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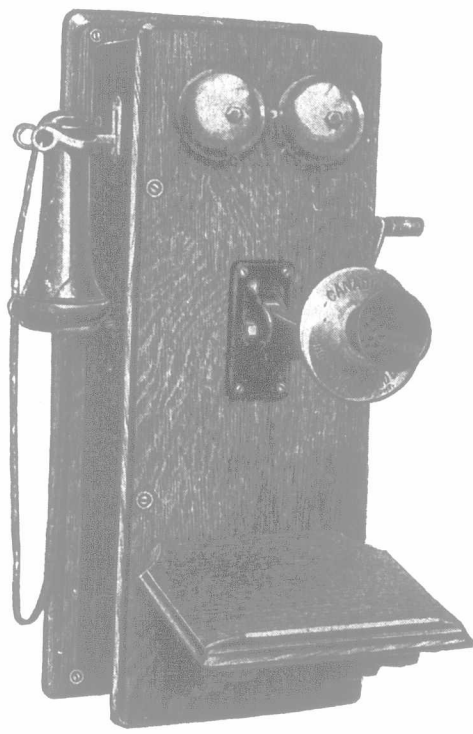


VOL. LII.

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LONDON, ONTARIO, JANUARY 18, 1917.

No. 1269

The Same High Quality Will Be Maintained During 1917



Our New Year's Wish

is that all users of our tele-
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WE HAVE just concluded a successful year's business, for which we express our thanks to the Independent Telephone Systems who have stood loyally by us. We assure you all that we will maintain the same high standard of quality in our telephones and materials that has earned your trade and your good will in past years.

Canadian Independent Telephones

are built by a company that has kept quality first in all its telephone products. Our rural telephones are famous for their low maintenance cost and efficient service. Our switchboards save time in giving connections and increase the efficiency of the operators. Our materials are guaranteed first quality.

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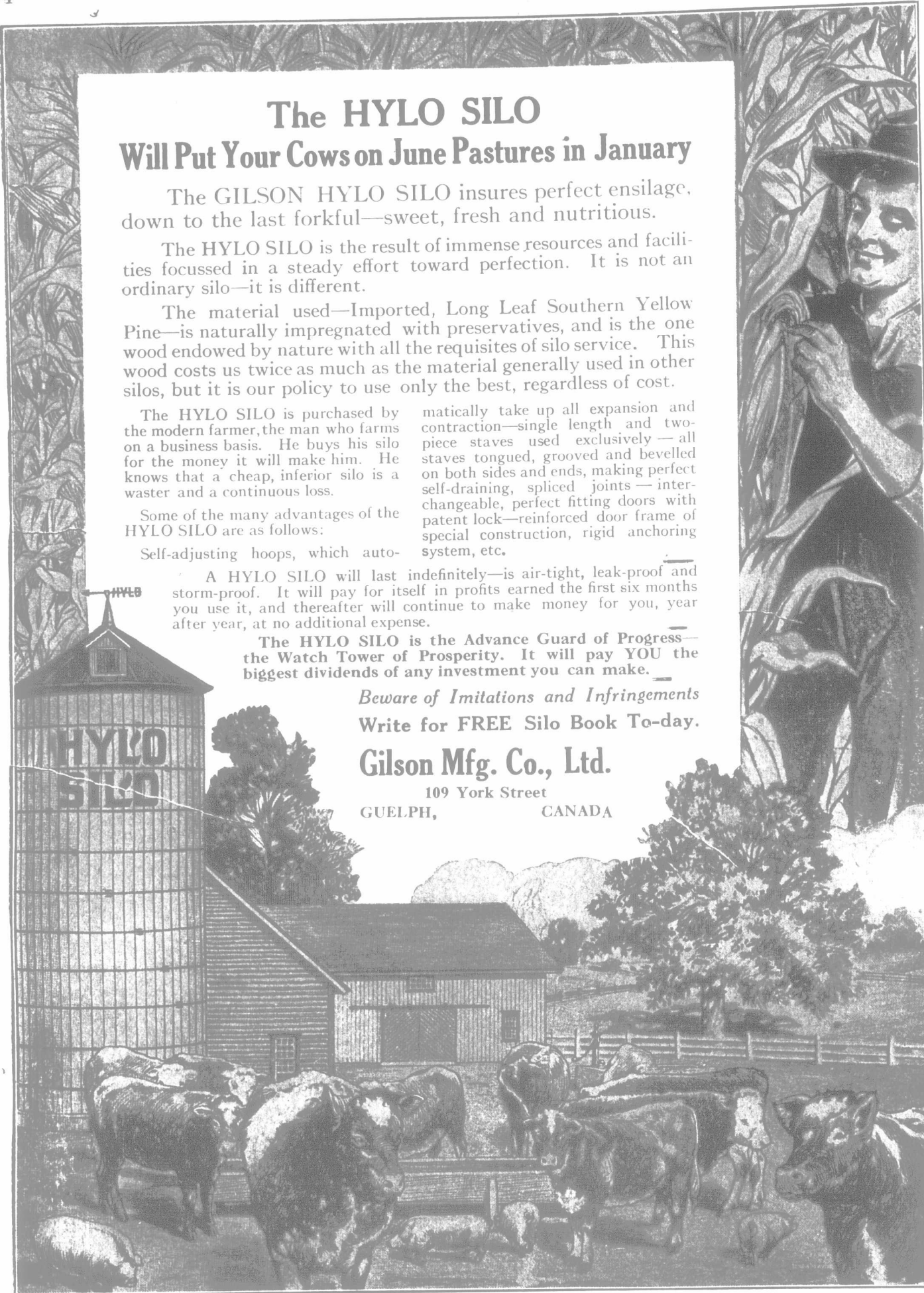
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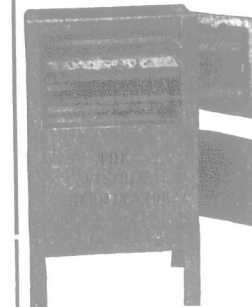
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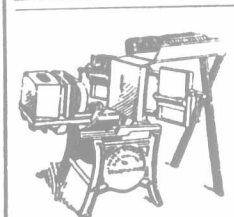


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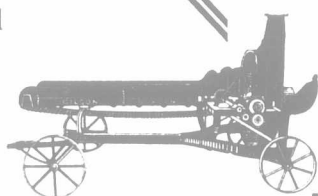
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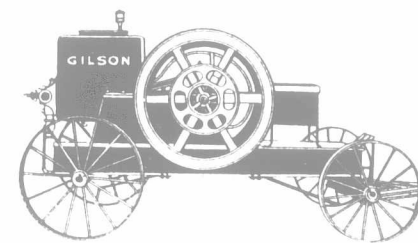
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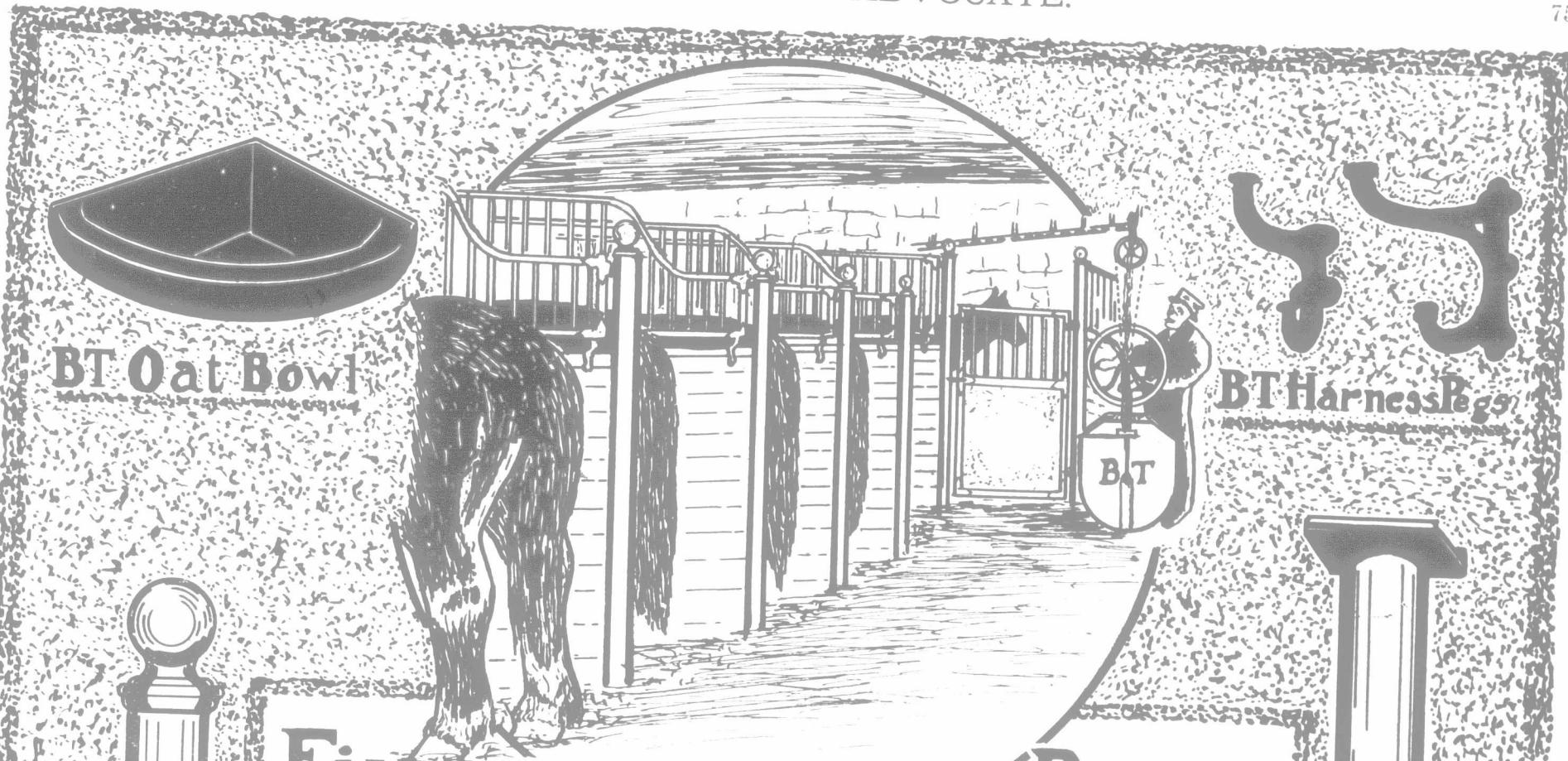
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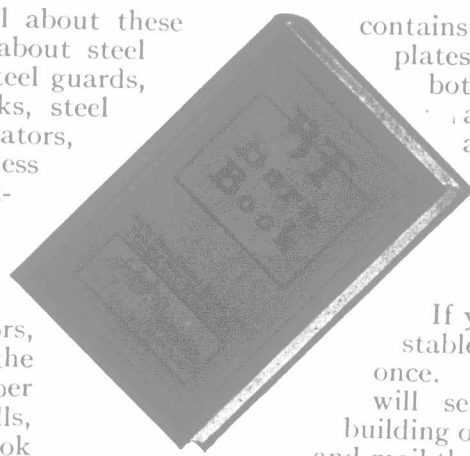
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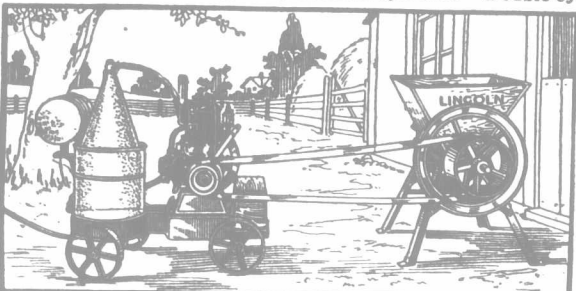
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40 to 60 lbs. per Horsepower**

**4 H. P. Weighs Only 190 lbs. 15 H. P. Weighs Only 780 lbs.
8 H. P. Weighs Only 320 lbs. 20 H. P. Weighs Only 1200 lbs.**

The 4 H. P. is a wonderful little farm engine, because in addition to doing all the ordinary farm work, it is so light it may be attached to moving machines in the field, such as grain and corn binders, potato diggers, etc., driving the operating part of the machine and leaving the horses nothing to do but pull the machine out of gear. It is thus an all-year engine. The 8 H. P. is possibly the most useful all-around farm engine ever built. It may be used for such a wide range of work—from the smallest jobs to driving the ensilage cutter, wood saw, corn sheller, and even small threshers. It will do the little jobs just as economically as a small engine, as it uses only enough fuel to do the actual work required. All 8 H. P. and larger Cushman Engines are double cylinder. Double cylinders mean steadier power.



