lamb's quarter, shepherd's purse and other large weeds before they went to seed and just left the smaller weeds—bindweed, clover, etc. The beets were not planted till after the first of June and the ground had been well cultivated up to that time, so the weeds did not give us much work there; once over them with hoes was enough for the whole season. When we came to take up the carrots the difference between the weeded and unweeded strips was easily seen, there being twice the amount of roots in the cleaned part that there was in the same amount of unweeded land. In addition to the poorer sample of roots in the uncleaned strip, the tangle of bindweed made it much harder to take them up.

Our mistake was in planting more than we could look after well. Had crops been planted that could have been hoed and did not necessitate any hand weeding, we could have looked after them better and had the ground in fairly good condition for next year. In ordinary years we might possibly have kept the three-and-a-half acres of onions and carrots clean, but the

rains of May and June of this year gave the weeds a start that we could not overcome. However, experience is the greatest teacher, and those who will take a lesson from the mistakes of themselves and others can learn to avoid further mistakes of their own.

Wellington Co., Ont.

H. B. F.

Five Roads to Better Farming.

EDITOR "THE FARMER'S ADVOCATE":

The season of 1916 holds a record for variable extremes. The late, wet spring proved disastrous to the germination of the spring grain and also to the corn planting. The dry summer again crippled the maturing of the crops. About the only crop really benefited was the hay. The wet spring proved the advantage of tile drainage. Portions of the country which were untilled were very wet and soggy after the "let up" of the downpours and they dried out hard and were in a very unsatisfactory condition to prepare for a seed-bed.

In this section of the country much of the plowing is left till spring. This has many disadvantages. In the first place spring plowing requires twice the pulverizing of the fall plowing. In the second place plowing is a very lengthy job and if the spring be backward as in the case of 1916, the time cannot be spared and an implement covering the ground a little more speedily than even the two-furrow plow must be used. The plow does better work in the matter of turning over ground and consequently will pay better. It is claimed that spring plowing can be seeded before fall plowing is dry enough to allow the horses on the ground. From my own observation I believe that the majority of those making that claim prefer visiting in the corner blacksmith shop to holding the plow handles. However, their statement has a certain degree of truth in it, but I am of the opinion that tile drainage will solve that problem. As yet I have had no experience in that line nor even chance for observation.

The corn harvest interferes very materially with the operation of the plow. Even yet there are many farmers who prefer to cut their corn by hand, but I believe that the binder is the cheapest, quickest and the best way. I have also found that hauling a few loads of unhusked fodder into the barn and standing it on end and husking on a rainy day saves a few hours for the farmer. Of course this could only be done with binder-cut corn.

Last fall a friend of mine who grows between fifty and one hundred acres of corn every year, plowed up forty acres for this season's corn. The ground plowed hard and he used two fair-sized teams on each two-furrow plow. His farm was tiled and the spring rains did not damage the seeding in his locality as in others. Those forty acres of fall-plowing were a great help to him.

Our pasture was practically a failure and all classes of stock suffered. If I had a herd of stock I would plan to sow a few acres to a very large, fodder variety of corn such as is used for silage and feed this through the drouth period. A patch of mangels would also help out. I would use a cutting box for both feeds.

All the crops were injured to some degree by the lack of water. In the matter of cultivated crops a more thorough cultivation would prove very beneficial. It seems that when the corn has advanced so far in its growth that the two-wheel cultivator is of so little use that some farmers cry quits, but I do not agree with this, and when I begin farming on my own "hook" I purpose keeping the scuffer going as long as possible.

In closing I will briefly outline my ideas for better farming on my own part:

- (1) Tiled land.
- (2) As much fall plowing as possible.
- (3) Green feed to replenish poor pasture.
- (4) More thorough cultivation.
- (5) Use of machinery doing a larger work.

Essex Co., Ont.

HUGH CURTIS.

Mixed Farming and Heavy Horses Surest.

EDITOR "THE FARMER'S ADVOCATE":

In looking over the mistakes of the past one can easily see where changes might have been made for the better and all are prone to say "If I had only known so and so", or, "If I had known it was going to be wet, or dry." This is only folly. We cannot foresee the future. As an old gentleman said yesterday when I asked him if he thought it had closed up for good. "Well! I've seen a lot of 'em, but I never saw two falls just alike yet." So there it is in a nut shell, we cannot see these things, but we can be on the lookout and manage not to let little wet days stop everything.

Mixed farming will help materially over adverse weather conditions. Some people imagine that all a farmer has to do at present is sow the seed and get rich. There is plenty room on the land for these people. The farmer does not get all good crops in one year. No man ever saw it that way. For instance a real good year means a bad start for corn and so it is with many other things.

Perhaps one of the greatest mistakes on my farm was the failure to get any wheat in, a year ago, this being a good year for wheat. We missed the chance of a good crop. I find this a good slogan: "Do not depend too much on one thing." If buying a farm get high land and low land, heavy land and light land. Keep after a little of everything. Have a certain time to do things and adhere as nearly as possible to it, or as nearly as weather conditions will permit. Profit

by experience. What I mean by experience is learn by experience, take notice of things and if you see you have made a mistake, never let that same mistake happen again. I am a constant reader of "The Farmer's Advocate." I have taken many valuable ideas from its pages, but I think one must still shift considerably for himself. He must study his own farm, every field of it. He must know just what it is in condition to grow. He should study just how to put it in condition for certain crops, just what fertilizer to use and how much and when this is done with skill and diligence it will help greatly to overcome weather conditions.

Another problem which is looking very serious at present is the shortage of labor, in fact it cannot be had "for love or money". In York County many farmers will be twenty-five and some fifty per cent. short in crop for nineteen-seventeen, and a number of others are cutting hoed crop-out, especially corn. I would not find fault with this where help cannot be had. A man should not work himself to death and I know farmers who are working for fifteen or eighteen hours per day with little or no recreation through the year. They are making good but at the expense of their own physical and mental welfare. I might say here that I am putting my root crop on land in good condition, in fact most of it was summer-fallow the past summer and manured, and we are now spreading another light coat on which will be worked in this fall if weather conditions permit, by doing this I expect to be able to grow a bumper crop with the least possible labor. I am putting corn on a very clean clover sod which perhaps will not need hoeing when cultivated both ways. This will help out if things get in a heap or bad weather puts us back.

I have always noticed the stand the Advocate takes re large implements. This in my estimation is good advice. We have saved much time with large implements especially harrows and seeding implements. Right here is where the big drafter is helping out many farmers. The light draft horse is no good on a large farm like ours. The bigger the better all conditions being equal. The little fellow cannot drag these heavy loads. In drawing in we find that we can strip large fields much quicker with seventeen or eighteen-hundred pounders than with smaller ones, especially in haying when on the hay loader. A good heavy team on a heavy truck with a strong, flat rack about eighteen feet long can go to the barn with a couple of tons and it saves time.

York Co., Ont.

S. L.

How an Essex County Young Farmer Overcame Obstacles.

EDITOR "THE FARMER'S ADVOCATE":

In looking over the year's work and noting mistakes made and lessons learned, there are several things that stand out distinctly, but the one most prominent of all, in my experience, is the fact that the farmer must be adaptable. He must be willing to break new ground if his judgment tells him that the old and established method of doing things will not fill the bill in the case under consideration. To illustrate: In this section

of country the usual custom is to plow or work the whole of one field, from 5 to 10 acres, usually for corn, let us say. The field is worked both ways and of course it should be if it can be done. But sticking to this plan this year left a good many farmers with no ripe corn, because we did not get weather in which to prepare the whole of one field at once.

The best corn I had this year was five acres that was planted in about six or seven different pieces. Not so good as it would have been to have been worked both ways and perhaps corner-wise as well, but "better half a loaf than no bread," and it all got ripe, whereas field after field which was held back till the weather finally settled ripened no corn.

In this same connection may be mentioned a fact concerning co-operation, or in the old homely phrase, changing work. Part of my land is tiled and this could be worked when untilled land could not be touched. But the weather this spring was so bad that we could only get in about one day a week even on the driest fields. When one could work he wanted to make things move. My neighbor, with no tiled ground, was doing nothing, so, contrary to custom, I asked him to help me and I would help him when his land was fit. Of course he jumped at the chance and the result was both crops went in as quickly as possible when land was fit to work, which finally resulted in a better and more neighborly feeling between us than ever before.

This was a hard spring on horses. Standing in the stable for days and then in one day doing two days' work and this again followed by idleness. I got in one field in a single day and saved my horses somewhat as follows: I got at it soon after daylight with cultivator and three horses. By pushing them hard I had cultivated the field both ways by 11.30 a. m. I sent one horse to the barn where the wife put her in and fed her while I put the two horses left on harrows. It was harrowed by one p. m. I went to the house, snatched a few bites and was in the field again in 20 minutes with a fresh team composed of a two-year-old colt and the mare I had sent up at 11.30. I pushed them as hard as the colt would stand until four p. m. Then I put this team in the stable and took out the other team and worked until 8.30, when, as I finished the last furrow, it started to rain again. I stabled my team, had supper, and finished chores in the rain by eleven p. m. But worse was to follow. That field was the only one not underdrained and after all the work it gave me, and it took twice as much all season as any of the rest, I only harvested about one-tenth of a normal crop from the tiled land.

In connection with this side of the matter. "It's an ill wind that blows nobody any good" and many a man in this section will, in years to come, be thankful because the years 1915 and 1916 forced him to underdrain his farm. It has done that for underdrainage that nothing else could have done. I have known as many as three or four tiling machines to be working at once within say a mile and a half in each direction from here.

This was a bad year to get a catch of grass or clover seed. Many of my neighbors tell me they have no seeding fit to leave for hay. These men are afraid to try alfalfa. I have been growing it about five years and

this year, am pleased to say, that the only thing I have worth standing is the red clover on wheat stubble and the alfalfa sown with one bushel of barley as a nurse crop. The barley yielded nearly 25 bushels to the acre of a splendid sample and I have an excellent stand of alfalfa all over the field, even though it was so dry after I harvested the barley that the land cracked open so you could shove your hand in the cracks. All the other seeding with spring grain succumbed, but the alfalfa. And I may say that this has been my experience several times, until now I feel more confident of getting a stand of alfalfa than anything else I can sow. I would like to tell about the way we co-operated and purchased a car of feed this summer when prices were low, but I must leave this till some future date.

Essex Co., Ont.

RAJ.

Topics for Discussion.

Each week we shall announce topics for discussion in this department. Four topics will appear each week during the winter season, with the dates upon which manuscript must be in our hands. Readers are invited to discuss one or more topics as they see fit. All articles published will be paid for in cash at a liberal rate. Make this department the best in the paper. This is the boys' and young man's opportunity. Here are the topics:

1. The Literary Society.

This is a big and important question. Every community should have such an organization but many haven't. Tell readers of its value. Explain how it is managed and methods used in starting it as well as how interest is maintained. Do you have debates? Are short addresses successful? There is room in this subject for the expression of new ideas. Get copy here by December 9 for this topic.

2. The Farmer's Club.

This is a topic for many of our readers. What was said about the Literary Society applies to this topic. Outline the organization, the operation and benefits of the Farmer's Club in your community. Give suggestions as to its improvement. Copy should be in our hands by December 16.

3. Field Crop Competitions.

This is a big subject and one in which hundreds of our young men are interested. Tell us frankly what you think of field crop competitions, the rules, the judging, the effect upon crop production. If any improvements are necessary, suggest them. Copy should reach us not later than December 23.

4. What is Wrong With the Community?

Discuss social, financial and other problems from a community viewpoint. Why have so many young people left the land? Why does almost every boy tire of his rural surroundings at some time in his early life? Is there a lack of proper social intercourse? Is there a lack of co-operation between the different members of the community? What is wrong? What is the remedy? Articles on this topic should reach this office by December 30.

Automobiles, Farm Machinery and Farm Motors.

Trucks and Trailers.

The old Roman roads, which are constantly referred to in every effort made to effect a general improvement in the highways of this and other countries, are not brought into comparison because they were simply good roads, but rather because they gave an easy means of transportation to build up tremendous savings in the agricultural life of a great people. The Romans were the first to figure that if the city and country could be brought into the closest and easiest communication, that a general prosperity would inevitably accrue. Of course, they always had the idea of war in the background, and knew that when armies could be transported readily, success was always closest at hand. The paramount thought, nevertheless, was easy access to outlying districts. This being true, there is now no doubt that a further step is being taken by progressive farmers in the purchase and maintenance of trucks and trailers, in order that the cost of transportation may be brought down to a minimum. A good road is always a well-travelled one, no matter what class of vehicular traffic is popular, but if in Canada we can combine good roads with minimum transportation charges, we have gone a long way towards a money-making era such as never yet has been enjoyed.

Motor trucks are being used, at the present time, by many farmers engaged in the fruit, dairy, creamery, cheese and allied industries. Sometimes these trucks are purchased new, direct from the manufacturers or their agents, at prices ranging all the way from \$750 to \$5,000, but in most cases the machines are either purchased second hand, after having been replaced by new ones in city work, or a passenger automobile is torn down and a truck body placed upon the chassis. Both systems find many advocates, and both bring varying degrees of satisfaction. If you have never used a truck, it might be well to go slowly at first, but the system that we suggest would be the purchase of an old passenger car with an obsolete body but an engine of standard make and in satisfactory running condition. You can either remove the body intact and place a new truck body on the frame or pursue the simpler method of taking off the rear seat and building a plat-

form instead. This will leave the front seat for the driver and a passenger. Such a step should provide a truck of from 1,000 to 2,500 lbs. capacity for from \$500 up. There are a great many arguments in favor of hard tires, but we believe that the farmer will find that the pneumatic tires give greater satisfaction, as they do not have a tendency to communicate stiff jars and jolts to the motor. Hard truck tires are economical where the pavements and roads are very smooth and even, but they do not attain maximum results in country running. If you employ a man to operate your truck, it might be well to have a governor placed on the engine in order that his speed may never be greater than twenty miles an hour. This is going to prevent accidents that would inevitably occur to the truck if it was operated at high speed when carrying a maximum load.

Trailers, as you know, are practically the outcome of the past two years. They are built in two-wheel and four-wheel types. Some of the two-wheel models carry the load directly over the axle, but in the semi-trailer, the load is carried forward and rests partly upon the connecting rod between the trailer and car. The good quality of the trailer, and they are made from ¼ ton to 7-ton capacity, is that they allow the pleasure car, by drawing them, to carry a full complement of passengers and be free from bruises and scratches incident to the actual handling of freight. It can be stated, in a general way, that if a trailer is attached to a truck, it will draw about the same load as it carries itself between the capacity of one ton to five tons, but many trucks of less than one ton capacity, will draw a trailer with a heavier load. Passenger cars are a different proposition, but it will be very easy for you to determine just what sized trailer a passenger car can handle by experimenting a little on the road. It is folly, of course, to draw a trailer with a load that is too heavy for the car, as damage, through strain, may result to the mechanism of the automobile. There are a few points regarding the trailer proposition that are worthy of your attention. On muddy, slippery and sandy roads an automobile must, of necessity, reduce its speed greatly when drawing a trailer. The reduction on good roads can be safely estimated at about 15 per cent. You must remember, however, that a passenger car hauling a trailer,

and so lessening its speed, will nevertheless deliver twice the quantity of goods that might otherwise be expected without the trailer. Trailers are attached to passenger cars through a drawbar which in turn is attached to buffer springs that take up jolts and vibration. There is one other point that we must emphasize, and that is the ease with which trailers can be loaded. If you have a great deal of hauling to do, and cannot see your way clear to invest in a truck, it may pay you very well to purchase two trailers, one of which can be in the process of loading while your passenger automobile is delivering the other to any destination. Iron tires are used on trailers where the goods to be transported are in no sense fragile, but if your product is subject to breakage, in going over bumps and rutty places, hard or pneumatic rubber tires must be used in accordance with your requirements. AUTO.

A Few Fall Binder Notes.

EDITOR "THE FARMER'S ADVOCATE":

Your automobile and farm machinery department deserves special commendation in as much as it is a great help to all farmers as practically everybody engaged in farming has quite a few implements; a great many own engines, and cars are growing more popular among them every year.

I have had no experience with automobiles, at least not to any extent, but have had considerable with the self-binder, as I have been using one for quite a number of years and have had quite a few experiences with it.

To the owner of a new binder there is not so much trouble looking over the machine as to the man who has used it for from fifteen to twenty years. Taken as an average, the self-binder is in this country altogether too short lived, mostly on account of improper care in storing for winter and not replacing or tightening up partly worn parts. Only this fall I met a farmer driving away with his binder, and the packers were so loose that they had torn away the deck boards until they were at any moment ready to get entangled with the needle. This part is, in all makes, the first to show excessive wear. It will pay any farmer to look after this, even if

the machine has not been used so very much. The more play the packers have the faster they wear. It is no hard task to loosen the packer-cap and fit a piece of thin copper sheet, or even steel tin, between the packer box and the crank. If they are not worn too much this will often do for a couple of years. If, however, too long running with loose packers, which wears the crank out of centre and makes babbling not very satisfactory, is the case, it may be necessary to replace the packers and crank. If neglected, serious breakages and delays in the busy time of harvest are sure to result.

The drive-dog driving the binding mechanism is the next to go. If badly worn and loose, it is no mistake to replace same at the first convenient opportunity. On old, worn machines the drive-chain sometimes stretches too much and wears the sprockets in such a manner as to slide the chain outward on the big sprocket, the result is the chain sometimes breaks without apparent cause. This can be overcome by taking out the large sprocket and grinding the points to shape again, and either shorten the chain by hammering the links together, or replace it by a new one.

It is well to take care that the main bevel gear runs in proper mesh. On most new machines this is provided for by a set screw at the end thrust of the cross shaft. The pitman and crank will wear the same as the packers; so does the butter. Look after these in time by inserting some thin sheet of metal (copper preferred) between the crank and pitman or butter arm as the case may be.

The elevator chain will in time begin to act the same as the drive chain. If stretched and worn very badly it is well to replace same, as the longer you run it the more it will wear the sprockets out of shape. The reel gear is slow running and not so very apt to get out of order, and if the knotted does not work satisfactorily it is well to take it to an expert, if personally inexperienced in this job of repairing. It is advisable to keep the main knotted shaft nut (generally a forked nut kept in place by a cotter pin) tight; not too tight, however, as it has to have enough play to allow it to run. This is all the play necessary.

Everybody knows that the canvas straps ought to be kept in good order, and that a sharp knife can do no harm at any time. The twine knife also needs sharpening once in a while. If roller bearings are placed in grain wheel hub look after them when going over your machine, as the jolting sometimes causes some of the rollers to break which will certainly play some havoc if left to run for some time.

In storing the machine over winter it is well to grease all the bright parts with lard, (care should be taken that it contains no salt) or other grease.

The bearings are preserved best if oiled with a mixture of gasoline and lard. Have the mixture of that consistency so as to trickle into the bearing and then harden. It will, however, be a little late now if these precautions were neglected.

Do not use your shed as a chicken coop, and don't allow rabbits to burrow underneath the machines, throwing dirt into them and tend to sink them into the ground. To leave the canvas on the binder is sometimes a good place for the mice to build their nests.

Waterloo Co., Ont.

J. K.

Extracting a Headless Nail.

Very often old lumber is used to make repairs about the buildings, but if there are any nails in the boards they are almost sure to be exactly where the board must be cut. Usually the head is broken off and it is almost impossible to get the nail out. To cut to one side leaves the board either too long or too short. The other day we saw a man get around the difficulty very nicely. He drove a good nail in close to the broken one, then pulled it out. The headless nail was then loosened quite easily and by means of a pair of tweezers was extracted. Others may find this means to work satisfactorily the next time a nail is in the road of the saw.

THE DAIRY.

The Brown Swiss a Dual-Purpose Breed.

Brown Swiss cattle do not occupy a prominent place in Canadian agriculture at the present time, and it is doubtful if they ever will in any way supplant the breeds already firmly established. There are a few herds within the borders, but the breed does not gain very fast in popularity. In the United States a number of large herds have been built up, and the breed is proving profitable as a producer of both beef and milk. Mature animals attain a good weight; the standard given for a mature cow is from 1,300 to 1,400 pounds and bulls weigh from 1,800 to 2,000 pounds. The native home of the Brown Swiss is in Switzerland where they graze far up on the Alps during the summer. The environment has developed a very hardy breed which subsists the year round largely on pasture and hay, as grain is little fed in that country. The origin is considered to be prehistoric, as bones and horns resembling those of the Brown Swiss have been found in Swiss lake dwellings which date back to the Bronze Age. In "Types and breeds of Farm Animals" the Brown Swiss is credited with being a breed of uniform and distinct breed characteristics, possessing dual-purpose qualities. The most favored color is a dark brown running to a gray, especially about the lower part of the body. They are deep, thick, blocky animals and the cows carry big udders with large, well-placed

teats. The udder is not quite so well balanced as it is on representatives of some other breeds but the test shows a fairly high yearly production of average quality milk.

A large head, thick neck and heavy prominent shoulder gives the impression of coarseness. The body shows large capacity, but the fore ribs have barely sufficient spread to give good conformation. The hind quarters are distinctly beefy, being long and broad on top and thick through the thighs, a quality desired by feeders of cattle for the block. Judging by the thick skin and coarse hair, the quality is not of the best. The bone is strong and the joints are rather large and coarse. However, the cattle are very hardy and keep in good flesh on rations which would be considered inferior for other breeds of stock. Steers attain a good size and dress out a high percentage of fair quality meat.

In the show-ring Brown Swiss cattle give a fairly good impression, especially to admirers of dual-purpose cattle. Their strong character, rugged constitution, blocky type and good-sized udders attract attention. The breed is adapted to a wide range of conditions, but has a special place in the more elevated regions where a hardy breed is desirable. The producing ability is improved with good care and feed.

The American Brown Swiss Breeder's Association was organized in 1880, to champion the cause of the breed on this side of the Atlantic. Herd records have been published giving the pedigrees of males and females. At recent dairy shows, held in the United States, there has been a comparatively large showing of Brown Swiss cattle.

Paying for Milk and Cream on a Quality Basis.

Many phases of dairying have increased by leaps and bounds during the past few years, but none has been more marked than the butter industry. This growth is attended with new problems which must be solved if Canadian cheese and butter are to be held in as high esteem in the future as they have been in the past. In 1907 about 6,000,000 pounds of creamery butter were manufactured in Western Ontario. The home market



Hill-crest King Pontiac Countess 30108.

Record at two years and eight months: Milk, 437.1 lbs.; butter, 20.62 lbs. Dam, dam's dam and sire's dam all 20,000-lb. cows, averaging nearly 24,000 lbs. of milk in one year and over 1,018 lbs. of butter.

consumed the major portion of it, but in 1915 20,000,000 pounds were manufactured and the home demand was lessened by the Western Provinces being able to supply their local trade. Ontario butter must cater to a foreign market in competition with butter from other countries, and these markets will be a little more exacting as to flavor, texture, etc. than our own people.

The other Provinces of the Dominion have led Ontario in the matter of cream grading. In 1915, 96 per cent. of butter manufactured in Alberta was made from graded cream and 59 per cent. graded specials, with only 7 per cent. seconds, which is a tribute to the high-quality cream delivered by the producer. In Saskatchewan 98 per cent. was graded and in Manitoba 61 per cent. In Quebec cream grading is compulsory, and dairymen in the Maritime Provinces are strong supporters of the system. Ontario lags behind, and the effect was noticed by her failure to win prizes with butter when in competition with other Provinces. However, the new Dairy Act which comes into force in March provides for the grading of all cream. Such legislation should be welcomed by producer and manufacturer alike. First-quality butter cannot be made from second-grade cream, nor can the best butter be made from the mixture of a first and second-grade cream. The dairyman who, through carelessness in handling his cream, delivers a second quality, not only hurts his neighbor, who endeavors to keep his cream in the most approved manner, but he tends to cripple the whole industry for the Province. On the market one pound of low-grade butter will displace 100 pounds of the finest quality. More free advertising, is given the poor stuff than the good. It is the case with everything; consequently, as competition becomes keener, more care must be taken to manufacture goods of the best quality.

Cream grading was started when creameries were first established in the West, so that dairymen were not familiar with any other system. The high quality product manufactured has given them an enviable position. In Ontario it has been different. For years creamerymen have taken the cream whether it was of the best quality or not. If they didn't take it they knew their nearby competitor would; the dairyman also knew it, and was aware that the same price would be paid as if it had a good flavor. Pasteurizing the cream at the creamery overcame much of the difficulty and gives a uniformity of quality of butter, but that quality cannot be so good as if made from only first-grade cream. Besides, the careful dairyman suffered by the carelessness of his neighbor. The point has been reached where something has to be done to hold the best markets for Ontario butter. Second-grade cream is not worth as much as first-grade for butter making. To pay the same price puts a premium on carelessness, and discourages the careful man. The Legislature has put an Act on the statute books, which comes into force in March, compelling cream grading. This will offset the competition for cream regardless of quality and cream will be paid for on a quality basis, thus giving an incentive to dairymen to take precautions to look after the cream properly. It is in the dairymen's interests to aid in facilitating the working out of the new regulations. If cream is graded No. 2, there is a cause for it, and the cause is usually to be found in the handling of the cream from the time it leaves the separator until it is delivered at the creamery. Few dairymen would intentionally injure the industry which means so much to them, but so long as good butter was manufactured and a fair price paid for butter-fat, they did not concern themselves particularly about the condition the cream was in when it left their hands so long as it was accepted. When cream is bought on a graded basis, every dairyman will endeavor to have his product in the first grade. It will pay him to care for the cream in the most approved manner. First-grade cream will make first-grade butter, which will tend to change the verdict on the Ontario product from "good" to "extra good", thus keeping it in demand on the most exclusive markets. It is anticipated that the producers will do their part towards facilitating the working out of the grading system in Ontario. It has proved a good thing for the other Provinces and will do likewise for Ontario dairymen.

Evidence shows that the average quality of milk delivered at the cheese factories has decreased rather than increased during the past twenty years. In the report of G. G. Publow's work, twenty years ago, as Chief Dairy Instructor for Eastern Ontario the average per cent. of fat contained in 6,800 samples of milk, gathered in several counties is given as 4.2. In 1914 the report from the same territory shows the average test to be 3.5 per cent., or a decrease of over .5 per cent. in twenty years. As the fat decreases in the milk, the quantity of cheese per 100 pounds of milk becomes less. The system of "pooling" the milk, so commonly practiced, put a premium on poor milk, or at least encouraged dairymen to increase the quantity

and is largely responsible for the decrease in quality. When payment is made on a quality basis, it will be an incentive to select and breed the herd to improve the test, which in turn will give more of a richer cheese from 100 pounds of milk than is secured at present.

Grading of cream at creameries and paying for milk at cheese factories according to quality would have been to the best interests of Ontario dairymen years ago. The loss caused by lack of these systems for so long a time can be partly retrieved, by every producer of dairy products aiding in their working out now that they are to be adopted throughout the Province. There is no question but that the Dairy Act to be enforced this coming spring is to the best interests of the man behind the cow, as well as of the whole industry.

An Open Confession of the "Oleo" Boosters.

It will be news to most of our readers that the advertising interests are at the present time putting up a strenuous fight to get oleomargarine into Canada. In fact an advertising man stated in this office not so very long ago that the packers were not at present very particular about it, being short of labor and busy with other work, but that advertising men were pushing the case of oleo because it meant big business for them. Oh, the ramifications of the trade in the butter substitute! The advertising man is not seeking to help the consumer this time, although he often does help immensely. His motives in this case are purely selfish. It is plain that his main desire is to benefit himself and his business. Read this from an article in favor of the admittance of oleomargarine in the December 1 issue

of "The Canadian Grocer" and written by John C. Kirkwood, an advertising man. He states the case, honestly, so honestly, in fact, that the "oleo" interests will not smile upon him for it. After perfunctorily saying that the consumer wants it, he goes on: "Also, those commercial interests that will profit, if oleomargarine be permitted to be made and sold in this country are silently at work to have the law of the land changed."

Note that word "silently". They never work openly. Watch the game.

New Regulation Regarding R. O. P. Test.

EDITOR "THE FARMER'S ADVOCATE":

The following regulation has been added to the rules governing the Record of Performance Test since the last annual report was issued. "It shall be understood that, if the Department finds that the regulations are not satisfactorily adhered to or that the weights as furnished by the owner are seriously at variance with the computed weights as obtained from the inspectors' reports, the Live Stock Commissioner reserves the right to investigate the case, and, at his discretion, to refuse a certificate". This regulation has been added not only for the protection of the Department in vouching for the accuracy and genuineness of records represented in certificates issued, but also for the protection of those directly interested, and of farmers purchasing stock on the strength of records made in the Record of Performance Test.

JOHN BRIGHT,
Live Stock Commissioner.

Average Prices for Dairy Cattle at Public Auction.

A number of auction sales of pure-bred dairy cattle have been held this fall, and the prices realized at some of them convey an idea of what dairy stock brings in different districts. The condition the animals were in, at time of sale together with the records made by the individuals or their ancestors, greatly influenced the price.

At the Elgin County Ontario Breeders' Sale, Holstein bulls averaged \$128, and cows \$141.50. The highest price paid was \$250 for a female. At the Lake Mills Consignment Sale, Wisconsin, 181 head of Holsteins realized \$32,590, or an average of \$180.05 per head. The Northern Pennsylvania Sale, held at Dalton, 63 head of Holsteins averaged \$152.44. At the dispersion sale of the Fred J. Karlen's Holstein herd; at Winslow, Illinois, 152 animals averaged a trifle more than \$423. Four thousand two hundred and forty dollars was paid for the herd bull, King Alcartra De-Kol Pontiac. Wisconsin breeders sold 177 Holsteins at Watertown for an average price of \$148. Central Wisconsin Live Stock Breeders held a sale at Marshfield, where 47 animals averaged \$146. The top price was \$550 for the female, Alna Wa Wa Burke. Fifty-eight Holsteins sold at Holywood, Washington, for an average of \$246. The Colorado Holstein-Friesian Club held their first sale this year at Denver. One hundred and thirty-one animals averaged \$176.11. The W. J. & P. Atchison Holstein sale held at Boardman, Conn., realized \$18,455 for 65 head. King Pontiac Segis Clothilde brought \$1,000. At Spokane, Wash., 88 head averaged \$291.

At the Burr Oak auction sale of Jerseys, held at Shelbyville, Ky., 42 aged cows averaged \$505.71 two-year-old heifers, \$282.22; and 7 bulls, \$390.70. Gold Medal Modesty, a female, topped the sale at \$2,500. Second was Golden Fern's Benedictine, a young cow, which brought \$2,000.

The third annual sale of Ayrshire bull calves and two-year-old heifers from A. W. Montgomery's herd was recently held at Lessnessock, Ochiltree, Scotland. The top price for bulls was \$367.90, which was received for Lessnessock Nipper, an April calf. The top price for females was \$383.25, for Muirhill Bess. The average price for bull calves was \$129.25, and for the heifers \$202.85.

HORTICULTURE.

Home-Grown Root and Vegetable Seed.

A matter of much concern to root and vegetable growers is the source and supply of good seed. Some are now producing their own seed, and in this connection A. McMeans, of the Dominion Seed Branch, spoke to the Vegetable Growers recently assembled at Toronto. His address is herewith reproduced in full.

It has been aptly said that "vegetable seed can and should be grown in a soil and climate suitable for the production of the vegetable." Such being the case would it not be wise for the vegetable growers of this province to give more thought and study to the seed production end of the vegetable business. In the past too little attention has been paid to the seed end of the business. It has been very easy to either go or send to the seedsman for your requirements, no thought or attention given to the source of supply, nothing but a trust in the dealer and a hope that they would turn out good. The slogan of the vegetable grower when purchasing seeds should be "not how cheap but how good," "not price but quality." An instance that came under

my observation the past summer will serve to show the difference in seed. This grower had two blocks of Early Jersey Wakefield cabbage, about five thousand in each block. Seed was purchased from two reliable seed houses, A and B. On looking these blocks over rather carefully, a big difference was noted. I put the question to the grower—How much more is the B plot worth than the A plot? His reply was, "It will make a difference of over \$40.00 to me." Sometime in the past we have all gone through a similar experience or perhaps a total crop failure, and yet we smile and go on buying our seeds from a middleman.

Why do we sometimes find such a difference in seeds of the same variety? Briefly we may say, climatic influence where seed was grown, careless roguing and selecting, and the difference in opinion of the contract grower's idea of what constitutes the exact ideal type of the variety. Take the case of Copenhagen Market cabbage. This valuable variety was introduced to the garden trade by a well-known American seed house in the year 1911. The following is the introducer's description. "The heads average about ten pounds each in weight, are very solid, with small core and of fine quality. It matures as early as Charleston Wakefield, and will give a much heavier yield per acre than that popular variety, the heads being produced almost on the ground level. The leaves are light green, rather small, saucer-shaped and always tightly folded." What happens? It goes out to the market grower either under its correct name, or under any other name the particular seedsman distributing it may choose. Here arises the first point of confusion to the vegetable grower. The type takes with the market, consequently demand must be met, and the seedsman send out their stock seed to the contract growers, who grow them their seed supply for another season. For the sake of making sure of a stock of seed, necessary to supply the demand, the stock seed may be issued to as many contract growers as the seedsman deems necessary. These contract growers may be situated in different countries or different parts of the same country. What is the result? Each of these contract growers proceeds to grow a stock of seed true to type. (It must be admitted by anyone conversant with seed-trade conditions, that the majority of contract growers are men well up to their work and with a reputation to sustain.) But it is human nature to err or be variable, because all of these contract growers have nothing to guide them but the introducer's brief description, or perhaps they saw the variety growing in the introducer's trial grounds. So we have each of these contract growers with his own fixed ideas of what constitutes a perfect Copenhagen Market cabbage, and he selects that type accordingly. Add to the above, climate and other influences and we have still more confusion.

If we pause to consider the comparative cost of the seed, to the value of the resulting crop, we find that in most cases it is so low as to be almost lost sight of, ranging from about 1 to 30 in the case of beans, to 1 to about 300 in the case of celery. It is well known that the vegetable grower is a very busy person during the growing season and does not wish to be burdened with the added duty of growing his own seed requirements, also, the average grower thinks that there is a wizardry, beyond the knowledge of the ordinary man, in seed growing or seed breeding. Thus we have about three reasons why the vegetable grower does not grow seed. Forgetful of the fact, that unless he has full knowledge or control of the source of the seed used by him, he does not control his business, for the seed is the foundation of the vegetable business.

Under the best cultural conditions of the present day the environment of the different plants of any one variety, in a field, is practically the same, but there is usually a variation, either in the quantity or quality of the product. Much of this variation is due to a difference in the individual seed. So that in our selection of stock seed we should make sure that each and all of its ancestors, back for an indefinite number of generations, are of the exact and desired type. One of the chief steps in seed growing or breeding is a rigid adherence from year to year to precisely the same variety type. Such adherence can only be accomplished when such variety types have been closely, clearly and accurately defined and described and if possible supplemented by photographs. By frequent reference to these type books we can keep our exact type more closely in mind and note differences.

As before remarked, "Vegetable seed should be grown in a climate suitable for the production of the vegetable." A climate suitable for vegetables where the portion eaten is the seed, such as peas and beans, would be one that induced rapid growth, for we well know that the product is wanted as soon as possible after sowing, and it is a difficult matter to get varieties early, where the vegetable naturally grows slowly.

For the class of vegetables where the substance is the part consumed, such as lettuce, a climate or soil condition should be selected where growth is rather slow, for the longer the period of growth before running to seed, the more profit will it bring to the vegetable grower. If the seed stalk in lettuce makes its appearance early, the result is unsatisfactory and the quality very poor.

It is needless to state that nearly all seeds will reproduce themselves more freely if sown as quickly as possible after maturity. This is quite plainly shown by the way weeds reproduce themselves, the seeds of which are sown as soon as ripened. But in vegetable seed selection where the seeds are only used to produce the plant, the opposite course should be pursued and forms selected that produce as little seed as possible. As an instance I may say that all vine seeds do well in a warm climate and on rather dry soils. The further they are removed from this condition the less seed they

will produce, also the vitality of the seed will be lower; but it will also be noted that the less seed produced the greater will be the fleshy covering, and as it is this fleshy covering which is the thing desired, it therefore follows that the less seed there is produced the greater is the value for the production of a vegetable crop. Vegetable growers have noticed the fact, that the older vine seeds are the better, so long as they have germinating power left, the resulting crop showing the vines to be more productive of fruit, less inclined to throw out runners and the fruits more fleshy. The same can be said of the Egg Plant, which is a native of the East Indies.

Nature does not work in the interest of either the market grower or seedsman. Her object is to perpetuate and preserve the species, and when the plant has furnished the required amount of seed nothing further is demanded of it. If a plant grown in a temperate climate produces in a single fruit only one-third the amount of seeds which it usually yields in a warm climate, it naturally follows that three times the number of fruits must be produced to secure the same amount of seed.

In the development of the cabbage, we have probably seen more changes of form through selection and climatic influence than in any other vegetable. The cabbage in its wild state is entirely destitute of a head, but has a rather succulent stem and leaves. Botanists tell us that from this wild plant originated not only all our forms of cultivated cabbage, but also all the forms of Kale, Kohl-rabi, Brussels Sprouts, Broccoli and Cauliflower. From Long Island we have seen several new varieties of cabbage introduced to the trade. Certain growers who have made a speciality of growing this vegetable and who as growers were close observers noticed differences in their crops, not only as regards earliness or lateness, but differences in type as well, also the differences in soils in close proximity to each other. Start with the same stock seed and grow it for years on a heavy soil, with a liberal supply of plant food and constant and careful cultivation and a type will develop remarkable for its size, vigor and keeping qualities. On the other hand, starting with the same stock seed under the same climatic influence and careful cultivation but on a light, sandy soil and selecting with a view to earliness, the result will be a variety of the same general form, but of smaller size and very much earlier. These specialists have also practiced helps of an artificial character, such as when harvesting their stock seed, they examine each plant carefully and if the seed is of large size it is rejected, as they hold that such seed will have a tendency to run to leaves instead of heads. They will not use seed until it is three years old, for the same reason that they will not use large seed.

In seed selection the entire plant should be taken into consideration, rather than the individual part or fruit thereof. So many people in saving tomato seed, select out a basketful of nice, extra choice fruits, picked indiscriminately, and to be saved over for seed. The following year they wonder why the tomatoes do not turn out as nice as the fruits selected. It is said that the late A. W. Livingstone spent the first twelve years of his work in the development of the tomato, by selecting the choicest specimens of individual fruits, without taking the plants that had produced these fruits into consideration. It was not until he selected fruits from the plants most nearly approaching his ideal, that he began to make real gains.

In seed selection of biennial plants, such as beets, carrots or onions, the seed grower usually selects out one hundred or more choice specimens; these are usually gone over again before planting and re-selected down to ten. These ten are then planted in an isolated spot, and seed saved separately from each individual plant. A small sample of each of the ten is sown the following year, and the sample showing up the best is selected as a breeder. The balance of the seed selected as the breeder, is sown the following year, and selection is again made and carried on as before described. This is to breed up a pure stock.

Nearly every market grower has a specialty, that is a variety in which he takes a little more pride than he does with the other varieties grown by him. My advice would be (and in saying this I am keeping in mind how busy he is) grow some seed of your specialty and by so doing you will not only be more interested in your crop but will learn to distinguish differences, and the chances are that from noting these little differences you will become a better grower.

POULTRY.

Experience With 100-Day-Old Chicks.

EDITOR "THE FARMER'S ADVOCATE":

"Peep, peep," and the chickens scrambled about in the box which my husband handed me from the democrat, and which had accidentally been tipped slightly sideways. I hurried into the house, drew up an old chair, which had had the back knocked off for divers purposes, and setting the box down upon it, hastened for the scissors, cut the cords, and lifted the lid.

"Peep, peep, peep!" came from one hundred lusty little throats in answer to the reviving heat from the open door.

"Oh, you little beauties!" I could not help exclaiming, and who could? They were pure-bred, bred-to-lay S.-C., White Leghorns, and all of them the fluffiest, liveliest birds ever.

"Are they not dandies?" asked my husband who

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had just come in, and, after taking out two which had been badly trampled in coming and readjusting the lid, he lifted the box and away we went to the colony house. This was a building 8 feet 6 inches by 6 feet 6 inches, higher at the front than at the back and with a large window, half cotton and half glass, the floor inside being slightly raised at one end under the hover. This raised or double floor extended out in the building for about three feet, and then gradually sloped off until it finally ended with the other floor. The long slope with the aid of a small board to act as a sort of fence and which my husband arranged so that it allowed, each day, the chicks a little more of the slope space as a run, caused us no trouble whatever. In fact, from the very first we had no difficulty with the chicks not knowing enough to go back under the hover. The hover lamp had been lit for some time, and as we lifted the little baby chicks from the box, counted them, and placed them under the hover, they murmured contentedly. Before we had left some were thoroughly warm and had already begun to peek from between the curtains.

The following day commenced the most difficult part of their rearing, namely, the feeding. So many books and magazines emphasize the word over-feeding and never mention under-feeding, and yet it is so easy for the amateur to do either, and the chicks will as surely die from the one, if carried too far, as from the other. But one must use a little judgment. When they are feathering quite fast, they need nearly twice as much as before. In fact the chicks themselves will tell you exactly what they do need in the way of feed and heat also. However, I found it worked splendidly to give them for their first feed nothing but fine sand and nothing at all until they were so hungry that they would all scramble from under the hover at the creak of the door and would pick at my hands and shoes.

For the first two days, I fed five times a day, a mixture of stale breadcrumbs, 3 parts; hard-boiled eggs, put through a kitchen grinder, shells and all, 1 part (by measure), and a little oatmeal. On the third day I started to feed a commercial chick food with one feed a day of oatmeal for a scratch food, but with this method I lost a chicken a day, and so you can imagine it was not many days before I changed to the old-fashioned feed of baked cornmeal, which I, however, soon changed to cornmeal just moistened enough with buttermilk to make it crumbly but not sticky. Three feeds of this a day with two of the best commercial chick grains I could buy completed the ration, with the exception of oatmeal which I kept in a sack in the colony house and, whenever I went in, scattered a small handful over as large a space as I could and kept them digging. I had sifted sand in one side of a small box and ground charcoal in the other; there was sifted sand on the floor underneath the litter and I took the further precaution of sprinkling a little over each feed, which I found a safe method to always give on clean, new shingles and leave before the chicks for about five minutes, by my watch, at each meal-time, so that at least their food must have been thoroughly digested.

Water I gave them from the first, and the second day of feeding I added buttermilk. Of these I gave all they would take, and I found that they would take twice as much buttermilk as water, but they drank enormous quantities of both. However, to the fact of having it always before them and regular feeding hours I gave the credit of good luck, for at the end of three weeks I had ninety-four left, of as nice, healthy, growing chicks as anyone ever saw, and considering the fact that two were tramped and two cripples, this was, we thought, very good.

Then one day came that most dreaded of varmints, a weasel. Two trips he made before we finally got him and each time he created havoc, leaving us in the end but fifty-four. When these were two months old the colony house was drawn back to a corn field where they enjoyed themselves immensely and also took to roosting in a near-by tree, which last habit we had quite a job to break, for it seemed that no matter how high we trimmed the branches they could still fly up.

My husband made a long, flat-bottomed trough for water. Over this he made a roof with wires at the sides for the chickens to put their heads through and drink and a self-feeding hopper, one side for mixed grain and the other for a dry mash. These, we made trips every so often to refill. A hawk made two or three visits, and one time a wind storm at night blew the door of the colony house shut with the chickens inside, and they remained there for four or five days before we made another trip back and found them. Of the chickens that were left we had twenty-five pullets, which we brought to the house and made their quarters ready for winter.

We got the chickens on the first of May and they commenced to lay about the middle of October, which is in about five months and a half. When they started to lay extra care was needed. Their house is kept clean, dry and comfortable. A dry mash is always before them. Mixed grain is thrown in the litter at night, and the whole piled up on one side of the building for them to scratch first thing in the morning. Often the corn is not mixed with the other grain, but I shell it, put it in a pan and on the stove until it is piping hot, then take it out to the chickens. A warm mash is also fed at noon and the rest of their grain portion about an hour before they go to roost. For a green feed they get sprouted oats.

Since the time when they first commenced to lay they have, one by one, been rapidly coming into action, so that by now, with the price of eggs as it is, they seem likely to prove very profitable this winter, and so we are content for we are but amateurs.

Essex Co., Ont.

A COUNTRY WIFE.

Macdonald College Short Course.

The annual Short Course in Poultry Husbandry given at Macdonald College will be held from Feb. 19th to March 2nd inclusive, 1917.

This Short Course of two weeks is intended to assist in supplying the demands for practical knowledge in the raising of poultry. It is of considerable value to all those who are now keeping fowls as well as to those who intend to start in the poultry business. The classes in the past have been very well attended and have appreciated the practical information given. *This year special attention will be given to returned soldiers*, many of whom are desirous of taking up poultry raising as a means of making their living.

The Short Course consists of lectures and practical work. Lectures will be given every day, and hours will also be provided for work in feeding poultry and in incubation and brooding. The Poultry Plant at the College will be used in the study of various practical phases of poultry raising. The information will be up-to-date and every effort will be made to make the course as valuable as possible. It is entirely free of cost and consequently is an excellent opportunity for a good investment of two weeks' time.

Those who are interested may secure an Announcement regarding the Course by writing the Principal. MACDONALD COLLEGE, QUE.

FARM BULLETIN.

Canadian Loyalty.

BY PETER MCARTHUR.

The most inspiring story I have heard since the outbreak of the war was told by the father of two boys who went to the front with the first contingent. One of the boys, the one whom his father least suspected of having any sentiment in his make-up, wrote a description of the trip through the Gulf of St. Lawrence and told of one incident that should touch the heart of every true Canadian. His father repeated his words to me, I shall repeat them to you.

"A few of us were standing on the deck watching the shores of Canada disappear in the distance. As the outlines of our native land finally grew dim we were all moved by the same impulse. We raised our hands and saluted. Then I plunged down the companion-way to my berth and it was some time before I could regain my self-control and rejoin my companions."

Whenever I hear people talking about loyalty I think of those Canadian boys, some of whom have since given their lives for the Empire, and feel that they had the only true conception of Canadian loyalty. It was the thought of Canada that moved their hearts and brought the tears to their eyes. Because they loved Canada they were willing to offer their lives in defence of the Empire of which Canada is a part. Yet in all the talk I hear about loyalty I seldom hear the name of Canada mentioned. Indeed, if a man speaks of loyalty to Canada he is in danger of having his loyalty suspected. But with the picture of those brave Canadian boys saluting their native land fresh in my memory, I propose to discuss this dangerous question of loyalty which promises to be an irritating factor in any election that we may have in the near future.

The trouble with loyalty to Canada is that up to the present it has been largely unconscious. I have no doubt that even the boys who saluted their native land so dramatically would have described themselves as English, Irish or Scotch, according to their parentage. It was the wrench of parting with all they loved that made them realize for the first time that they were Canadians. Those of us whose parents were born in the Old Land know how their hearts went out to their old homes in fond remembrance. They would talk of the scenes of their childhood with so much longing and affection that we naturally felt that we too belonged to those oldlands. But at the same time, we who were born here were learning to love the land of our birth—the only land we ever knew. Unconsciously we were being bound to it just as our parents were bound to the old lands. But with our country at peace nothing happened to call forth our loyalty to our own land. When loyalty was talked of, it was usually in the heat of political debate and instead of being inspired by a spirit of sacrifice was inspired by a longing for office. Even when loyalty to Canada was urged it was usually by some politician whose self-seeking was perfectly apparent. So when the great day came that put our loyalty to the test even the most patriotic appeals were listened to without enthusiasm. In spite of this the response was something to be proud of. The unconscious loyalty of the people asserted itself. But I am convinced that the response would have been greater and the spirit of patriotic sacrifice would have been stronger if the appeal had been made to Canadians as Canadians. Moreover, I am convinced that Canada will never take her rightful place in the Empire until the spirit of loyalty to Canada is thoroughly aroused, and only by developing a robust Canadianism will the people of Canada be able to deal with the problems that are sure to come after the war.

No citizen of the Empire has better right to be proud of his country than the Canadian. Canadians are not simply inheritors of Empire but Empire builders. Canada was originally a wilderness, and more a source of weakness than of strength to the Empire. But the pioneers cleared away this wilderness and built Canada acre by acre,

making it one of the most productive and valuable countries in the world. Those humble, long-suffering workers were as truly empire builders as Clive and Rhodes, and just as truly deserve gratitude for their work. We have every right to feel proud that we are descended from those empire builders and to be proud that we belong to the country which they added to the Empire. We are bound to Canada by the strongest ties that could bind any people to the soil and Canada, being a true part of the Empire, we have as much right to be loyal to our native land as the English have to be loyal to England, the Scotch to Scotland or the Irish to Ireland. In all expressions of loyalty that our orators quote, loyalty to the native land is given as the best of all.

"This is my own, my native land," exclaims Scott, and all the world has taken up the cry. But there are some who seem to think it wrong for Canadians to apply this line to themselves and to their country. Their loyalty should all go out to lands they have never seen and probably will never see. To meet the wishes of these people the boys who have gone to the aid of the Mother Land should amend the famous line and exclaim with patriotic fervor.

"This is my grandfather's native land," which would not make either good poetry or good sense. What needs to be brought home to the people of Canada is that to be a loyal citizen of the Empire a Canadian must be first of all a loyal citizen of Canada and draw his inspiration from his native land, which is just as truly a part of the Empire as any part of the British Isles. Then loyalty will cease to be a tradition and become an active force.

A Holstein Sale at St. Thomas.

The first consignment sale of dairy cattle, under the auspices of the Elgin County Breeders' Association, was held in St. Thomas on November 28. The offering consisted of 55 head of registered Holstein-Friesians. Seating was arranged around a raised sale-ring so that the crowd that gathered had little difficulty in seeing the quality of animals being sold. Many breeders were present from a distance, and the majority of the cattle went out of the County. The young stuff and most of the cows in milk were in good condition. There were a few head that would have brought more had they been a little higher fleshed. Considering the quality, purchasers secured some bargains in cows, and the consigners made a reputation which will make future sales an even greater success than their first. A ten-months-old bull calf consigned by L. H. Lipsett brought \$197.50; the highest price paid for males. He is a choice individual. Margaret Netherland Cornelia, consigned by C. L. Morrison, was the highest priced female; \$250 was paid for her by G. H. McFadyen, of Sarnia. The sale totalled \$6,435. Bulls averaged \$128; 35 cows, \$141.50; yearling heifers, \$83; and calves from two weeks to two months old brought from \$35 to \$50. The following is a list of the animals selling for \$100 and over, together with the names of the purchasers.

Axie King Fayne, Geo. Laidlaw, Glanworth.....	\$197.50
Bull calf, E. C. Gilbert, St. Thomas.....	130.00
Shadelawn Sir Canary Thirteen, Chas. Locke, St. Thomas.....	110.00
Forest Ridge Fayne Prilly, F. B. Bainard, Glanworth.....	140.00
June Fayne, G. I. Willis, London.....	115.00
Pauline Countess De Kol, G. I. Willis.....	112.50
Jessie Posch, 2nd, G. H. McFadyen, Sarnia.....	140.00
Centre View Segis Topsy, G. A. Goodwillie, Welland.....	167.50
Heifer calf, G. A. Goodwillie.....	110.50
Ina DeKol, Houwtje, Chas. Butler, St. Thomas..	120.00
Dorliska Princess, Chas. Butler.....	117.50
Princess Clyde De Kol, G. A. Goodwillie.....	145.00
Annie Netherland Ormsby, G. H. McFadyen.....	160.00
Princess Queen, C. Holborne, Shedden.....	155.00
Lady Veeman Idaline, Dr. Holbrook, Hamilton..	230.00
Princess Polly, Alex. Anderson, St. Thomas.....	180.00
Lizzie Veeman, G. H. McFadyen.....	135.00
Margaret Netherland Cornelia, G. H. McFadyen	250.00
Topsy Posch, G. H. McFadyen.....	107.50
Dellah DeKol Posch, G. H. McFadyen.....	225.00
Sprucedale Susie, L. H. Lipsett, Straffordville..	127.50
Fannie Ormsby, C. C. Kettle, Wilsonville.....	105.00
Frome Beauty Veeman, G. H. McFadyen.....	125.00
White Rose Veeman, Chas. Pettit, St. Thomas..	105.00
Mildred Lady, L. H. Lipsett.....	115.00
Queen Calamity Veeman, C. C. Kettle.....	107.50
Lady Florence Veeman, L. Begg, St. Thomas.....	102.50
Princess Pietertje Maid, G. A. Goodwillie.....	125.00
Forest View Laura, J. O. Haviland, Waterford..	130.00
Sunshine Mercedes, Dr. Holbrook.....	140.00
Mercedes DeKol, H. B. Powers, St. Thomas.....	110.00
Magdalen Mercedes DeKol, A. F. McNiven, St. Thomas.....	117.50
Thistleton Bell DeKol, A. F. McNiven.....	100.00
Teake May Abbekerk, J. O. Haviland.....	200.00
Grace Netherland Ormsby, G. H. McFadyen.....	185.00
Katie Veeman Ormsby, J. O. Haviland.....	160.00
Betty Allan Ormsby, J. Begg, Shedden.....	102.50
Bessie Colantha.....	185.00

One Issue Worth the Price.

EDITOR "THE FARMER'S ADVOCATE":

Your last issue, alone, contained information enough to be worth the price of subscription.

Essex Co., Ont.

R. A. JACKSON.

Raising a Calf on Skim-Milk.

There is no getting away from the fact that whole milk is the ideal feed for young animals. It is rich in protein and ash, in fact every nutrient required to build up a strong, healthy body is contained in correct proportions. Whole-milk calves usually are fleshier and look smoother at weaning time than calves forced to subsist on milk from which the fat has been removed. Six months after weaning the difference is not so marked if the calves have been properly fed. Those fed on whole milk make most rapid gains at first, but it is at greater cost. In a trial at the Kansas Experiment Station the average daily gain for a number of calves fed skim-milk was 1.5 pounds at a cost of \$2.26 per hundred pounds gain. Whole milk calves made an average gain of 1.9 pounds at a cost of \$7.06 per hundred pounds of gain. At the present price of whole milk the cost is greater. These same calves were turned in the feeding lot after weaning and those fed skim-milk made an average daily gain of 2.1 pounds and required 439 pounds of concentrates to make 100 pounds gain. The calves raised on whole milk averaged 1.9 pounds per day, and required 470 pounds of concentrates to make 100 pounds of gain. This is an argument in favor of raising calves on skim-milk, a substance which contains everything found in whole milk except the fat. This ingredient can be substituted by various feeds. However, many feeders make a dismal failure of rearing calves, unless they have a liberal supply of whole milk. In most cases the fault is in the feeder, not the feed. No hard and fast rules of feeding can be given, as the success of raising calves depends a good deal upon the skill and judgment of the feeder. It has been demonstrated time and again that heifer calves carefully fed on skim-milk and some fat substitute develop into as large framed, heavy producing cows as do those reared on whole milk.

Dairymen shipping cream have a splendid opportunity to raise calves at a minimum cost for feed, but there are certain requirements which must be met if the greatest success would be obtained. A calf should always be given the milk of its own mother for a few days. The first milk is not normal, but is prepared by Nature to stimulate the calf's digestive organs. It pays to feed whole milk for the first two or three weeks at least, and then change gradually to skim-milk. The fatal mistake of changing too rapidly is oftentimes made. It must ever be kept in mind that whole milk is the natural feed and that the calf's stomach is so constituted that it can digest it readily. The digestive tract must undergo a change with the change of feed. Ten pounds or four or five quarts of new milk per day, fed in two feeds for a strong calf, and three for a weakling, is sufficient for a start. When changing to skim-milk best results have been obtained by substituting one pound at each feed until the calf is entirely on its new diet. At four weeks of age 12 pounds of skim-milk can safely be fed, and as the calf grows this should be gradually increased to 15 or 18 pounds; the latter amount is sufficient for a five-months-old calf.

Scours is the common ailment of the skim-milk-fed calf. This can largely be controlled by paying attention to the cleanliness and temperature of the milk. It should always be fed sweet and at a temperature as near that of blood heat as possible. Too many fail to realize that milk will cool several degrees from the time it is drawn until it comes from the separator, even under the most ideal conditions. Sometimes the milk is allowed to stand for some time before it is

fed; cold milk chills the stomach so that the digestive processes are checked and disturbances are bound to follow. Cool milk, or failing to feed it at a constant temperature from day to day, is a direct cause of many unthrifty, skim-milk calves. Over feeding may cause trouble. It is not kindness to the calf to give it all it will drink, as a calf's appetite for milk is hard to satisfy. The scales should be used frequently, if not all the time, in order to be sure that the calf gets the proper amount. Pails cannot be kept sweet unless they are scalded regularly. The condition of some calf pails is enough to put the young animal off its feed. Sweet skim-milk in the right quantities, at uniform temperature, fed in clean pails at regular intervals, in conjunction with some concentrates to furnish fat, will produce thrifty calves, provided they are kept in a clean, well-ventilated stall or yard. The feeder must watch the young animals and rectify any disorders the moment they are noticed. Prevention of calf ailments is easier than effecting a cure.

Some feed must be given in conjunction with skim-milk to take the place of the fat removed. The nutritive ratio of whole milk is 1:4.4 and for skim-milk 1:2.1. This shows the latter to be richer in protein than the former and requires a carbonaceous food rather than one rich in protein to make a suitable ration. It is the heat and energy-producing factors that have been removed, and fat or carbohydrates are required to replace the fat removed from the milk. Whole oats have been used successfully; oat chop gives good results. A mixture of two parts ground corn and two parts crushed oats gives as good results as any grain that can be supplied. The calf can be allowed all it will eat of this mixture up to about 3 pounds, which should be the limit until it is weaned. It is not necessary nor advisable to feed high-priced nitrogenous feeds to skim-milk calves. A calf commences to pick at hay when quite young, and as it grows its first stomach or paunch develops and considerable roughage is required. Well cured clover or alfalfa hay is preferred for growing calves, and at five months of age about 5 pounds will be consumed daily. The manger or rack should be cleaned before each feeding, as leaving the hay to accumulate from day to day soon turns the calf against its feed. Pulped roots are relished by the youngsters and can safely be fed. Silage can also be fed in limited quantities; some calves are very fond of it. A calf requires water to drink besides skim-milk. Many dairymen find that it pays to have water accessible to the calf at all times. It requires salt as well as the grown animal.

The following ration should give fairly good results for a calf from three to six months of age: Skim-milk about 15 lbs. a mixture of two parts corn and one part oats, feeding 2.5 lbs. per day; clover or alfalfa hay, 4 or 5 lbs., and a couple of handfuls of pulp roots or silage. A thrifty calf should gain from 1.5 to 2 lbs. daily up to six months of age. To make the calf fat should not be the aim, but it is necessary to keep it vigorous and in a growing condition. Strong bone and muscle is required. At six months of age the calf should be ready for weaning, and 2 lbs. daily of a mixture of 75 lbs. corn chop and 25 lbs. oats or bran, together with all the clover hay the calf will eat should keep it in good growing condition. Good pasture without concentrates will keep it thrifty. From six to twelve months of age the gains will not be quite so rapid.

A calf born in the fall usually gets a better start in life than one born in the spring and at less cost.

By spring it is large enough to turn on pasture with the rest of the stock. The spring calf will require very much the same treatment as outlined for the fall calf. To get the best results it must be kept in a paddock or stable throughout the summer where it has protection from the sun and flies. It is not advisable to turn it with the older stock. The first winter it will require some high-priced feed in the stable. The calf must be fed well and kept growing at all times. A poorly-fed calf will not make as good a cow as it would have, had it received proper attention. While badly stunted calves may recover somewhat from the effects, if well fed in later life, it is poor practice to try to raise calves on a limited amount of feed. The second year the heifer is able to rough it, and can be brought through the winter in good condition on a liberal supply of clover hay and silage or roots. The first year is the most critical time of the calf's life and the time which exerts the greatest influence on the size and capacity of the mature animal.

Who Says Farmers Can't Organize?

Those who follow conditions in Canada closely, read with great interest the announcement made in the daily press a few days ago regarding the amalgamation of the big organizations of farmers in Western Canada. Farmers and those interested in agriculture, Canada over, were delighted. Politicians and those whose business it is to "farm the farmers" doubtless were slightly perturbed. The Grain Growers' Grain Company, The United Farmers of Alberta, The Alberta Farmers Co-operative Elevator Company, and the Manitoba Grain Growers' Association have thrown in their lot together under the name of the United Grain Growers Limited, and it has been decided to increase the capital of the Grain Growers' Grain Company from \$2,000,000 to \$5,000,000. It is also intimated that the organization in the West is contemplating electing twenty or thirty of its members as parliamentary representatives at the next election. Would it not be a grand thing if this organization would extend its influence to Ontario, and inject some of its push and business capacity into some such organization in this and other Eastern provinces? It looks as if farmers could organize, and with the proper men at the head of affairs could do a big business. We can only wish the movement, in its growth, every success, and farmers should welcome the chance to get fair play which such a live organization gives. Hasten the day when the farmers over all Canada will be organized, united, and in a position to assert themselves and demand justice for all. The farmers of the East should take off their hats to the progressive, business farmers of the West. The time is at hand when the man of the city will cease to laugh at farmers' organizations. Farmers can do business and they are getting ready to do it on a larger scale.

J. H. S. Johnstone Passes.

J. H. S. Johnstone, well known to Canadian livestock men as the author of "The Horse Book" and as an authority on all horse matters, died at his home in Chicago, on Nov. 24. Mr. Johnstone was for many years horse expert on the staff of "the Breeders Gazette," Chicago, and at the time of his death was editor of "The Daily Live Stock World" of that city.