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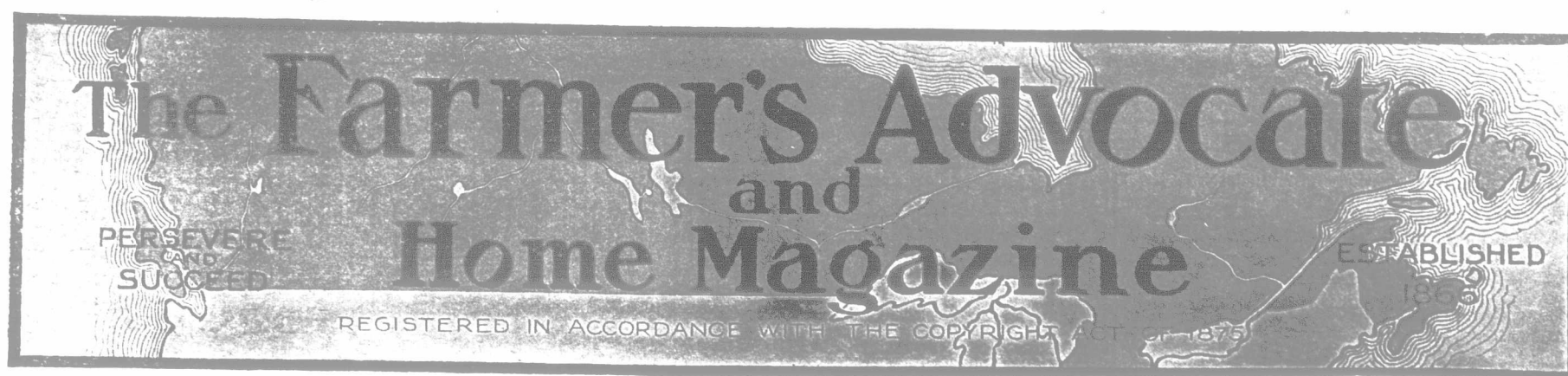
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LII.

LONDON, ONTARIO, JANUARY 18, 1917.

1269

EDITORIAL.

Once more, secure the seed grain early.

Discussion is the life of any meeting.

"He can who thinks he can," but the Kaiser can't and he knows it.

Peace may yet be made in Germany, but not by the German war lords.

Many a man insures his barns and house against fire, but neglects to insure his life.

Blood tells. Read what special breeding has done for the Clydesdale breed in this issue.

Many people talk of "going farming" but when the time of final decision comes they get "cold feet."

Both political parties have talked "tariff" for years, but neither lowers it very appreciably under any circumstances.

The farm is a safe investment, but it is necessary to so work the land that it is not robbed, else there will be depreciation.

King Alcohol has been the heaviest territorial loser since the world war began and peace will never restore his colonies to him.

It is well for every farmer to know how to treat some of the commoner ailments of his cattle. "Whip" tells you how in an interesting table this week.

Canada's Parliament is again in session. The country desires that the utmost be done toward the winning of the war. On with the great work in hand!

The man who keeps no hens thinks that every egg is clear profit, and likewise the know-it-all of dairying often does not know which end of a cow gets up first.

Those who look upon the Western Grain Growers' movement as a puny offspring would like to see it such but it is growing lustier daily and may jolt some of the scoffers from power yet.

Canada has made a start toward national enrolment and national service. Let us hope that it is followed up. Three classes of men are needed: fighters, munitions workers, and food producers.

There is a noticeable lack of support given by Department of Agriculture officials to farmers' organization work. Too many of them are politicians first and agricultural workers afterwards.

Judging from many of our "Young Farmers' " ideas on the ills of the country community, "Dad" is not as generous-minded as he might be. On the whole, however, we believe that the fathers of farm boys are just about as considerate as circumstances will permit.

The Experimental Farms and the Experimental Union, through actual trials of the leading varieties, are able to choose the best for their own conditions or for an average of all, but it remains for the individual experimenter to prove which of the top-notchers is best suited to his own farm and his own conditions. Try an experiment.

Consider the Tariff.

By the time this is in the hands of our readers the Dominion Parliament will be again in session. Since the war began legislation, other than that necessary to the carrying out of the country's plans toward the winning of the conflict in Europe and the final establishment of permanent peace, has not been heavy, and rightly so. The war is the first consideration and none should be for the party, but rather all should unite for the good of the state. It is not likely that any great amount of new legislation will be brought down and finally passed by the present session, but there are many questions daily discussed by the average Canadian citizen. The high cost of living, the labor problem, food production, the rural problem in all its phases, taxation and many vital questions come up at every meeting, and no one has found a solution under our present laws.

The woman in the city asks, as a measure of relief, that the tariff be taken off outside food products entering this country. She seems to know nothing of the fact that the producer in this country pays a high tariff on his implements and machinery used in producing similar food products and is forced to compete in the same labor market with highly protected city industries. City men and women criticize the boys and young men who have left the country districts to work in city factories, particularly munition factories, saying that they should have gone to the front. The beautiful backyard brunette bursts forth with a great deal of clap-trap about the farmer not trying to produce more food products. She tells him what he has known for long that his acres do not grow the maximum crop each year, but no one explains how the farmer can create of himself three men to do the necessary work. Boys are advised to stay on the farm at the same time that protected, bonused and otherwise fattened city industry beckons them away. What of it all?

No one measure, no matter how strong the medicine, can cure all the ills, but in the near future those at the head of affairs at Ottawa, if we mistake not, will be forced to consider and reconsider tariffs. It has always been held that an independent journal like "The Farmer's Advocate" was treading on dangerous ground when it attempted to discuss tariffs. How so? The ground is entirely safe, for both of our political parties, having an eye to vote—getting and knowing where to look for the necessary campaign funds, have been high-tariff parties. Out of power, they see where changes could be made and the subject becomes the furnace which produces a great deal of parliamentary hot air. In power, they remember who put them there and forget all about lowering tariff. The fact is the people can never look for much reduction or very radical tariff policy changes until they assert their independence and demand it.

In former days it was believed by many that high tariffs, while not of direct value to the farmer helped him, through creating large cities and manufacturing centres, which meant better markets. Few thought of the city consumer as injured by the tariff. Manufacturing concerns were able to pay him better wages and he benefitted. It is now dawning upon many city consumers, as well as rural producers, the tariff affects both to their respective detriment. City leagues of women are asking that the tariff be removed from foodstuffs. This could not be consistently done, without removing the duty from agricultural implements and machinery used in food production in this country, which would mean all-round tariff revision downward.

Politicians of the past, and of the present too, have been too intent upon building up large manufacturing centres. They assumed the impossible, viz., that the agricultural community was stable, unchanging and permanent—a community which would stay on the land and go on producing regardless of the rise in cost of

implements, machinery and all necessities to production, and regardless of the increasingly rosy opportunities which this artificial condition offered to young men and young women to remove to the city. The people did not all stay on the land according to such a senseless assumption, and to-day the problem is more acute than ever. Producers are all too few in Canada at a time when the empire and our own country need more food. The acreage to go into crop next spring cannot be as large as it should be; far from it. The men are not on the farms, which were greatly depleted even before the war. The situation is acute and the city dweller, as well as the rural, begins to feel the pinch, and the pinch will tighten. We have reached the stage where the average city man working for a living, and all country people working for a living, are beginning to realize that what is the problem of one is the problem of the other.

It has been argued that protection to industry gives the farmer a near, abundant and steady market for his products, and creates a market for live-stock products, truck-farming crops, etc., and that the policy which increases the number of those who are not engaged in farming but must live on the products of the farm assures to the farmer the highest and steadiest remuneration. The greatest argument to offset this in Canada is that industry, through its ability to pay higher wages has robbed the farms of men until it is a physical impossibility to carry on intensive farming on a large scale in the country. Intensive farming means more men, and were the farmer to pay wages which would compete with those paid by big industries, the cost of living would be higher and higher; otherwise he could not produce at a profit and would do as he has done, stick more closely to extensive farming, pasture fields, and wheat. Prosperity for the laborer or city worker and the farmer must be measured by the relation of his wages to the current prices of the things he needs in the case of the former, and for the latter in the relationship of cost of production, amount he is able to produce and the price obtained; and in the cost of production we must not forget to consider the price of manufactured goods the farmer must buy. Now what do we find? Notwithstanding the fact that those who do not farm claim that farmers are growing rich, the boys brought up and raised in the country leave it for the city. If farming were a fair money proposition would they do it? We attribute to them a reasonable amount of intelligence, and do not hesitate to say they would not. What of the city laborer? True, his wages have increased until they are higher than the farmer feels he can afford to pay, but the cost of the necessities of life are up out of all proportion to his increase of pay. Who is getting the plums? Certainly not the farmer, nor yet the average city worker.

The country must raise revenue, and the fiscal argument that customs duties are the most satisfactory method of taxation because they are paid by foreign countries is trotted out. Such is only a delusion. The student of Canadian political economy knows that when he buys a dutiable article he pays the duty. The home manufacturer puts his price up to a level with that of the outside manufacturer, and for every dollar which finds its way into the public treasury probably three dollars of the people's hard-earned cash goes into the pockets of those who enjoy the protection. As a means of raising revenue for the country, customs duties are not quite so satisfactory as they seem on the surface, although the majority of the people pay them without thinking and without kicking every time they buy dutiable goods. It is the absence of "kick" on the part of the consumers which pleases politicians and manufacturers alike. A man will pay the price set for an article more readily than he will pay any amount of direct tax, no matter how infinitesimal the latter may be. The country must have revenue.

Should a country's civilization be national or cos-

The Farmer's Advocate AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN THE
DOMINION.

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mopolitan? We favor the national idea. While similar forces are at work in various countries, their relative importance is very varied owing to the particular adaptability of countries to certain lines of endeavor, and also to the condition of the people. Canada, for instance, should develop her internal resources, making opportunity for all. Progress will come industrially, commercially and agriculturally with the development of these resources. Land, mines, etc., must be opened up and such, of course, tends to increase the productive capacity of the laborer.

The greatest natural resource of Canada is agricultural land. The economic environment of this country is peculiarly agricultural. Agriculture should be dominant. Mineral, forest, and other resources are immense. What should be done? Develop these and at the same time be careful to put the products on the market, in so far as possible, in a finished state. This means development not only of the production of raw material, but of its manufacture. The balance must be maintained in accordance with the importance of the various industries to the country. The balance has not been maintained; the cost of living has increased; farmers have not been making returns to compare with those of protected manufacturers; home production has not increased as it might have done.

Infant industries ask protection and when they grow up they ask more. European nations argue that they require a tariff because they must compete with new countries where land is new and rich and taxes low, and the new countries claim they must have a high tariff to compete with older countries where labor is cheap and civilization not so highly developed. There you have it. Where does Canada stand? We leave it with you. What of our tariff and its relation to the present economic conditions in this country? would it not be wise to, from a non-partisan standpoint, consider a reduction of the customs duty against British goods as well as some new developments leading towards a gradual removal of the duty on foodstuffs, agricultural implements, farm machinery and the necessities of life. We believe that Great Britain should get the preference and that she should be the first to be extended any tariff concessions made.

At the last session before the great war the duty

on certain harvesting machinery was lowered from 17½ to 12½ per cent. When the tariff was revised in 1915 and 7½ per cent. increase was made in the general and a 5 per cent. in British Preferential these were exempt from the rise. To meet the unnatural conditions caused by the war, it was necessary to increase revenue at once, and the Finance Minister naturally chose the tariff. It is doubtful whether any other Minister would have done otherwise under the circumstances. But conditions are changing, the great war will end possibly within a twelve-month. Conditions which were developing before it started must be met. Canada cannot afford to have agriculture neglected. Canada cannot afford to make it hard for the laborer to make ends meet. We want no party controversy over an economic question, but what we have outlined would bear some thought by our leaders in public life, as well as by citizens of Canada generally, and then it might be found advisable to take this old party football out of politics entirely where it never belonged and place it in the hands of an efficient, non-partizan, economic commission.

The Life Insurance Question and the Farmer.

"Time passeth swift away;
Our life is frail, and we may die to-day."

MARLOWE.

How true are the words of the poet! "The fleeting moments of too short a life," as Shakespeare put it, leave no doubt in the minds of those who have experienced several years of sojourn here below that Burns, when he wrote: "Life is but a day at most," was entirely correct. In childhood weeks seem as years; in early youth months are twelve times too long; in middle age years are all too short; and travelling down the western slope toward the setting sun, decades are as a single day. He who has tasted life in all its fullness knows how short and uncertain it is.

But "life is real, life is earnest." Every man desires the best possible in life. As a boy he is eager to be a man among men in the affairs of the world. As a man he plays no unimportant part in these affairs, be he laborer, mechanic, engineer, conductor, manufacturer, businessman, farmer, teacher or what not. He depends upon others and others depend upon him. No matter how independent the individual may be, his life cannot be independent. Every man is a link in the great chain and owes certain things to the community and deserves certain considerations of people in general. But it is not of the man and his relationship to the community that we wish to write, but of the man and those directly dependent upon him, be it father, mother, sister, brother, wife or children, and we wish to confine our remarks largely to the man on the land.

The farmer builds a house or barn and if he builds it well it will probably outlive him and his children as well, yet he insures that house or barn against possible destruction by fire or lightning, that is if he is a wise farmer. He profits by placing the risk on his buildings upon collective capital in the hands of some sound fire insurance company, and he knows they are much better fitted to carry the risk than he is himself. But this same farmer neglects to insure his own life, which is daily exposed to many dangers more imminent than the fire danger to his barn. If the barn went up in smoke another would arise on its foundations; if his life is snuffed out no power under Heaven can replace it. It is infinitely more important that a man, upon whom someone directly depends, insure his life in favor of those dependents than it is that he insure his buildings in favor of himself, and he does the latter because he knows that it is a wise safeguard of his own interests.

Life insurance, judiciously taken, is of even more importance to the farmer, and particularly the young farmer, than it is to some other classes of men. We would advise all to insure in early life, because it is cheaper but it would not be wise policy for all middle-aged men to turn life insurance down because of age.

Take the case of the young married man starting on a farm. His money is needed for farm stock and implements. He is often in considerable debt on his investment in the farm. He has no ready cash. If anything happens to him, and he is by no means exempt though he may be strong and healthy, his widow or other dependents could make very good use of a thousand or two thousand dollars ready cash, which would come through a policy in a standard life insurance company. Aside from the ready cash, consideration

of the question, the money would help those left behind as an addition to the estate. The young farmer can scarcely afford to be without a policy in a good company.