Toronto, Montreal, Buffalo, and Other Leading Markets.

Toronto.

Receipts, of live stock at Union Stock Yards, West Toronto, Monday, Dec. 4, consisted of 165 cars, 3,285 cattle, 279 calves, 722 hogs, 1,464 sheep. Best butchers' steers and heifers and heavy steers 25 to 40 cents higher, all other classes of cattle 15 cents to 25 cents higher. Lambs 50 cents higher; sheep and calves 25 cents higher. Hogs at quotations given farther on.

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

	City	Union	Total
Cars	90	713	803
Cattle	1,623	10,232	11,855
Calves	55	1,020	1,075
Hogs	753	16,082	16,835
Sheep	1,197	6,184	7,381
Horses	13	599	612

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

	City	Union	Total
Cars	44	624	668
Cattle	482	7,499	7,981
Calves	35	512	547
Hogs	1,184	13,530	14,714
Sheep	616	4,480	5,096
Horses	80	1,740	1,820

The combined receipts of live stock at the two markets for the past week show

an increase of 135 cars, 3,874 cattle, 528 calves, 2,121 hogs, 2,235 sheep, but a decrease of 1,208 horses, when compared with the corresponding week of 1915.

Packers quote hogs for this week as follows: F. O. B., \$10.40; fed and watered, \$10.90; weighed off cars, \$11.15.

There were plenty of cattle on the live-stock market when it opened on Monday, nearly six thousand being on sale. The bulk, however, consisted of canners, cutters and common to medium-quality animals, what few good to choice butchers were on sale brought from fifteen to twenty-five cents more than the close of the previous week. All other classes were steady at last Friday's quotations. Several loads of good to choice butchers' went over the scales early, selling at from \$7.75 to \$8.50, while a few choice steers brought \$8.75. Good to choice fat cows sold readily at from \$6.25 to \$6.75 and a few extra choice at \$7.00 to \$7.25. Common cows brought from \$4.65 to \$5.00; canners and cutters were active and sold readily at from \$3.90 to \$4.25 for canners and \$4.25 to \$4.50 for cutters. Good to choice butcher bulls were scarce at \$6.50 to \$7.50, but bologna bulls were plentiful at from \$4.50 to \$5.25. There was a slightly better feeling among stockers and feeders, several loads of choice feeders selling at from \$6.50 to \$7.00, and one load of extra choice, average weight 1,000 lbs., sold at \$7.25, while a few odd lots brought \$7.50. Common to medium animals sold at from \$4.50 to \$6; milkers

and springers were steady with the close of the previous week; good to choice milkers of quality and nearby springers were in demand at from \$80 to \$110. One extra choice Shorthorn cow sold at \$130; common milkers and backward springers were slow and sold at \$55 to \$70. For the balance of the week choice cattle remained firm, but each day the bulk of the market consisted of common, thin, scraggy animals. Business was slow but prices remained steady, with the exception of common to medium stockers and feeders which declined from 20c. to 35c., and common milkers and springers which were from \$5 to \$10 lower. Calves were steady, to firm throughout the week. Choice veal selling at from \$11 to \$11.75, a few extra choice sold at \$12; medium calves at \$8.50 to \$10.50. Heavy fat and grass calves at from \$5 to \$8. Sheep were firm and in strong demand, choice light sheep selling at \$8.50 to \$9.25, and heavy fat at \$6.50 to \$8. Lambs—There was a fairly heavy offering on Monday, but prices held firm with the close of the previous week. During the balance of the week receipts were lighter and prices advanced. Several choice carloads of Blackfaces, average weight from 85 lbs. to 90 lbs., sold at \$11.75. The bulk of the market brought from \$11.40 to \$11.60, and a few loads of poor quality stuff sold at \$11.00 to \$11.25.

Hogs.—Packers gave out their quotations for hogs as follows: \$10.40 f. o. b.; \$10.75 fed and watered, and

\$11.15 weighed off cars, but with Monday's light run they brought \$11.00 to \$11.15, fed and watered, and \$11.25 weighed off cars. During the week prices advanced, and at the close sold as follows, \$11.25 to \$11.35 fed and watered, and \$11.50 weighed off cars. Ten to twenty-five cents more than the above prices was paid in a few cases for selects, but the above quotations fairly represent the market.

Live stock quotations: Steers, choice, heavy, \$8.25 to \$8.75; good, heavy, \$7.75 to \$8. Butcher steers and heifers, choice, \$7.25 to \$7.65; good, \$6.75 to \$7.15; medium, \$6.25 to \$6.50; common, \$5 to \$5.75. Cows, choice, \$6.50 to \$6.75; good \$6 to \$6.40; medium, \$5.25 to \$5.75; common \$4.75 to \$5; canners, \$3.90 to \$4.25; cutters, \$4.25 to \$4.50. Bulls, choice, \$7 to \$7.25; good \$6.50 to \$6.75; medium, \$5.75 to \$6.25 common, \$4.50 to \$5.50. Milkers and springers, best, \$90 to \$110; common to medium, \$50 to \$75. Stockers and feeders, choice, \$6.50 to \$7.50; common to medium, \$4.50 to \$6. Lambs, choice, \$11 to \$11.75; culls \$8 to \$8.75. Sheep, light handy, \$8.50 to \$9.25; heavy, fat, \$6.50 to \$8. Calves, choice, \$11 to \$11.75; medium, \$8.50 to \$10.50; heavy, fat, \$6 to \$8; grassers, \$5 to \$7.50. Hogs, fed and watered, \$11.25 to \$11.35; weighed off cars, \$11.50, less \$2.50 to \$3.50 per cwt. off sows, \$4 to \$5 per cwt. off stags, \$1 to \$2 per cwt. off light hogs and \$2 to \$3 per cwt. off thin feeder pigs, and one-half of one per cent. government condemnation loss.

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THE ROYAL BANK OF CANADA

Capital Authorized - - - \$ 25,000,000
 Capital Paid Up - - - 11,785,000
 Reserve Funds - - - 13,236,000
 Total Assets - - - 214,000,000

HEAD OFFICE: MONTREAL

Branches throughout every Province of the Dominion of Canada

Accounts of Farmers Invited
 Sale Notes Collected

Savings Department at all Branches

Breadstuffs.

Wheat.—Ontario, No. 2 winter, new, per car lot, \$1.73 to \$1.75; No. 3 winter, per car lot, \$1.71 to \$1.73 (according to freights outside). Manitoba, track, bay ports—No. 1 northern, new, \$2.01½; No. 2 northern, new, \$1.98½; No. 3 northern, new, \$1.93½; No. 4 wheat, new, \$1.83; old crop, trading 3c. above new crop.
 Oats.—Ontario, No. 2 white, 63c. to 65c., nominal; No. 3 white, 62c. to 64c., nominal. Manitoba oats (track, bay ports)—No. 2 C. W., 67½c.; No. 3, 66½c.; extra No. 1 feed, 66½c.; No. 1 feed, 66c.
 Barley.—Malting barley, according to freights outside, \$1.18 to \$1.20, nominal; feed barley, nominal.
 Peas.—According to freights outside; No. 2, \$2.45.
 Buckwheat.—According to freights outside, \$1.35, nominal.
 Corn.—American (track, Toronto) No. 3 yellow, new, \$1.04; immediate shipment. Rye.—No. 2, new, \$1.40 to \$1.42.
 Flour.—Manitoba first patents, in jute bags, \$10.20; second patents, in jute bags, \$9.70; strong bakers', in jute bags, \$9.50. Ontario, new, winter, according to sample, in bags, \$7.65 to \$7.75, track Toronto.

Hay and Millfeed.

Hay.—Track, Toronto, No. 1, per ton, \$12.50 to \$13.50; No. 2, per ton, \$10 to \$11.50.
 Straw.—Car lots, per ton, \$9 to \$9.50, track, Toronto.
 Bran.—Per ton, \$31 to \$32.
 Shorts.—Per ton, \$36 to \$37.
 Middlings.—Per ton, \$38 to \$40.
 Good Feed Flour.—Per bag, \$2.70 to \$2.80.

Country Produce.

Butter.—Creamery, fresh-made pound squares, 47c. to 48c. per lb.; creamery solids, 44c. to 45c. per lb.; dairy, 40c. to 41c. per lb.; separator dairy, 43c. to 44c. per lb.
 Eggs.—New-laid eggs advanced, selling at 65c. per dozen, in cartons; fresh eggs in case lots bringing 42c. per dozen, and selects, in case lots, 55c. and 60c. per dozen. Cold storage selects bringing 45c. per dozen.
 Cheese.—June, 26c. per lb.; new, 26c. per lb.; twins, 26½c. and 26¾c. per lb.
 Honey remained stationary in price with an active demand. Sixty-lb tins selling at 12c. per lb.; one-lb. sections, \$2.40 to \$3 per dozen.
 Poultry.—Chickens and ducks were slightly firmer in price, and turkey is becoming scarce. Live-weight prices: spring chickens, per lb., 14c.; spring ducks, per lb., 13c.; geese, per lb., 11c.; turkeys, young, per lb., 22c.; fowl, 4 lbs. and over, per lb., 14c.; fowl, under 4 lbs., per lb., 10c.; squabs, per dozen, dressed, \$3.50 to \$4.

Hides and Skins.

City hides, flat 25c.; country hides, cured, 24c.; country hides, part cured, 22c.; country hides, green, 19c.; calf skins, per lb., 45c.; kip skins, per lb., 32c.; sheep skins, city, \$2.50 to \$3.50; sheep skins, country, \$1.50 to \$3; lamb skins and pelts, \$1.50 to \$2; horse hair, per lb., 38c.; horse hides, No. 1, \$7 to \$9; No. 2, \$7 to \$8; wool, washed, 44c. to 47c. per lb.; wool, rejections, 35c. to 38c. per lb.; wool, unwashed, 34c. to 37c. per lb.; tallow, No. 1, 9c. to 10c.; solids, 8c. to 9c.

Wholesale Fruits and Vegetables.
 Potatoes remained stationary in price on the wholesales during the past week, New Brunswick Delawares selling at

\$2.25 per bag; N. B. Reds, \$2 per bag; British Columbias, \$2.10 and \$2.15 per bag; Prince Edward Reds, \$1.75 to \$1.90 per bag; Westerns, \$2 per bag, and the very few Ontarios bringing \$2.10 and \$2.15 per bag.
 Turnips declined, and are now selling at 65c. per bag, just about their normal price.
 Cabbage firmed slightly, selling at \$2.50 to \$3 per bbl. and 2½c. per lb.
 Carrots sold at \$1 to \$1.25 per bag, according to quality; New (imported) ones bringing 75c. per dozen bunches.
 Cauliflower, the small quantity of home-grown shipped in was mostly poor quality, selling at \$2 to \$3.25 per bbl. The new arrivals from California bringing \$2 per crate.
 Celery has been rather scarce and of very poor quality. Some fresh arrivals being of better quality sold at \$4.50 per case.
 Lettuce has not been so plentiful and sold better at 25c. per dozen.
 Onions remained stationary. Spanish selling at \$4.75 to \$5 per case; B. C.'s at \$3.50 to \$3.75 per cwt.; Americans, \$4 per cwt.; Ontarios, \$2.75 per 75 lbs.
 Parsnips remained quite scarce and sold at \$1.25 to \$1.50 per bag.
 Sweet potatoes advanced slightly, selling at \$2 per hamper.
 Oranges came in freely, and declined in price. Navels, (Cal.), selling at \$3.75 to \$4.25 per case; Floridas, at \$2.75 to \$3.75 per case.
 Grape-fruit also became slightly cheaper selling at \$3.75 to \$4.25 per case.
 Lemons declined materially, the Messinas selling at \$4 to \$4.75 per case, and Californias at \$4.50 to \$5 per case.
 Pears—There are still a few pears being offered. Canadian boxed Anjous, selling at \$2.75 to \$3, and Californias at \$4 per case.
 Hot-house tomatoes came in freely, were not of very good quality and declined in price. No. 1's selling at 20c. to 25c. per lb. and No. 2's at 15c. to 17c. per lb.
 Bananas remain high priced at \$2 to \$3 per bunch.
 Apples, the British Columbia boxed variety came in freely and sold well at \$2.25 to \$2.50 per box, a few bringing \$2.75; Washington, boxed, \$2.25 to \$2.50 per box; home grown were mostly low grade, and sell at \$3.50 to \$7 per bbl., according to kind and grade.

Montreal.

The unsettled weather last week was a factor against the cattle trade in the local market. Demand for live stock of all kinds was restricted, but as supplies were limited, prices continued practically unchanged on all lines. No choice stock was offered, but good steers continued to sell at around 7½c. to 7¾c. per lb., while medium quality sold at 6½c. to 7c. and common as low as 5½c. to 6c. Butchers' cows sold at 4¾c. to 6½c., and bulls at the same figures to ¼c. higher for the best, as compared with cows. Canning stock was the feature of the market. Offerings are barely up to requirements and everything in sight was purchased quickly by packers. Canners' bulls sold all the way from 4¾c. to 5¾c. per lb., while cows sell at 3¾c. to 4¼c. Offerings of sheep and lambs continued quite small and the demand was good for everything available. Choice lots of Ontario lambs changed hands at 11¼c. to 11½c. per lb., Quebec stock bringing ½c. less than these figures. Sheep were available at from 7c. to 7¾c. per lb. The offering of calves was fairly large, but choice stock was very scarce. Prices were steady at 9c. to 10c. per lb. for the choice and at 5c. to 5½c. for grass-fed stock. The market for hogs was moderately active and the tone firm, with sales of selected lots at 12c. to 12½c. per lb., while fine quality may be had at 11¼c. per lb.
 Horses.—There was very little new in the market for horses, though trade was slightly better during the latter half of last month than it was before. Prices were unchanged as follows: Heavy draft horses, weighing 1,500 lbs. to 1,700 lbs., \$200 to \$250 each; light draft horses, weighing 1,400 lbs. to 1,500 lbs., \$150 to \$200 each; small horses, \$100 to \$125 each; culls, \$50 to \$75 each; choice saddle and carriage horses, \$200 to \$250 each.
 Dressed Hogs.—There was no change in the price of dressed hogs, but the tone of the market continued very firm, and abattoir fresh-killed stock sold at 16½c.

to 16½c. per lb. Country-dressed hogs were 16¼c. for the light weights and 15¼c. for the heavy.
 Poultry.—The price of poultry showed an upward tendency and choice turkeys were quoted at 28c., while ordinary stock was about 25c. Chickens ranged from 20c. to 22c. for good to choice, while ordinary stock is about 16c. to 18c. Fowl ranged from 15c. to 18c.; geese from 16c. to 17c. and ducks from 19c. to 22c.
 Potatoes.—Notwithstanding the action of the Housewives' League, the market for potatoes showed a firm tone after the recent decline. Green Mountains were quoted at \$1.85 to \$1.90, and Quebec stock at \$1.70 to \$1.75 per bag of 90 lbs., ex-track. Smaller lots were 10c. to 20c. above these figures.
 Maple syrup and Honey.—Prices continued unchanged at 90c. to 95c. for 8-lb tins of maple syrup; \$1.05 to \$1.10 for 10-lb. tins and \$1.25 to \$1.50 for 13-lb. tins. Sugar was 15c. a lb. Honey was steady at 15c. for white clover comb; 13c. for brown comb and white extracted; 11c. for brown extracted and 10c. for buckwheat honey.
 Eggs.—Supplies of really fresh eggs were almost unobtainable and prices were around 65c. per dozen; so-called fresh eggs were about 55c., while No. 1 selected were 42c.; No. 1 candled 39c. and No. 2 candled 35c. per dozen.
 Butter.—Demand for butter was moderately active, and prices continued firm, being 43½c. to 44c. for finest creamery and ½c. less for fine. Undergrades were steady at 42c. to 42½c. and dairies at 38c. to 40c.
 Cheese.—Prices constantly tending upwards. Finest Western colored cheese was quoted at 25½c. to 25¾c. per lb., and Eastern colored 24¼c. to 24½c. White cheese was ¼c. lower than colored.
 Grain.—The market for oats showed considerable fluctuation. No. 1 Canadian Western was quoted locally at 71½c. per bushel; No. 2, at 69½c.; No. 3, at 69¼c. and No. 2 feed at 67¼c., ex-store.
 Flour.—Owing to the decline in the price of wheat, flour has lost the advance of 30c., reported a week ago, prices were \$10.30 per barrel for first patents, Manitoba; \$9.80 for seconds and \$9.60 for strong bakers, in bags. Ontario flour was \$10.00 per barrel for choice patents and \$9.50 to \$9.80 for 90% patents, the latter being \$4.55 to \$4.70 per bag.
 Millfeed.—Prices of bran were steady at \$30 per ton, in bags, shorts being \$33, middlings \$35 to \$37, pure grain mouille \$42 to \$45 and mixed mouille \$40 per ton.
 Baled hay. Prices were unchanged at \$13 per ton for No. 2 hay; \$11.50 for No. 3, and \$10.50 for clover mixed, car loads ex-track.
 Hides.—The market was extraordinarily strong and almost unquotable. Horse hides jumped 50 per cent. and were \$8 to \$9 each. Lamb skins jumped 45c., at \$3.10 each; beef hides were 1c. up, at 26c., 25c. and 24c. per lb., and calf skins, were 3c. up at 36c. per lb. for No. 1 and 34c. for No. 2. Tallow was 1c. to 2c. up, being 3c. to 5c. per lb. for rough and 8c. to 9c. for rendered.

Buffalo.

Cattle.—Good cattle sold higher at Buffalo last week—shipping steers and the better kinds of butchering cattle running from a dime to a quarter above the preceding week's level. Canadian steers sold to specially good advantage and there were plenty of sales of these at a full quarter advance. Class of Canadians generally were not of the better kinds, shipping steers running to the medium and fair kinds, best of which sold at \$9. Native steers sold up to \$9.60. Best handy-weight steers sold at \$9, and butchering heifers generally ranged from \$7 to \$8, with light and commoner grades from \$5.50 to \$6.50. Stockers and feeders were met with a good, strong demand and prices ruled firm. Best feeders sold up to \$7.25, but must be of good quality. Bull market was strong on the better fat grades and weak and shade lower on the common kinds that sold as low as \$4.25 to \$5. Milk cows and springers of the better kinds brought full strong values, while the medium and commoner grades went at beef prices. With the winter months on, dairymen are looking principally for the best milkers or near springers. There were around sixty loads of Canadians in the week's run. Offerings for the week totaled 6,350 head, as against 7,600 for the preceding week and 3,900 head for the corresponding week last year. Quotations:

Shipping Steers.—Choice to prime natives, \$9.50 to \$10.50; fair to good, \$8.25 to \$8.75; plain, \$7.50 to \$8.00; very coarse and common, \$7.00 to \$7.50; best Canadian, \$9.25 to \$9.75; fair to good, \$8.00 to \$8.35; common and plain, \$7.50 to \$7.75.
 Butchering Steers.—Choice heavy, \$8.50 to \$9.00; fair to good, \$8.00 to \$8.25; best handy, \$8.25 to \$8.75; fair to good, \$7.50 to \$7.75; light and common, \$6.25 to \$7.00; yearlings, prime, \$9.50 to \$10.25; fair to good, \$8.50 to \$9.00.
 Cows and Heifers.—Best heavy heifers, \$7.00 to \$7.50; fair butchering heifers, \$5.75 to \$6.25; light and common, \$5.00 to \$5.50; best heavy fat cows, \$6.75 to \$7.00; good butchering cows, \$6.00 to \$6.50; medium to fair, \$5.00 to \$5.50; cutters, \$4.00 to \$4.50; canners, \$3.00 to \$3.90.
 Bulls.—Best heavy, \$6.75 to \$7.00; good butchering, \$6.25 to \$6.50.
 Stockers and Feeders.—Best feeders, \$7.00 to \$7.25; common to fair, \$5.25 to \$5.60; best stockers, \$6.50 to \$7.00; common to good, \$5.00 to \$5.50.
 Milchers and Springers.—Good to best, in small lots, \$80.00 to \$100.00; in car loads, \$70.00 to \$75.00.
 Hogs.—The fore part of last week, when receipts were moderate, prices were higher, and the latter part of the week, under heavy supplies, values showed a break. Monday a few tippy hogs sold from \$10.25 to \$10.40, with one deck \$10.50 but the bulk of the crop ran light and Yorkers and light mixed grades ranged from \$10.00 to \$10.15. Tuesday's market was strong to a dime higher, and Wednesday good hogs were steady and York weights were five to ten cents lower. Friday, under a supply that reached around 100 double decks, values went off 20 to 40 cents, range in prices being from \$9.80 to \$10, bulk \$9.90. Tuesday and Wednesday were the high days for pigs, these weights selling at \$9 on Monday, and Friday buyers got the most of the pigs at \$8.75. Roughs, \$8.75 to \$9.00 and stags \$8.00 down. Last week receipts totaled 42,000 head, as against 54,044 head for the week previous and 56,800 head for the same week a year ago.
 Sheep and Lambs.—Receipts last week were light and prices were somewhat higher, a new high mark being made for lambs. Monday it was a \$12.00 market for tops, Tuesday some reached \$12.50, Wednesday nothing sold above \$12.25, and Friday bulk of the sales were made at \$12.50, few moved at \$12.60 and two decks scored \$12.75. Cull lambs sold up to \$11.25, with skips as low as \$8.00, top for yearlings was \$10.50, wether sheep showed a top quotation of \$8.75 and the range on ewes was from \$7.50 to \$7.75. Receipts last week were \$15,100 head, being against 26,505 head for the week before and 21,100 head for the same week a year ago.

Chicago.

Cattle.—Beeves, \$7 to \$13; western steers, \$7 to \$10.50; stockers and feeders, \$4.60 to \$7.75; cows and heifers, \$3 to \$10; calves \$9.75 to \$13.50.
 Hogs.—Light, \$8.50 to \$9.65; mixed, \$9 to \$10; heavy, \$9.40 to \$10; rough, \$9.40 to \$9.55; pigs, \$6.25 to \$8.35.
 Sheep.—Lambs, native, \$9.90 to \$12.70.

Cheese Markets.

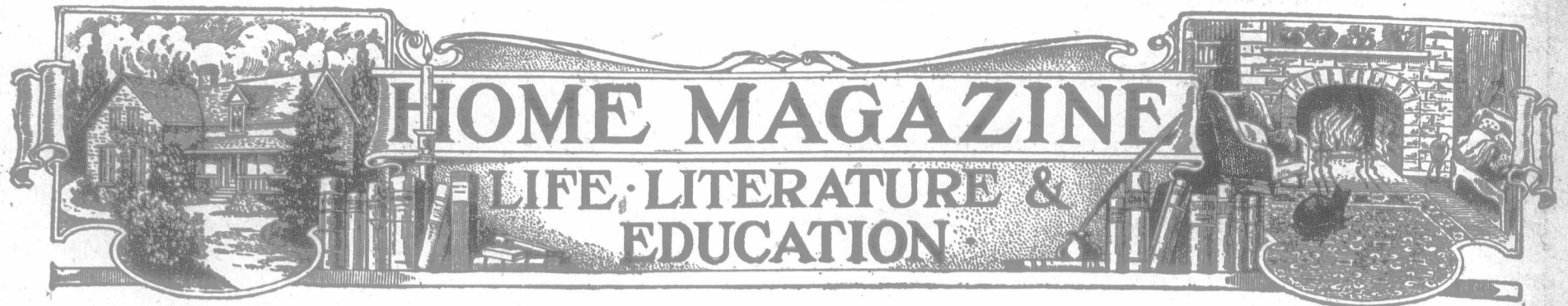
London, bidding 22c.; no sales; St. Hayacinthe, 20½c.; Montreal, finest westerns, 25c. to 25½c.; finest easterns, 24c. to 24½c.; New York, specials, 24¼c. to 25c.; average fancy, 24c. to 24½c.

Sale Dates.

Dec. 13.—Oxford District Holstein Breeders' Club, Woodstock, Ont., Holsteins.
 Dec. 14.—Wm. H. Hartin, Twin Elm, Ont., Shorthorns.
 Dec. 14.—Estate, H. H. Miller, Hanover, Ont., pure-bred stock.
 Dec. 28.—Southern Counties Ayrshire Breeders' Club, Tillsonburg, Ayrshires.

Holsteins at Woodstock.

With 60 pure-bred Holsteins to choose from at the sale in Woodstock on December 13, there should be a splendid opportunity to obtain some good blood. There are winners in the show-ring and in dairy tests included in the offering. Many are in the R. O. M. See the advertisement in this issue and write to W. E. Thomson, Woodstock, for a catalogue.



The Ground.

BY C. ZANDER.

I love the ground:
To me it has a friendly look;
And ev'n when hid by winter snows
Its trees are signposts
Reassuring me that in the spring
Earth's rugged, kindly face will smile
again.
Then, like a little, lonesome country boy,
Who snuggles close against his father's
side,
And loves the very stains and smells of
toil and sweat,
So I'll companion with the good brown
soil,
And comfort find
Ev'n in the thought that when my tale of
years is told,
And God shall call again the spirit which
He gave,
This earthly tabernacle shall return,
Dust unto dust, till that great day
When there shall be new heaven and
new earth.

—In The Westminster.

A Town Garden.

BY NORA TYNAN O'MAHONY.

My garden's but a small, square space,
Beset with city walls,
Where no green trees bestow their grace,
Nor note of blackbird calls
Across the sunburnt plot of grass
Which doth its center make,
Nor is there terrace-walk, alas!
Nor fountain cool, nor lake.

But here the sunshine floods all day
The white walls new and bare,
Where I have planted roses gay
With pinks and lavender,
Sweet-williams, stocks, and asters fine
Bloom bravely in the sun,
And happy I to call them mine
When the day's work is done.

And when I'm tired and sad and lone
In Dublin by the sea,
A bit of country all my own
My garden makes for me.
Yet in my dreams I sometimes see
Another garden fair,
Where floats the drowsy hum of bee
On balmy country air.

A tangle sweet of apple-bloom,
Of roses and woodbine,
Where country breezes go and come
And skies of azure shine.
Ah me! how dull my garden grows!
Its sunburnt plot of green,
And narrow flower-beds set in rows
The hard stone walls between!

Ontario's Voice on Horticulture.

For several years The Farmer's Advocate and Home Magazine has sent a reporter regularly to the Convention of the Ontario Horticultural Society held annually in Toronto. Intensely interesting as those meetings have been, and much as has been the "meat" extracted from them for all interested in gardening, there has always been a certain element of disappointment to the representative from this staff: the talk has been chiefly of town and village gardening, the delegates have come almost—perhaps quite—invariably from the cities and towns. Now, a garden in one place is as good as a garden in any other—which sounds quite like an axiom from Euclid! A beautiful garden in town would be a beautiful garden in the country. Nevertheless it has always seemed a pity that there was no word, or but little word, of horticultural work pushed right out into the rural districts, a pity that there was no one

from the farms who could stand up and say what was being done in horticulture along this "side-line" or that. The Farmer's Advocate representative could only wait with patience, hoping that some day the step would be taken and "the country" brought in where it so rightfully belongs.

This year the step came, hurled like a bomb almost at the close of the two days' sessions. A delegate from Tillsonburg, Mr. Sinclair by name, a man of personality too, after a few words on "tulips", expressed his astonishment that he had heard no word spoken in regard to the rural communities. He himself, he said, had been much interested in getting farmers in touch with the society in his town, and had found that one "only had to get them started to get them going." This year his society had done considerable work among adjacent school sections and had found results very encouraging. He could see no reason whatever why rural Canada should not be as beautiful as rural England, and he thought it was "up to" the Ontario Horticultural Association to assist in making it so. Beautiful home surroundings and good gardens are not only a joy but a positive asset to farmers, and he hoped that one thing the delegates would carry back from the Convention would be a determination to prosecute the good work in the farming communities.

Mr. Sinclair's words evidently found quick response in others beside the Farmer's Advocate reporter, for Professor Crow, of the Agricultural College at Guelph, immediately came to his feet

to state his conviction that this was one of the most important questions brought up at the Convention.

A few minutes later A. H. Tomlinson, also of the O. A. C., was called upon. He had been slated for an address on "Landscape Gardening and Improvement in surroundings of schools, etc.," but, as the time for closing had almost arrived, he decided, very wisely, to give instead a brief statement of the work his department, under Prof. Crow, is prepared to do. He himself would visit any section, upon the request of a Farmers' Club, Board of Trustees, or other rural body of any kind, and would give an address, advice in landscape gardening etc., and, later, send plans. At an early date, he hoped, lantern slides would be available.

Mr. Tomlinson made such a distinctly favorable impression that the delegates were all immediately alive to certain possibilities, and at once proposed a resolution that steps be taken to see if he could not be secured to lecture at meetings of the Horticultural Society Branches in the towns and villages, as well as in the strictly rural districts.

* * * * *

—All this is, no doubt, beginning the Convention report "wrong end to", but this is an Agricultural Magazine, so what would you have?

—To return to the beginning, this Convention was the eleventh held by the Ontario Horticultural Association, and it met with the President, Rev. G. W. Tebbs, of Hamilton, in the chair.



A Flower-lined Pathway Always Promises a Real Home.

Rev. G. W. Tebbs of Hamilton.

The address given by Mr. Tebbs was so interesting and so suggestive that we take pleasure in giving it almost in full. He said:

The first decade of the existence of the Ontario Horticultural Association has passed, and upon this the eleventh Annual Gathering of ladies and gentlemen representing 91 Horticultural Societies having a membership of almost 16,000, we bid you the most hearty and cordial greetings to the Convention of 1916.

We are still in the midst of this fearful war, with little to encourage us that the end of it is near. May our next gathering be held with no sound of strife in our ears, but with our loved ones safely back, and with a lasting and permanent peace assured to all the peoples of this beautiful world upon which we live and move and have our being.

Many of the sons, brothers and husbands of the many members of our Association are to-day at the front fighting for us and our fair homes; others, alas! have laid down their lives, making the supreme sacrifice for us, and I am sure that it is the wish of all our officers and delegates assembled here that I should voice on behalf of this Convention our earnest wish for a speedy and safe return of the living; and to assure those bereaved of their dear ones of the deepest sympathy of all assembled here to-day.

On the same fields one hundred years ago brave men fought and bled for the liberties of Europe; the same earth was watered with the tears of dying men; it was fertilized with the blood of the best of heroes as it is being repeated to-day; ploughed with shot and harrowed with shell then as now, and travellers tell us that every springtime those fields are covered with blue forget-me-nots. When Keats, walking in his garden, saw all the ground beneath the rose bushes covered with pink petals he exclaimed, "Next year the roses should be very red". When Aeneas tore the bough from the myrtle tree, Virgil says the tree exuded blood. This is only the poet's way of saying that civilization is a tree that is nourished, not by rain and snow, but by the tears and blood of the patriots and prophets of yesterday.

The Science of Horticulture (I had almost said the art of Horticulture) has always emphasised the truth of the illustration I have used.

I mean, the work that you have been doing and are doing, is only the emphasizing of the principle of vicarious service and suffering. This is the first lesson which this world war teaches me as a flower-lover.

Your labors and your toils for the making of beautiful homes, communities, towns and cities, has been at the cost of the consecrated energy of the horticultural workers of the province through the year that is past, blood and strength that you have given willingly, sometimes appreciated and sometimes not, by those whom you have tried to help and interest in the work of building up the beautiful.

But the wine costs the clusters; the linen costs the flax; the furniture costs the forests. Astronomers tell us that the sun makes our gardens beautiful at the cost of burning itself up. Each golden sheaf, each orange bough, each cluster of grapes, costs the sun thousands of tons of carbon. Geike, the geologist, shows us that the valleys grow rich and deep with soil through the mountains growing bare and being denuded of their treasure. Beholding the valleys of France and the plains of Italy all gilded with corn and fragrant with deep grasses, where the violets and buttercups wave and toss in the summer airs, travellers often forget that the beauty of the plains was bought by the bareness of the mountains. Farraday

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amazes us by his statement of the energy required to embroider a violet or to produce a strawberry. To untwist the sunbeam and extract the rich strawberry red, to refine the sugar and to mix its flavor, represents heat sufficient to run an engine from Toronto to Detroit. Thus nature works, silently, noiselessly, without fuss, without advertisement, but with tremendous energy and great expenditure. As her humble students we flower lovers must not forget the lessons.

I am sure that in some measure, ladies and gentlemen, this has been the character of the tasks you have undertaken in this fair Province of Ontario.

You have been laboring in partnership with, nay in love with nature as she has appealed to you in her beautiful, if at times wayward moods. You have been trying to make others appreciate her too, in your efforts to make your home-town surroundings lovely by introducing her to your neighbors, but at much cost of your time, thought and treasure.

I trust that as we meet here once again we may each of us gain renewed inspiration and fresh invigoration to carry back to the other workers the messages this Convention bears, and from the programme before us I am certain we shall not be disappointed.

May I (perhaps at the risk of being somewhat wearisome) refer to just one other lesson which we as garden lovers may learn from the events of these sad and bitter days. It is the value of having a big vision of our task.

The late Earl Kitchener had his plans matured for a much longer and more strenuous campaign than most men of the nation thought possible. Yet events to-day are proving his estimate of the duration of the war to have been correct and even conservative. The war will only be decided by "a long, long, long, and a strong, strong, strong pull" on every side with every man at his post doing "his bit", with plans of campaign fully matured, and set in motion. There must be loyal co-operation of every branch of the Army and Navy. Each of the Allies must unite in the common cause, and then and only then will final victory be attained. The man on the street in England, to-day says, "Oh of course we shall win. It will take a bit of doing, but—we shall win." And he represents the Empire in its resolve. Fellow members of the Horticultural Societies of Ontario, we have a big task ahead of us. Hitherto our vision has been largely confined to our own lovely little lawns, and our own charming little gardens. Their beauty has often been magnified because it was our own doing, and was good in our sight.

In a very literal sense we have made a frontal attack upon the ugly and unsightly, but only on a small section of the whole battle-line. The larger vision is now possessing us. Town and city improvement schemes, town planning, park surveys, town and city approaches are calling for our help; the joining up of our horticultural work with allied societies, loyal co-operation with other agencies having the same ends in view, and with similar aims to our own, the making of the province more productive and more beautiful. Production, Patriotism and Perfection is the battle-cry of Horticulture at this time, and we have still a long way to go. We have not yet done all we could with our waste spaces, which with their weeds, like the poor, are ever with us. The planting of trees in our towns, beautifying our streets, is a species of re-afforestation which may well engage our attention. The production of new and improved varieties of flora especially suitable to the very varied climate found in the different parts of our province should have a place in our programme. The education of the rising generation to love the flowers, plants and trees we love is calling for our best efforts. Conservation, Co-operation, and Concentration in every branch of Horticulture must play a large and important part in the unfulfilled task lying before us. Are we equal to the larger vision? I believe we are. Of course it is going to take time to bring all this to a successful issue. But everything that is worthwhile takes time. Time is a very negligible quantity in the plans of our generals to-day. You gardeners knew that what ripens quickest is of the least worth. The mushroom only needs a night; the moss only asks a week to

cover the fallen tree; the humble vegetable asks a few weeks of summer weather, and the strawberry but a month or two at most; but planting his apple tree, the gardener must wait years for his ripened russet, and the forester many years for the full grown oak or elm. Were it given to the child, tearing open the golden meat of the orange, to trace the ascent of the tree, he would see the tree a wild, bitter orange growing on the edge of the wilderness. But your horticultural ancestors, standing by the fruit grafted it for sweetness, pruned it for the juicy flow, nourished it for taste and color. Could he who picks the peach or the pear have this inner vision, he would behold an untold company of husbandmen standing beneath the branches pointing to their own special contribution towards the excellence of the whole, and, indeed, amongst them he could see flower and fruit lovers from this association amongst the number: R. B. Whyte, a Groff amongst the Gladioli; Professors Macoun and Crow hybridizing and perfecting new varieties; two ladies, Misses Yates and Blacklock, amongst the perennials perfecting color schemes, and a Doctor Clark tickling mother earth with his tulips.

Ladies and gentlemen, we have been long enough doing the ordinary routine work. Let us get out of the ruts, for some have become so deep that they have almost become graves. There is no time to occupy our attention with out-of-date methods of work. We do not exist simply to help ourselves, and to get glory for ourselves. If we do there is a grave danger that we shall be buried beneath the weight of our own self-gratification, and we shall be most indecently interred at that. I have no doubt but that the report of our indefatigable secretary and friend, Dr. Lockie Wilson, will show that, happily, there are not many such societies in this province, and that in spite of all the distractions created by the war, horticulture, in the province of Ontario, has made excellent progress during the year.

Your Board of Directors is ready at all times to take into consideration everything that will conduce to the well-being of each and every society. For this it exists, and hence it is most important that every society in this province should be represented at these conventions, not only to elect capable men on the board to deal with matters in general, but to discuss at the conventions the matters which local societies feel should be dealt with.

The province is yet young. We have by no means exhausted the pos-

sibilities, horticulturally, of which this province is capable. We have hitherto been satisfied to accept seeds, bulbs and plants from either the U. S. A. or from overseas. The problem of the production of our own seeds and bulbs is becoming increasingly important. At the same time we recognize with gratitude the labors of an army of workers in horticulture the wide world over. There is a great need of specialization of particular plants and flowers and fruits in Canada. In some degree this has been accomplished in roses. The barley and oats, used by the farmers of Ontario, originated, after careful experiments, at the O. A. C., and with remarkable success. I would respectfully suggest that the authorities at our Provincial Farm should give a little larger place to the horticultural section of their work beyond the actual amount of work done in the interests solely of the student body of the college.

I am quite sure a little more money spent there on hybridization and propagation in the Horticultural Department would be of the greatest value to the province at large.

I feel that I have already over-stepped the limits of a president's address, but before I close I feel that we must not allow another moment to pass without, on behalf of the horticultural societies of the province, expressing to the government our deep sense of the loss the province has sustained in the deaths of two warm friends of this organization. I refer to the Hon. C. C. James, earlier in the year, and more recently the Hon. Mr. Duff, Minister of Agriculture. Both these gentlemen have graced our conventions with their presence, and kindly words of counsel, and with the more practical assistance in their official duties elsewhere.

In closing I wish to thank you most sincerely for the honor you conferred upon me last year in unanimously electing me as your president, and I bespeak for my successor in office the same kind consideration which you have afforded me.

We are here as flower lovers. Let us apply ourselves to the task in hand, and then go back to our societies fully determined to make them better than ever.

You are weaving day by day,
Beauty for the sun to slay,
The fleeting pageant of delight
That dwells within a garden bright.
You this Persian carpet spread,
And named it a Sweet-William bed
You painted this great lambent screen
Of Larkspur, lillied white between.

You hang vine garlands, low and high,
Ripe for Bacchus, reeling by,
You are the over-lord of grapes
And plums, and all alluring shapes
To win the eye and tempt the tongue,
Globed liquid honey, leaves among,
Living, you, an earth-born guest,
Are of men the mightiest;
And when you die, earth-lover
Flowers shall be your cover.

Work Done During the Year.

The President's address was followed by the report of the Superintendent, Mr. J. Lockie Wilson, Toronto. The Association he said, has now reached a total of 91 societies, made up of 16,000 enthusiastic members whose slogan is "A more beautiful Ontario,"—an Ontario with cleaner back yards, better lawns and gardens, clinging vines, beautiful flowers. "Beauty," as has been said, is "the visible interpretation of truth."

Mr Wilson dwelt upon the uplifting influences of beautiful surroundings, and commended the experimental work done at the Experimental Farm, Ottawa, also the fine year-book compiled by Messrs. Whyte, Macoun, Buck and Spencer.

Next year, he said, the Department intends to have more speakers available to give addresses at the various societies. Among many other items of interest in the various branches he mentioned the Rose Show at St. Catharines and the Tulip Show at St. Thomas. School gardens, he thought, were not progressing as rapidly as might be desired. They should not be used as an end, but as the means to an end—the training of the powers of the child. It was found that the time devoted to manual training and gardening was more than made up in other studies (Tolstoi's conclusion). He thought that our cultivation of the waste land should be more thorough than it is; in France and Flanders every foot of land was made of high value, and even now was being cultivated right up to the firing line by the women and children.

The reports from various societies showed important work done during the year, but only outstanding events can be touched upon here.

The Brantford Society imported 28,000 bulbs from Holland and 1,000 rose bushes from England, besides buying many shrubs and plants from Canadian growers. . . . Carleton Place put window boxes in the schools and encouraged the boys and girls to turn back-yards into spots of beauty . . . Dundas society gave prizes to boys for bird-houses and to girls for knit-



Canadian Troops Take a Wartime Spin.

A group of Canadians, taking a little motor spin on the western front. They are plainly enjoying their ride on this army motor truck. Note that the seat of honor has been given to the proud possessor of a captured German helmet.

International Film Service.

ting these being presented on school sports day. . . . Elora and Salem reported an exhibit of children's products. . . . Fort William, the specialization of sweet pea growing in the town. . . . Hamilton found garden meetings very popular, and had held a bird-house exhibit at which the boys realized \$50 for the Red Cross. The city is specializing in roses. . . . At Hanover the rural schools had been brought into the work and contributed at the exhibits. . . . Kingsville bought 16,500 tulip bulbs. . . . Kitchener had a fine lecture on "Home Gardens," given by Mr. Baldwin of Toronto. . . . In Listowel, Mr. Tomlinson of the O. A. C., Guelph gave valuable suggestions. . . . Mitchell had given aster seeds to school children, the result of which was a fine exhibit of 75 bouquets. . . . Orangeville set out 300 evergreen and deciduous trees. . . . Ottawa, with 901 members had a fine report. Much help had been derived from the book compiled by Messrs. Whyte, Macoun, Buck and Spencer, and distributed at Mr. Whyte's expense. . . . St. Thomas, with 1,104 members told of a tulip festival, and the specialization of tulips in the city. Mr. Thomas Adams of the Commission of Conservation, Ottawa, had given a fine address. A great many flowers had been placed in Pinafore Park and an attempt made to create a general interest in bird life and wild flowers. . . . Stratford awarded prizes for school grounds and distributed 29,000 bulbs besides roses etc. . . . The Thornhill society found inspiration in making trips to various gardens of interest. . . . Windsor told of an illustrated lecture given by Rev. G. W. Tebbs, Hamilton. . . . Chatham society installed two drinking fountains. . . . In Haileybury, Mrs. Potts of Hamilton spoke on Rose Growing.

The above were the "high lights" only. Almost every delegate told of seeds distributed to school children, prizes for lawns and gardens, lectures by local gardeners, tree-planting, flower shows, and beautification of public buildings by window boxes and vines.

In opening the discussion on Reports from the various districts, Rev. A. H. Scott, Perth Co., gave an interesting account of the beginning and development of the Horticultural Society in the motherland, dating from Dec. 5th, 1809, when 17 men met in Edinburgh and formed a society for the improvement and cultivation of the best fruits, flowers and vegetables. It is interesting to note that the first paper read was "An Account of a Method of Preparing a Soporific from the White Juice of Lettuce." In the fifth year prizes were first offered for homemade wines, by the way—and included such articles as spectacles, umbrellas and tea-pots. One prize-winner asked for a toddy-ladle, but was refused, as the article was not on the list. Later prizes were offered for laying out gardens. In 1840 two men brought an exhibit on a hand-barrow, from a distance of 41 miles, and each was awarded a prize of 5 shillings! . . . So the Society grew slowly, reaching at last the dimensions which it has attained in Great Britain.

Gardening, said Mr. Scott, is bound to assume greater importance here, since the culture of the earth is the greatest undertaking of man, rendering the tillers of the soil the real founders of civilization. If we are to love our country it must be lovely, and heart, head and energy will accomplish this. . . . In passing, Mr. Scott thought it advisable to experiment for sweetness in flowers as well as form and color. He recommended highly, to all garden-lovers, a little book "The English Flower Garden," by William Robinson.

A Prize Cup.

The President at this point called attention to a beautiful silver cup, donated by St. Thomas for the best 25 spring tulips—a competition available to all societies except St. Thomas. This year it was won by Tillsonburg.

Birds and Their Relation to Horticulture.

Mr. W. E. Saunders, of London, who knows birds as well as any man in Ontario, gave a most interesting address on the above subject. Every gardener, he said in beginning, is an aesthete, and should have the birds about for the delight of them as well as for their actual value, as insect eaters, in the garden.

In inducing the birds to live with us, there must be both summer work and

winter work, as the birds that come to us in winter are, for the most part, different from those that come in the summer. The birds in November, for instance, are chiefly of the small insect-eating class,—chickadees, nuthatches, small woodpeckers, a few kinglets, large woodpeckers, etc.

The chickadee is perhaps the most useful of all the winter birds, as it is "on the job" all the time in daylight. They are almost exclusively insect-eaters and also eat insect eggs, perhaps thousands at a meal. To attract them in winter (also the white-breasted nuthatch and downy woodpecker) hang a ball of beef-fat outside of the window where you can watch operations; also prepare a food-shelf covered with bark, in the grooves of which are broken nuts with melted beef-fat poured over to hold them. He had such a shelf outside of one of his own windows, and the chickadees and other birds were there whenever they were not on the trees looking for insects,—the white-breasted, and sometimes the red-breasted nuthatch, among the number.

A few days before Mr. Saunders had been at Middleton's in South London, talking with Mr. Middleton. Outside of the window, on a shelf improvised from a cheese-box lid, was a chickadee. Mr. Middleton raised the window and Mr. Saunders sat still with some nuts in his hand. Presently the little bird came right in and ate the nuts; "evidently it knew that anyone at Middleton's would be a safe person." Among the birds that have come to Mr. Middleton's was a cardinal; he had seen it feeding on corn there.

In winter, give the birds a good brush heap; they love it. Throw some millet seed into it. To eliminate English sparrows, which drive away our native and useful birds, sparrow-traps may be used.

A man in Eastern Ontario, a Mr. Wallace, had made a little island on Rideau Lake a safe place for birds by keeping it free of cats, red squirrels, English sparrows, blue jays, cow-birds and bronze grackles. In 5 years the number of breeding pairs had increased from 5 to 33.

In summer the most desirable thing for birds is water, and drinking basins and bathing pools should be provided for them. Nesting boxes are also a great help; birds learn from each other where to go. Mr. Saunders here told of the wonderful success of "Jack Miner," near Leamington to whose pond, every spring, from 1,000 to 2,000 wild geese come, also some wild swans. In the bird-houses one is likely to get, in spring, the wren, bluebird, crested fly-catcher, tree swallow and flicker, all insect-eaters. If one provides a special house for it, the purple marten may come, and, perhaps, in a large box, a little screech owl. Usually the last named is contented with mice, but watch him; if he bothers the birds it may be necessary to remove him. All the houses, of course, should have entrances to suit. The oriole may be attracted by bits of string and thread put where he can find it easily in the nesting season.

In concluding Mr. Saunders said that we can assist Nature greatly, but we must be discriminating. We must not make such mistakes as the man who shot the hawk that was killing the mice that girdled his fruit trees.

In reply to a question from Mr. R. B. Whyte, of Ottawa, Mr. Saunders said that the best way to keep robins from eating cherries and other garden fruits is to plant plenty of "wild" fruits about, and give the birds plenty of water. A mulberry tree is very useful for this.

It was resolved that, since birds stem the ravages of the codling moth, caterpillars and plant insects of all kinds, ornithology and the conservation of bird life be associated with the work of the Society, and that the teaching of ornithology in the schools, and establishment of bird sanctuaries be encouraged.

An exhibit of bark-covered bird-houses, made by Chas. Caverly, St. Thomas, proved of great interest.

Diseases of Roses.

This subject was taken up by Dr. Massey, of Cornell University, Ithaca, N. Y.

The worst rose diseases are Mildew, Blackspot and Galls.

Powdery Mildew is a serious disease, especially to the crimson rambler, and may be recognized in grayish, powdery spots which grow darker, while the young sprouts dwarf and curl. The disease is

most troublesome in autumn, and one treatment is to dust with finely ground salt, following in 10 days with a spray of potassium sulphate, 1 oz. to 3 gals. of water.

When Black Spot appears, the bushes become defoliated early in the season, and the bloom of the following year is destroyed. The spots appear on the upper surface, and may cover the whole leaf, the leaves turning yellow, as the disease progresses. The disease is fungous, and works in the tissues. Apply a fungicide—one of the copper compounds, and burn the leaves in the fall. Some claim that a solution of potassium permanganate is useful.

Crown Galls and Root Galls are caused by bacteria, and are thought to be like cancer in nature, appearing as abnormal swellings. The bacteria which cause them may live in the ground for a considerable time. Inspect young bushes for galls when setting out, and do not plant where galls have been. No treatment yet found will cure an infected plant.

Rose Rust is abundant on wild roses, and appears in orange powdery patches which become black beneath in late autumn. The disease is due to a spore. When badly infected cut the bush off close to the ground and burn it; otherwise use fungicides.

Stem Canker is also caused by a fungus, and the symptoms are cankers on the canes or branches, brown in the center with a black border. Burn all diseased parts.

Beautiful Pictures.

At the evening session beautiful lantern views of flowers and flower borders were shown by Mr. William Allen, of Toronto, and an address was given by Lieut.-Col. J. L. Hughes, formerly Inspector of Schools in Toronto.

Lieut.-Col. Hughes said that, since planting means partnership with God more than anything else, it should be greatly encouraged everywhere, and especially among the children.—"More play, more planting, and more productivity."

There are barren spots on every farm and back-yard in this country. If the boy is trained to put beauty there he learns to put beauty in barren lives too.

Lieut.-Col. Hughes told something of the work done in school gardens in Toronto, also of the wonderful results achieved by John Patterson, of Dayton, Ohio, who, for the sake of the development of the people, had made his factories spots of beauty and encouraged the people to make the whole town beautiful.

The speaker was glad to speak a word for the wild flowers, which the farm boys could protect and encourage. He himself had had 236 species growing at his summer home at Balmy Beach. He thought it pathetic to see children come home from the woods with armfuls of wilted, murdered flowers. They should be taught that three trilliums in a vase are infinitely more beautiful than thirty-three (the Japanese ideal). To permit children to rifle the woods in such a way is to develop destructiveness of things we ought to love.

The members of the Horticultural Association should put on programmes in the country and help the people to a real love of Nature, giving instruction how to encourage the native things. Get the boys to work; it never was true that they love wrong better than right. Look to the barren places. Grow orchids in the swamps—a profitable undertaking from a commercial standpoint. Cover the sloping hillsides with trees. In this we might learn efficiency from the Germans, who even plant trees along the railway tracks. Produce beauty—even for commercial purposes, if you like. At his summer home he had grown 46 varieties of Canadian ferns; ferns are now sold in the city; but the farmers are digging them up and not putting others in.

Some have said that love of flowers and the beautiful makes boys effeminate, but that is not true. Look how the English—flower-lovers—are coming out in the great War, with 5,000,000 men in the army, and 1,000,000 women in the factories.

God made us to be in harmony with His beautiful things, and education should lead to that.

Mr. Garfield Gibson next spoke in terms of praise of the Boy Scout movement, with its oath of membership that each must "do a good turn to someone every day of his life,"—about the essence of true religion.

Officers for the Year.

On Nov. 23rd the election of officers was held, resulting as follows:
President, Dr. F. E. Bennett, St. Thomas.

First Vice-Pres., Professor Crow, Guelph.
Second Vice-Pres., Wm., Hartry, Seaforth.

Treasurer, C. A. Hesson, St. Catharines.
Secretary, J. Lockie Wilson, Toronto.
Hon. Director, Rev. G. W. Tebbs, Hamilton.

Directors:

- Dist. 1, Rev. A. H. Scott, Perth.
- " 2, Mr. Ross, Picton.
- " 3, R. Whorley, Haileybury.
- " 4, T. D. Dockray, Toronto.
- " 5, Jas. Ogilvie, Hamilton.
- " 6, Jno. Grieves, Seaforth.
- " 7, E. Kilmer, Brantford.
- " 8, Dr. Bothwell, Stratford.
- " 9, C. D. Brown, Walkerville.

Auditors, Miss Yates, Port Credit, and Mrs. Potts, Hamilton.

Delegates to American Civic Association: J. H. Bennett, Barrie; Rev. G. W. Tebbs, and J. Lockie Wilson.

Representative to the Canadian National Exhibition, Mr. Burgoyne, St. Catharines.

Representative to the Civic Improvement League, R. B. Whyte, Ottawa.

Committee on Names and Varieties: H. J. Moore, Niagara Falls; F. R. Buck, Ottawa; Prof. Macoun, Ottawa; Mr. Hunt, O. A. C., Guelph; Mr. Norman Galt; R. H. Mitchell, Toronto; O. J. Robbs, Vineland.

To be continued.

The Windrow

The U. S. ship *Caesar* has been fitted as a Christmas ship to carry food supplies and clothing to destitute Syrians and Armenians.

Over \$3,000,000 have been subscribed by the people of India to help carry on the war.

The Ontario Military Hospital at Orpington, Eng., is to be enlarged to give capacity for 2,014 beds.

In Hamilton, Ont., 25 women have been accepted to work in the post-office, and will receive \$2.00 per day.

In the United States four more States have been added to the "dry" list,—Michigan, Nebraska, South Dakota and Montana. The States in which prohibition now holds are Washington, Oregon, Idaho, Colorado, Arizona, North Dakota, Kansas, Oklahoma, Arkansas, Mississippi, Alabama, Tennessee, Georgia, North and South Carolina, Virginia, West Virginia, Iowa and the four named above.

It is believed that pepper, which grows plentifully in Hungary, is employed in making the "tear bombs" now used by the German army.

Japan is profiting immensely by the war. One of her markets is India, to which she is sending many supplies that were formerly imported from Germany. The whole country, according to the Japanese Ambassador at Rome, "is practically one immense war-factory, and very many thousands of Japanese, both men and women, are assisting in the production of munitions of war." These are being sent to the Russian front as rapidly as possible.

Miss Jeannette Rankin, who was elected by the Republicans of Montana to represent their State in the lower House of Congress, is the first woman to sit in the legislative halls at Washington. Twelve States of the Union now have woman suffrage, and about 2,000,000 women voted in the last elections. Miss Rankin, it is said, makes her own clothes and hats, and is a most excellent cook.

A Swiss paper, the *Berner Tagwacht*, reports that during September alone over 500 Socialists were arrested and interned in Germany for agitating against the war. Since the arrest of Dr. Liebknecht for refusing to countenance the war in any form, his followers have grown into a Socialist opposition of twenty members and secured the support of the Berlin Vorwarts, the central organ of the Social Democrats. Most of the Socialist press,

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however, intimate that they have had to submit to censorship their reports of the recent Social Democratic Conference.—Condensed from Literary Digest.

Thousands of Belgian civilians are being torn from their homes and families and forced to work as slaves in Germany. It is said that German's fighting forces have already been increased by 16,000 Germans whose places in munition plants have been filled by Belgians. Cardinal Mercier on Nov. 7th wrote as follows: "Soldiers bar with the bayonet the door through which wives and mothers

The number of full-blooded Indians who have enlisted for overseas service since the war began is now placed at 1,200. Of these Ontario contributed 862; Quebec, 101; Manitoba, 89; Saskatchewan, 57; Prince Edward Island, 24; British Columbia, 17; Nova Scotia, 14; New Brunswick 12; Alberta, 9; Yukon, 2. The Indians have also contributed \$6,000 in cash.

At Hampton Court Palace, Eng., is a huge "Black Hamburg" grapevine, said to be the largest in Europe if not in the world. It is over 110 feet long, and at 3 feet from the ground its stem is nearly 30 inches in circumference. In some seasons it yields more than 2,500 bunches of grapes. It was obtained, in 1768, as a cutting from an estate in Essex, and has supplied the table of the Royal family with grapes since it first began to bear.

An article recently published in *Massey-Harris illustrated* recently tells of the splendid patriotic work which has been done by the Cree Indians of File Hills, Sask. The population of the Agency numbers 331 Indians and 17 whites. Up to the 15th of July they had raised, for patriotic purposes, \$3,555.50, or more than \$10 per head for every man, woman and child. A branch of the Red Cross was organized in March, 1915, and up to the present, has raised \$1,610. A bed has been endowed at the Cliveden Hospital, and another at the Saskatchewan Base Hospital, and a great deal of knitting has been done by the women. The Belgian Relief Fund has received \$334.00 raised by means of concerts given by the brass band, but as 11 of the best musicians have joined the colors the concerts had to be discontinued. The sum of \$100.00, proceeds from a Treaty Picnic held on June 30th, has been sent to the Serbian Relief Fund. In order that they might contribute to the Patriotic Fund the older Indians each sold one load of fire-wood a month throughout the winter and gave the entire amount to the Fund. Many of the younger men have enlisted, and one of them, Jack Walker, was drafted to the Princess Pats.

In strenuous times it is well to smile occasionally: The following has been copied from the Thanksgiving Number of "Life", N. Y., where it appeared under the heading, "Things we have to be Thankful For."

- The Atlantic Ocean.
- The British Navy.
- France.
- The drop in gasoline.
- The Declaration of Independence.
- The retirement of William Jennings Bryan from public office.
- The fact that John D. Rockefeller laughed in church.
- The large munition contracts.
- The President's platitudes.
- Home cooking.
- Theodore Roosevelt, private citizen.
- The high cost of paper, and the consequent shortage in sex novels.
- The reform of Sing Sing.
- The anti-child-labor law.
- The adjournment of Congress.
- Longer skirts.
- The Russian Offensive.
- The reincarnation of the tariff.
- The fact that Society has returned to town.
- The Rio Grande River.
- The Congressional Record.
- The fact that George Washington was not a German.
- The bombs that didn't go off.
- The good humor of William Howard Taft.
- Boston.
- Cranberry sauce.
- Turkey, with a small "t".

A Perfect Stranger.—For several days Mandy, the faithful cook, failed to put in an appearance. Her mistress made anxious inquiries, and found to her dismay that Mandy had been arrested. She hastened down to the courthouse to see what could be done. "Why, Mandy!" she exclaimed, "what in the world have you been doing to get arrested?" "Ah ain't been doin' nothin' 'tall, Mis' Anna," was the indignant reply. "All dis heah fuss is about a lady named Mis Demeanor, and Ah ain't nevah even heahed of her befo'!"

Hope's Quiet Hour

Saints in the Making.

Beloved of God, called to be saints.—Rom. I, 7.

"My little maiden of four years old (No myth, but a genuine child is she, With her bronze-brown eyes and her curls of gold)

Came quite in disgust one day to me. Rubbing her shoulder with rosy palm, As the loathsome touch seemed yet to thrill her,

She cried, 'O mother, I found on my arm A horrible crawling caterpillar.'

And with mischievous smile she could scarcely smother, Yet a glance in its daring, half-awed and shy,

She added, 'while they were about it, mother, I wish they'd just finished the butterfly.'"

How impatient we are of the slow growth of holiness in ourselves and others. Like the child, we shrink away in disgust from the ugliness which is plainly visible, not caring to make further search for possible growing wings, hidden yet from all eyes but God's.

We look back on history's marvellous revelation and see that some of the noblest saints were once very far from saintly. What a sad thing it would have been for the world if God had been as impatient as we are, and

"Couldn't bear with the worm till the wings should grow!"

Once there were some trembling christians in Damascus, waiting for the arrival of a fierce enemy of theirs, who was coming swiftly from Jerusalem to carry them away in chains. Suddenly one of these disciples was sent by his Master to welcome this fierce persecutor into their little company of christians. How astonished the messenger was at his commission. This man who had done so much evil to the saints at Jerusalem, and who had come to Damascus on purpose to bind all christians,—could be a "chosen vessel" of the Lord, to bear His name before Gentiles and kings."

The Lord could see the growing wings of the angel, when they were hidden under the ugly mask of cruelty and injustice. He was patient, knowing that the man who had helped forward the martyrdom of St. Stephen was very near the point when he also would be able to say, "To me to live is Christ." Saul of Tarsus would soon become holy Paul, the great Apostle to the Gentiles. The wings were still folded, but they were growing, and would soon lift his soul to the third heaven.

It was this sinner (turned saint) who wrote so tenderly to other sinners (sinners struggling after holiness) saying: "Beloved of God, called to be saints; Grace to you and peace from God our Father, and the Lord Jesus Christ." We sometimes grow almost hopeless over our slow progress in Christlikeness. Our good resolutions vanish like the morning dew, and we are irritable, selfish, conceited or lazy without intending to be anything of the kind. Then there are the people who don't even seem to be trying to be good. What about their wings! Can there be the germ of a saint in a ruthless murderer, who is eagerly hunting out inoffensive men and women and killing them?

Christ looked at Saul of Tarsus and that look of love changed him into the loving and loved Apostle. The Lord looked on the weak, disloyal Simon and woke up in him the sleeping angel, the noble manhood of a Rock-Apostle. He was called Simon, but the new name given him was Cephas or Peter—the "rock." On such a firm foundation the church could be built—the foundations of the Apostles and Prophets.

Zaccheus, the grasping tax-gatherer, heard the gracious words of the Master of men: "To-day I must abide at thy house;" and he was instantly ready to give the half of his goods to the poor and to make four-fold restitutions for any wrong he had done.

Do you think Christ has no longer power to win the hearts and rule the lives of men and women? Only last week a young man in Manitoba sent me \$5 to buy a Family Bible for some poor family. He said that he had promised God to give two of these Bibles yearly as an acknowledgment of blessings received from Him.

Yesterday I received a donation of \$5 "for the needy" from a farmer's wife—she has sent me \$25.00 since April. To-day a lovely white shawl and some baby's woollen shoes "for the needy" came from another reader of the "Advocate." So it goes on continually. I know personally a great many men and women who are loyally spending their lives in Christ's service. They are "beloved of God, called to be saints;" and the beauty of their growing souls shines out in their everyday lives.