The boy at home might, to his advantage in many cases, take out a policy, for sooner or later he will marry and anyway the policy is a nice nest egg to induce him to save money, and he gets it cheaper while young. Long-term endowment, or even short-term endowment, may interest him, although we favor straight life or twenty-pay life policies over the short-term endowment, largely because the risk is carried at a lower rate per thousand per annum.

The middle-aged farmer may not be out of debt, or if he is, he may feel that he can carry a small policy at a rate which is cheap considering the risk and there are forms of policies particularly suited to his case.

Let us get down to figures. In a straight-line company, on the non-participating basis, a twenty-year endowment \$1,000 policy would cost, at 25 years of age, in the neighborhood of \$42 per year; at 30 years of age, about 50 cents per year more; and at 40 years, about \$45. The figures are only approximate, but will be found reasonably close to the actual.

On a straight-life policy, at the same three ages, the cost per thousand of insurance would be in the neighborhood of \$17, \$19 and \$26, respectively. This policy could be cashed at the end of 20 years at considerably over \$200 per thousand, if taken at 25, or the holder at that time could stop paying and have over \$450 paid-up insurance, or he could take about nineteen years' free insurance. When these amounts are considered the risk on the life of the holder of the policy is carried very cheaply. After the third payment is made all policies have a cash-surrender and paid-up value; that is, the insured does not lose all he has paid in, provided he, through circumstances, cannot continue paying. Many in the country are against straight-life policies because some man among them has lived to an exceedingly great age and has paid in more than his heirs can ever get out. Policies, nowadays, give the insured many chances. He can, for instance, pay for twenty years and then stop, leaving a fine sum of paid-up insurance, or he can collect then if he so desires. We know a man who has a \$5,000 life policy which costs him about \$85 per year on a special plan. If he stops paying at the twentieth pay he will have \$2,500 paid-up insurance; that is, he will not pay any more in, and at his death his heirs will get \$2,500. His risk is carried cheaply during the earning period of his life.

A twenty-pay life policy in the same line of company would cost around \$25 per thousand of insurance, at the age of 25; \$27 at 30, and \$34 at 40. This is paid up at the end of twenty years and would have a cash surrender value then of from \$450 to \$630, according to age.

Rates on profit-sharing or participating policies are a little higher at the start, but premiums are reduced each year. At the age of 25 they will run around \$21 or \$22 per thousand. A twenty-pay life at the same age will cost about \$30 per thousand. A long-term endowment, say 40 years, will cost in the neighborhood of \$25 per thousand, and a short-term or twenty-year a little less than double that amount per year. It must be remembered, however, that in the best companies the second pay will be about \$4 per thousand of insurance smaller than the first, and these reductions increase year by year. Supposing the first payment were \$30, the second would be \$26; the third \$25.50, and so on. The reduction is always figured from the original premium. We know of men who are actually drawing money each year from the company in which they are insured. Profits on their policies have reached the stage where they no longer pay premiums, but the company owes them a small amount each year. Instances have been known also where young men, on endowment policies, have got their money back when the policies matured, and with it three per cent. interest. This of course was on profit-sharing policies.

But we did not start out to prove insurance valuable as an investment. Its main worth is in the risk carried. Analyze the figures. We cannot go into more details. Every good policy leaves the holder the chance of many different desirable courses—cash surrender value, paid-up insurance, loans, free insurance for so many years—all these chances are good. For a small annual outlay every sound man can have banked for him at the maturity of his policy, or at his death, \$1,000 or \$2,000 or more. Deduct the cash-surrender value from amount paid in, and note the small annual premium at which companies will carry \$1,000 risk on your life. Few farmers can afford to be without this protection.

How much insurance should a farmer take? It all

depends on circumstances, but most should have at least \$1,000 or \$2,000 anyway. Under average conditions avoid large policies because they mean larger payments and it is not wise to go in too deep. Also some would avoid endowment insurance because it costs more per year than straight-life or twenty-pay life. Keep in mind that it is the risk carried that is most important.

Why don't more farmers insure? Largely because of suspicion caused by former company and fraternal society failures to make good. At the present time the life insurance business is one of the safest and strongest in the country. In the last fifty years no standard insurance company in Canada has gone into liquidation at a loss to the policy-holders. One or two got into difficulties, but policy-holders were safeguarded by Government laws, and other companies took over the policies at their face value. Insure in a standard line company and you are reasonably safe. We have nothing against fraternal insurance. Some are said to be good, but too many of the fraternal societies started out with too low rates and could not meet their increase of expenditure and their increasingly high death-rate. You are sure you are safe in a line company, and the rates, while reasonable, are set on a basis which ensures solidarity and success. It must be remembered that there is cost of producing insurance the same as other commodities, and the insurance companies, having years of experience on a large scale to fall back on, have set their rates where there is no possible chance of loss to the company or policy-holder. While rates may seem high compared with those of certain societies, is it not better to have your premium decrease with your years than increase?

The whole problem is worthy of consideration. As a straight investment insurance is not a leader, but when risk is considered few men who have dependents can afford to pass it by. Take out a policy and stick to it. It would be better to take a thousand or two thousand and keep it than to take five thousand or more and drop it.

Nature's Diary.

A. B. KLUGH, M.A.

In our studies of the animal mind there are three ways in which we may proceed. We may call these the method of anecdote, the method of observation, and the method of experiment.

The method of anecdote is the oldest method, and it is upon this method that practically all the information contained in the older books and in all the popular books of the present day is based. This method consists essentially in taking the report of another person regarding the action of an animal, and bringing such a series of reports together in an effort at arriving at the mental status of that animal. This method is open to many serious objections, the main ones being:

1. The person who relates the anecdote is not a trained observer, and fails to distinguish what he sees from what he infers.
2. He is not sufficiently acquainted with the habits of the species to which the animal belongs.
3. He has a personal affection for the animal, and thus desires to show its intelligence.
4. He likes to tell a good story, and thus, perhaps unconsciously, glosses over facts which would detract from the force of the episode.

A good example of the method of anecdote is that of Wundt's conclusion on the intelligence of a spider, quoted by the Peckhams. Now, Wundt was a noted human psychologist and a good observer. He says: "I made myself, as a boy, a fly-trap like a pigeon cote. The flies were attracted by scattering sugar and caught as soon as they entered the cage. Behind the trap was a second box, separated from it by a sliding door, which could be opened or closed at will. In this I had put a large garden spider. Cage and box were provided with glass windows on the top, so that I could quite well observe anything that was going on inside. When some flies had been caught and the slide was drawn out, the spider, of course, rushed upon her prey and devoured them. This went on for some time. The spider was sometimes let into the cage, sometimes confined to her own box. But one day I made a notable discovery. During an absence the slide had been accidentally left open for some little while. When I came to shut it, I found that there was an unusual resistance. As I looked more closely I found that the spider had drawn a large number of threads directly under the lifted door, and that these were preventing my closing it. What was going on in the spider's mind? I imagine that as the days went by there had been formed in the mind of the spider a determinate association on the one hand between free entry into the cage and the pleasurable feeling of satisfying the nutritive impulse, and on the other hand between the closed slide and the unpleasant feeling of hunger. Now, in her free life the spider had always employed her web in the service of the nutritive impulse. Associations had therefore grown up between the definite position of her web and the definite peculiarities of the objects to which it was attached, as well as changes which it produced in the position of certain of these objects—leaves, twigs, grass, etc. The impression of

the falling slide, that is, called up by association the idea of other objects similarly moved which had been held in their places when the threads were properly spun, and finally there was connected with this association the other two of pleasure and raising, and unpleasantness and closing of the door." Now, Wundt's observation was in all probability strictly accurate, but, as the Peckhams point out, his inferences are entirely erroneous. His carefully elaborated theory as to what was taking place in the mind of the spider is very wide of the mark, because he was not familiar with the habits of spiders. If he had been, he would have known that whenever they are confined they walk around and around the cage, leaving behind them threads of silk. Naturally many lines passed under his little sliding door, and when he came to close it there was a slight resistance. These are the facts, and the supposition that there was even the remotest intention on the part of the spider to hinder the working of the door is entirely gratuitous.

The method of observation to be of value in the study of animal psychology calls for a trained observer who is thoroughly familiar with the habits of the species under consideration, who studies the species carefully in the field, ever with a view to seeing how different individuals meet different conditions. While it is not as direct or perhaps as intrinsically valuable as the method of experiment, it acts as a check on that method in cases where experimental conditions are performed too artificial.

The method of experiment, when properly applied, undoubtedly gives us the truest insight into the animal mind. In experiments the conditions are not only known but controlled, desirable factors can be modified and undesirable factors can be eliminated. The experimentalist also sets about his experiments with an entirely unbiased mind, he does not set out to prove something, but seeks to record whatever results his ex-



The Late King Edward VII.
The late king is here seen in his farming clothes.

periments reveal. Just as experimental methods in chemistry, physics, and physiology have given us most of our great modern advances in these sciences, so it is in comparative psychology.

(To be continued.)

A Farmers' Government for Farmers.

In the recent state election in North Dakota the Farmers' Non-Partisan Political League made a clean sweep at the polls. Their slogan was a farmers' government for a farming state and they got it, for they now control eighty-one votes out of a membership of 113 in the lower house, and of twenty-five members of the state senate chosen last year eighteen are adherents of the league. The legislative program of the League provides for state-owned terminal elevators, packing plants, flour mills and other marketing facilities.

Canada is moving in the same direction. The Western Provinces are lining up. Saskatchewan is a farming province, and plans to have a farmers' government. It is no more than right that governments should represent the people.

It may be all right to advise the farmer to keep his breeding stock (and no one believes that he should any more than we do), but the man with 100 acres of land, a big stock, little money and less feed cannot always do just as he would like. In all advice the advisor should put himself in the place of the handicapped man on the land.

THE HORSE.

Why Farmers Should Breed More Draft Horses.

EDITOR "THE FARMER'S ADVOCATE":

The danger of over-production of horses is remote. It costs more to produce them than any other class of live stock. For that reason many farmers sit back and proclaim that it doesn't pay to raise horses; that there never was a time when the horse market was so dull as now; that the motor truck and tractor have killed the horse business, and the horse is a thing of the past. Some people believe all of this, even though the truth of the matter is the opposite. Those who have allowed such thoughts to direct their operations for the past five to ten years, will soon see the error of their ways. It takes time to make much headway in the horse business. Five years are needed to grow a horse. At best one should not expect more than two colts from three mares as an average per year. Moreover, not more than 16 per cent. of our farmers are raising colts. Not long hence the American farmer will wake up only to learn that a great opportunity has passed. The next ten years is bound to see the greatest demand for horse flesh the world has ever known. It can't be met on short notice. The man who is breeding every mare old enough to the best stallion available, and is taking proper care of the offspring, is the man who is sure to be rewarded. There are plenty of men who have bought and paid for farms within the past ten years by their pure-bred draft mares. In the same community there are farmers who are no better off financially than they were a decade ago, because they failed to foresee the profits from using the right kind of horses in their farm work. The men who have made money and who are going to reap the fruits of their efforts in the future are those who early saw the undeniable need for heavy draft horses for farm work; who bred that kind and who will continue to do so without a halt.

Why is there a general tendency among farmers to buy their horses rather than to raise them? Farmers say: "I don't want to be bothered with a colt. When I get ready to plant corn or cut wheat I want horses ready to work; I don't want to have to pay \$25.00 for a little, scrub colt and then have all the bother to raise it, besides." Men with such ideas have to buy a horse or two nearly every spring at a cost of \$150.00 to \$250.00 a head. Instead of having a horse or two to buy, better have some to sell. There is no unusual training necessary. Any farmer can raise good horses if he will only use common sense. He can even succeed with pure-bred drafters if he will select good parent stock, take reasonably good care of them and develop the offspring rightly. Therein lies the secret of success.

A careful consideration of the situation cannot fail to convince us that there is no danger of an over-production of heavy draft horses for our farm and city uses. Almost a million horses and mules have been exported from the United States in the last 27 months for use in war. These figures show almost one horse or mule taken for every twenty-five left. As surely as this war continues another two years, good farm horses will be at a premium; and even after the war is over, exports will not cease, for thousands of horses will be needed to start European agriculture anew.

It follows, as a necessary consequence, that the demand for pure-bred draft horses for breeding purposes will continue to be good. Importations have been, to all practical purposes, cut off. The United States is producing only twelve or thirteen thousand pure-bred draft horses eligible to registry. This means, in substance, that we are producing only five or six thousand stallions fit for service per year, when we need at least seven or eight thousand. An excess of demand over supply always makes good prices, and the present is no exception.

The farmer who uses heavy draft mares does better farm work, and raises bigger crops, than he who relies on small horses or tractors. Furthermore, he has horses to sell each spring, at a profit. If you don't believe it, go ask any country banker for the name of the most successful farmers in his neighborhood.—You will find them to be live-stock farmers, and men who keep and use heavy draft mares, either grade or pure-bred, in their farm work.

WAYNE DINSMORE, Sec. Percheron Society of America.

Fifty Years a Subscriber.

EDITOR "THE FARMER'S ADVOCATE":

"I have been a subscriber to 'The Farmer's Advocate' for fifty years, and would not do without it."

Welland Co., Ont.

RICHARD ROBINSON.

A Reader Since 1876.

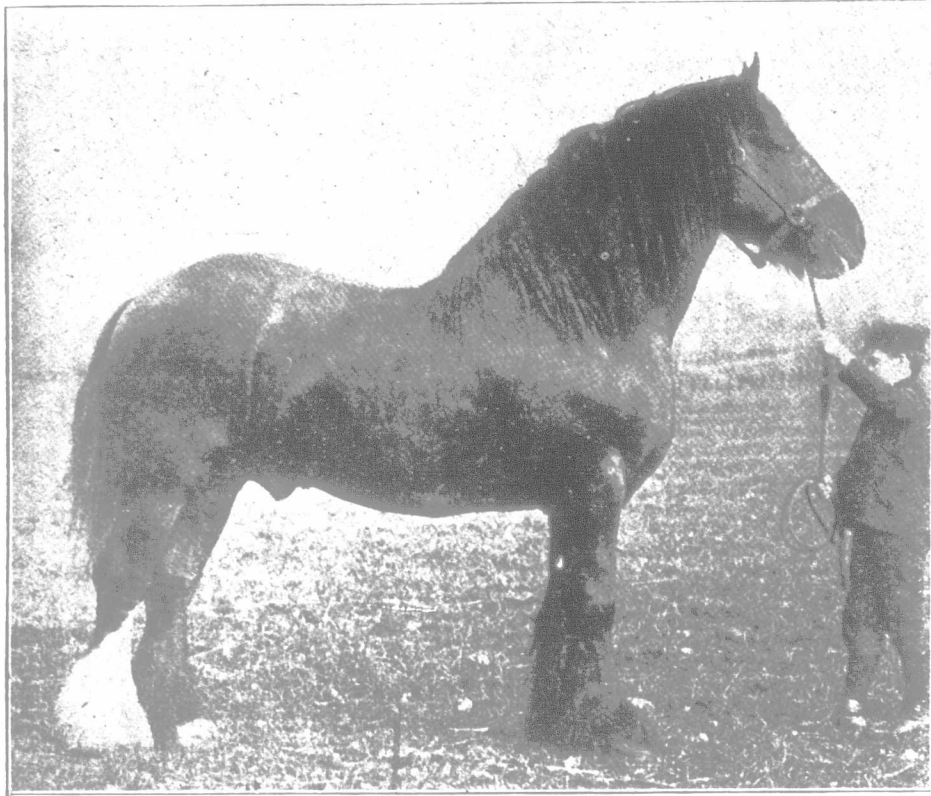
EDITOR "THE FARMER'S ADVOCATE":

I might say that I have been reading your valuable paper since 1876.

N. S.

WM. O'BRIEN.

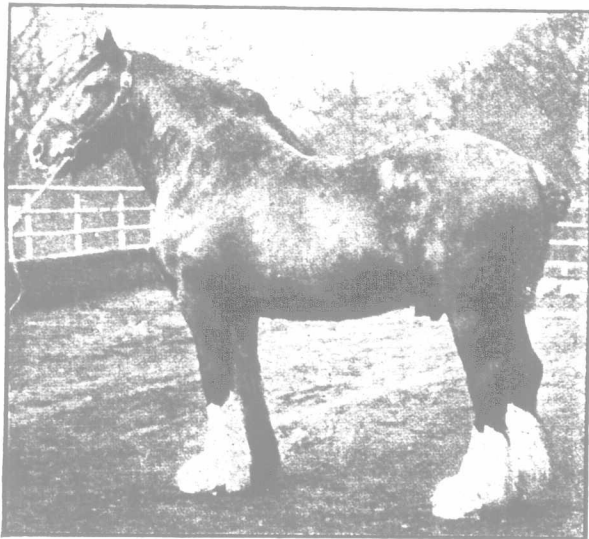
Some Distinguished Clydesdale Stallions



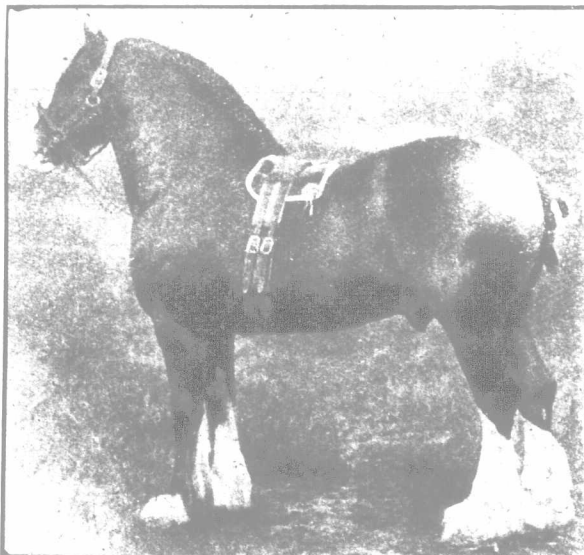
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Prince of Wales (673).



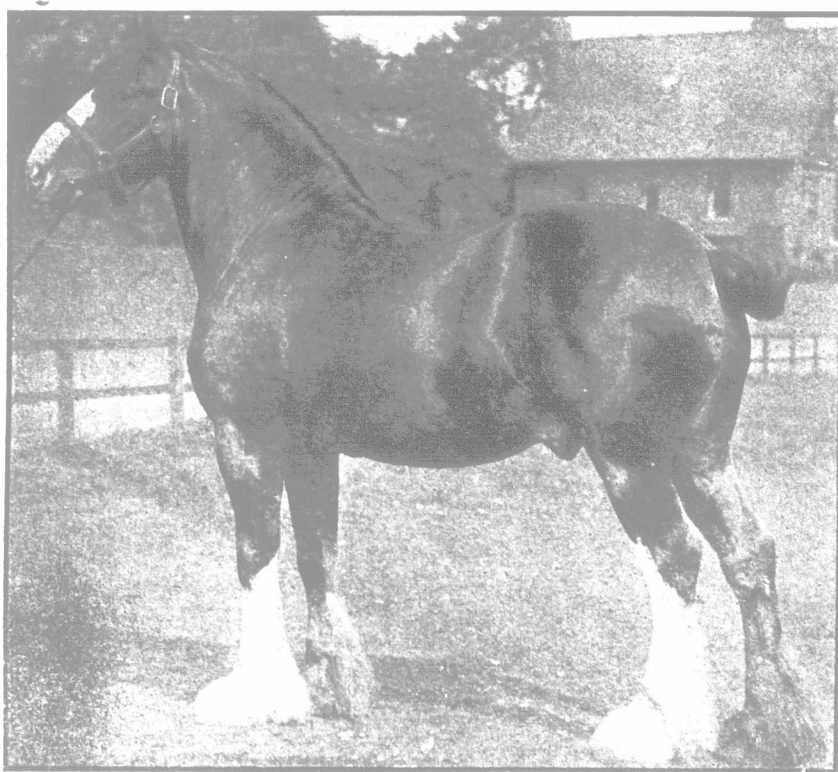
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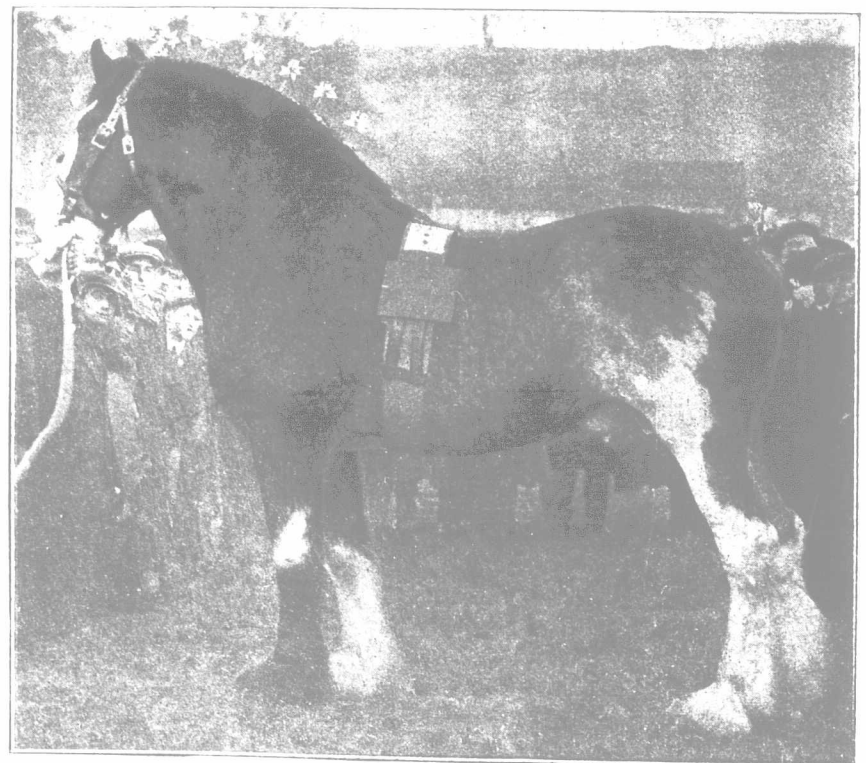
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The Foundation Source of Modern Clydesdale Blood.

In the early days of Clydesdales in Scotland there were many notable horses that have left their imprint upon the modern draft animal which emanates from the hills and valleys of that country, so famous for the excellency of the types of live stock it has given to the world. With all breeds, as in our own lineage, often it does not pay to go beyond certain branches of the family tree. Certain progenitors there are whose conduct has not been unimpeachable, or their claims to blood relationship beyond suspicion. Every pure breed of live stock has undergone a period of creation, so to speak, in which time certain desirable qualities have been welded together into a product of the breeders' art, while the undesirable characters have been cast out and rejected. The source, to a certain extent, is incidental or only secondary in importance to the results achieved. It is said that both grandams of Prince of Wales were Shirés, and that certain Flemish stallions were used on Scotch mares, along the river Clyde, in the very early days. Be that as it may, the fact remains that the Clydesdale is now one of the best draft breeds of horses the world knows, and capable of transmitting those characters which are good and which are essentially Clydesdale characters, and nothing else. It is not even necessary to go as far back as the first good sires and dams, which made early history for the breed, when we desire to study the forebears of the modern horse. The breeders in those days were few, and through the process of mating and breeding there were evolved two horses, Darnley and Prince of Wales, representing two distinct types which later became blended into what is now known as the modern Clydesdale. Perhaps it would not be out of place, however, to mention only a few of the breed-making sires and dams before reverting to these two horses which have impregnated modern pedigrees with their own blood and characteristics to such a marked degree.

History has it that a stallion named Blaze, purchased in Ayrshire about 1780 and taken to Lanark for service, was mated to "The Lampits Mare" and produced the first Clydesdale stallion of note, namely, Glancer (335), alias "Thompson's Black Horse." The Stud Book records this horse as foaled in 1810 and bought as a yearling by Alexander Kerr, of Gallowberry. Following him came Broomfield's Champion (98), which sired a number of good brood mares, but his chief claims to distinction are based on the fact that he sired Clyde, alias Glancer (153). This latter animal was dark brown in color, and on account of being ruptured was known as "The ruptured horse." Though not a show horse, his get were prominent in the show-ring from 1844 to 1850, when they were the leading winners at the Scotch exhibitions. Seven of his sons and one daughter are recorded in the first volume of the Clydesdale Stud Book, and his blood, through his get, did much to improve the breed. Another individual that might be mentioned here was Lochfergus Champion, which traces back to Broomfield's Champion. He was the grandsire of Darnley, and figures in the pedigree of Hiawatha, through the latter's dam, Old Darling.

Two Famous Horses.

The lover of pedigrees will view the names of Prince of Wales and Darnley with a feeling of intimate acquaintance, for they have both given particular characteristics to the modern Clydesdale, and have infused into the lineage of the breed both the draft character and action for which it is famous at the present time. If one were to ascribe to each, credit for some outstanding trait, possibly Prince of Wales would be called the sire of the flash and action peculiar to this Scottish breed of horses, and Darnley would be remembered as the progenitor of the draft character and those indescribable attributes which we term breeding and quality.

About 1864 a Scotsman, James Nicol Fleming by name, began the breeding of Clydesdales in the Carrick District of Ayrshire. He purchased some notable animals from the Merryton Stud, and in 1866 made a hit by breeding the Prince of Wales, which later was purchased by Robert Drew for £1,500 (and a penny for luck), and given to his brother, Lawrence Drew, the tenant of Merryton. Here the horse remained until Drew's death in 1884, and in this stud became world-famed as the Merryton Prince of Wales (673). In April, 1884, the horse was sold by auction for 900 guineas, when eighteen years old, passing again into the possession of David Riddell, a one-time former owner, in whose stud he died at the close of the season of 1888.