We have no right to shake ourselves free of unpleasant people—as the child shook off the ugly caterpillar. As a worm may be transformed into a butterfly, as a cruel persecutor may become a loving Apostle and a Magdalen may be transformed into a saint, so the neighbor we dislike may be a chosen witness for Christ. This is a topsy-turvy world, and human material changes its appearance suddenly sometimes—or with seeming suddenness. Many an apparently unheroic character has done wonderful deeds of heroism in Europe. Many, who have thought themselves incapable of such things, have descended to horrors of cruelty and shame. God sometimes shows a man his real self in order to rouse him to penitence. St. Peter thought himself incapable of disloyalty to the Master he passionately loved, but one touch of temptation showed him how weak he was, and he learned to go to God for the needed strength instead of foolishly depending on his own good impulses. So he gained his by fall. All things—even sins—work together for the good of those who love God. "Beloved of God, called to be saints: Grace to you and peace from God our Father, and the Lord Jesus Christ," wrote St. Paul.

How he loved to call his friends "saints!" We read in his letters about the saints at Jerusalem, at Ephesus, Colosse, Corinth, Rome and Philippi. The word seems to have lost its savour, somehow—perhaps because it was so valuable that it had many counterfeits—and if you call a person a "saint" to-day he is irritated instead of pleased. But, though we may dislike the word, we all want to live valiantly and die nobly.

Are we doing the one and shall we do the other? God knows! Who are we to despise our neighbors or scorn our enemies. They may be nearer God than we. The growing wings are hidden, perhaps, and the beauty of soul may be visible only to God. A crisis may reveal beauty in them and ugliness in us. Or it may be the other way round. We are quite incapable of judging ourselves or others correctly. We don't know to what heights we may climb or to what depths we may fall. This war has amazed us by showing us that men, who seemed quite ordinary, may suddenly do dastardly deeds of devilish cruelty or follow Christ up the steep and painful mountains of self-sacrifice.

It is always a mistake to judge by outward appearance. The wise men came from afar to offer their gifts to a king. After their earnest search they only found a little child in a humble home. Were they disappointed? Have you ever heard of any one who really found the king being disappointed? I never have. They rejoiced with exceeding great joy, for with the eyes of faith they saw their King under His lowly disguise. I look at the babies, on the streets and in the cars, and wonder over the possibilities lying latent within them. The greatest men and women in the world were once little, helpless, ignorant babies. At Christmas time we are reminded that even the Saviour of the world was once a little child. He has transformed millions of lives, and each soul is of infinite value in His eyes. Should we ever lose heart? Browning says:

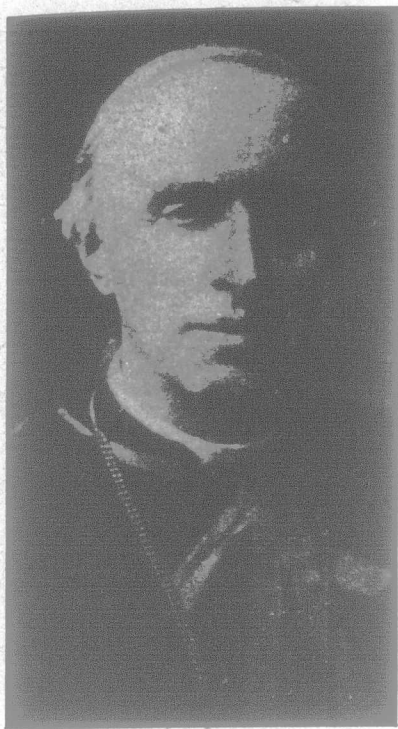
"No, when the fight begins within himself, A man's worth something. God stoops o'er his head, Satan looks up between his feet—both tug— He's left, himself, i' the middle: the soul wakes And grows. Prolong that battle through his life! Never leave growing till the life to come!"

DORA FARNCOMB.

For the "Shut in."

Thank you—"D. and G. M."—for the S. S. papers. They will be greatly appreciated by some poor girls in the hospital.

HOPE.



Cardinal Mercier

who issued a protest denouncing the deportation of Belgians to Germany. "Thousands of Belgians," he said, "are being reduced to slavery."

wish to pass to say farewell to those departing. They herd their captives in groups of tens and twenties and push them into cars. As soon as the train is filled the officer in charge waves the signal for departure. Thus thousands of Belgians are being reduced to slavery. The Germans are not only controlling the unemployed, but they are also recruiting a great number of men who have never been out of work."

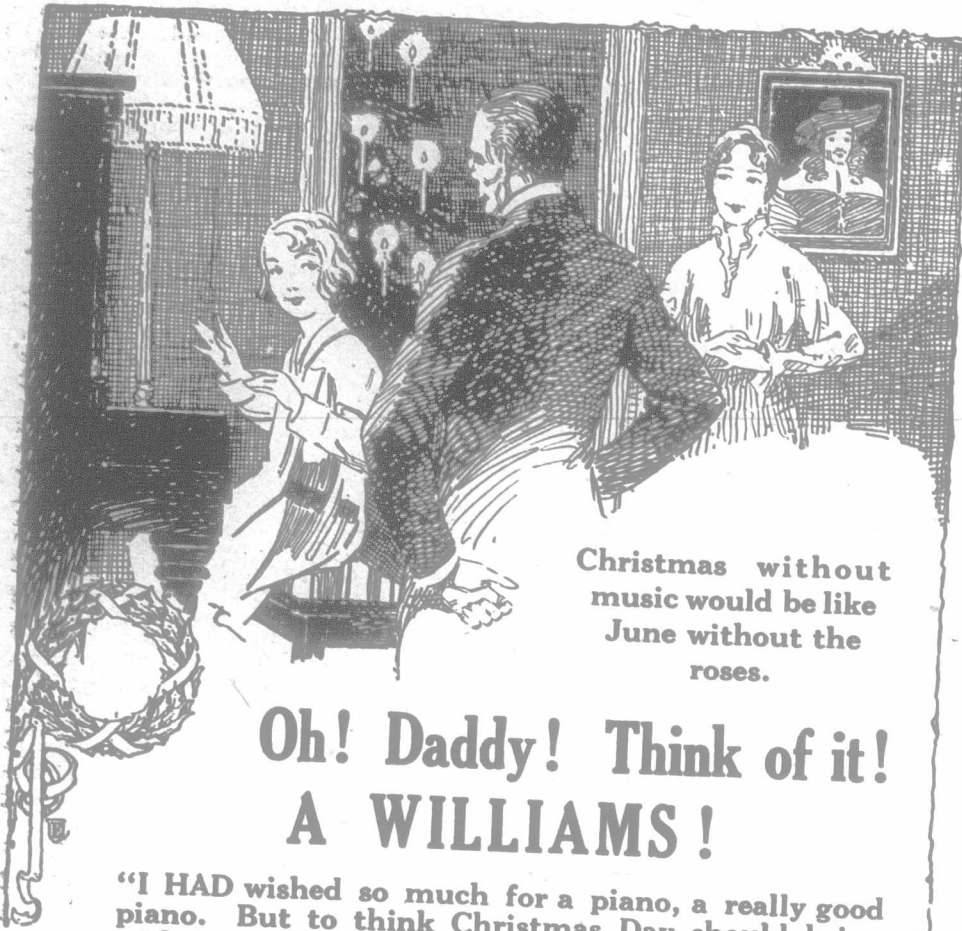
If the war lasts the full three years, or until next August, it will have cost \$75,000,000,000 for direct military purposes, not including other losses.

When the State of Virginia "went dry" at the end of October, 800 saloons were closed.

The Nobel prize for Literature for 1915 was awarded to the French novelist and playwright, Romain Rolland, and, for 1916, to the Swedish poet, Verner Heidenstam.

The idea of a league of nations to enforce universal peace, when the war is over, is gaining ground everywhere. Recently Viscount Grey, British Secretary for Foreign affairs, declared that hereafter "we must see that no nation goes to war for a cause not approved by the verdict of mankind." "There would have been no war," he declared, if a league such as ex-President Taft has proposed and President Wilson and Mr. Hughes have endorsed had existed in 1914." Even in Germany the idea finds supporters. Prof. Hans Delbruck, for instance, in a recent number of the *Preussische Jahrbucher*, argues that Germany should join "the growing movement for the creation of some practical form of a world tribunal which would have for its purpose the settling of disputes between nations by amicable agreements on principles of justice, instead of by force of arms."

Miss Ruth Law, an aviator, broke all records in America for long-distance single flight, when, on Nov. 19th she flew from Chicago to Hornell, N. Y., a distance of 660 miles. Continuing, after replenishing her gasoline supply, she flew an additional 125 miles, having covered the 785 miles in 6 hours and 50 minutes.



Christmas without music would be like June without the roses.

Oh! Daddy! Think of it!
A WILLIAMS!

"I HAD wished so much for a piano, a really good piano. But to think Christmas Day should bring with it a WILLIAMS!"

Bless her little heart—she knows—every bright little girl knows, somehow, that music must be a part of life and living, and that its fullest enjoyment means more than just having a piano.

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Think also of the evenings you would come home to enjoy your little girl's progress, and feel, through her, the thrill of musical attainment.

All these things, and more, urge now the importance of making this Christmas the occasion for commencing your little girl's musical education.

Distance or a limited pocket-book are no hindrances to your family enjoying a Williams this Christmas. Tear out the coupon at once for the book of beautiful Williams' Models, and ask us to tell you how a little of your Christmas money NOW will put a Williams Piano or Player Piano in your home on Christmas Eve.

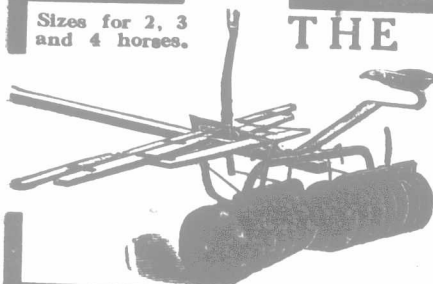
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Music in the Home.

The home needs more than conversation to make it absolutely home-like. It needs a bright fire and—music. There are times when conversation flags. There are times when one wants to sit by the fire and listen to soft music. Then when young folk—or old folk for that matter—come in for the evening, what so helpful as music in entertaining them?

Again, music in the home is needful for the developing and refining influence that it exerts, or, rather, may exert if

real music be chosen—songs and "instrumentals" by the best composers, and which may be bought at any music shop.—Why should not compositions from the great musical minds of the world be heard in our farm homes? Music, evanescent in itself, far-reaching in its influence,—is it not one of the great forces of the day, and is it not destined to be still greater when the roar of battle ceases, and from out of the strife comes once more, sweet harmony?

Let the children know something of music; they will thank you for the opportunity as long as they live.

OUR NEW SERIAL STORY

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The Brown Mouse

CHAPTER VIII.

AND THE OLD BOTTLES.

The day passed. Four o'clock came. In order that all might reach home for supper, there was no staying, except that Newt Bronson and Raymond Simms remained to sweep and dust the schoolroom, and prepare kindling for the next morning's fire—a work they had taken upon themselves, so as to enable the teacher to put on the blackboards such outlines for the morrow's class work as might be required. Jim was writing on the board a list of words constituting a spelling exercise. They were not from the text-book, but grew naturally out of the study of the seed wheat—"cockle," "morning-glory," "convolvulus," "viable," "viability," "sprouting," "iron-weed" and the like. A tap was heard at the door, and Raymond Simms opened it.

In filed three women—and Jim Irwin knew as he looked at them that he was greeting a deputation, and felt that it meant a struggle. For they were the wives of the members of the school board. He placed for them the three available chairs, and in the absence of any for himself remained standing before them, a gaunt shabby-looking revolutionist at the bar of settled usage and fixed public opinion.

Mrs. Haakon Peterson was a tall, blonde woman who, when she spoke betrayed her Scandinavian origin by the northern burr to her "r's," and a slight difficulty with her "j's," her "y's" and long "a's." She was slow-spoken and dignified, and Jim felt an instinctive respect for her personality. Mrs. Bronson was a good motherly woman, noted for her housekeeping, and for her church activities. She looked oftener at her son, and his friend Raymond than at the schoolmaster. Mrs. Bonner was the most voluble of the three, and was the only one who shook hands with Jim; but in spite of her rather offhand manner, Jim sensed in the little, black-eyed Irishwoman the real commander of the expedition against him—for such he knew it to be.

"You may think it strange of us coming after hours," said she, "but we wanted to speak to you, teacher, without the children here."

"I wish more of the parents would call," said Jim. "At any hour of the day."

"Or night either, I dare say," suggested Mrs. Bonner. "I hear you've the scholars here at all hours, Jim."

Jim smiled his slow, patient smile. "We do break the union rules, I guess, Mrs. Bonner," said he; "there seems to be more to do than we can get done during school hours."

"What right have ye," struck in Mrs. Bonner, "to be burning the district's fuel, and wearing out the school's property out of hours like that—not that it's any of my business," she interposed, hastily, as if she had been diverted from her chosen point of attack. "I just thought of it, that's all. What we came for, Mr. Irwin, is to object to the way the teachin's being done—corn and wheat, and hogs and the like, instead of the learnin' schools was made to teach."

"Schools were made to prepare children for life, weren't they, Mrs. Bonner?"

"To be sure, went on Mrs. Bonner, "I can see, an' the whole district can see that it's easier for a man that's been a farm-hand to teach farm-hand knowledge, than the learnin' schools was set up to teach; but if so be he

hasn't the book education to do the right thing, we think he should get out and give a real teacher a chance."

"What am I neglecting?" asked Jim mildly. Mrs. Bonner seemed unprepared for the question, and sat for an instant mute. Mrs. Peterson interposed her attack while Mrs. Bonner might be recovering her wind.

"We people that have had a hard time," she said in a precise way which seemed to show that she knew exactly what she wanted, "want to give our boys and girls a chance to live easier lives than we lived. We don't want our children taught about nothing but work. We want higher things."

"Mrs. Peterson," said Jim earnestly, "we must have first things first. 'Making a living is the first thing—and the highest.'"

"Haakon and I will look after making a living for our family," said she. "We want our children to learn nice things, and go to high school, and after a while to the University."

"And I," declared Jim "will send out from this school, if you will let me, pupils better prepared for higher schools than have ever gone from it—because they will be trained to think in terms of action. They will go knowing that thoughts must always be linked with things. Aren't your children happy in school, Mrs. Peterson?"

"I don't send them to school to be happy, Yim," replied Mrs. Peterson, calling him by the name most familiarly known to all of them; "I send them to learn to be higher people than their father and mother. That's what America means!"

"They'll be higher people—higher than their parents—higher than their teacher—they'll be efficient farmers, and efficient farmers' wives. They'll be happy, because they will know how to use more brains in farming than any lawyer or doctor or merchant can possibly use in his business. I'm educating them to find an outlet for genius in farming!"

"It's a fine thing," said Mrs. Bonner, coming to the aid of her fellow soldiers, "to work hard for a lifetime, an' raise nothing but a family of farmers! A fine thing!"

"They will be farmers anyhow," cried Jim, "in spite of your efforts—ninety out of every hundred of them! And of the other ten, nine will be wage-earners in the cities, and wish to God they were back on the farm; and the hundredth one will succeed in the city. Shall we educate the ninety-and-nine to fail, that the hundredth, instead of enriching the rural life with his talents, may steal them away to make the city stronger? It is already too strong for us farmers. Shall we drive our best away to make it stronger?"

The guns of Mrs. Bonner and Mrs. Peterson were silenced for a moment, and Mrs. Bronson, after gazing about at the typewriter, the hectograph, the exhibits of weed seeds, the Babcock milk tester, and the other unscholastic equipment, pointed to the list of words, and the arithmetic problems on the board.

"Do you get them words from the speller?" she asked.

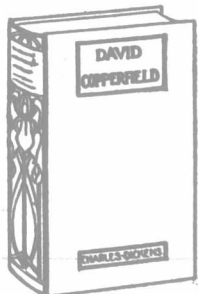
"No," said he, "we got them from a lesson on seed wheat."

"Did them examples come out of an arithmetic book?" cross-examined she.



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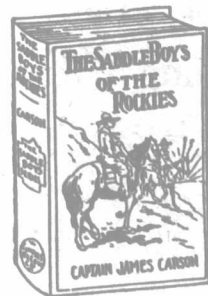
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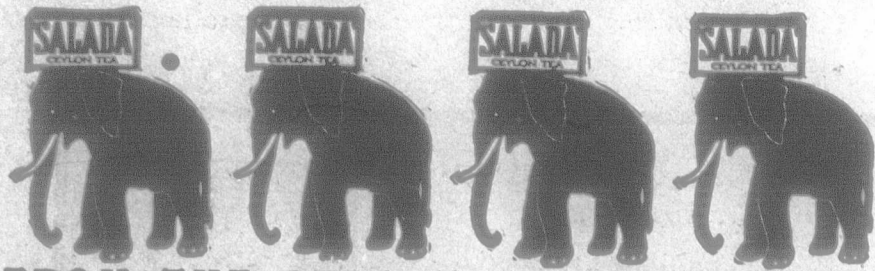
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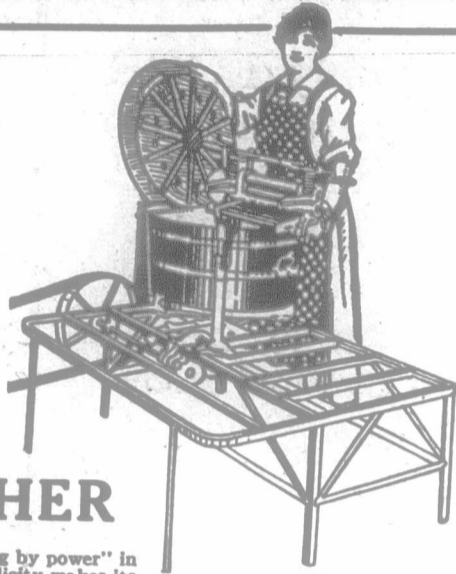
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References—Any Banker, Any Cream Shipper

"No," said Jim, "we use problems we made ourselves. We were figuring profits and losses on your cows, Mrs. Bronson!"

"Ezra Bronson," said Mrs. Bronson loftily, "don't need any help in telling what's a good cow. He was farming before you was born!"

"Like fun, he don't need help! He's going to dry old Cherry off and fatten her for beef; and he can make more money on the cream by beefing about three more of 'em. The Babcock test shows they're just boarding on us without paying their board!"

The delegation of matrons ruffled like a group of startled hens at this interposition, which was Newton Bronson's effective seizing of the opportunity to issue a progress bulletin in the research work on the Bronson dairy herd.

"Newton!" said his mother, "don't interrupt me when I'm talking to the teacher!"

"Well, then," said Newton, don't tell the teacher that pa knew which cows were good and which were poor. If any one in this district wants to know about their cows they'll have to come to this shop. And I can tell you that it'll pay 'em to come too, if they're going to make anything selling cream. Wait until we get out our reports on the herds, ma!"

The women were rather stampeded by this onslaught of the irregular troops—especially Mrs. Bronson. She was placed in the position of a woman taking a man's wisdom from her ne'er-do-well son for the first time in her life. Like any other mother in this position, she felt a flutter of pride—but it was strongly mingled with a motherly desire to spank him. The deputation rose, with a unanimous feeling that they had been scored upon.

"Cows!" scoffed Mrs. Peterson. "If we leave you in this yob, Mr. Irwin, our children will know nothing but cows and hens and soil and grains—and where will the culture come in? How will our boys and girls appear when we get fixed so we can move to town? We won't have no culture at all, Yim!"

"Culture!" exclaimed Jim. "Why—why, after ten years of the sort of school I would give you if I were a better teacher, and could have my way, the people of the cities would be begging to have their children admitted so that they might obtain real culture—culture fitting them for life in the twentieth century—"

"Don't bother to get ready for the city children, Jim" said Mrs. Bonner sneeringly, "you won't be teaching the Woodruff school that long."

All this time, the dark-faced Cracker had been glooming from a corner, earnestly seeking to fathom the wrongness he sensed in the gathering. Now he came forward.

"I reckon I may be making a mistake to say anything," said he, "f'r we-all is strangers hyeh, an' we're pore; but I must speak out for Mr. Jim—I must! Don't turn him out, folks, f'r he's done mo' f'r us than evah any one done in the world!"

"What do you mean?" asked Mrs. Peterson.

"I mean," said Raymond, "that when Mr. Jim began talking school to us, we was a pore no'count lot without any learnin', with nothin' to talk about except our wrongs, an' our enemies, and the meanness of the Iowa folks. You see we didn't understand you-all. An' now, we have hope. We done got hope from this school. We're goin' to make good in the world. We're getting education. We're all learnin' to use books. My little sister will be as good as anybody, if you'll just let Mr. Jim alone in this school—as good as anyone. An' I'll he'p pap get a farm, and we'll work and think at the same time, an' be happy!"

To be continued.

Young Hopeful.—"Father, what is a traitor in politics?"

Veteran Politician.—"A traitor is a man who leaves our party and goes over to the other one."

Young Hopeful.—"Well, then, what is a man who leaves his party and comes over to yours?"

Veteran Politician.—"A convert, my son."—Tit-Bits.

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.]

Dear Ingle Nook Friends,—I am not going to talk to you to-day at all, except to say how much encouragement the following letter has given me. So very, very often I have wondered if "my people" wanted fewer articles on ideals and more on practical things. Indeed, last fall when out in the country I asked a dear friend if she thought I should talk differently to my audience—more about housework and so on. "No," she said, "we want to get away from washing dishes and scrubbing floors, we can't live—really—without ideals and interests that make us look up from the 'little round'—important though that is too."—And so now I feel "heartened" just to go on, talking a little from my own experience and my own failures—one's own failures, those stumblings which teach one so much. For often when I am talking to you I am trying to help myself to look up too. We are all in one boat, and, I hope, are pulling our oars together.

Very gratefully yours,

JUNIA.

A Word From Wellington County.

Dear Junia.—Each week as the Advocate comes I eagerly turn to the Ingle Nook to find there without fail something to make me think of other things besides breakfasts, dinners and teas, milking, feeding poultry, shipping cream and eggs, keeping the house right and a thousand other things "too numerous to mention," as the sale bills say.

Each week after getting my thoughts (for a few minutes) off the aforesaid things, I resolve solemnly to sit down and write a letter to the "Ingle Nook," but each week the same old duties crowd in and insist on being done before I have time to get paper, pen and ink ready.

Is there any harm in writing on Sunday? The day is nearly over, full of Sunday duties—breakfast half an hour later than usual, the usual milking and feeding, keeping on fires, brushing up just a little, finishing a home letter started Saturday night, looking over the Sunday-School lesson, again preparing a little dinner in good time, church in the afternoon, tea over and evening work all done and the Advocate is before me, for I hold there is no harm but good in the Ingle Nook and "Hope's Quiet Hour." You say you do not find it easy to write to people you do not know, to get started and finished, and as I write now I wonder how you ever do it, for I am trying to do the same; there is a regular army of thoughts racing through my mind, and the idea I get this week is to concentrate. How easy to let one's thoughts wander, and how difficult to keep them in order and accomplish something, or, in other words, to concentrate. I sympathize with the Doctor of Philosophy who found himself obliged to renew his determination to concentrate every three minutes. When a man like that has to do it what about a busy farmer's wife, who only writes one rambling letter a week to the folks at home or an old school chum! Oh, these careless, aimless, wandering thoughts!

If wishing would bring them I would have on my table some volumes of either of those writers who were mentioned in the little sermon that descended on your perplexed head quite unawares and that seemed to be the very help that you needed at that particular time, for I believe such reading would help greatly in schooling the thoughts to concentrate. What a practical, little sermon it was!

Do we ever appreciate a thing we get easily? No, and I resolve right now to save my pennies and buy one of the books, perhaps do without something that I think I need, for this is a hard year on the farm, everything is to buy that other years would grow in abundance to the door, apples, potatoes, onions, and all other vegetables, things we must have, for the men come in from the plough with just as large appetites as they have other years.

No, Junia, I cannot concentrate. I must just ramble on, and now I am think-

ing of those came out in t ago, called born a Mac t everything w me. I learn heart" as h peat them w and they sel

Mrs. Buch them too, an something th Sap in the S that appeals handy. How appreciated sugar so sc People in have everyth try farming a the stock, no and consequ little straw, parts had on of grain.

But we wi for what we more import my Sunday to-morrow we all the end winter for it like snow to-come, a sad many homes brother, in n Risking their up everythin How thankfu were willing t them with ou for a speedy that the New

Wellington

[Dear "Re letter that fa rule, we do "easily," nor we get easily cost us somet and sacrifice. of life to kee We cannot st back; only a advance.—J.]

Six

Oh Sun! thy Upon my p Tell me—how Where those What messag Bring you, fr

How fared the You saw the The men that Pride of the l How many— How many l

Oh Sun! you Nor care if m Nor if our fr Even so—we For where ou show, That warm

A Pe

How them sh They'll be Goodness! wh An' the chic

What a mess What a tra Sally's dawdl An' I ha'r

Crash! there p Dad'll sure Drat it! now i An' my was

An' there's pe He'll be co Likes our tat Sally! pare

Sally! change t (Goodness! He's in such a (Mercy! but

ing of those beautiful Scotch lines which came out in the Advocate several months ago, called "The Twa Hairsts." I was born a Mac though not a Scotch one, but everything written in Scotch appeals to me. I learned the "verses" "off by heart" as the children say, and often repeat them while sweeping and dusting, and they seldom fail to bring the tears.

Mrs. Buchanan, of Grey Co., noticed them too, and that makes me think of something that she wrote on "Boiling Sap in the Sugar Bush,"—another thing that appeals to me, though I like the wood handy. How the maple syrup will be appreciated next spring, with fruit and sugar so scarce and everything else. People in town think that farmers have everything, but I wish they would try farming a year like this; no roots for the stock, no corn, no grass in the fields, and consequently not much butter, very little straw, as many farmers in these parts had only from six to twelve loads of grain.

But we will just try and be thankful for what we have and for other things more important than these. And now my Sunday evening is nearly over and to-morrow we will take a fresh start with all the endless duties, preparing for winter for it will soon be here, it feels like snow to-night. Then Christmas will come, a sad one in many homes, for how many homes have given up a son and a brother, in many cases never to return. Risking their lives for our safety, giving up everything as they start in life! How thankful we should be that so many were willing to do it. We can just follow them with our prayers and hope and trust for a speedy end to all this warfare. Oh that the New Year will bring a change!

INGLE NOOK READER.

Wellington Co., Ont.

[Dear "Reader," the idea from your letter that fastens upon me is that, as a rule, we do not get the best things "easily," nor even appreciate the things we get easily as much as those that have cost us something in energy and thinking and sacrifice. That seems to be a law of life to keep us moving, not stagnant. We cannot stand still; if we stop we go back; only as we make endeavor do we advance.—J.]

Six Hours Ago.

BY A. M. J.

Oh Sun! thy crimson, morning beams Upon my peaceful casement gleams, Tell me—how did the battle go, Where those beams fell six hours ago? What message in your fiery car, Bring you, from our dear ones afar?

How fared they? You must surely know, You saw them, six, short hours ago, The men that Canada sent forth, Pride of the land that gave them birth. How many—oh, some signal show! How many lived, six hours ago?

Oh Sun! your stately way you keep, Nor care if mortals smile or weep, Nor if our friends awake or sleep, Even so—we love that radiant glow, For where our friends' camp-fires now show, That warm light shone six hours ago.

A Peck of Trouble.

How them shingles blow away! They'll be strikin' someone's head. Goodness! what a windy day, An' the chickens arena' fed.

What a mess o' leaves an' such! What a traipsin', to be sure! Sally's dawmlin' overmuch, An' I ha'na' scrubbed the floor.

Crash! there goes a winner pane; Dad'll sure to wunner why, Drat it! now it's goin' to rain, An' my washin' isna' dry.

An' there's passon down the road; He'll be comin' in for sure; Likes our taties, as I knowed— Sally! pare enough for four.

Sally! change the baby's dress (Goodness! how the mornin's go); He's in such an awful mess (Mercy! but the gal is slow).

ERNEST H. A. HOME.

Current Events.

One of the first visits paid by Canada's new Governor General, the Duke of Devonshire, was to the Agricultural College at Guelph, Ont.

The British Board of Trade has issued an order debarbing the use of wheat in the manufacture of beer and other liquors.

Two more Zeppelins were brought down in England during the Zeppelin raid at the end of November. On Nov. 28th, British naval aeroplanes made a raid on Zeebrugge, the naval base of the Germans in Belgium.

Lloyd George on Dec. 3rd, handed to Premier Asquith his resignation as Secretary of War, and a few hours later it was announced that Premier Asquith would ask the King to consent to a new Cabinet. At time of going to press it is thought that Lord George and Asquith will retain their offices, although it may eventuate that Lloyd George will become Premier. At present the lines seem to cleave, with Asquith, Grey, Balfour and Lansdowne on the one hand, and Lloyd George, Law, Carson and Derby on the other.

Vice-Admiral Beatty has been given the highest command of the Grand Fleet; Admiral Sir John Jellicoe has been appointed First Sea Lord of the Admiralty, and Sir Henry Jackson President of the Royal Naval College at Greenwich. Sir David Beatty is an Irishman, and, it will be remembered, was the hero of the naval battle off the Jutland Peninsula.

The chief point of interest in the war is still Roumania, where a terrific battle is raging almost continuously from the Carpathian Passes to the Black Sea. From the northwest and southwest the forces of Falkenhayn and Mackensen are within a few miles of Bucharest, while, in an effort to relieve the situation, Gen. Brusiloff's army is attacking fiercely in the Carpathian district. Meanwhile, far to south, Gen. Sarrail's troops are occupying the Bulgars. . . . On Dec. 1st a detachment of Allied troops landed at Piraeus, and it is reported that King Constantine has handed over the supplies required of him. . . . In East Africa a large German force has been taken by Gen. Smuts.

The Dollar Chain

A fund maintained by readers of "The Farmer's Advocate and Home Magazine" for (1) Red Cross Supplies; (2) Soldiers' Comforts; (3) Belgian Relief; (4) Serbian Relief; (5) Prisoners of War. Contributions from Nov. 24th to Dec. 1st: Jas. A. Hair, R. R. 7, Watford, Ont., \$10; Geo. H. Ridley, St. Mary's, Ont., \$1; I. H. G., Stratford, Ont., \$1; J. A. S., Watford, Ont., \$3; David Kennedy, R. R. 1, Lucknow, Ont., \$3; "Scotia," London, Ont., \$1.

Previously acknowledged.....\$3,152.00
Total to Dec. 1st.....\$3,171.00

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

Smiles.

More Frightfulness.—Old Dame—"Tinpeace a pound for candles! That's very dear, ain't it?"
Grocer.—"Yes, but, you see, they are dearer now on account of the war."
Old Dame (in surprise).—"Lor' a massy! You don't say so. An' be they a-fightin' by candle-light now?"—Tit-bits.

Little Millie's father and grandfather were Republicans; and, as election drew near, they spoke of their opponents with ever-increasing warmth, never heeding the little maid who was preparing for bed. She cast a fearful glance across the room, and whispered in a frightened voice: "Oh, mamma, I'm afraid to go to bed. I'm afraid there's a Democrat in the closet."—Organizer.