Prince of Wales was sired by General (322), the sire of which was Sir Walter Scott (797). His dam was a mare named Darling, of unknown breeding beyond one generation. He was a dark brown horse with a white stripe on his face and some white on each of three legs. In a series of reminiscences of the history of early, and less early individual Clydesdale breeders and horses, written by Thomas Dykes, of Edinburgh, and published in a volume of transactions of the Highland and Agricultural Society of Scotland, we find the following comment on Prince of Wales when nine years old: "I had an opportunity of looking at the horse, Prince of Wales, the other day when he was drawn up alongside the big chestnut mare (Mary) and their produce, the big chestnut colt, which was placed first at Glasgow. A more valuable trio I never saw before. 'The Prince' was looking as well as ever; his grand contour round and sound, well-tapered feet and pasterns, and characteristic head at once captivating the eye. His hocks are certainly straight, but his thighs are unusually powerful. The fullness above the hock joints on the inside was visible, but a well-skilled veterinary surgeon, who has a great knowledge of the breed, at once declared it to be muscle,

and, as such, a point to be reckoned in the horse's favor. Nor is his action a whit less free than it used to be, for he steps out before like a trotting stallion and, standing from behind, you can see the soles of his feet clearly every time he lifts them. Indeed, no draft horse we have ever looked at before or since ever carried itself better. Such grand spring and gaiety at the trot, and such steady, well-placed, extensive, regular and even action at the walk. He was a bit tempery and it was risky for a stranger to go into his box, more particularly when feeding." Again, this same writer commenting on the death of Lawrence Drew and the dispersal of his famous stud, penned these words: "The dispersal sale, drew breeders from all parts of Scotland and England. Again was his old stud horse, Prince of Wales, put on the market, and at 900 guineas (a long price for a horse eighteen years old, which had descendants in nearly every Scottish parish and every corner of our colonies) he found his way back into the hands of his owner when a colt, Mr. Riddell, of Blackhall. The old horse dropped down dead in his stall on December 31, 1888, literally going out with the expiring year."

About 1872 in the stud of Sir William Stirling Maxwell, Keir Peggy (187), one of the best breeding mares of her time, dropped an undersized colt by Conqueror (199). The foal was purchased by David Riddell, the owner of Prince of Wales, and developed into the celebrated Darnley (222). The horse had a distinguished career in the Scottish show-ring until he was twelve years of age, and if Prince of Wales was famous as a sire of sires, Darnley was no less famous as a sire of mares. However, the three horses, McGregor (1487); Flashwood (3604), and Top Gallant (1850), were the get of Darnley. These sons became distinguished in Scotland, and their produce, particularly that of McGregor and Top Gallant, won distinction in the show-ring at home, as well as in Canada and the United States. McGregor was considered by some second as a breeder only to his sire and Prince of Wales.

Darnley won all the chief honors in 1876, 1877, and 1878, and in 1884 was declared the supreme champion of the Highland and Agricultural Show at Edinburgh. He was criticized as having a pony head and drooping quarters; some claimed that he dished his feet when at the trot, and all agreed that the fearless action and splendid dash which characterized Prince of Wales were foreign to Darnley. Nevertheless, he had draft conformation, almost a perfect action at the walk, and breeding character and superior quality, which the dominating personalities of the Clydesdale world at that time, Andrew Montgomery and David Riddell, championed as their ideal. With such zealous and influential advocates, type was molded along Darnley lines for two decades, and fashionable Clydesdales of the present time have pedigrees richly infused with Darnley blood.

The Transition Period.

In the early eighties, Darnley horses were very prominent in the show-rings, and were favored with a considerable degree of popularity. McGregor was the property of Andrew Montgomery, while Top Gallant was owned by David Riddell. These were the best in 1880, and in 1881 a third Darnley horse, Sanquhar (2393) entered the arena, being first as an aged horse at the H. & A. Show, at Stirling in that year. Outside of his soft hocks, Top Gallant was a grand individual, while Sanquhar had splendid quarters, feet and legs, but was somewhat low in the back.

With many excellent stallions from Prince of Wales in service, and good Darnley females numerous, it was only natural that the mating of the two strains should be practiced. This compromise marked another epoch in the formation and establishment of the breed, for it gave a well-balanced type, perhaps small, but with good action. In 1884 another mating occurred which improved the situation, for then Top Gallant was bred to a dark brown mare by London Prince, which was by Prince of Wales. The result was Sir Everard (5353). This noted horse had a conformation corresponding with the original Darnley draft type, and he inherited the scale and action of his Prince of Wales' ancestors. Four years elapsed between the advent of Sir Everard and his illustrious son, Baron's Pride (9122), which shows a lineage strong in Darnley blood on both sides, and to admirers of the Clydesdale on this side of the ocean is, perhaps, better known by his get than any other horse of the breed. In the same period, Hiawatha (10067), a grandson of Prince of Wales, through Prince Robert, and having no Darnley blood in his veins, came into existence. He was foaled in April, 1892, from the mare, Old Darling, which traces back on her sire's side to Lochfergus Champion (419). Through a combination of Baron's Pride and Hiawatha breeding the modern Clydesdale was evolved. These horses of the present era may be taller than the original Darnley type, but veteran breeders tell us they are no better ribbed nor do they possess action equal to the Prince of Wales horses and mares of the seventies, eighties and early nineties.

Some Good Breeding Females.

In this review of early Clydesdale history we have neglected to mention the females of the breed, which have been no small factor in such a rapid and healthy development. In this connection we can do no better than reproduce here some comments from the pen of Archibald MacNeilage, who for 40 years has been intimately connected with Clydesdale interests in Scotland: "The first show Clydesdale whose appearance I have in lively fixed in memory was a black mare, Alpine, bred by the late Alexander Wilson, Newtonmeads, and got by Prince of Wales (673) out of Jean by Eclipse (268). She was a full sister to the stallions, What Care I (912), Prince Edward (1245) and Royal Prince (1521). Her

name occurs in one Clydesdale pedigree somewhere in an early volume of the Stud Book. This mare was first at the first show I ever attended, the Glasgow Summer Show of 1878. She was a mare of good size and weight, with blue hoofs and clean, hard, flinty bone. Her dam was credited with having a bit of temper, and she may have had the same. In size, weight and general contour she was about the same as the popular type of the present day. The most beautifully molded Clydesdale mare I ever saw was Boquhan Lady Peggy, a Cawdor Cup champion, and so far as I can judge about as near perfection as nature is in the habit of making Clydesdales. I have seen bigger mares, but none truer to Clydesdale type. One of the most handsome mares I ever saw was the black mare, Chester Princess, a daughter of Baron's Pride, a Cawdor Cup winner and dam of two Cawdor Cup winners, Scotland Yet and his own sister, Harviestoun Phyllis. This magnificent mare died of anthrax, a very rare disease in horses. The best type of mare for breeding purposes I can recall was Dunure Ideal, the dam of Dunure Footprint, Dunure Index, Dunure Keynote, Dunure Chosen, a wonderful quartette. This mare was never awarded champion honors, yet judges consistently acknowledged that as a breeding type she could not be excelled. The logic by which, while admitting this, judges managed to convince themselves that she was not fit to be a champion, never appealed to me.

"A much earlier female champion than these was the great Moss Rose (6203). This was the phenomenal mare of her time. She was foaled in 1881, and lived to a great age, securing the Cawdor Cup when an old mare, and producing one great foal, Montrave Maud, which also won the Cawdor Cup. Montrave Maud produced one great foal, Montrave Mac, perhaps the best living sire of brood mares in the breed. He was grandsire of Dunure Ideal, her sire, Auchenflower, being the only outstanding stallion got by him. Old Moss Rose was dam of two stallions, got by the £3,000-horse, Prince of Albion (6178), frankly two of the worst stallions of their time. The Clydesdale mares of to-day are much truer to type and draft character than was Moss Rose."

The Modern Clydesdale.

Dunure Footprint and Bonnie Buchlyvie may well be looked upon as exemplars of the modern Clydesdale. The former was the leading sire of winners in Scotland during the show season of 1916. His progeny exhibited at the seven principal shows numbered 51, and altogether they secured 97 prizes, including 7 champion prizes. Second in order of merit, as a sire of winners, came Dunure Footprint's illustrious parent, Baron of Buchlyvie. Apukwa was third, and Bonnie of Buchlyvie fourth. The first twelve individuals in the 1913 list of sires, arranged in order of merit according to the success of their produce in the show-ring, include the best horses of recent and semi-recent years. They stood in the following order: Baron of Buchlyvie, Apukwa, Dunure Footprint, Baron's Pride, Hiawatha, Revelanta, Scotland Yet, Everlasting, Auchenflower, Oyama, Royal Favorite, Bonnie Buchlyvie. Six of these horses were winners of the Cawdor Cup, while Baron's Pride and Everlasting were H. & A. S. champion horses. Baron of Buchlyvie was a first and also a second-prize aged horse at the Highland Shows. Royal Favorite and Auchenflower have better records as sires than show horses. Apukwa probably reached the acme of his fame in 1915 when his get made such a brilliant record in the show-rings of Scotland. One of his good representatives, which has won in this country, was Elma, champion female at the Canadian National in 1914 as a yearling, and second in a class of eleven three-year-olds at the International last December.

It was fitting and opportune indeed that, while Dunure Footprint's get were winning the leading honors in the Scottish show-rings in 1916, another son, Fairholme Footprint, should be awarded the highest measure of approbation at the International Fat Stock Exposition in Chicago in December last. This American horse was imported in dam when Harviestoun Baroness, the champion mare at the Highland in 1912, was brought over the same year to win the highest honors accorded to Clydesdale females at the Chicago International. Fairholme Footprint was foaled on June 23, 1913, and he inherits, to a considerable degree, the markings and general characteristics of his paternal parent. Another sire in the United States which has achieved a fair measure of success as a breeder, is Golden Knight. Formerly he was in an Ontario stud, but for some time past has been doing service in the State of Pennsylvania. The past season Harviestoun Baroness was sent from her home stables in New Jersey to Golden Knight, the highest compliment that could be paid to any Clydesdale stallion in America.

LIVE STOCK.

The past season was one of the best for the pure-bred live stock industry there has been for some years. Breeders, particularly of cattle, sheep and swine have reported excellent sales, and in some cases not sufficient supply to meet the demand. With horses the rather slow movement of Canadian stock for draft purposes tended to quiet business, but conditions are now such the world over that either in United States or Canada horses should be in greater demand than they have been for some time. In fact the buyers from across the border have been purchasing mares and geldings in Western Ontario and where the animals were in any kind of fit, they took them. The present status of the industry promises to survive, as European stocks are sure to suffer in the turmoil there, and the world shortage must be overcome.

Common Diseases of Cattle---Causes, Symptoms, Treatment

WHAT TO DO AND HOW TO DO IT

In the following table we have briefly described the causes, symptoms and treatment of some of the most common diseases of cattle.

The doses mentioned are for cattle of ordinary size. Those of larger or smaller size should be given doses in proportion.

It may be wise to state, that in most cases an ox will swallow liquids readily and quickly, but there are exceptions, and in such cases there is great danger of a

portion of the liquid passing down the windpipe and causing death by suffocation, or mechanical bronchitis, which usually ends fatally. If while being drenched an ox continues to work his or her jaws, it indicates that he is swallowing, but if the jaws be held quiet great care must be taken. (We use the word "ox" when referring to any sex.) We also wish to caution readers against attempting to drench an animal that has a sore throat, or that is unable to swallow properly on account of paralysis of the muscles of deglutition (swallowing)

or is in a comatose, or partially comatose condition, as in cases of milk fever. Many cows suffering from the last-named disease are suffocated by the fluids that are supposed to enter the stomach.

It is, of course, always understood that a sick animal be made as comfortable as possible, preferably in a box stall. It must also be understood that after the administration of a purgative the patient be allowed nothing to eat but a little sloppy bran until the bowels commence to act freely.

Disease and Cause.	Symptoms.	Treatment.
TYMPANITIS, BLOATING OR BLOWN. Over-feeding; eating food that readily ferments; frozen food, sudden changes in food; weakness of digestive glands.	Uneasiness, cessation of eating and ruminating; fullness of the abdomen, and more marked on left side; difficult breathing in proportion to degree of bloating.	Give 3 to 4 oz. oil of turpentine in a pint of raw linseed oil as a drench. Repeat if necessary in 2 hours. Tie a hay rope or round stick in the mouth. If bloating be excessive puncture in front of the point of left hip.
IMPACTION OF RUMEN. Over-feeding; dry food; sudden changes in food; weakness of digestive glands.	Uneasiness, cessation of eating and ruminating; often a grunt during expiration; fullness of abdomen, especially on left side, doughy to touch, with dull sound upon concussion.	Drench with 2 lbs. Epsom salts, ½ oz. gamboge and 1 oz. ginger in quart water. Repeat, or give 1½ pints raw oil in 24 hours if necessary. Also give 2 drams nux vomica 3 times daily, and allow nothing to eat except a little bran.
FARDEL-BOUND—IMPACTION OF THIRD STOMACH. Food of a dry, woody nature; weakness of the digestive glands.	Dullness and loss of appetite, and rumination. Sometimes diarrhœa followed by constipation; grunt during expiration, especially when animal is lying. In some cases delirium.	Give 1 lb. Epsom salts, ½ oz. gamboge and 1 oz. ginger. In 12 hours give 1 pint raw linseed oil and alternate the above doses every 12 hours until bowels move freely. In the meantime give 2 drams nux vomica 3 times daily, and a little wet bran if desired.
CONSTIPATION. Indigestible food, dry food; weakness of digestive glands or of contractile powers of the coats of intestines.	Impaired appetite. Passage of small quantities of dry feces, or an absence of any passage. In some cases slight uneasiness.	Give purgative, followed by nux vomica as for impaction of rumen. Give rectal injections of warm, soapy water, and nothing to eat but a little wet bran.
COLIC. Change of food; green food, frosted food; over-feeding.	Uneasiness, stamping, kicking at abdomen, whisking tail; looking around at abdomen; alternated by periods of ease.	Give a drench of 1 oz. laudanum and 2 oz. each of sweet spirits of nitre and tincture of belladonna, in a pint of cold water. Repeat, if necessary, in 2 hours.
GRAIN SICK. Eating large quantities of grain.	Same as impaction of the rumen.	So soon as it is known that the animal has had an opportunity to eat too much grain, do not await developments, but give a brisk purgative of 2 lbs. Epsom salts, ½ oz. gamboge and 1 oz. ginger at once.
CHOKING. The lodgment of a portion of a turnip or other root, apple or other foreign body in the throat or gullet.	Vain efforts to swallow; uneasiness; salivation; in many cases soon complicated with bloating.	Hold mouth open by the use of a clevice or other device. If obstruction can be reached remove by hand or forceps. If it can be located, move if possible up or down by manipulation. If not, pass probang or garden hose and force to stomach. Do not attempt to pass whip handles, broom handles, harness traces, etc.
DIARRHŒA. Too succulent foods; food or water of bad quality; irritating foods; foreign bodies in stomach or intestines.	Frequent passage of liquid or semi-liquid feces; impaired appetite; rapid loss of strength; usually excessive thirst.	If due to foreign body, or if animal be still strong, give laxative of 1½ pints raw linseed oil. In about 8 hours, (or if animal be weak, at once); give 2 oz. laudanum and 6 drams each of catechu and prepared chalk in a pint of water, every 4 hours until diarrhœa ceases. Also add to the drinking water ¼ of its bulk of lime water.
FOUL IN FEET. Standing in, or walking through, irritating substances, as liquid manure, mud, wet rushes, etc.	Lameness, with irritation and swelling between the clouts and on coronet.	Remove cause; keep in perfectly dry place; cleanse between clouts; apply poultices of hot linseed meal until acute soreness disappears; then dress raw surfaces 3 times daily with 1 part carbolic acid to 30 parts sweet oil.
RINGWORM. Due to a vegetable parasite. It is very contagious.	Itchiness. In circular spots the hair falls out and greyish scales form. Great tendency to spread. The face and head the favorite seat, but may attack any part.	Isolate the diseased and disinfect the premises; be careful not to carry contagion to healthy stock. Moisten the scales with sweet oil, remove them and apply tincture of iodine twice daily until cured.
WARTS. Appear without appreciable cause.	Epithelial excrescences of various forms and sizes appear on any part of the body.	Clip off those with constricted necks, and to the flat ones apply butter of antimony once daily with a feather until they disappear. Very large ones should be dissected out.
LICE. Contact with affected animals or with the premises on which such are kept.	More or less intense itchiness, and the presence of the insects upon examination.	If in warm weather clip; give thorough dressing with a hot, 5-per-cent. solution of one of the coal-tar antiseptics, and repeat every 2 weeks so long as a fresh supply continue to hatch. The use of grease or oils will destroy the lice, but is objectionable on account of tendency to collect dirt.
PARTURIENT PARESIS, COMMONLY CALLED MILK FEVER. Not well understood, occurs shortly before, during or shortly after parturition.	Uneasiness; inattention to calf; glossy eyes; staggering; lying or falling down; may rise again; soon unable to rise; lies up on sternum or out flat; becomes comatose.	Prevention—allow calf to nurse, or milk little at a time and often, for 3 or 4 days after calving. Curative—Give no medicines by the mouth. Inflation of the udder to its fullest capacity with oxygen gas or sterilized air, by the use of instruments specially designed; even a bicycle pump and teat syphon can be used.
MAMMITIS—INFLAMMATION OF UDDER. Wounds, bruises, exposure, irregular milking, often occurs at or about parturition.	Heat and swelling of part or all of the udder; loss of appetite; increased temperature; alteration in the quality and decrease in quantity of milk.	Give ordinary purgative, and follow with 4 drams nitrate of potash 3 times daily. Apply heat to udder by poulticing or long bathings with hot water; milk 4 times daily, and after milking rub well with camphorated oil.

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Common Diseases of Cattle---Continued

Disease and Cause	Symptoms	Treatment.
RETENTION OF AFTERBIRTH. Causes not well understood.	Generally a portion of the membranes apparent through vulva, but in some cases none is apparent. In some cases straining and loss of appetite.	After retention for 24 hours in warm, or 48 hours in cold weather; it should be carefully removed by hand, the womb flushed out with a warm, 1 per cent. solution of one of the coal-tar antiseptics, and the animal given 40 drops carbolic acid in a pint of water as a drench or sprinkled on her food 3 times daily until all discharge ceases.
SORE TEATS. Rough milking or rough usage by calf when nursing; wounds, scratches, wet, filth, etc.	Teats are sore, swollen and hot, cracks generally soon appear.	Remove the cause. If necessary use teat syphon to draw milk. Dress cracks with 1 part carbolic acid to 30 parts sweet oil 3 times daily until cured.
COW POX. Specific virus. Is very contagious.	Soreness of teats, inflamed spots, soon forming vesicles which break and form scales with slight depression in centre, and are difficult to heal.	Isolate diseased and take great care to not carry infection to other milking cows. Dress 3 times daily with ointment made of 4 drams boracic acid, 20 drops carbolic acid and 2 oz. vaseline. If necessary use syphon. Milk not fit for use until cured.
FISTULA OF TEAT. A wound penetrating the teat and milk duct.	Escape of milk through the wound. Wound heals, except a small opening through which milk continues to escape.	Do the best you can until cow goes dry. Then scarify the edges of the opening, stitch with silk suture and dress daily with 1 part carbolic acid to 30 parts sweet oil.
OBSTRUCTION IN MILK DUCT. Appears to be a congenital predisposition.	Milk can be drawn in only small stream, or not at all. A careful manipulation between thumb and finger reveals a little, hard lump in some part of milk duct.	Either allow cow to go dry and fit for the butcher, or employ a veterinarian to operate, as the passage of needles, etc., is usually followed by serious complications.
INFECTIOUS OPHTHALMIA. Due to infection.	Swollen eye lids; escape of tears; intolerance to light or sunshine, followed by a glassy appearance of the eye and partial or complete blindness. Animal after animal becomes affected.	Isolate the diseased; give a light purgative; keep in partially darkened stalls. Bathe well 3 times daily with hot water, and after bathing put a few drops of the following lotion into each eye, viz., 10 grains sulphate of zinc, 20 drops fluid extract of belladonna and 2 oz. distilled water.
DIARRHŒA IN CALVES. Improper food and insanitary surroundings.	Frequent escape of liquid or semi-liquid faeces, usually of a yellowish color. Loss of strength and vitality.	Place in sanitary quarters; feed on whole milk to which has been added ¼ of its bulk of lime water. If diarrhoea continues give 1 to 2 teaspoonfuls of laudanum in a little new milk every 4 or 5 hours for a few doses.
INFECTIOUS DIARRHŒA IN CALVES. Due to a specific virus that exists in the surroundings, and usually enters the circulation by the navel opening.	Same as ordinary diarrhoea, except that in many cases it appears very shortly after birth.	Disinfect premises; dress navel at birth and several times daily until healed with 20 grains corrosive sublimate to a pint of water. If attacked mix 1 oz. formalin with 15 oz. water and give a teaspoonful to each pint of milk taken, or treat as for ordinary diarrhoea. WHIP.

THE FARM.

Commercialism.

BY PETER MCARTHUR.

Having spent the best part of an hour fitting a pair of hockey skates on a pair of hockey shoes and getting every dinky little screw in its place, I want to enter a protest. When I used to go skating I didn't have an expert mechanic to get things ready for me, and, what is more, I didn't need one. The skates I used were fitted on my everyday boots, and it was no trick to put them on. All I had to do was to take a gimlet and bore a hole into the heel of my cow-hides, start the screw of the skate into the hole and twist it around until it was tight. Then if I didn't have skate straps a couple of home straps that were not working fastened the skates at the toes. There was nothing fancy about those old skates, but a fellow could have a roaring good time on them just the same. They were made with wooden frames shaped to fit the sole of the boot, and there was a screw nail at the heel to fasten them with. The blade, or runner, was set in a groove in the bottom of the wooden frame, and was held in place by the head of the heel screw and a couple of brads that were driven through the wood and a hole in the blade. There were brads in the toe of the wooden frame that would sink into the sole of the boot when the straps were tightened, and when these skates were once in place they stayed on until you were done skating. Then they were unstrapped and unscrewed and the boots were ready for everyday wear. When the skates had to be put on again all you had to do was to clean out the gimlet hole in the heel with a nail and screw them on again. But nowadays the skates are fancy affairs, and have to be put on special shoes that are useless for anything else. Not only are the skates much more expensive than the old ones, but there is the extra expense of the shoes. Of course, it is quite right that the children should skate, but I am not sure that they enjoy the sport any more because it has been made expensive.

Come to think of it, I have mentioned only part of the equipment of an up-to-date skater. Besides the fancy skates and fancy shoes there are leather ankle supports to keep the skater's ankles from turning and being sprained. Then, of course, the skater should be supplied with a warm, woollen sweater, a knitted, woollen hat or toque, a hockey stick and a rubber puck. If I gave a little time to it I could probably think of a lot of other

things that a skater needs in order to have an up-to-date good time. The trouble is that skating has been commercialized like almost all other games, except "bull in the ring" and "tag." I don't know how one could invent anything to be used in those primitive games, but I know that if anyone could invent them they would have been invented, and a fortune would have been made from them. The complexity and expensiveness of sports that were once simple and inexpensive is rivalled in every department of our lives. We have many labor-saving devices that are certainly valuable, but we have far more that are merely catch-penny affairs, but we feel that we must have them. It would probably startle the ordinary farmer to take stock of his effects and find how many things he has in his house and about his farm that were unknown to his father, or, if not unknown, that his father made for himself instead of buying them at a store. As a matter of curiosity I have glanced through a mail-order catalogue which offers things that are supposed to be indispensable in every home or on every farm. As nearly as I can judge, between three and four thousand different items appear in this catalogue, and there must be a sale for them or it would not pay to advertise them. Among these indispensable articles there are very few that Robinson Crusoe had with him on his island. They are not indispensable, though many of them are doubtless a great help.

Of course, no one would advocate going back to pioneer conditions, but there should be a halt somewhere. The Government is urging us to the practice of thrift, but what are we to do? Our lives have been so completely commercialized that we are not only tempted to buy necessities but things that cater to every whim, folly or vice to which we are subject. Several of the most dignified fortunes in Canada have been built on gratifying the popular demand for tobacco and red whiskey, which shows that it is just as profitable to cater to a vice as to a virtue. One of the world's great soap manufacturers told me that he owed his immense fortune to the foolishness of women in not saving waste grease and ashes and making their own soap. Personally, I have no objection to his making a fortune in this way, for I have helped at making soft soap and I do not care for the job. Besides, it would probably be impossible to revive the art of making soft soap, for I do not suppose that any of the women of the present day know the right words to say over the bubbling soap kettle to make it jell right. If they do I wish they would write and let me know—not for use in soap-making—but because I have a curiosity about such forms of folk-lore and like to collect specimens. I know that such words were used, for the best

soap-makers of other days were known to use them. But I am wandering from my subject. Public-spirited persons are urging that people should make their own bread instead of buying bakers' bread—but that is only one of many forms of work that have left the home—both indoors and outdoors. It seems to be the rule to buy everything ready-made if possible. I am not objecting to this, for labor is scarce in most homes and on most farms, but the ready-made things are altogether too plentiful and we are being tempted by them altogether too much. If we are to be thrifty we must think twice before buying things that catch our fancy.

With all due deference to the Government, there is danger of a great disturbance of conditions in the country if we should all decide to become thrifty. What would become of the manufacturers of all kinds of goods that we buy, even though we do not need them urgently? They would have to shut up shop, and their employees would be thrown out of work. I have no doubt that there are many families depending on the manufacture and sale of even skating supplies and baseball supplies, and a score or two of things equally unimportant that might be cut out without damage to ourselves or the children. There was just as much fun in the old games the way we played them as there is now. A thrift campaign that proved successful would probably not hurt the people who are now in the habit of buying unnecessary things, but it would work havoc with many prosperous and established industries and with those dependent on them. We are all caught in a web of commercialism from which we can hardly be freed without a panic or a revolution. In the face of the arguments in favor of thrift the people are helpless. Most people are trying to save money now, but the modern method of living presses them from every side and they find saving very hard. We have gone so far astray that about the only thing possible is to start over from the beginning—but that would be revolution.

England an Agricultural Nation.

EDITOR "THE FARMER'S ADVOCATE":

The coming of the Lloyd-George Ministry and of R. E. Prothero, a practical farmer, to the Board of Agriculture, has even in a few days after the Premier's accession, meant a lot to English agriculture.

A huge effort to make England what it once was, an agricultural nation, is being launched by Prothero, and he has behind him all the leading men in Agriculture in the United Kingdom.

In short this is Prothero's program:

The Board of Agriculture is to fix contract prices for all crops and has commenced by offering 60s. per quarter for wheat. The prices for oats and potatoes are to be fixed within the next fortnight. Seed will be supplied at reasonable prices. Cottage garden cultivation and pig keeping are to be encouraged to the fullest limits. Labor is to be left on the land and the country is to be organized generally on a real food producing basis.

Assistance is to be given to everyone—even financial assistance to poor farmers unable to buy seeds with which to plant their increased acreage, for acreage must be increased right and left, and all waste commons and park lands must go. In your graphic language we are "out for the dough", and if Britain can win the war on agriculture she will. But it has taken the government a long time to realize the value of agriculture properly cared for and fostered.

Foremost, as a helping hand to the Minister of Agriculture is the Royal Agricultural Society of England. It has dropped its 1917 show, and it is now going all out to help practical men with practical means and ways. Here are five resolutions it has given Prothero to ponder over:

1. This Committee is of opinion that a price should not be fixed for any Agricultural Produce unless the cost of production is taken into consideration and unless the price of feeding stuffs, fertilizers etc., is also fixed.