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Our system is perfect—simply write us, asking for samples of cloth, style book showing latest fashions in suits and overcoats, and our patented self-measurement form. We mail you these promptly, you select your material from the samples, take measure according to instructions, choose the style you prefer, mail this information to us in return envelope provided, and we make your suit and send it to you within two weeks.

Thousands of men are wearing Tip Top Tailors' one-price, made-to-measure clothes. These men used to pay \$25 and \$30. Now they pay \$15. Why not save money and get the same service and satisfaction.



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253 Richmond St. West TORONTO

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Crisp Even and Flakey-

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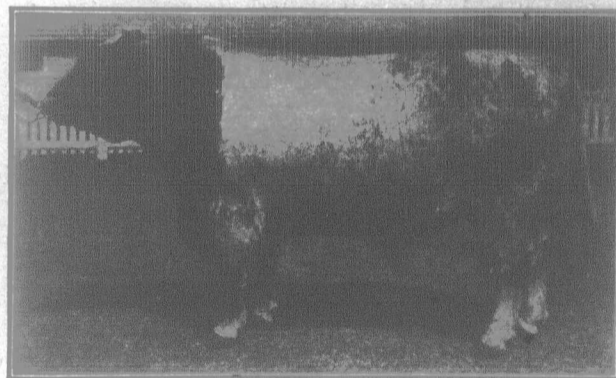


FIVE ROSES FLOUR

Salem Shorthorns

We have at present a real Christmas offering in extra well bred young bulls and a few choice females. The bulls are the best lot we ever offered. Several are by our undefeated sire, Gainford Marquis, others are by his illustrious son, Gainford Select. Two are by the noted champion, Brownale, while several others are by the good breeding bull, Oakland Star. If you are in need of a herd sire we would like to have you see these. Our females, too, are bred along these same lines. They are right individuals; they are bred right and will be sold right. Visitors welcome.

J.A. WATT, Salem Stock Farm
ELORA, ONT.



GAINFORD MARQUIS Imp. Canada's Greatest Shorthorn Sire

SEEDS FIFTY YEARS SERVICE

1966 1916

Preparedness

While it lasts we can supply 1914 and 1915 CORN on cob, of high Germinating power at \$3.00 per bus. In crates. This advertisement has been suggested to us by the number of farmers who are buying SEED GORN NOW for spring. We are buyers of Alsike, Alfalfa, Red Clover, Timothy and Seed Grain. Send samples.

"A Wink is as Good as a Nod"

GEO. KEITH & SONS 124 KING ST. E. TORONTO

When you buy a SHERLOCK-MANNING 20th Century Piano you get "Canada's Biggest Piano Value" and at the same time save fully \$100. Write Dept 18 for Catalogue "T". THE SHERLOCK-MANNING PIANO CO. London, Canada (No street address necessary)

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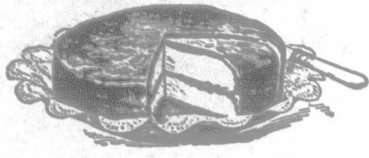
No. 25, Child's, Sizes 6-10	\$1.65
No. 24, Youths' " 11-13	2.20
No. 22 1/2, Boys' " 1-5	2.50
No. 21, Men's " 6-12	3.00

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"1900" Gravity Washer

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

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



Coffee Icing

Cook two cups of Lantic Sugar with half a cup of strong coffee until the syrup forms a soft ball when dropped in cold water. Add a teaspoonful of vanilla extract and beat until cold enough to spread.

Lantic Sugar

"The All-Purpose Sugar"

is specially good for cake baking on account of the fine granulation.

The Sugar with the red ball trade-mark

Packed in 100-lb. Bags

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Power Building, MONTREAL 13



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.

FOR SALE—100 ACRES, RICH CLAY LOAM, well underdrained, good house and outbuildings, never-failing supply of water. Rural telephone and cable to rural mail. Apply to Thos. Tosh, Pakenham, Ont.

WE REQUIRE PARTIES TO KNIT MEN'S wool socks for us at home, either with machine or by hand. Send stamp for information. The Canadian Wholesale Dis. Co., Dept. S., Orillia, Ont.

WANTED—GOOD GENERAL FARM HAND, wages \$35 per month and board. Apply A. Goodbrand, Valley Farm, Aldershot, P.O., Ont.

WANTED—THREE MARRIED MEN FOR dairy farm, twelve miles from Toronto, good milkers required, steady position. House, room, garden and wood supplied. State wages. Box "P", Farmer's Advocate, London, Ont.

FARM FOR SALE—100 ACRES, MORE OR less, in the centre of the dairy, canning and grain district of Prince Edward County. Good roads, rural mail and Bell telephone; convenient to town and village. Good proposition—\$2,500 will handle it. For further particulars apply to Dr. M. E. Branscombe, Box 25, Picton, Ont.

FOR SALE, A Buckeye Tile Ditching Machine in good condition. To be sold cheap. For information apply to A. Diemer, Woodslee, Ont.

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

The Wrong End Up.

It was while they were building the Panama canal. An excited Chinese laborer dashed into one of the foreman's tents.

"Oh, Mistler Boss!" cried the Mongolian, "Chung Li, him stuck in mud up to him ankles!"

"In the mud up to his ankles?" roared the boss. "Why the duce don't he get out?"

"Oh, Mistler Boss, him upside down!"

New York Times.

The Beaver Circle

Rhymes and Reason.

(From London Tit-Bits.)

When the English tongue we speak
Why is "break" not rhymed with
"freak?"

Will you tell me why it's true
We say "sew," but likewise "few,"
And the maker of verse
Cannot cap his "horse" with "worse?"
"Beard" sounds not the same as "heard;"
"Cord" is different from "word;"
"Cow" is cow, but "low" is low!
"Shoe" is never rhymed with "foe."
Think of "hose" and "dose" and "lose;"
And of "goose" and of "choose."
Think of "comb" and "tomb" and
"bomb;"
"Doll" and "roll" and "home" and
"some."

And since "pay" is rhymed with "say,"
Why not "paid" with "said," I pray?
We have "blood" and "food" and
"good;"
"Mould" is not pronounced like "could."
Wherefore "done," but "gone" and
"lone?"

Is there any reason known?
And, in short, it seems to me
Sounds and letters disagree.

Little Bits of Fun.

At the close of his talk before a Sunday school, the bishop invited questions. A tiny boy with white, eager face at once held up his hand. "Please, sir" said he, "why was Adam never a baby?" The bishop coughed, in doubt as to what answer to give, but a little girl, the eldest of several brothers and sisters, came promptly to his aid. "Please, sir," she answered smartly, "there was nobody to nurse him."

The day was hot, and the sleepy class found it difficult to concentrate its attention on its tasks, though the history mistress did her best to make the lesson interesting.

"Now, girls," said she at last, "can you tell me why the great man was buried in Westminster Abbey?"

There was a long silence.
At last a girl put up her hand.
"Because," she answered, solemn and impressively, "he was dead!"—
Tit-Bits.

Senior Beavers' Letter Box.

Dear Puck and Beavers.—I saw my other letter in print so I thought I would write again. I guess this is my third or fourth letter. It seems as if winter is soon coming. I will now tell you about the dog we used to have. His name was Dooly. He would beg. We would say "Speak" then he would bark. You could hold your leg up and say "Jump" He would jump over. He would stand on a chair and put his front paws up. I guess I had better close or the W. P. B. will get this. I hope the W. P. B. isn't hungry. I'll close with some riddles.

What have eyes, but cannot see?
Ans.—Needles.
What have ears and cannot hear?
Ans.—Corn.

What goes upstairs black and white and comes down red (read)?
Ans.—A newspaper.

JEAN BELL, Jr. IV., age 12.
Lambton Mills, Ont.

Dear Puck and Beavers.—My father has taken the Farmer's Advocate for as long as I can remember. I like reading the letters in the Beaver Circle, so I thought I would write you a little letter. I am going to tell you about a lecture and views which were given in the Presbyterian church. Subject: Florence Nightingale and Red Cross Work, in aid of the Red Cross Society, Tara." The views were beautiful. I tell you it made you feel almost in tears to see the poor soldiers suffering.

Some of the views were Florence Nightingale and her class of Red Cross nurses in the Crimean War, Lord Kitchener, King George V. and Queen Mary, the Red Cross nurses carrying wounded soldiers out of the trenches, and a lot of other views with a fine lecture on Red Cross work.

Well I think this is all for now.
I remain your loving Beaver,
Tara, Ont.
LILLIAN SPAVEN.

Dear Puck and Beavers.—I have been a silent reader of your Circle for a long time. I go to school every day and am in the fourth book. Our teacher's name is Miss Frasher. For a pet I have a black kitten called Blackey. I took three prizes at our Fall Fair. I think I will close as my letter is getting long. I will enclose some riddles.

As I was going over London Bridge I saw a ship-load of people and yet there wasn't a single person in it.

Ans.—Because they were all married.

Which is correct, the yolks of eggs are white or the yolk of eggs is white?

Ans.—The yolks of eggs are yellow.

I hope the w. p. b. is out visiting when this arrives.

R. R. No. 2, EVA SMYTH.
Pembroke, Ont.

P. S. I would like some of the Beavers (age 12) to write to me.

Junior Beavers' Letter Box.

Dear Puck and Beavers.—This is my first letter to your Circle. We have four miles to go to school. We drive in the winter and walk in the summer. My teacher's name is Miss Mona Hallingsworth. I go to school every day that I can. I will close with a riddle.

As I was going through a gate I saw a little green house, in the green house was a white house, in the white house was a red house, in the red house were a lot of darkeys.

Ans.—A watermelon.

I hope my letter will escape the waste paper basket.

Mindemoya, Ont. AGGIE SMITH.
Age 12 years, Sr. 11 class.

Dear Puck and Beavers.—I am very much interested in your Circle. My father has taken the Advocate as long as I can remember. I have a dog. He is a hunter, and I like to take him out hunting partridge. I like to read. Some of the books I have read are: Coral Island, Dog Cruso, Andy Gordon, Phil the Fiddler, etc. I will close with a riddle: A man went up a hill on Friday; he stayed a week and came back on the same Friday.

Ans.—His horse's name was Friday.

ROBERT BUSTEED, age 12.
Cross Point, Quebec, Canada.

Dear Puck and Beavers.—My father has taken "The Farmer's Advocate" for nearly three years. I like reading the letters of the Beavers and the riddles. I go to school every day. I am in third reader. For pets I have a little colt; her name is Bell. She is black, with a white spot in her face. I also have a kitten; it is a light grey.

I will close with a riddle.

What has four eyes and cannot see?

Ans.—Mississippi.
PEARL THUR, age 12.
R. R. No. 1, Elora, Ont.

Dear Puck and Beavers.—I have been interested in your letters to the Circle for a long time, so I thought I would join and write a short letter.

I live in the country near the Ottawa River. I have two brothers whose names are Arthur and Howard. Arthur is two years older than I am, and Howard is three years younger than I. We go to Sunday-school every week. We are practicing for a Rally Sunday. We have taken the Advocate for over twenty-five years, and feel as if we could not do without it.

I will close, as this is my first letter to your Circle.

WILLMINA C. HARRIS.
(Age 10, Book III.)
Gatineau Point, Que.

Gossip.

Pure-bred Stock Sale.

We wish to direct attention to the sale at Hanover on December 14. The stock of the late H. H. Miller of that place will be sold at public auction, as well as the farm and farm implements. Red Poll cattle and French-Canadian horses are included in the offering. The place is easy to reach by G. T. R. or C. P. R. See the advertisement in this issue and write to M. A. Miller, Hanover, Ont., for particulars.

Reducing Expenses

THE war has increased the cost of living. The housewife must, therefore, make her money go farther. By using a tea, like Red Rose, which is largely composed of Assam Indian teas, she can reduce her tea bills considerably. The rich Indian strength requires less tea in the tea pot.
In sealed packages only. Try it.



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.

BARRED ROCKS AND PEKIN DUCKS OF prize-winning stock, at right prices. Correspondence invited. Leslie Kerns, Freeman, Ont.

BRONZE TURKEYS, LIGHT BRAHMAS, S.-C. Black Minorcas, good breeders and exhibition birds. Also, bred-to-lay White Leghorns, at \$1 each. Chas. Gould, Glencoe, Ont., R. R. 1.

BRONZE TURKEYS—EXTRA LARGE, WITH heavy bone. Runner ducks, Brahmas, Spanish, Barred Rocks, Partridge, Wyandottes, White Leghorns. Rabbit Hound and Bull Terrier puppies. Bred right. Priced right. John Annesser, Tilbury, Ont.

FOR SALE—PURE-BRED MAMMOTH Bronze Turkeys. For particulars write Mrs. Jason Trickey, R.R. 2, Mallorytown, Ont.

FOR SALE—PURE-BRED MAMMOTH Bronze turkeys; prices reasonable. Write W. W. Hodgins, R.R. No. 4, Denfield, Ont.

FOR SALE—MAMMOTH BRONZE TURKEYS, heavyweights, bred from imported stock. Angus Beattie, R.R. 1, Wilton Grove, Ont.

MAMMOTH BRONZE TURKEYS, BRED from best imported stock; free from disease; large flock; satisfied customers. Order early and get first choice. Mrs. W. R. Armstrong, Newmarket, Ont.

ORDER NOW—UTILITY BARRED Plymouth Rocks—famous O. A. College bred-to-lay strain. Our motto, "Early Maturity and High Egg Production". Flock trap nested and breeders selected on production basis. A few extra choice cockerels, pullets and yearling cocks, for quick November sale. Males, three to five dollars; pullets, two dollars. Prices advance after December 1st. Walter H. Smith, Athens, Ont.

RINGLET BARRED ROCKS—IMPROVE THE laying abilities of your flock. Bred-to-lay strain, strong, healthy cockerels, \$2 each. Satisfaction or money returned. Coldham, Kingston, Ont.

WANTED—POULTRY AND EGGS, ETC. Will pay market price for first-class poultry, new-laid eggs and other produce. W. J. Falle, 39 Somerville Ave., Westmount, Montreal.

"We enjoy your valuable paper very much and would not wish to be without it even at a much higher rate."

SAYS J. W. ROULSTON, R. R. No. 5, HAGERSVILLE, ONT.

How do you feel about it?
(Send in your opinion for publication)

Volume Herd Bo Friesian in circ of the copy has It is a n over 1,50 of bulls 172,519, 307,054. Secretary Brattlebo

Volume

Volume Angus He A copy of carefully this office animals August, 1 bers from the pedig contains together tion and Address a of the Ar ers' Assoc

The

Robert writing t has the e vent ac columns:

"The V horns at Decembe important public kn largest in good wor Many of critical in bred from the best, substantia for the fe cow that foot; even are in calf a little c man that do not sell We have much befo price and beginning

Southe

The thi Ayrshire o of the Sou ers' Club Dec. 28, Tillsonbur that so Ayrshires great Jear and there closely re to the fa produced by Ayrshire Scotch T R. O. P. was purc There are cows due in the co richly bre enough fo ference si the breed of the Cl bidding" prospective fair and Secretary, for a cat ticulars r on that

Stu

Volume Stud Boo press and the Secre Calgary, number 2 2,112 to dexed, pri contains Percheron

Gossip.

Volume 34 of the Holstein-Friesian Herd Book, issued by the Holstein-Friesian Association of America is now in circulation. Through the courtesy of the Secretary, F. L. Houghton, a copy has been received at this office. It is a neatly bound volume containing over 1,500 pages. In it are the pedigrees of bulls numbering from 155,861 to 172,519, and of cows from 278,176 to 307,054. Address communications to Secretary of the Holstein Association, Brattleboro, Vermont.

Volume 26, American Aberdeen-Angus Herd Book.

Volume 26 of the American Aberdeen-Angus Herd Book is now in circulation. A copy of this edition, nicely bound, and carefully indexed has been received at this office. It contains the pedigrees of animals registered from February to August, 1916. The entries include numbers from 208,501 to 220,500. Besides the pedigrees of the animals, the volume contains names of officers for 1915-16, together with the organization, incorporation and by-laws of the Association. Address all communications to Secretary of the American Aberdeen-Angus Breeders' Association, Chicago, Ill.

The Hartin Shorthorn Sale.

Robert Miller of Stouffville, Ont., writing to "The Farmer's Advocate" has the following to say regarding an event advertised elsewhere in these columns:

"The Wm. H. Hartin sale of Shorthorns at Twin Elm, near Ottawa, on December 14th, is an event of great importance, much more than the general public know, for the herd is one of the largest in Ontario and it is a genuine good working herd of well-bred cattle. Many of them are bred to suit the most critical in Scotch blood, some of them are bred from milking strains that are of the best, and all of them are of the substantial kind that give good results for the feed that they consume. Every cow that is old enough has a calf at foot; every heifer and cow in the sale are in calf if old enough, or if they have not a little calf at foot. It will pay any man that can use some good cattle to be there, for the pure-bred cattle do not sell too well in that part of Ontario. We have never seen cattle worth so much before, and they are going up in price and value, for the scarcity is just beginning to be felt."

Southern Counties Ayrshire Sale.

The third annual consignment sale of Ayrshire cattle from the herds of members of the Southern Counties Ayrshire Breeders' Club is advertised for Thursday, Dec. 28, at the Imperial Hotel Stables, Tillsonburg. It is from this district that so many of the great producing Ayrshires of the day are coming. The great Jean Armour family originated here, and there will be much stock in the sale closely related to that family as well as to the famous Garclaugh family that produced the present world's champion Ayrshire cow, Garclaugh May Mischief. Scotch Thistle, the present 3-year-old R. O. P. Ayrshire champion of Canada was purchased at a former Club sale. There are a large number of fresh cows and cows due to freshen soon after the sale in the consignment. About 10 head of richly bred young bulls, most of them old enough for service, will be sold. The reference sires in the catalogue show that the breeding is very choice. The rules of the Club absolutely prohibit all "by-bidding" or "bidding-in" so that every prospective purchaser is assured of a fair and square deal. Send to the Secretary, John McKee, Norwich, Ont., for a catalogue and learn further particulars regarding what is to be offered on that day.

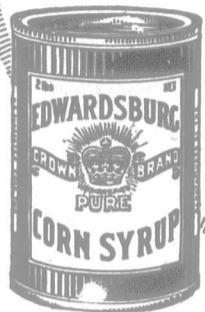
Stud Books Recently Issued.

Volume 2 of the Canadian Percheron Stud Book has recently come from the press and a copy received at this office from the Secretary-Treasurer, W. H. Willson, Calgary, Alta. Stallions in this book number 2,194 to 4,568, and mares from 2,112 to 4,545. Besides being well indexed, printed and compiled, the volume contains much information of value to Percheron breeders.

Give the "Kiddies"
All They Want of
**CROWN BRAND
CORN PURE SYRUP**



It is one of the delicious "good things" that has a real food value. A slice of your good homemade bread, spread with "Crown Brand", forms a perfectly balanced food, that is practically all nourishment.



So—let them have it on biscuits and pancakes, and on their porridge if they want it.

You'll like it, too, on Griddle Cakes—on Blanc Mange and Baked Apples. And you'll find it the most economical sweetener you can use, for Cakes, Cookies, Gingerbread and Pies.

Have your husband get a tin, the next time he is in town—a 5, 10 or 20 pound tin—or a 3 pound glass jar.

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MONTREAL, CARDINAL, BRANTFORD, FORT WILLIAM.
Makers of "Lily White" Corn Syrup—Benson's Corn Starch—
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Our new recipe book, "Desserts and Candies", will show you how to make a lot of really delicious dishes with "Crown Brand". Write for a copy to our Montreal Office.



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WHEN you buy Penmans Hose you get all those things to be expected from them, and a bit over. They wear just a little longer, look just a little better, feel just a little more comfortable.

Penmans make sox for every occasion. You can get the heavy article or the light one, with lots of weights in between. You'll find warmth, wear, comfort, and above all, the satisfaction of knowing you made a good investment when you bought them.

Next time, say Penmans——your dealer has them.



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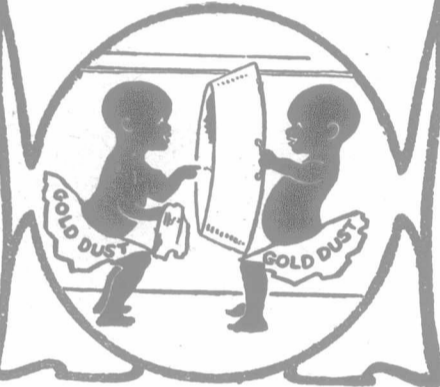


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Millions of housewives choose Gold Dust to clean and brighten everything. They know it does its work busily and thoroughly. It will do the same for you in your home.

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and in prime condition by supplementing the feed with LINSEED OIL CAKE, "Maple Leaf" Brand. With a trial ton order we will send you free, "The Veterinarian," a valuable book about the diseases of cattle.

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CATESBYS LIMITED, Canadian Office 119 West Wellington Street, Toronto Mention "Farmer's Advocate"

Questions and Answers.

1st—Questions asked by bona-fide subscribers to "The Farmer's Advocate" are answered in this department free.

2nd—Questions should be clearly stated and plainly written, on one side of the paper only, and must be accompanied by the full name and address of the writer.

3rd—In veterinary questions, the symptoms especially must be fully and clearly stated, otherwise satisfactory replies cannot be given.

4th—When a reply by mail is required to urgent veterinary or legal enquiries, \$1.00 must be enclosed.

Miscellaneous.

Girl's Wages.

1. Are all Canadian girls of age at 18 years old so that they can collect their own wages?

2. Will home girls come under the same law? or can some homes keep control of their girl's wages till the girls are 21 years old and collect?

Ontario. A SUBSCRIBER.

Ans.—1. Generally speaking, yes. There is a limit (\$100) to the amount they can sue for in the Division Court. This applies to all minors.

2. This depends upon various circumstances, and we are not given enough information respecting same to enable us to answer this question.

Paying for Insurance.

A insured his buildings in a Mutual Insurance Company giving a premium note. Had a fire shortly after, consuming a part of the buildings.

Insurance paid as soon as practicable. Barn was built and a new policy was issued by the same company, cancelling the remaining insurances, giving a rebate for the unearned premium for the unexpired term of insurance and receiving the corresponding premium note for the same.

About one year after fire, the company found it necessary to make an assessment of notes and made one on the present one held and also on the original note or rather on that portion of it affected by the fire. Was it just or legal to do so or should company have assessed the note on present insurance only?

Ontario. IGNORAMUS.

Ans.—We think that the company's course was legal and proper.

Blackhead in Turkeys.

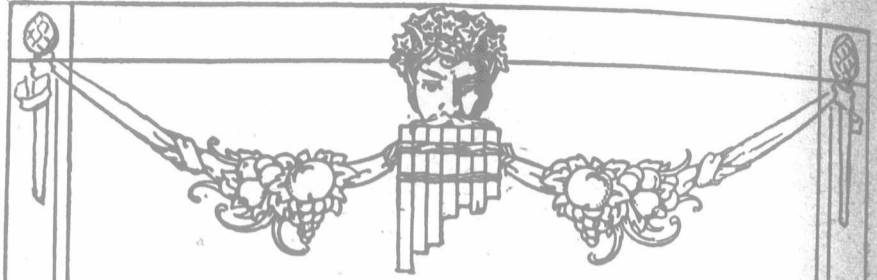
I had a fine flock of turkeys which did well until I started feeding them this fall. Up until a few weeks ago they gathered their own living, but since confining them to the yard ten have taken sick. They mope around, refuse food, do not go with the rest of the flock and the excrement is slimy, green and yellow. I isolate them as soon as I see they are sick and feed them by themselves. Two have died and the other eight do not look very promising. The feed consisted of a mash of oat, barley and wheat chop mixed with milk, in the morning, and whole mixed grain at night. What is the cause, and cure if any?

MRS. N. MCA.

Ans.—The symptoms are those of birds affected with blackhead, a disease which in most cases proves fatal, as treatment of diseased birds does not give very satisfactory results. One symptom of blackhead is not mentioned, that is, a darkening and swelling of the head. A post mortem of a victim of this disease usually shows the caeca, or blind pouches at the lower end of the small intestines to be thickened. The liver becomes enlarged and darkened, while scattered over its surface are distinct round spots, sometimes whitish or with a yellowish tinge. Starving the birds for forty-eight hours and then letting them drink from a mixture composed of a teaspoonful of muriatic acid to a quart of water has been recommended. Others recommend 5 grains of sulphur to one of sulphate of iron, or sulphate of iron one grain and salicylate of soda one grain. These remedies should be preceded and followed by a dose of Epsom salts or castor oil. Treatment should be given twice a day. Birds which are apparently healthy should be put on fresh ground. The germs of the disease, it is claimed, will remain in the soil for several years.

Gossip.

Attention is directed to the advertisement of Albert Mittelfeldt elsewhere in this issue. He is offering some Percherons, foals, one stallion and two imported mares.



If you are paying the duty from motives of patriotism, your course is commendable, but if you desire the most for your money, you are going the wrong way about it. In sound, in workmanship, in quality of wood, in finish, too, the Phonola offers you all that you can get in any foreign-made equivalent at a considerable reduction in cost. It has exclusive features: (1) The concealed crank, (2) Plays all disc records, (3) In different woods to match your furniture. Prices run from \$15 to \$250.



Phonola REGISTERED

Model Prince \$175

Send for free illustrated catalogue, and receive also a copy of our new catalogue of records.

Agents wanted in unrepresented towns. Our sales-promoting plans offer a splendid opportunity to responsible dealers. Write for details.

The Pollock Manufacturing Company Limited, Kitchener, Ontario

RAW FURS —WE BUY THEM—

Thousands of satisfied shippers say we give best and quickest returns. Good reasons: We pay highest market prices, give honest fair grading and send the money promptly. We charge no commissions and pay express and mail charges.

Trappers and Dealers write at once for free price list.

IT WILL PAY YOU TO SHIP TO US.

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147 West 24th Street, New York

PERCHERONS

Large stock to choose from. Stallions and Mares.

Stallions from two to seven years of age.
Mares from three to five years of age.
Everyone imported. Write for catalogue.

SEE OUR EXHIBIT AT THE GUELPH WINTER FAIR.

HODGKINSON & TISDALE, Beaverton, Ontario

ABERDEEN-ANGUS

We have a number of young bulls to offer at reasonable and attractive prices. At the recent Canadian National Exhibition, with 15 animals shown, we won 24 prizes, among which was Grand Champion and Gold Medal for best female of the breed. To insure prepotency of the right kind in your next herd bull, buy him from

Berkshire Swine, Shropshire and Southdown Sheep **Larkin Farms** Queenston, Ontario

For Sale

2 imported Clydesdale Stallions, one French coach and two Hackneys ranging in price from \$500 to \$1,200, on easy terms. All are show horses. Warranted sound and sure, good workers and quiet to handle.

HENRY M. DOUGLAS, ELMVALE, ONTARIO

Hillsdale Clydesdales

Highest Quality Richest Breeding

I am now offering a number of in-foal young mares from Imp. sires and dams, bred from Scotch and Canadian winners and champions for generations. They represent the highest standard of the breed's quality and breeding. B. Rothwell, Ottawa, R.R.1, L.-D. Bell Phone. Farm, 3 miles from city.

Clydesdales

We have still left some exceptionally good drafty stallions, ranging in age from one to eight years, prizewinners, including champions; also in-foal mares and fillies. There is a horse boom coming. Buy now.

SMITH & RICHARDSON, COLUMBUS, ONT.

Pear Lawn Clydesdales, Shorthorns, Improved Yorkshires & B.P. Rocks

Two nice young dual-purpose bull calves from one month to seven, from dams testing 4.01; also a choice lot of young sows of breeding age, and a fine lot of boars and sows rising four months, and a dandy lot of B.P. Rock Cockerels. All offered at selling prices.

Herbert J. Miller, Keene, Ontario, R.R. No. 1

DANGEROUS
as well as painful

Backache Neuralgia
Lumbago Rheumatism
Stiff Joints Sprains

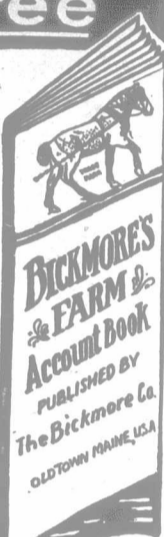
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WILL RELIEVE YOU.

It is penetrating, soothing and healing and for all
Bones or Wounds, Felons, Exterior Ouncers, Burns,
Blisters, Carbuncles and all swellings where an outward
application is required. CAUSTIC BALSAM HAS NO
EQUAL. Removes the soreness—strengthens the muscles.
Price \$1.00 per bottle. Sold by druggists or sent
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BUSINESS farming puts
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pages, for pen or pencil. Work-
men's Time Sheet and Wage
Table save a world of bother.



Bickmore's Gall Cure

is the standard remedy for
bruises, cuts, rope burns or any
wounds on horses or cattle.
Cures collar and saddle galls
while the horse works—no lost
time. Fine for curing sore teats
in cows. Heals mange and other
skin diseases. Note the work-
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Send today for Account Book
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A Winner Again—

Thanks to SAVE-THI-HORSE

Geers, Murphy, Cox and other famous trainers attest to the
remarkable cures made with SAVE-THI-HORSE.
Learn a lesson from them. Keep a bottle always on hand.
When you need it, you need it badly.

Save-THI-HORSE is sold with a Signed Contract-Bond to
return money if remedy fails on Ringbone—Thoropin—
SPAVIN or ANY Shoulder, Knee, Ankle, Hoof
or Tendon Disease.

FREE expert veterinary advice and sample of Guarantee-
Bond. Send today for our FREE 96-page BOOK. It's
our 21 years' experience in treating every known lameness.

TROY CHEMICAL CO., 145 Van Horn St.,
(Made in Canada) Toronto, Ont.
Druggists everywhere sell Save-THI-HORSE with
CONTRACT or we send by Parcel
Post or Express Paid.

Dr. Page's English Spavin Cure

Cures the lameness from Bone-Spavins, Side-
Bones, Ringbones, Curbs, Splints, etc., and
absorbs the bunched; does
not kill the hair,
absorbs Capped
Hocks, Bog-
spavins, thick
pastern joints;
cures lameness
in tendons;
most powerful
absorbent
known; guaran-
teed, or money
refunded. Mailed to any address, price \$1.00.
Canadian Agents—

J. A. JOHNSTON & CO., DRUGGISTS
171 King St. East, Toronto, Ont.

IMPORTED AND CANADIAN-BRED PERCHERONS

Present Offering—Two Imported mares, eight
years old, one stallion rising 5, two 1916 colts
about six months old, one filly, and one entire.
Write for further particulars. Come and see.
Albert Mittelfeldt, Wellandport, Ont.

Mention this paper

Questions and Answers.
Miscellaneous.

The Hares of Ontario.

How many kinds of wild hares are
found in Ontario? What are their names?
E. J.