The Committee questions the wisdom of fixing prices, but in the event of the price of wheat being fixed at 60s. per quarter, the opinion of the Committee is that the price of oats should be fixed at not less than 40s. per quarter.

2. The Committee is of the opinion that where spring sowing of wheat is undertaken, care should be taken to ensure that the varieties used should be especially suitable for the purpose—such as Red Marvel, April Bearded or, in districts where it is known to succeed, Red Fife.

3. The Committee feel that the land of this country cannot be made to produce more food unless there be an increase in the supply and use of artificial manures.

The manufacturer of these manures is dependent upon a larger amount of sulphuric acid being made available for the use of the makers of artificial manures, and the Committee urge the Government to set free for the use of those manufacturers such acid as they may require.

4. The Committee are of opinion that in view of the great difficulty experienced in obtaining artificial manures in this country, the Government be requested to prohibit the export of sulphate of ammonia and basic slag, except to our colonies, until the requirements of agriculturists of this country have been met.

5. This Committee views with the gravest apprehension any proposal to send, for sale in England, horses cast from the Army in France.

They are of opinion that it would be a most unwise proceeding to import these horses having regard to the grave risk of introducing and spreading disease.

This Committee requests the President of the Board of Agriculture to safeguard the farmers' interests in this matter, both now and at the end of the war.

There are more Prothero problems to be probed—wool prices, encouraging the production of pedigree live stock and so on, but these will come later and I'll advise you. I know you are keen in the new land watching what the old is doing. Piping times are coming—and the joy bells of victory too.

ALBION.

Automobiles, Farm Machinery and Farm Motors.

Sanitary Disposal of Schoolhouse Wastes.

The "Metal Worker, Plumber and Steam Fitter" has published an article dealing with advanced methods of treating waste matter from schools and similar institutions, where no complete system of sewage disposal is installed, in such a way as to avoid any menace to health. The article was submitted to Prof. W. H. Day of the Ontario Agricultural College for his consideration, particularly with regard to any possibility of frost troubles. The complete article is reproduced in the following paragraphs, but we shall first insert Prof. Day's comments which follow:

"I have read carefully the article referred to, and especially that part referring to the illustration. This design of sewage disposal plant for schools should be a very satisfactory one. It seems to me, there should not be much trouble with freezing in our climate, especially if two or three pails of water are poured in daily as recommended. You see the tanks are covered, except at seat, with 5 inches of concrete and 2 inches of plank, and then over this is the protection of the building. In our climate the building should, however, be the full size of the tank. If the building were sheeted inside this would guard still further against freezing. Of course somewhere to the northward there would be a limit to the winter efficiency, but I think the system should, at least, prove ample for Old Ontario and other portions of Canada having similar or warmer climates. The barrel method probably could not be used so far north as the concrete tanks."

The location of privies to make them sanitary for country schools is a troublesome matter. They should be convenient and at the same time sanitary. Dry vault privies are most common in rural districts, and now septic tanks are being introduced for the treatment of the waste, but even this does not make the effluent harmless without further chemical treatment. If the outside privy is used, it should be constructed so as to prevent contamination of the surrounding soil and underneath the school building. This precaution is necessary, especially where a well is used as a source of water supply. A privy set over an excavation in soil that is not watertight is dangerous, and will contaminate nearby water supplies. Rules have been given as to the distance at which privies or cesspools may be located, but no general rule can be made to fit all conditions. What is known as the cone of filtration is the increasing distance with depth that the liquids from the vault will penetrate and this in proportion to the poverty of the soil.

The privy house generally should have two seats, each seat provided with tight-fitting hinged covers arranged so that they will stay down when not in use. A bin with a locked cover should be provided having an opening at the bottom for the storage of dry soil. After the privy has been used this dry earth should be used freely to cover the waste matter.

The entrance door should fit tightly and be of the self-closing type with a spring catch, and windows and ventilators should be tightly screened to exclude flies and other disease carriers.

The construction underneath the seat may be of several types. The waste matter must be kept in some receptacle which can be kept dry and off the ground and so made that it can be easily removed, emptied and cleaned. The contents of the receptacle must be protected from flies. This is most important.

The receptacle may be a strong box of heavy timber, substantially braced and lined with sheet metal. It may be provided with runners, sled fashion to make removal expeditious. But the most important point is to have it removed at regular intervals. The contents should be buried in a field at a safe distance from a well or spring and should never be put in a field where vegetables are grown. When the receptacle is returned to its place several inches of dry loam should be put in it to absorb all moisture and to neutralize all odors and waste matter introduced.

The use of sheet metal buckets in place of a metal lined receptacle is recommended for catching the waste.

Another form of dry privy that is satisfactory for use in sloping ground has a watertight brick or concrete pit to catch the wastes. The lids of the seats should be made to fit tight and to close automatically. The cover at the rear over the pit should fit tight against the entrance of flies and should be waterproof to prevent leakage from beating rains. The pit can be easily cleaned but like all forms of dry privies the two essentials for sanitation are the regular use of dust and the safe disposal of the refuse. Sand should never be used, the dusty loam from dirt roads being the best.

A similar type of sanitary privy designed by members of the United States Public Health Service is known as the "L. R. S." privy. In its simplest form it consists of a watertight barrel with a seat arrangement over the top and a connecting T pipe from the barrel, to an outside effluent tank, either a large bucket or a

the fecal matter is liquefied and that there is comparatively little odor about the building.

An anti-splash should be provided and the top and bottom of the T pipe should have wire strainers attached.

More elaborate forms of the "L. R. S." privy may be made. Concrete boxes can be made to hold the barrels and pumps can be used to empty the barrels.

Concrete waterproof tanks similar to a small septic tank can be constructed instead of the barrels. In this case, if the ground is suitable, subsurface drain lines can be made to carry off the effluent after it has been chemically treated to destroy bacteria.

A form of sanitary privy has been designed by the State Board of Health of Kentucky which comes nearer solving the problem of providing a sanitary privy where sewer connections are unavailable than those previously described. This type, a cross-section of which is shown, is recommended for town or country homes, schools, railway stations, hotels and other places where there are no sewer connections.

A concrete tank should be made 4 ft. deep, 4 ft. 2 in. wide and 6 ft. long, divided into three parts each 2 ft. wide, inside measurement, as shown. The partitions act as baffles, the first being 3 ft. 4 in. high, and the other extending downward 3 ft. so that there is 12 in. clearance at the bottom for the effluent to pass to the next tank. When the water rises to the 3-ft. 4-in. level it overflows into compartment No. 3. Here, when it rises to a level of 3 ft. 2 in. it is carried off by a 4-in. glazed tile.

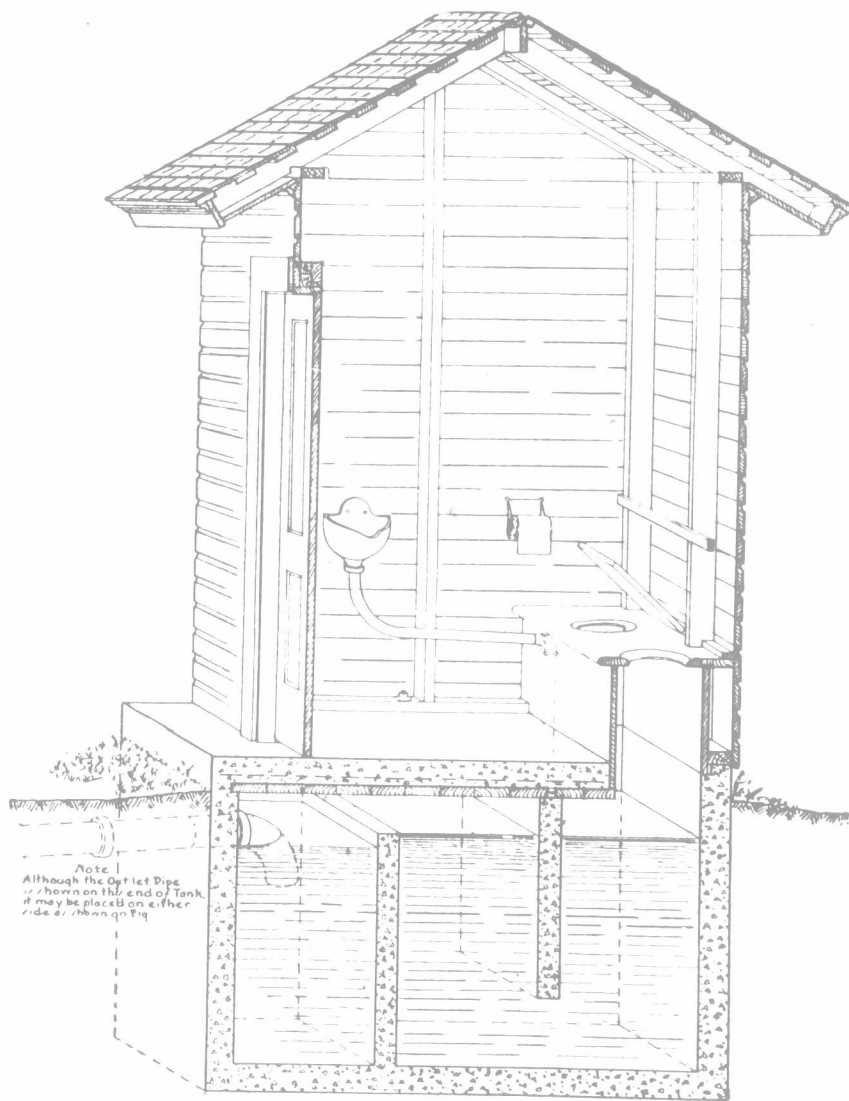
When the excavation has been made the wooden forms for the walls and floor should be made. The floor should be laid first, and like the walls should be 5 in. thick. The proportions of the concrete mixture should be one part good, fresh Portland cement, two parts sand and four parts of gravel or finely crushed rock, with enough water to make it the consistency of soft batter. The construction will take 15 bags of cement, 1 cu. yd. of sand, 3 cu. yd. of crushed rock or gravel.

After the floor has set for 24 hr. the side-wall forms should be placed, care being taken to have no dirt or trash where the walls and floors join. The concrete mixture should then be poured and tamped with a thin-edged board next to the wood forms so as to give a

smooth surface to the inside walls. When this has set for three days the form should be removed and the inside walls and floor should be finished with a mixture of cement about the consistency of thick cream.

When the seat which is 16-in. wide and 18 in. high has been put in place, a cover of 2-in. planks is constructed for the tank. This will be the form for the concrete floor of the privy. Several layers of galvanized iron fence wire should be used to reinforce the concrete. The latter should be finished smooth so that it can be kept clean easily.

The drain tile which is to carry away the effluent after it has been chemically treated should be carried to a distance of 100 ft. It should be laid with cemented



Kentucky Type of Sanitary Privy.

small barrel, securely covered to exclude mosquitoes and flies.

The theory of the action of this outfit is exactly the same as that in any septic tank disposal system. The larger barrel is the liquefying tank and the smaller is the effluent tank. First the larger barrel is filled with water to the level of the overflow, or about three-fourths full. A small quantity of well-rotted stable manure should be thrown in the water to aid the work of the liquefying bacteria. The action of the bacteria on the excrement is to liquefy it. As the water line in the larger barrel rises the liquid will flow out into the outer barrel or bucket, in which it can be chemically nullified and finally carted away and emptied. It has been proven that

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joint and at the ends with open joints below the frost line and away from wells or springs. The discharge should be entirely underground and it is a good plan to have a rose garden or flower bed along this drain line. A vegetable garden should never be made here.

Just before the house is put in place and bolted down, the tank should be filled with water and five or six shovelfuls of well-rotted stable manure should be added. This is to inoculate the fluid with the liquefying germs upon which the satisfactory operation of the outfit depends.

Each day a bucket of water should be poured in each seat and urinal to break up the fecal matter, and the urinal should be flushed thoroughly every day. If care is taken to do this the tank need never be filled but once. No disinfection of any kind need be used except camphor balls in the urinal, if the pail of water is put in every day and if the urinal pipe extends well into the water. There should be practically no odor, and after years of operation there will be very little accumulation of solid matter in the first tank.

Sanitary Farm Conveniences.

EDITOR "THE FARMER'S ADVOCATE":

After making some improvement in farm practice or equipment and realizing its benefit, people are often surprised that they so long endured the inconveniences, and probably loss, arising from conditions that well-warranted effort and outlay so easily remedied. Year after year families put up with insanitary arrangements about the premises that are really intolerable and dangerous. Such is the tendency to stay in a rut or to excuse the lack of an extra effort by reason of the pressure of what seems to be more necessary routine. All that is needed in some cases is to call attention to what ought to be done, but others have to be prodded up more pointedly. Engaged in an arduous occupation making heavy demands on intelligence, patience and physical

effort, the farm family is entitled to a household equipment conducive to comfort and health without which the best results cannot be secured. Thanks to the presentation of this subject in "The Farmer's Advocate" the water supply, lavatory and closet equipment of great numbers of farm homes have been radically reformed, and those who have done so will pass the cap of criticism along to those whom it may fit if there are any of your readers left in that class. I hope that the message will reach others indirectly. From observations in several provinces, and personal experiences that cannot be discounted, I regret to say that in too many cases the state of things is yet not only alarming but shocking. This was verified by what I lately heard from the lips of a man whose duties last year took him through several extensive districts in long settled portions of Ontario. He was no pernickety town man either, sniffing around for something to growl about. The actual experiences were simply sickening. Is it necessary, one might enquire, that outhouses be located 50 or 75 feet away from the dwelling, and that women and children, frequently in a delicate state of health, have to wade there through the snow or slush and in all sorts of weather several times per day? Possibly they were located at that distance so that the water of the well might not be contaminated, and vile odors would blow away into space without reaching the house. Would your readers believe it that some of these pits had been left for years without being cleaned out, blocked full and frozen until spring or a big thaw lowered the accumulations? Will an annual coat of white-wash remedy such conditions? Hardly. A gallon of rose water would not suffice to sweeten such a filthy pit! Now, if there be absolutely not sufficient space in the house for a bath room and closet such as so many properly-equipped farm houses now have, the outbuilding should be accessible through a covered way or connected with the end of the wood shed or summer kitchen. A pit is a nuisance and unnecessary.