There are in Ontario two species of
Hares, the Varying Hare and the Cotton-
tail. The former is often known as
Northern Hare, Snow-shoe Hare, Snow-
shoe Rabbit or simply as Hare in dis-
tinction to the Cotton-tail which is
mostly generally termed "Rabbit". The
Varying Hare is slightly longer than the
Cotton-tail and the hind foot is longer
than the head in this species, while
in the Cotton-tail the hind foot is not
longer than the head. The Varying
Hare turns white in winter, while the
Cotton-tail remains brown.

A. B. K.

Tuberculosis in Poultry.

I have a flock of well-matured, Barred
Rock chickens, which were fed on wheat
all summer. About a month ago they
commenced to get pale in the head
and to mope around with their feathers
ruffled. There is a watery, brownish
discharge. The birds are dying, and on
opening them I find all the organs
apparently healthy, with the exception
of the blind portion of the bowels which is
swollen and contains a brownish, frothy
matter. The birds appear hungry enough
and have been given different poultry tonics
in a mash of bran and middlings, but they
are getting thinner all the time. What
treatment do you advise?

A. M. McK.

Ans.—Some of the symptoms are
those of birds suffering from tuberculosis.
However, birds having this disease
frequently go lame and the liver and
spleen are usually covered with numerous
raised nodules of cheesy material. It
might be advisable to send a diseased
bird to the Bacteriology Department,
O. A. C., Guelph in order to determine
accurately the cause of the trouble.
If the birds are suffering from tuber-
culosis there is no known cure. All
birds showing symptoms should be
destroyed, and some go as far as to
state that the whole flock should be
eradicated, and the houses and runs
thoroughly disinfected. A number of
birds may appear healthy, which are
only infected to a slight degree. These
are carriers of the disease and it would
be difficult to build up a healthy flock
while these birds remain.

Feed for Bull—Cost of Registration.

I recently purchased a pure-bred bull
calf, five months old, which had been
running with the cow from birth. I
have plenty of good mixed hay, oat
straw and corn fodder for roughages;
a few roots, oats and bran, but no milk.
Do you think the above feeds sufficient
to bring him along to the best advantage,
or would it be advisable to supplement
them with something else?

2. What does it usually cost for
registering Shorthorn cattle?

J. D.

Ans. 1.—At five months of age the
calf should be ready for weaning and have
been accustomed to eating roughage
and concentrate feeds. Clover or alfalfa
hay would be preferable to mixed hay,
but when feeding oats and bran a calf
should do fairly well if it gets a liberal
supply of roots and corn fodder. Some
feeders advise mixing a little corn chop
with the oats and bran for a calf being
fed on clover hay. Some also advise
feeding about 2 pounds of grain daily
of a mixture of 40 pounds corn chop,
20 pounds bran, 20 pounds oat chop,
and about 40 pounds of linseed meal.
A little care will have to be exercised
at the start as the calf is almost bound
to lose a little; owing to being deprived
of whole milk.

2. To members of the Shorthorn
Breeders' Association \$1.00 is charged for
each registration of animals under twenty-
four months of age, and \$2.00 for animals
over twenty-four months. Non-members
over twenty-four months are charged
\$1.50 and \$3.00 respectively
for each registration. To members and
non-members certificates of registration
of transfer 25 cents each; duplicate
certificates 25 cents each; new certifi-
cates, replacing certificates of which ship-
ping vouchers have been used, 25 cents
each.



Every Farmer, Every Owner of Horses Should Use RED TIP HORSESHOE CALKS during the Winter Season.

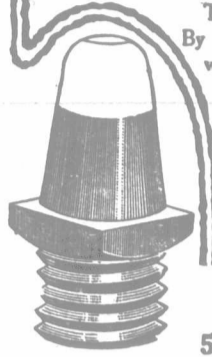
Whether your horse is a light roadster or a heavy draught horse there
is a calk made especially to fit his requirements. When worn down RED TIP
HORSESHOE CALKS can be removed and a new set inserted in twenty minutes.

They will not break off and instead of becoming dull will wear sharper with use.
By this method your horse is always sharp shod and you eliminate all the danger and
worry of Winter travel.

RED TIP HORSESHOE CALKS are cheap, easy to get, easy to put
on and will absolutely hold up any horse on any pavement or road, no matter how
slippery. They will save time, money and annoyance.

Go to your horseshoer today and have your horse fitted with RED TIP
HORSESHOE CALKS and remember that genuine NEVERSLIP
HORSESHOE CALKS ALWAYS HAVE RED TIPS.

Send for Booklet 4, which will tell you all about them



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The stock of the late H. H. Miller, consisting of registered
Red Poll Cattle—French-Canadian Horses

together with a full line of farm implements, including potato
machinery, will be offered for sale without reserve at

PUBLIC AUCTION

at the farm at Hanover, Ontario, at 10.30 a. m. and 1.00 p. m.

THURSDAY, DECEMBER, 14, 1916

The farm, immediately adjoining the town, will also be sold,
subject to reserve bid.

G.T.R., C.P.R.

For further particulars or
copy of sale bill, address: **M.A. Miller, Hanover, Ont.**

ORCHARD GROVE HEREFORDS

Have several young bulls and heifers for sale. Satisfaction guaranteed.

L. O. Clifford

Oshawa, Ontario

Elm Park Aberdeen-Angus

& Suffolks. Our cattle and sheep at the large fair
of Eastern and Western Canada this year have
won 154 first prizes and 19 champion prizes. Our
cattle have won 14 first prizes for herds out of a possible 18, competing with best Canada could
produce. We have stock of all ages and both sexes for sale. A strong lot of ram lambs.
JAMES BOWMAN. ELM PARK GUELPH, ONT.

BURNFOOT STOCK FARM

Breeders of high-record dual-purpose Shorthorns with a splendid conformation for beef.
Visitors welcome.

S. A. MOORE, Prop.

CALEDONIA, ONT.

Shorthorns

Pure Scotch and Scotch topped—Booth. Also five (5)
young bulls from ten to twenty months old, of the
low down, thick kind, good colors—reds and roans.
Prices reasonable.

G. E. MORDEN & SON, Oakville, Ont.

WILLOWBANK STOCK FARM SHORTHORN HERD

Established 1855. This large and old established herd has at the head the two great bulls: Imported
Roan Chief =60865=, a butterfly, and the prizewinning bull, Browndale =80112=, a Mina. An extra
good lot of young stock to offer of either sex. Splendid condition. Good families of both milking
strain and beef.
JAMES DOUGLAS. CALEDONIA, ONT.

SCOTCH SHORTHORNS

We are offering this fall the choicest lot of young herd headers we ever bred, several are of serviceable
age, high in quality, rich in breeding. Also a number of heifers.

GEO. GIER & SON,

WALDEMAR, R.M.D.

Grand Valley Sta.

IRVINEDALE SCOTCH SHORTHORNS

Our offering this year in Scotch Shorthorns is probably the best we have offered for many years, there
are several young bulls of serviceable age, right good ones and breeding the very best; also females of
any age.
JOHN WATT & SON, ELORA, R.M.D.

MEADOW LAWN SHORTHORNS

We are offering a splendid lot of young bulls from 10 to 18 months old, of the low-set, thick, fleshy
type from good milking dams. You are invited to inspect this offering.

Elora, R.R. No. 1.

F. W. EWING

Spruce Glen Shorthorns

When in want of Shorthorns visit our
herd. We have 70 head to select from,
Minas, Fames, Miss Ramsdens, Florences,
Emilys, etc. Many of them one and two-year-old heifers. Also several young bulls of breeding
age—level, thick, mellow
fellows and bred just right.
James McPherson & Sons, Dundalk, Ont.

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Cows and heifers in calf, or with calf at foot. Yearling bulls and bull calves. One of the best im-
portations of the year. You will be surprised when you see them.

WILL A. DRYDEN,

Maple Shade Farm,

Brooklin, Ont.

CREEKSIDE FARM SHORTHORNS

We have a couple of young bulls that are right and bred right. We also have a few show heifers.

GEO. FERGUSON,

SALEM, ONT.

Shorthorns, Shrops., Clydes.

If you want a good young bull, a promising
Stallion colt, or a young cow or heifer of Scotch
breeding and beef type, having dams eligible or
good enough for R.O.P.—Come, see, and satisfy
yourself and please the owner. Prices reasonable
that they may be sold. Visitors welcome.

Wm. D. Dyer, R. No. 3, Oshawa, Ont.

Brooklin, G. T. R., and C. N. R., Myrtle, C. P. R.

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Any person, however inexperienced, can readily cure either disease with **FLEMING'S FISTULA AND POLL EVIL CURE**—even bad old cases that skilled doctors have abandoned. Easy and simple; no cutting; just a little attention every fifth day—and your money refunded if it ever fails. Cures most cases within thirty days, leaving the horse sound and smooth. All particulars given in **Fleming's Vest Pocket Veterinary Advisor**. Write us for a free copy. Ninety-six pages, covering more than a hundred veterinary subjects. Durable, bound, indexed and illustrated. **Fleming Bros. Chemists** 75 Church Street, Toronto, Ont.

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Established 1858

MESSRS. A. J. HICKMAN, & CO., (late Hickman & Scruby), Court Lodge, Egerton, Kent, England. Exporters of **PEDIGREED LIVE STOCK** of all descriptions. Specialty made of draft horses, Beef and Dairy breeds of cattle, Show and Field Sheep. Illustrated catalogues and testimonials on application. All enquiries answered with pleasure. Now is the time to import, prospects were never better, and insurance against all war risks can be covered by payment of an extra 1% only.

ALLOWAY LODGE STOCK FARM Angus, Southdowns, Collies
—PRIZE BULL CALVES AND RAMS—
COLLIE PUPS

Robt. McEwen, R.R. 4, London, Ont.
BEAVER HILL ABERDEEN-ANGUS CATTLE AND OXFORD DOWN SHEEP. Bulls from seven to nineteen months old. Females all ages. Shearling ewes, ewe and ram lambs.
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FOR SALE OR EXCHANGE
Shorthorn Bull
Royal Warrant Imp. =86056= (113205)
Rosebud bred, son of the great Newton Crystal. Photo and extended pedigree sent.
H. M. VANDERLIP
Elmhurst Stock Farm Route 1 Brantford, Ont.

Glenfoyle Shorthorns
Large selections in females, all ages, bred from the best dual-purpose families. One extra choice fifteen-months bull, some younger ones coming on. Priced well worth the money.
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MILKING STRAINS—5 young bulls, 5 to 12 months, bred from record cows. Visitors welcome.
F. Martindale & Son, G.T.R. Caledonia, R.R. 3

MARDELLA SHORTHORNS
Bulls, cows, heifers. Have size, quality, breeding dual-purpose cattle over 40 years. Have great milkers and beefers. Glad to have you see them, or write—**Thomas Graham, Port Perry R.R. No. 3**
Spruce Lodge Stock Farm. Short-horns and Leicesters. Special offering of a choice lot of ram and ewe lambs, good type and well woolled; also my imported stock ram.
W. A. DOUGLAS, CALEDONIA, ONT.

Northlynd R.O.P. Shorthorns and Jerseys
Butterfly King 19th heads our Shorthorn herd; Edgley Prince Sunbeam heads our Jersey herd. For sale, a few young heifers and bulls, the get of these great bulls, out of high record cows.
G. A. JACKSON, Downsview, Ont.

Mention this Paper

Questions and Answers.
Miscellaneous.

Weight of Bushel of Turnips.
What is the legal weight of a bushel of turnips at the present time?
J. S. S.
Ans.—Fifty pounds per bushel.

Weight of Bag of Turnips.
What is the standard weight of a bag of turnips.
T. A.
Ans.—Seventy-five pounds.

Trussing a Dressed Chicken.
How is a dressed chicken tied up for market?
J. R. A.
Ans.—While the carcass is still warm, draw the legs up tightly against the breast bone so that the hocks fit closely together at the back of it. Lay the carcass on its breast and place a light weight on the back to shape it. The wings are laid over the back. A cord is attached to one foot and is brought up in front of and under the left wing, is crossed over the back to the right at the rear of the body, and is passed under the bird in such a way that it crosses over the hocks immediately back of the breast bone, and is brought to the back on the left side and passed under the right wing, in such a way that the legs and wings are firmly held to the body.

Feed for Milk Cows.
I am feeding each of my cows twice a day, one bushel of oat and wheat chaff; 3 lbs. of oat chop; 3 lbs. bran, and all the good, well-cured timothy hay they will eat. They receive salt with each feed and are watered twice daily. What should I add to balance this ration?
A. P.
Ans.—It is not stated just what amount of milk the cows are giving. Many feeders regulate the amount of concentrates by the amount of milk—three or four pounds to one of milk, being a rule frequently followed. Your ration contains a considerable quantity of concentrates which are suitable for milk production, but, in order to get the best results from the cows, they should have a little succulent feed such as roots, or silage. Timothy hay is not considered to be a milk producing feed. It is low in the nutrients which go to produce milk and is usually considered more expensive feed than clover or alfalfa. The ration which you have been feeding has a nutritive ratio of about 1:8.3, that is providing 15 pounds of timothy hay are fed per day. This is rather too wide a ratio for milking cows. It would give better results with feeding cattle. By adding 2 lbs. of cottonseed meal, a substance which is rich in protein, the ratio would be 1:6, which is fairly satisfactory, although dairymen feed even a narrower ration than this to heavy producing cows.

Preparing Land for Spring Seeding.
I have a farm that has been rented, but the tenant has done no plowing this fall. There is about eight acres that was well manured and worked last spring for roots, but, on account of the dry weather, practically nothing was grown on it. It is a clay-loam soil and is in good heart. I have a large disc and a cultivator which I work with four horses and was thinking of going over the ground with these implements instead of the plow this fall. Would this treatment put it in good tilth for barley next spring. There is about fifteen acres on the same farm that grew oats and barley the past year. It is fairly clean. Do you consider the disc or cultivator would put this stubble land in tilth for flax next spring? When is the proper time to sow flax? Is it advisable to sow grass seed with the flax?
A. C. A.
Ans.—Provided the root ground is clean and the soil is not too heavy, thorough working with disc or cultivator in the spring should make a good seed bed. We would prefer plowing the stubble land, but fairly good results may be obtained by a thorough use of the implements mentioned. Flax is usually sown as soon as the seed bed can be prepared in the spring. It is not advisable to sow grass seed with flax.

55 SHORTHORNS

will be sold by auction, on

Thursday, the 14th Dec., 1916

AT TWIN ELM, BY WM. H. HARTIN

Twin Elm is about 20 miles from Ottawa. It is a flag station on the C.N.R., and the morning train from Toronto will stop on morning of sale. The morning train from Ottawa will be met at Stittsville, and the Electric cars from Ottawa will be met at Britannia, both places at 11 a.m.

This is a big sale of good cattle, in nice breeding form, many of them of the best Scotch breeding, all of high-class blood. The best of sires have been used, and the uniform excellence of the whole herd shows the benefit of such a policy.

The crop of calves this year shows the results that are being obtained, and such results have been an annual event.

You will be surprised to see such cattle in such numbers, they will be sold without reserve, and you will have six months' time to pay for them.

Captain T. E. Robson, Auctioneer

Write Wm. H. Hartin, Twin Elm, Ontario, for catalogue.



Individuality

The chief characteristic of a sire is firmly implanted in all our bulls. Some of the best herds in America to-day are headed by bulls bred by us. We have them out of champions, by champions, and champions. Come to us to get a sire if you want to pick from the best in the country to-day. We have them from two hundred dollars up.

A. F. & G. AULD

A. GORDON AULD, Owner

FIELD MARSHALL = 100215 = the calf of 1915, sold June 7, 1916, for \$3,775.
Arkell Station, R. 2, Guelph, Ont.

Escana Farm Shorthorns

FOR SALE: Two imported bulls, proven valuable sires; 12 bulls, 10 to 20 months old, all by Imp. sires and from high-class dams; also for sale 20 heifers and young cows, several with calves at foot, all of very choicest breeding and especially suitable for foundation purposes.

MITCHELL BROS., Mail orders a specialty. Satisfaction guaranteed. **BURLINGTON P.O., ONT.**
Jos. McCrudden, Manager. Farm ¼ mile from Burlington Jct.

Shorthorn Bulls---Shorthorn Females

A HERD THAT YOU WILL LIKE

You will like our females; you will like the breeding and you will like the sires that have been used on these in the past year. Right Sort (Imp.), Bandsman (Imp.), Newton Friar (Imp.), Lytton Selection, Escana Champion,—all these bulls have been used in the past year. We can show you some young bulls by these sires that are show calves. Come and see them or let us send you particulars. We can also spare some females bred to them; heifers, four and six year-old cows, as well as cows with calves at foot.

WM. GHENT & SONS, FREEMAN P.O., ONT. Farm, 300 yds. from Burlington Jct., G.T.R.

Robert Miller Pays the Freight. I have now ready for sale, some extra choice young bulls of known to me, and of good form as well. I have some young cows and a lot of heifers, all that are old enough are in calf to great sires, amongst them some of the best in both breeding and form that I have ever had.

I have several cows that have made wonderful records, others are in the making; will spare a few of them if desired, two cows in the lot are making records of over 13,000 lbs. milk that is rich in butter-fat. These cows are well bred and they are the ideal dual-purpose type. The bulls are bred from them and their sisters.

Write for what you want and you will get an immediate reply with full particulars. **Stouffville, Post Office, Telephone, Telegraph and Station. I live near station. Robert Miller, Stouffville, Ont.**

ROYAL BREEDING SCOTCH SHORTHORNS HIGH-CLASS TYPE

of high-class, fashionably-bred Scotch Shorthorns in calf to Sittytan Sultan's Dale, a Mina-bred son of Avondale, dam by Whitehall Sultan, is of interest; come and examine my offering.
A. J. HOWDEN, COLUMBUS, ONT. Myrtle, C.P.R., Brooklin, G.T.R.

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 SHORTHORNS 51 to select from. 20 breeding cows and as many choice heifers, many of them bred, also a lot of choice young bulls, all of the dual-purpose strain. All sired by choice bulls and registered and offered at prices to live and let live.

JOHN ELDER & SONS, HENSALL, ONT.

Scotch Shorthorns, Yorkshires and Oxford Downs

Our Shorthorns are of the most noted Scotch families and the Scotch (imp.) bulls, Joy of Morning (imp.) = 32070 =, Benachie (imp.) = 69954 =, and Royal Bruce (imp.) = 80283 = have been used in succession. Two choice bulls of breeding age and heifers for sale. Also sheep and swine.

Erin Station, C.P.R. L.-D. Phone. GEO. D. FLETCHER, Erin, Ont., R.R. 1

IMPORTED SHORTHORNS 40 more imported Shorthorns have arrived home from quarantine. We now have 18 heifers in calf and 19 cows with calves at foot, also a few good imported bulls. They are all good individuals and represent the choicest breeding.

We can meet visitors at Burlington Jct. at any time if notified. **FREEMAN ONT.**

J. A. & H. M. PETTIT.

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.

PLEASANT VALLEY SHORTHORNS

Special Offering:—Several young bulls from 7 to 16 months, sired by Loyal Scot (Imp.) and from our best breeding females. You will like these, and we could also spare a few choice females bred to the same sire.
GEO. AMOS & SONS, Moffat, Ont. (11 miles east of Guelph, C.P.R.)

100 Buys the Strongest Halter made Have the best and save!

(\$1.85 West of Ft. William.)
Once let a young colt pull out of a halter and he learns a bad habit. Nothing will hold him as surely as a Giant Halter. The harder a horse pulls on this Giant Halter the tighter it holds. He can't break it.



GRIFFITH'S Giant Halters

Go to your dealer and see the Giant Halter and you can see the strength in it—well stitched double harness leather or russet belting—and 1/2 inch hard tested rope. You can see why it holds—and you can see why it wears so well. The next best halter you will see will cost you \$2.00. You can buy two Giant Halters for that money.

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ABSORBINE

will remove them and leave no blemishes. Reduces any puff or swelling. Does not blister or remove the hair, and horse can be worked. \$2 a bottle delivered. Book 6 K free.

ABSORBINE, JR., the antiseptic liniment for man and horse. For Boils, Bruises, Old Sores, Swellings, Varicose Veins, Verruocities, Allays Pain. Price \$1 and \$2 a bottle delivered. Will tell more if you write.
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Ship your cream to us. We pay all express charges. We supply cans. We remit weekly. We guarantee highest market price.

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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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"KING SEGIS PONTIAC DUPLICATE" is a son of "King Segis Pontiac" sire of more high-priced bulls than any other in U.S.A. "King Segis Pontiac Alcarra" \$50,000, "King Segis Pontiac Knigeton" \$35,000, "King Segis Pontiac Count"—all 3/4 brothers to "Duplicate" and "King Segis Pontiac Chicago", sold for \$20,000 at 6 mos. old is half brother. Duplicate's dam is by King of the Pontiacs, having made 21 lbs. butter at 2 years and 17,500 lbs. milk at 2 years, and is sister to two 40-lb. cows (one 44-lb.), seventeen 30-lb. cows; also sister to 185 A. R. O. cows, a showing made by no other bull, living or dead. One of Duplicate's first-tested daughters is Queen Pontiac Ormby, the first heifer in Canada to give 600 lbs. of milk in 7 days and her 60-day record of 4,701 lbs. milk and yearly record of 688 lbs. butter, 18,346.2 milk, stamp her as one of Canada's best. Write and get a brother of this great heifer for your next sire. **R. M. HOLTBY, Port Perry, Ont.**

We Have Several

Holstein Bulls

fit for service, and calves representing high producing strains.
F. R. Breckon, Merton, Ont.

Questions and Answers.
[Miscellaneous.]

Cow with Scours.

I have a cow with scours, she has been that way since last spring. For the past two weeks she has lost flesh very fast and is now looking very bad. She eats just as much as the rest of the cows and is just as strong, but she craves for salt. I have been giving the cows salt in a box in the yard and she would eat it by the mouthful. Just lately I have not given her any but it makes no difference. I have been giving her 2 tablespoons of prepared chalk in a little water twice a day. Will you give me your advice?

SUBSCRIBER.

Ans.—The scouring is no doubt caused by an abnormal condition of the system. An excessive amount of salt will cause scouring, and possibly the trouble has become chronic and will require some time to correct. It is not stated what the stable feed consists of but it is advisable to feed dry stuff for a short time. The prepared chalk should aid in curing the trouble. Evidently there is some irritant in the system which must be gotten rid of before a complete cure can be effected. Give a pint of linseed oil for several days and if the action of the bowels does not cease give 2 tablespoonfuls of powdered alum and 2 tablespoonfuls of ginger in a quart of milk once or twice a day until the disease moderates. Ten tablespoonfuls of castor oil and 4 tablespoonfuls of laudanum mixed with a gruel and given as a drench is also recommended.

Farm for Poultry Raising.

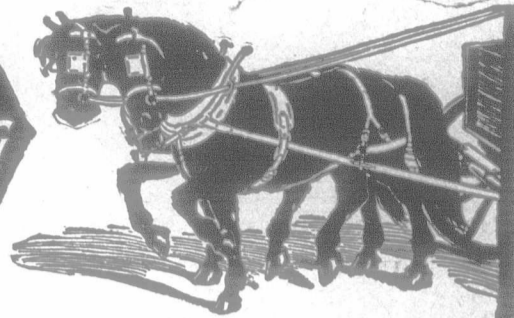
I am considering renting a farm of about 30 acres. I want to grow enough grain to feed about 1,000 hens. At present I am working in the city, and thought if I planted equal acreage of oats, corn and wheat I would get sufficient feed for the number of hens mentioned. I am figuring on keeping my job in the city until the grain is ready to use; in the meantime I would have to buy what feed is necessary to raise the growing chicks. I was talking to a man who just gave up 200 acres, and he says he would not think of taking such a small place, but how is a person going to get a start? Does everybody start farming on a large scale like that? I have a liking for farm work and want to get at it. The place I am thinking of is eight or ten miles from the city, but I can live there and come in to the city to work. Do you consider \$200 or \$300 per year too much for a place the size mentioned with a fair house and barn on it?

SUBSCRIBER.

Ans.—Many people make a start at farming on an even smaller acreage than you are thinking of, but of course they go in for special features such as poultry, fruit, or truck gardening. The bulk of the feed could be grown, although the crop will depend a good deal on the nature of the soil and the season. Oats, corn and wheat generally comprise the grain ration for poultry. There will also need to be green feed for the winter, such as roots or cabbage. The number of hens mentioned will require considerable yard space. The feed required for mash will necessarily have to be purchased. We see no reason why a man should not make a success on 30 acres if he grows the crops that his farm is adapted for, and is able to handle a large flock of chickens. That is pretty high priced land. From 50 to 100-acre farms with good buildings on them can often be rented for \$3.00 or \$4.00 per acre depending on the location. The taxes would have to be added to this. The closer one gets to the city, the more expensive land becomes. It is no more than the rent of a house in the city which brings the rent for the land very reasonable.

P. A. McIntyre, of Parkhill, Ontario, a breeder of Lincoln, Dorset and Cheviot sheep writes that this has been a banner year for the sheep business. Among his American sales was the first-prize Lincoln ewe at Columbus this year, which went to Xenia, Ohio. A two-year-old Lincoln ram, reserve champion at the same show, went to DeGraff, Ohio. Four ewe lambs were sold to Ohio University and two yearling rams and four ewes went to Irwin, Ohio. A number of sales were also made in the States of Michigan, Wisconsin and Montana.

KEEP YOUR HORSES IN PRIME WORKING CONDITION



SOUND legs pull big loads. No horse with a Spavin, Splint, Curb, Ringbone, Bony Growth or Sprain, can do itself justice. Thousands of horsemen have been keeping their horses sound by using Kendall's Spavin Cure—the old reliable, safe remedy. Mr. Maurice Wayville, Amherstburg, Ont., wrote on April 20th last—"I cured a jack spavin with two bottles of your Spavin Cure. I am just taking off a bog spavin. It is the best liniment for sprains you can get for man or beast. I would like to have a copy of your 'Treatise on the Horse'."

KENDALL'S SPAVIN CURE

acts quickly, leaves no scars or blemishes, and costs little—\$1. a bottle—6 for \$5. Get our valuable book—"Treatise on the Horse"—free at your druggist's, or write us 111
Dr. B. J. KENDALL CO., ENOSBURG FALLS, VERMONT, U.S.A.

OLD RELIABLE SALE AT WOODSTOCK

PURE BRED

60 HOLSTEINS 60

SIXTH CONSIGNMENT SALE

55 FRESH MILKERS AND SPRINGERS, & 5 CHOICE MALES, AT

Woodstock, December 13th, 1916

In this sale will be the best blood of the breed. A great many in R.O.M., winners in dairy tests and show-ring. No by bidding, no protection. All inspected, and easy terms. Write the Secretary for a catalogue.

W. E. Thomson, Secretary, Woodstock, Ont.

Moore & Dean, Auctioneers

100% Healthy



Records show that in barns and stables which are regularly disinfected with Zenoleum, not one single case of disease has appeared. This great-Cool Tax Disinfectant is SAFE, SURE and CHEAP. It kills lice, mites and fleas. Used as a spray inside Houses, Barns, Stables, Piggeries, Poultry Houses, etc., it destroys germs and thereby PREVENTS DISEASE. Used by Dominion Experimental Farm at Ottawa, at Guelph, and by 50 Agricultural Colleges in Canada and United States. No danger of fire or poison. Ask your dealer for ZENOLEUM when you want a reliable, safe, powerful and economical Disinfectant. Write for Booklet. Your dealer can supply Zenoleum. \$1.50 gal. makes 80 gals. dip. Sample, 25c.

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MADE IN CANADA

ZENNER DISINFECTANT CO., WINDSOR, ONT.

35 LB. BULL FROM THE HET LOO HERD

(His dam and sire's dam average 35.55 lbs. of butter in 7 days)
3 months old and a show individual. Sire, Avondale Pontiac Echo, a son of the famous May Echo Sylvania, World's champion milk cow; Canada's first 40 lb. cow. Dam, Roxie Concordia, 80.02 lbs. butter; 676.5 lbs. of milk in 7 days.
We also have a 17 months' bull by King Pontiac Artis, Canada, and out of a 25 lb. sister of the great May Echo. Another, same age by Dutchland Colantha Sir Mona, and from the noted 25 lb. show cow, Cherry Vale Winner. Come and see these, you will like them.
Gordon H. Manhard, Sup. W. L. Shaw, Newmarket, Ont.
Stops 69 Young St., Toronto and York Radial Cars.

HOLSTEIN CATTLE

Our present offering is a bull born February 1916. Dam gave 106 lbs. milk a day, sire's dam 116 lbs. a day. Nicely marked and a show bull. We make a specialty in foundation stock.
D. C. FLATT & SON, R. R. No. 2, Hamilton, Ontario

DUMFRIES FARM HOLSTEINS

Think this over—we have 175 head of Holsteins, 50 cows milking, 25 heifers due to calve in the fall and 60 heifers, from calves up to 2 years, as well as a dozen yearling bulls, and anything you may select is for sale. Breeding and individuality the very best. **S. G. & Eric Kitchen, St. George, Ont.**

Hospital for Insane, Hamilton, Ont.

Holstein bulls only, for sale. One fit for service from a R. of P. dam, testing 4.08 per cent. butter-fat; also four ranging from three to nine months, all from our Korndyke bull. Apply to Superintendent.

30-LB. GRANDSON OF KING SEGIS

Two years old. The records of his dam, granddam and her full sister average 30 lbs. Mostly white, long, straight, evenly developed—very smooth and stylish. A real promising individual, weighs over fifteen hundred pounds, price two hundred dollars, on car Toronto.
R. F. HICKS, Newton Brook, York Co., Ont.

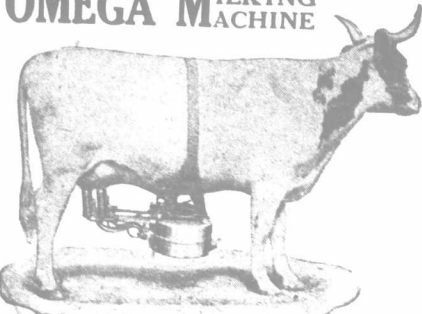
PIONEER FARM HOLSTEIN HERD

Of long-distance record makers, the kind that milk heavy and test around 4 per cent. the whole year. Of the six highest butter-fat-record two-year-olds in Canadian R.O.P., one half were bred at Pioneer Farm. Young bulls for sale from dams of the same breeding as these and sired by Canary Hartos, whose three nearest dams average 30 lbs. butter in 7 days and 108 lbs. milk in one day.
WALBURN RIVERS, R. R. No. 5, INGERSOLL, ONT. Phone 343 L. Ingersoll Independent

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Special Offering—3 heifer calves 6 to 11 months, sired by King Veeman Ormsby. Several fine bulls from cows with records of 29.20 lbs., 27.96 lbs. and 20.79 lbs. butter in 7 days, and from a 18.69 lbs. jr. 2-year-old. Write, or better, come and see them.
JAS. G. CURRIE & SON, (Electric car stops at the gate) INGERSOLL, ONT.

OMEGA MILKING MACHINE



Milks Fast and Clean

Has no rubber connections for the milk to pass through, but transparent celluloid tubes. The OMEGA is simple to operate, sanitary and easily washed. It is used in the private dairy of H. M. King George V. at Windsor Castle. Increased the milk flow 3% in a 17-day test on ten cows at the O. A. C. Guelph.

WRITE TO-DAY for free booklet describing the exclusive features of the OMEGA and the above test.

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Cotton-Seed Meal

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Write for prices to-day

We are buyers of Oats, Barley, Buckwheat, Goosewheat, Corn, Beans, Hay, Straw, etc.

Crampsey & Kelly
Dovercourt Road, Toronto, Ont.

AYRSHIRE
Sires are Prepotent

as herd headers. If you have a herd to grade up, you cannot do better than select an Ayrshire sire from high-testing, heavy-producing stock. There is an insistent demand for milk of higher food value than we are producing at the present time. Ayrshire blood will raise the fat test of your herd.

THE CANADIAN AYRSHIRE BREEDERS' ASSOCIATION

W. F. STEPHEN, Secretary
Huntingdon, Quebec

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Upward
Sent on trial. Fully guaranteed. Easy running, easily cleaned. Skims warm or cold milk. Bowl a sanitary marvel. Shipments direct from Winnipeg, Toronto and St. John. Whether large or small dairy, write for handsome catalogue. Address: Box 5,200
American Separator Co. Bainbridge, N. Y.

Harab-Davies Fertilizers

Yield Big Results

Write for Booklet.

THE ONTARIO FERTILIZERS, LTD.
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HE IS LESS DANGEROUS.

Eliminate the danger and increase the value of the young bull by dehorning him. The most successful dairymen, drovers and shippers use and recommend the **KEYSTONE DEHORNER** as the most efficient instrument for the purpose. Write for booklet.

B. H. McKenna, 219 Robert St., Toronto.

YOU CAN ASSURE YOUR FAMILY A MONTHLY INCOME FOR LIFE

or assure yourself an income during your old age by means of an

Imperial Monthly Income Policy

Write for particulars now and mention the Farmer's Advocate. Address:

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Head Office: TORONTO

JERSEY BULLS. For sale—Knoolwood's Raleigh, sire Fairy Glen's Raleigh (imp.), 22 daughters R. O. P.; dam Eminent Housymoon (imp.) R. O. P. 596 lbs. butter; reserve champion on island. Capt. Raleigh ready for service, sire Knoolwood's Raleigh, dam Mabel's Post Snowdrop; first as calf, 1914, first Junior Champion, 1915, 2nd 1916, Toronto. Milked 38 lbs. day, 6 per cent. milk, first calf. Ira Nichols, Burgessville, Ont. R. R. No. 2.

Please mention "The Advocate."

Questions and Answers.
Miscellaneous.

Electrical Engineering.
Where can I secure a book on electrical engineering? Could you give me the name or names of schools for this work?

Ans.—A book on electricity for the farm can be secured through this office for \$1.50 and one on electricity on the farm, for 85 cents. This subject is taken up in technical schools and in universities. Engineering is specialized in at the Toronto School of Practical Science.

Dorset Horned Sheep.
Could you give me any information about the Dorset sheep? What quality and amount of wool might I expect from them, also what weight of lamb? Are they prolific? Would you recommend them for a hilly farm?

W. N. L.
Ans.—Dorsets are medium to heavy in size compared with medium-wooled breeds. Rams will weigh around 225 lbs. and ewes 160 lbs. Occasionally they go considerably heavier. The meat is of fair quality especially that of the lambs. The lambs grow rapidly and if well fed can be placed on the market at an early age. The breed does fairly well in confinement. In certain tests lambs have made a daily gain of about one-half pound per day. Ewes produce lambs twice a year if desired and frequently give birth to twins and triplets. It is one of the most prolific breeds. Mature rams will shear about 9 lbs and ewes 6 lbs. of unwashed wool. The quality of staple is of medium grade. The breed is adapted to level or slightly rolling lands where there is plenty of feed. They will thrive on hilly land provided there is plenty of pasture. Single lambs weigh around 10 lbs. at birth and twins around 8½ lbs.

What Shall We Burn?

EDITOR "THE FARMER'S ADVOCATE":
"Yes, hard coal will be \$8.50 this winter, and may go to \$9.00. Too bad—the Trust, you know. Better order ahead, for it's not coming along very well."

This is the information that is being handed out by retail coal dealers all over Ontario. Why do we resent so bitterly every advance in the price of coal? It has not jumped in anything like the same ratio as butter and eggs. The reason is that experience has shown that every advance in the last twenty years has been rigidly maintained, and there is no way of escaping the toll of the Coal Barons. Eggs may be fifty cents in winter, but we can get along without eggs in the meantime, knowing that the old reliable farmer's hen will cluck down the price by next Easter. Even the price of butter may soften, and the steer that produces the cheap cuts may not be altogether extinct. But hard coal—there is no give to the price of that. It is getting altogether beyond a joke.

The history of domestic fuel in Ontario is brief: Up to about 50 years ago every-one burned wood; and as wood became scarce and dear it was replaced by hard coal, with gas for cooking, where available. When anthracite first came into Canada in quantities it was retailed at fair prices—probably as low as \$5. Wood fuel was a strong competitor, even in cities, up to thirty years ago. In the middle '80s Toronto was dotted with wood yards, and users were slow to change to coal, because it means a new outfit of stoves. The fact is that for a long time the producers of hard coal were very glad to get business, and Canada, with its long, cold winters, offered a tempting market. To get the stuff here was one thing, but to get people to use it was another. It is a matter of history that the man who first sold hard coal for domestic use in Pennsylvania was put in jail for obtaining money under false pretences. Customers proved that the stuff would not burn—which was no doubt true if they tried to burn it in an open fire-place. The first successful hard coal stoves were simple cylinders, lined with fire-brick, set above a stone hearth. It was some time before stove-makers hit the idea of making a closed ashpit. And for a long time after the use of hard coal was well established there was no

Old Dutch

quickly and thoroughly cuts milk clots and scummy accumulations from milk pans and pails—No greasy film left on the article cleaned.



Better - Cheaper POWER

A Gilt-edged Investment

No outlay you could make toward the betterment of your farm could bring you better returns on your investment than the money you will put into a Page Engine. Whether you select a Page Gasoline-burning Engine or the more economically inclined Page Engine that burns Kerosene, you are certain to find an undreamed-of reduction in the cost of operating your farm machinery. And compared with any other engine we've ever seen at work, we know that the Page will reveal a power capacity and dependable, easy-to-operate simplicity that will "open your eyes." There really are no other engines that begin to compare with Page Engines in sheer downright value.

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on **Thursday, December 28th, 1916** at 1 p.m.

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better way of burning it than in a stove of this sort—a heavy, brick-lined cylinder, technically called a surface heater. The base burner and the hot air furnace, as we know them to-day, are distinctly of our own time. The earliest base burners were given to sulking and throwing out gas, which is deadly. These defects were due to imperfect construction, with loose joints, and in some cases, to bad chimney connections. But the chief cause of unsatisfactory working was the flat grate, which was used even on large furnaces, and tended to choke with ashes and clinkers.

Whoever has shaken down an old, flat-grate furnace will not forget the experience. The performer doubled himself into a drunken question mark, and inserted a ponderous shaker bar in a particular slot, which always showed a tendency to secret itself out of sight. Having made the connection the whole grate was swung to and fro, enough force being expended to move the outfit to the next floor above. Then followed a little fancy work with the poker, much dust being evolved, and after all the furnace might burn up pleasantly—or not. Very conscientious people used to put the ashes through a sifter, and pick out the cinders by hand. But why revive memories of such things? The duplex or triplex shaking grate, applied even to small ranges, has wiped out all these troubles, and incidentally insured such good combustion that the cinder sifter is now a relic. Gas-tight joints and a general type of mounting equal to boiler-making have turned the hard coal stove or furnace into a remarkably perfect appliance—the cleanest and most easily managed heater in the world. And the anthracite coal monopolists have calmly capitalized all the improvements in stove-making, and jacked up the price to the limit. We may as well remember, however, that hardwood, hard coal and gas are the finest domestic fuels obtainable anywhere. We have accustomed ourselves to the best of everything in this line, and plenty of it. No European country enjoys these things to the extent that we do, and the time is coming when we may have to learn a few new tricks.

There is no perfect substitute for hard coal, which can be used in existing stoves in exactly the same way. Gas coke is a good make-shift, for furnaces of generous size, but it does not lend itself to making small fires. But there is very little gas coke available, most of it being utilized by the gas companies themselves. Foundry coke can be imported for six or seven dollars a ton, but it comes in large, irregular lumps, and is burned very hard to stand up under the stress of charging a cupola. Probably coke makers could supply a softer grade, suitable for domestic use, but just now they are hard pressed to fill orders for industrial purposes. Natural gas can be led into any existing stove or furnace, special burners being fitted, but the supply is purely local, and at thirty cents a thousand it costs about as much as hard coal at \$8 a ton. The advantage is in the saving of attendance, but on the other hand natural gas is rich in sulphur fumes, which blacken silverware, attack piano wires, and nothing but solid cast iron will stand up against them. For these reasons it is not altogether popular where available, especially as the pressure always runs down in cold weather, making it necessary to keep auxiliary heaters ready for use. Wood fuel is still in good supply on farms and in some rural districts, but is no longer shipped for city trade, except in small lots. Oil fuel is said to have a great future, but its present domestic use is limited to kerosene. Probably if ever it became a dominant factor in the situation the best way would be to distribute it as gas. This rapid survey leads to the conclusion that the only fuel which is cheap and plentiful, and can be delivered anywhere by ordinary means of transportation, is soft coal.

All the average housekeeper knows about soft coal is that it is dirty, smoky stuff, suitable for burning in a grate, where it makes a pretty fire. The price is a trade secret. Cannel coal, a fancy variety sold for grates, generally retails at about the same price as hard coal. Dealers naturally want to make as much as they can, and by keeping up the price avoid unpleasant comparisons, especially as a grate fire is considered to be a luxury.

Good steam coal, from Pennsylvania or Virginia, is now quoted at from \$4 to \$4.50 a ton, in car loads delivered in

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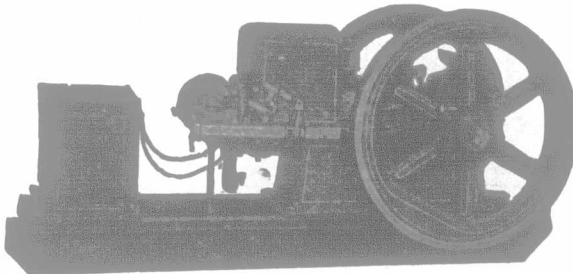
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Young stock, either sex, for sale from our imported sows and boar. Also some from our show herd, headed by our stock boar, Ringleader. Terms and prices right. John Weir & Son, Paris, Ont. R.R. 1.

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Sunnyside Chester Whites and Dorsets. In Chester Whites we have both sexes, any age, bred from our champions of many years. In Dorsets we have ram and ewe lambs by our Toronto and Ottawa champion, and out of Toronto, London, and Guelph winners. W. E. Wright & Son, Glanworth, Ont.

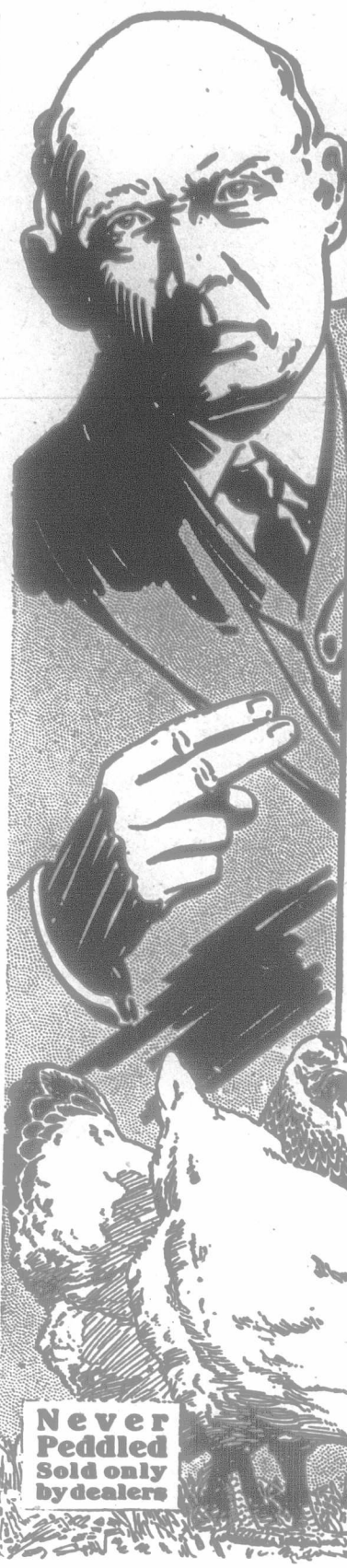
Ontario, including freight, duty and war tax. This is a high price, higher than for years, but experience shows that soft coal always fluctuates fairly, up and down, and the producers have never been able to effect any permanent combination, because there are too many of them, and the coal measures of North America are too widely distributed. Good soft coal could be retailed in Ontario for six dollars a ton, and its heating value is fully equal to hard coal. But it cannot be burned regularly in ordinary ranges and heaters intended for hard coal, because the rapid deposit of soot chokes the flues. A month's use of soft coal in a house furnace would mean a hurry call for the tinsmith, and we have no established guild of chimney cleaners and flue scrapers, nor does anyone want the job.

Needless to say, much ingenuity has been expended to overcome the soot nuisance. There are hundreds of smoke consumers, and some of them are effective, on a large scale. The cause of soft coal smoke is well understood. When a fresh charge is thrown on the fire there is a rapid evolution of light hydrocarbons of strong heating value, which burn with a long, bright flame, provided the air supply is right at the top of the fire and the flames are not chilled by contact with a cooling surface. This is why soft coal makes a good open fire, because the air is in full supply all around and the back bricks, being strongly heated, do not chill the flame. In a closed stove there is neither room enough nor air enough at the top of the fire to ensure thorough combustion, and the half-burned hydrocarbons are thrown off as black, sooty smoke.

One remedy is to fire frequently, in small quantities—the "one-shovel" system of the railroad fireman. On a domestic scale this would mean feeding the coal a few ounces at a time. Many large steam plants are stoked mechanically, coal being fed to a hopper and pushed into the fire at frequent intervals by a steam ram. There is an air blast to urge the fire, and the whole thing works automatically. That is why a 5,000-H. P. plant may be less smoky than a small factory chimney, with hand-firing. There are house furnaces on this forced feed principle, which are used in the Middle and Southern States, and said to be most efficient and economical. But it is doubtful if they would keep a steady fire for a Canadian winter night. Heating boilers for steam or hot water may be fired with soft coal, if arranged for the purpose, and given the necessary attention. It may be of interest to know what might be done with a large residence, or store. The first step would be to build a chimney, preferably in a central position, a straight shaft with a clear flue of ten or twelve inches in diameter. There would be no openings except for the smoke pipe and a soot door below. The heater would be connected directly, preferably without an elbow. With this outfit one might burn soft coal all winter, with occasional attention to boiler flues, and it would be quite practicable where a man was employed to do the work. But it is a very difficult arrangement from the average house furnace, fitted for hard coal, with a seven-inch stove pipe, leading to a narrow chimney of the general-purpose sort, and top often good for nothing in particular.

There are expedients that will save money if the householder will take a little trouble. Open grates should be used freely. If the draft is right any good steam coal will burn, and a buyer posted on prices, and ordering two or three tons at a time ought to get it for six or seven dollars. A house grate will run all day on about 25 lbs. of coal, and there are long stretches in the spring and fall when such heating is more pleasant than the furnace. Also, a grate fire in the living-room is more economical than forcing the furnace during a cold snap. Where a good chimney is available any straight-draft stove will burn soft coal, if connected directly with as little pipe as possible, preferably seven-inch. The choice in stoves is wide, and there are special soft-coal burners to be had, working on the hot blast principle. A simple cannon stove, with a sliding door, gives practically an open fire. If the draft is first class a Franklin stove may be used, always taking care to get one of fair size, for a little stove takes too much attention, and is apt to be red hot or dead out.

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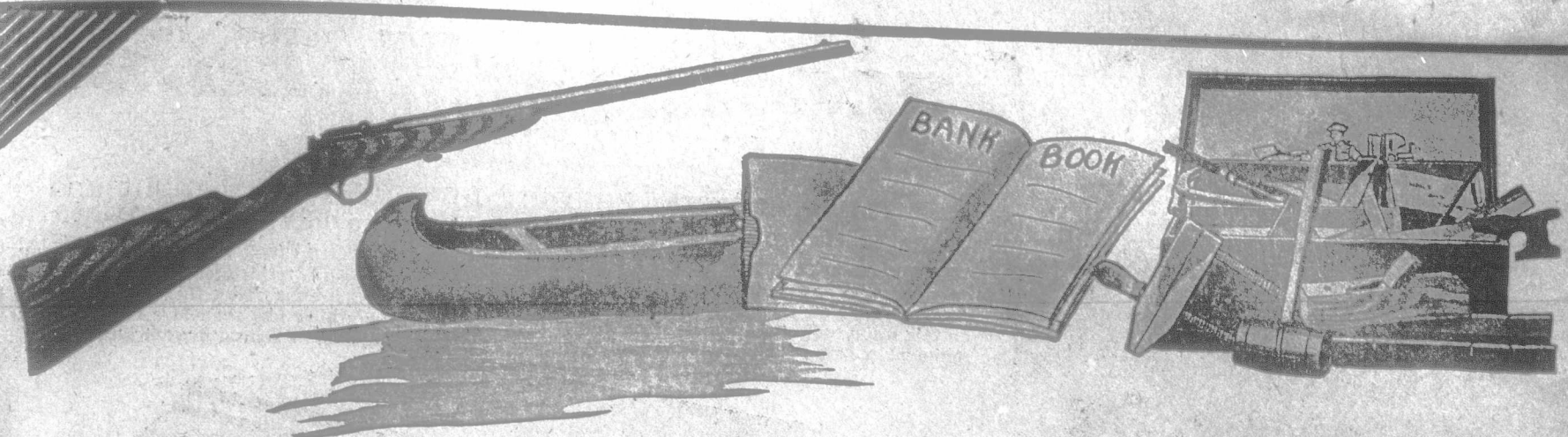
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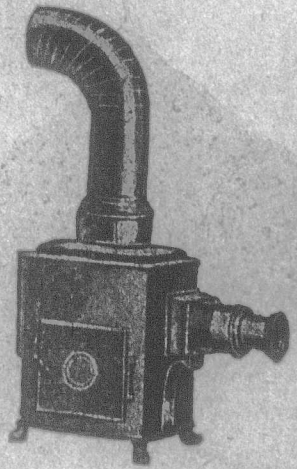
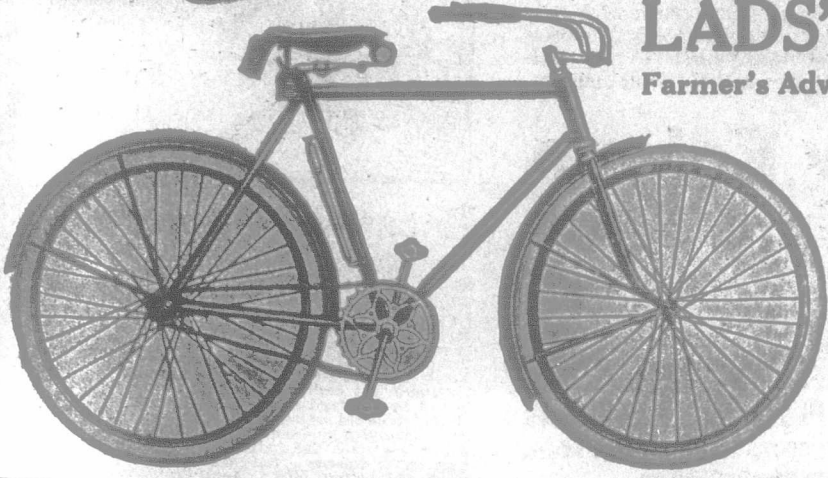
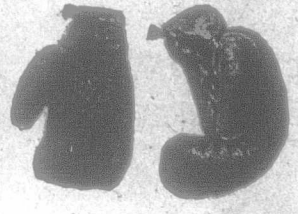
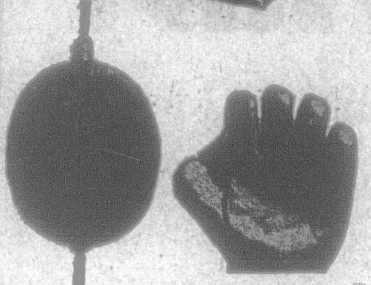
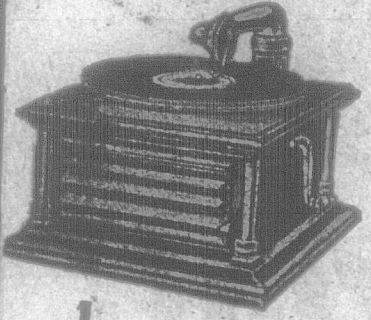
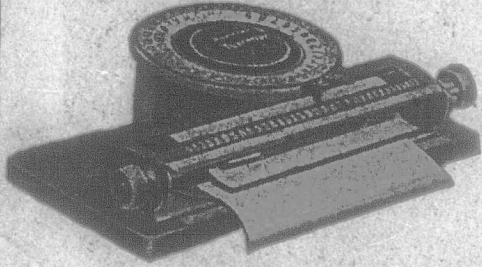
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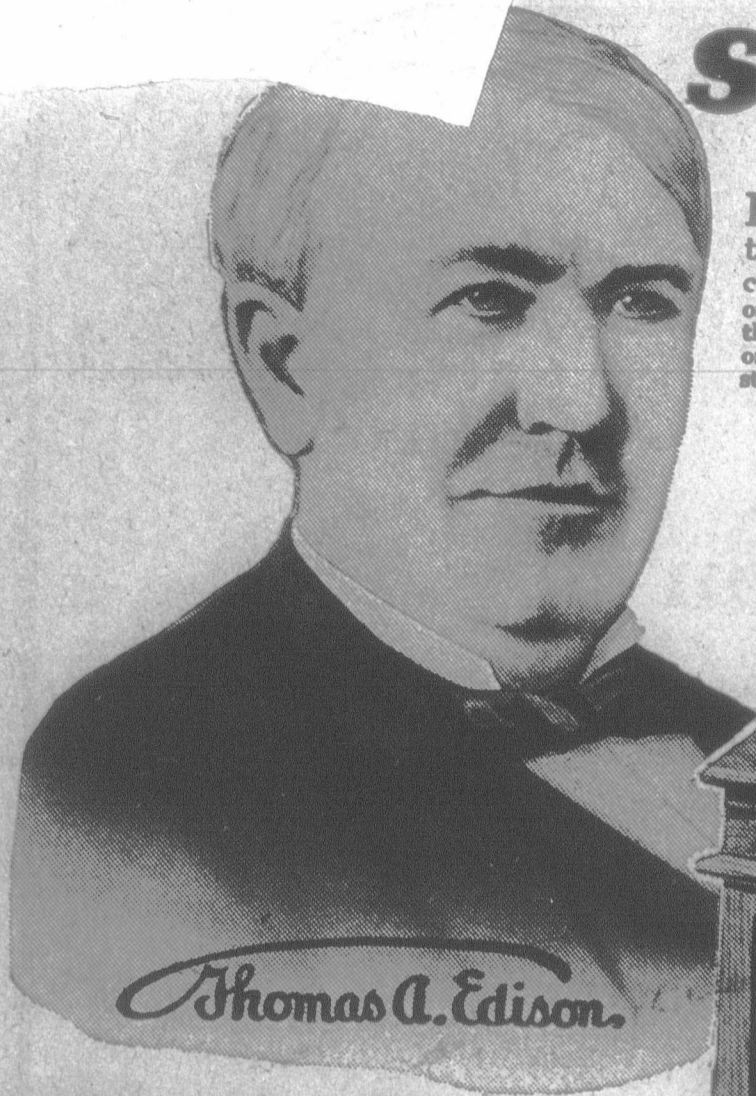
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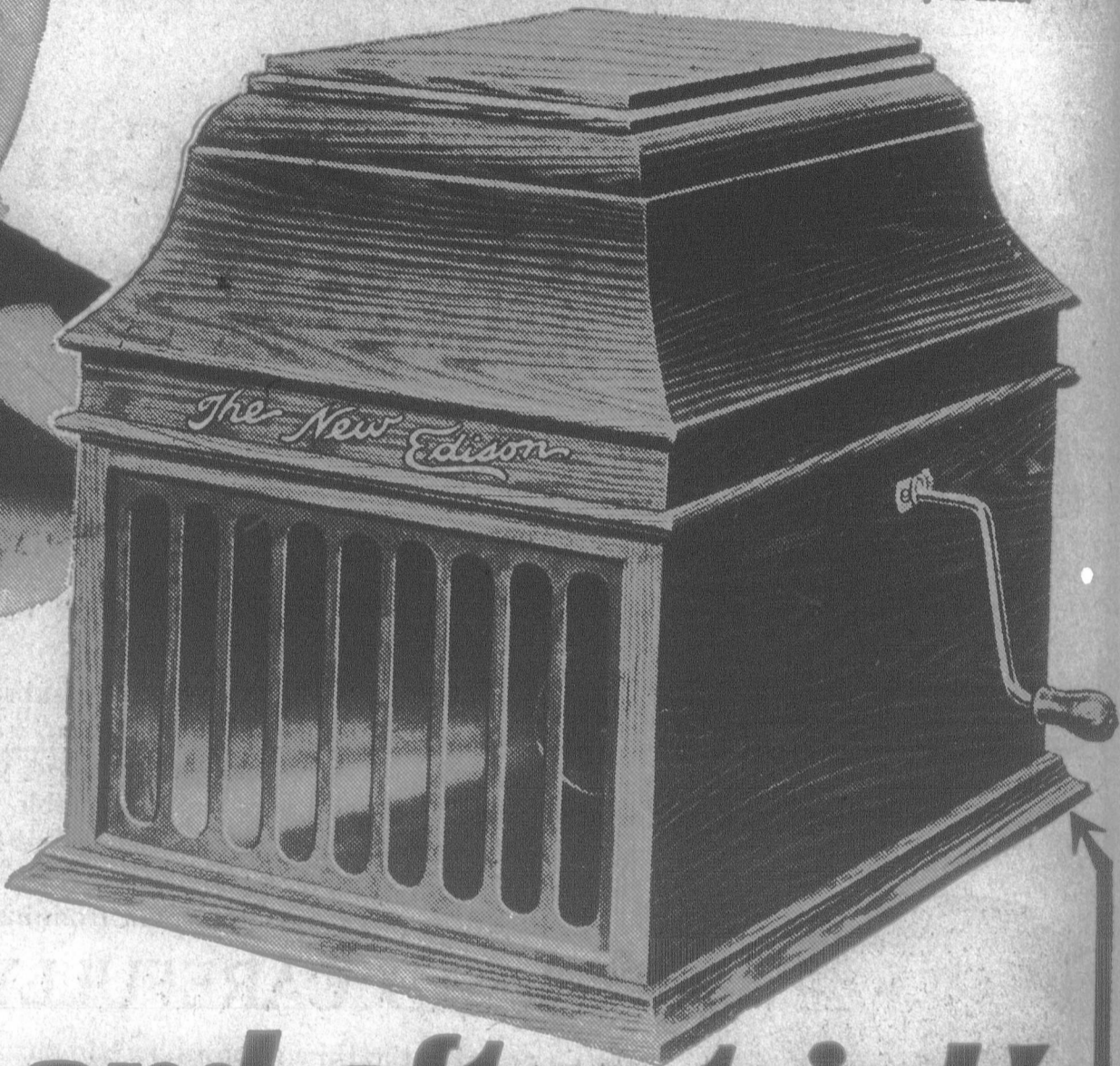
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For years, the world's greatest inventor worked night and day to make the music of the phonograph true to life. At last he has been crowned with success. Just as he was the first to invent the phonograph, so is he the only one who has made phonograph music life-like. And now we make this great, rock-bottom offer on the genuine New Edison, the phonograph invented by Thomas A. Edison. Now that you can get the best on this wonderful offer, you need no longer be satisfied with anything less than Mr. Edison's great instrument. Just read below how easily you may have the genuine New Edison in your home.



Only \$1.00

and after trial!

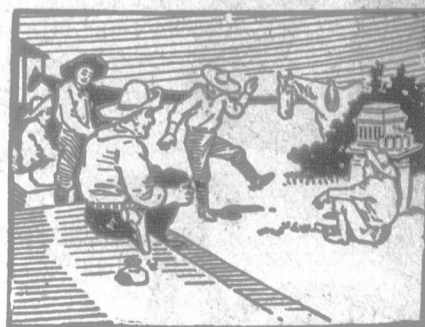
Yes, we will send you the New Edison, the product of the world's greatest inventor's genius, the phonograph with the wonderful diamond stylus reproducer and your choice of the latest Diamond Amberol Records on *free trial without a penny down*. On this offer, you can now have the genuine Edison, the instrument which gives you real, life-like music, the finest and best of all phonographs at a small fraction of the price asked for imitations of Mr. Edison's great instrument. *Seize this opportunity.* Send the coupon now for free catalog.

A Happy Home

Happiness is life—and real happiness is found only in a real home. And by a real home I do not mean a house with a yard or farm around it. Oh, no! A real home is the place where the happy and united family gather together for mutual enjoyment and recreation. And the Edison makes this possible, for it stands supreme as the greatest home entertainer. It will mean more than entertainment and merriment, more than an hour of amusement, yes, it will mean genuine pleasure of the lasting sort—helpful entertainment and culture of the most beneficial kind. It will mean the family united—a new home.

Rock-Bottom Direct Offer—

If, after free trial, you decide to keep Mr. Edison's superb new instrument, send us only \$1. Pay the balance on easiest kind of monthly payments. Think of it—a \$1 payment, and a few dollars a month to get this wonderful new style outfit—Mr. Edison's great phonograph with the Diamond Stylus reproducer, all the musical results of the highest price outfits—the same Diamond Amberol Records—yes, the greatest value for \$1 down, balance on easiest monthly terms. Convince yourself—free trial first. No money down, no C.O.D., not one cent to pay unless you choose to keep the instrument. Send coupon.



Entertain Your Friends

Get the New Edison in your home on free trial. Entertain your family and friends with the latest up-to-date song hits of the big cities. Laugh until your sides ache at the funniest of funny minstrel shows. Hear the grand old church hymns. Hear the crashing brass bands, the waltzes, the two-steps, the solos, the duets and quartettes. You will sit awe-stricken at the wonderful grand opera as sung by the world's greatest singers. You will be moved by the tender, sweet harmony of quartettes singing those old melodies that you have heard all your life. Take your choice of any kind of entertainment. All on free trial. Then, after the trial, send the outfit back at our expense if you choose. Or keep it on our great rock-bottom offer. Send the coupon today.

COUPON

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Gentlemen:— Please send me your New Edison Catalog and full particulars of your free trial offer on the new model Edison Phonograph.

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