It is no great job to construct a box say 36 inches by 20 inches by 18 inches of plank that can be drawn out at the protected rear, and the contents removed regularly, when about full, to the manure pile or elsewhere. It is surprising what an improvement a handy man, who really wants to do so, can make during one fine winter day. No new farm house should be planned without including an inside water supply, closet, lavatory and bathroom with an outside septic tank or other efficient discharge for waste. Before some of these modern systems such as hydro pneumatic, had been brought to notice publicly, farmers had worked out improvements for themselves with a little expert plumbing help. In one case I might mention, a galvanized metal tank about 8 feet by 28 inches by 26 inches in the attic over kitchen supplied the water fed direct from roof and also from cement cistern in ground with force pump at kitchen sink. The kitchen range has a hot water attachment, providing supply for bath room. The closet is in a small, separate, adjoining compartment, an arrangement which many prefer, if practicable. Bath room is above the kitchen and heated by range smoke pipe. Outside the house, four-inch, glazed sewer tile lead 40 feet to a loose brick cesspit 6 feet by 4 feet, and from this an ordinary three-inch tile drain carries away the overflow to a gully. For several years it has given excellent satisfaction and in periods of illness, which have been few, thanks to the improvement, the family would not be without it for ten-fold the cost. In solid comfort and convenience it has paid for itself over and over again. In our log house days, sheltered by the forest, such things were not available, and perhaps unnecessary, but they are essential and obtainable now, and I call attention to the subject at about the coldest time of year when the need is most keenly realized and steps more likely to be taken to provide, during the coming season, one of the most urgent requisites in any a farm home.

Middlesex Co., Ont.

ON THE WING.

Canada's Young Farmers and Future Leaders.

Topics for Discussion for Young Farmers.

Each week we shall announce topics for discussion in this department. Three 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. What are the Gross Returns From Your Farm?

State number of acres in farm, and give gross returns from the different branches of farming. What does it cost to run the business? Have you authentic information as to which departments are the most profitable. Have you thought of a plan whereby the returns can be increased the coming year? If you haven't kept books you, no doubt, have an account of the stock and other material sold. Make a resume of an average season's operations and put it into an article of not more than 800 words, and let us have it by January 20.

2. How Would You Manage a Farm?

Mention size of farm, nature of soil, branches of farming, kinds of crops and classes of stock. To what extent would the community, roads and markets influence you when deciding on the line of farming to follow? Have articles here by Jan. 27.

3. What Does Horse Labor Cost?

What does every hour of horse labor cost on your farm? How many horses do you keep—what does it cost to maintain them, and how many hours of labor per week, per month or per year do you get out of them. The cost of maintenance divided by the hours of work done will give very approximately the cost of a horse-hour. Is there any income from the horses, in the way of colts, etc., except that which they yield in actual farm or road labor. Express your views and give actual figures with regard to this question, and mail the copy, not exceeding 800 words, so it will be received at this office not later than February 3.

Everybody for Himself.

EDITOR "THE FARMER'S ADVOCATE":

Even in a time when our thoughts are naturally turned to a more serious question—the war, it doesn't seem at all out of place to ask ourselves the question, "What is Wrong with the Community?"

I always get angry when I hear a speaker from the city get up and answer this question. I say "from the city" because very few from the country have even attempted an answer. The reason we get angry is because there is so much truth in what is said about our rural society. As a boy on the farm I freely admit that there is something wrong when the exodus from country to city never ceases.

I do not believe that the trouble can all be attributed to one cause, but I rather think there are several. I think however, that one of the chief reasons for our young people leaving the farm is lack of proper social intercourse. I came back to the farm last fall after

being away several years, and I at once felt that there was something seriously wrong. No young people's organization existed here so I decided that it would be a good piece of work to start something along that line. A social survey of the community was made and those whom I had counted on for help showed well-marked indifference and as a result I have given over the idea for the present. In my survey I found no such thing as a common community spirit. It seemed to be everybody for himself. The situation I have described I believe to be typical of our Ontario communities. It is hard to suggest any remedy. In the first place we need education along social lines so that our young people will realize the good to be derived by working together. I often think that the church and school, the two strongest factors in the community, are partly to blame.

Many country churches have never attempted to organize their young people and we often find the school teacher showing little interest in the society of the community. What we need is a true spirit of co-operation and a feeling of unity among the people. If we can make the rural society attractive I feel that it will be from city to country, and not from country to city.

Ontario Co., Ont.

OLO.

Education, Organization and Higher Ideals.

EDITOR "THE FARMER'S ADVOCATE":

"What is wrong with the Community"? This subject appeals to me very strongly because of having lived and worked under its influence and having watched its influence on other young farmers. Take two of your questions: "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?" The first reason is the great lack of agricultural education. So much farm work has been done and is still being done without knowing why. A certain writer to these pages some months back complained that his father asked him to do certain work on the farm but did not tell him why it should be done. We want to know why, and if we cannot get an answer we lose interest in farm work and begin to think it would be better to work at something else. This lack of agricultural education is the cause of many mistakes in the management of the farm, and these mistakes cause losses, which in turn cause disappointment.

Here is an actual case on this point: A bunch of about twenty sheep was being fed in a small barn, which had once been used for a horse stable. Every night the door was closed to keep the sheep in. They soon began to fail and many of them died. These sheep were cared for by a boy whose father was dead, and the boy did not know that sheep should not be kept too warm. Would you wonder if that boy was disappointed with sheep? He is still keeping sheep and has learned more about them, but it cost too much to learn by losses.

Another reason why boys tire of rural surroundings is the fact that they are not appreciated or encouraged in their work. How many boys are expected to work and work day after day and no one speaks a word of encouragement or tells them that they are doing the

work very well? How much it does mean to hear the "well done" from a father or friend!

Notice the young man who leaves the farm and goes to a mining camp or some place where he gets good wages. He works there for a few years, perhaps working seven days a week, and so he saves some money. After a time he comes back home on a visit. Watch the people of the community welcome him, and hear them say so many nice things about him and ask him to visit them etc. The young fellow who remained on the farm and kept the home good, paid the taxes and many other things that call for payment, is looking on. Does he ever get a word of encouragement?

Another reason why the boys leave the farm is because farmers are so slow to organize and work together for their own good and protection. When we look around a farming district how often do we find that the farmers are working against each other and if one gets along better than his neighbor there are envious feelings which often develop into quarrels and perhaps worse. This condition of affairs is very unpleasant for the young folks and I think they often go away so as to be clear of it.

The lack of public conveniences is also a factor. The mail service is often of the poorest kind and the post offices long distances apart and the railroad is often so far away that we find it of very little use. I know a country district that has been settled more than one hundred years and these people get their mail only three times a week. What is the remedy?

(1) Agricultural education and it must be taught to the boys and the girls while they are young.

(2) A higher ideal for the farmer. He should realize that farming is the noblest profession.

(3) Organization; the farmers of Canada if united could get what they would ask the government for. To put it in a nutshell the farmers united would be the controlling power in the Dominion.

We would then be in a position to get cheaper farm machinery, better public service, a parcel post that would be of some use and many other things that would greatly benefit the rural districts.

Guysborough Co., N. S.

ACADIAN.

Equip the Boy and he Will Stay.

EDITOR "THE FARMER'S ADVOCATE":

The rural community has been of inestimable value in contributing leaders for every profession and walk in life. This no one can deny. It is plainly evident that young men are leaving the farm. The many allurements of the city and business life have taken a heavy toll. The present war is calling for all available men, and the country is answering nobly. And now, at the present time, the rural settlements are depleted of their manhood and are suffering for want of good, straightforward, honest men—men who are willing to stand shoulder to shoulder and fight the evils, distrusts and abuses that are at this time being laid on the very heads of the farming community. Suffice to say that a great part of this annoyance now being borne by the farmers should be directed toward another class—the middle-men.

To take an extensive view of the situation, it seems to present itself into two different aims or purposes in life—proprietorship, comfortable living, and spiritual,

mental and physical welfare, versus money making, social functions and amusements.

Some say "Why do young men leave the farm?" Others say, "What good reason is there for staying on the farm?" I think all will agree that the farmer is more dependent on weather and market conditions than any other class of people. He is running more chances of loss through death or mishaps to live stock, through storms and frosts destroying his crops, and through market fluctuations than anybody else. His working capital then is in constant danger, the greater part of which he has no control over whatever.

We see boys leaving the farms and making more money with less hard work and a great deal less worry and responsibility than those of us who stay ever expect to make. If farmers would take their sons into fuller partnership it would be more encouraging for the boy and a great deal more satisfactory to the farmer. Some fathers get their sons to help in planning the work and perhaps send them to market with produce to sell, but here the fun ends. The cheques are made out in dad's name and he generally cashes them himself, so son sees no money except a few pennies he may give him or he may be fortunate enough to earn a little by outside labor.

In many communities farmers are struggling to make two ends meet. This necessitates long hours and hard work, and the boy feels it too. Man is a social being, especially when young, and all efforts to oppose this tend to bring on discontent. He sees his neighbor starting off with his new rig, while if he can go he must walk or wheel it. No wonder he gets dissatisfied with his lot, and yet they say, "Why do so many leave the farm?"

Equip a country young man with means of easy conveyance to reach anything that is going on, give him a piece of land and some stock to interest him, and you will find you are beginning to solve the problem of keeping the boys on the farm.

P. E. I.

CLOVER LEAF.

"Sonny Jim's" Cures for the Ills of the Community.

EDITOR "THE FARMER'S ADVOCATE":

The financial problem we find is growing every day, and just to know how best to divide our income is a conundrum. It is true we are setting an eager pace to keep up production, yet the expenditure threatens to overrun our receipts. The war not only brings on a tremendous expenditure in itself, but increases the cost of production. At times when grain is high in price and cattle comparatively cheap, we farmers are feeding with a great amount of uncertainty. Let us look at the manufacturer. When the cost of production increases he simply adds it to the article which he sells; the consumer in turn pays for the increase. Now, can there not be some system brought about in our markets whereby the farmer might have at least some protection. In order to produce finished beeves we start feeding in the fall, for instance. By spring if the demand is good all is well, but if the demand be poor and prices so low as not to pay for the feeding, selling them would mean loss, and to keep them is only increasing the risk. The farmer's market seems to be the most unsteady, uncertain market there is to be found. However, we continue to raise stock, and feed our grain so that when there is a demand we will be ready with the goods.

A great deal of discussion is heard these days on why the boy on the farm tires of his surroundings. I think it is amusing to hear fathers say "give the boy something to look after—a calf for instance." Very good. The boy does the "looking after" part of it, sees the calf grow and sold along with the rest of its age. Of course he is persuaded to put the money in the bank. Shortly, the boy takes a fancy to a yearling in the neighbor's lot, but the thoughts of buying it are quickly discouraged, for, in the meantime, they have given him another calf to look after, to watch grow up to be sold and the money placed in the bank. Money put in the bank, is, to most boys, dead money. I would suggest that instead of a calf, change it to hens, as there would be a little money coming in every once in a while, thus the boy could see the gains more easily. You would see how his interest would grow. I have heard boys giving their reasons for keeping some certain breed of hens and arguing how they were superior to others, even with men who have been in the business all their lives.

Another "dead-fall" to keep the boy on the farm is that he is told that some day the place will become his. Yes, it will if that day is not too far away, but I have seen boys thirty-five years of age before they got a foot of land under this system. Here is an illustration: You go to the field with a few oats in a dish to coax a colt to the stable; if the stable is not too far away you may get him, but if he has too far to go, ten chances to one he will leave you, throw up his heels and run. Now give the boy a part of the place—did I hear father say: "It would be a queer farm the boy would run." If I remember the story rightly that father used to tell he got the place when he was a boy, started to clear it, etc., etc., and of the times he used to have at logging bees, breaking in oxen, and how they used to run away on him, get tangled up in a fence or tree, anyway it must have been a queer farm he run when first starting out.

I would like to change the subject to church attendance. I have been an advocate of church union for some time, but have recently made investigation and find that if all the people in the neighborhood were churchgoers there would be plenty for all the churches

to do. The great cry is that the church is dwindling. Let us take a look at the officers of a good many of our congregations. We find quite a number of old men, retired as it were in church work. Their days of vim and youth past, they hold office as a sort of honor for what they have been. I know of a church not three miles from where I live, whose officers are composed of young men, and that church is not dwindling, it is a live wire, humming with busy workers. They do not sit with folded arms and leave all for the minister to do. It needs men at the head of the work that will push it along, and not just live retired.

Grey Co., Ont.

SONNY JIM.

Help the Community Through Its Boys.

EDITOR "THE FARMER'S ADVOCATE":

The community in which I live had, twenty-five or thirty years ago, hosts of young people. Families of from five to eight or ten children growing up to young men and women were common, and literary societies held in schools were largely attended. Now all is changed. Literary societies would not be attended. One-hundred acre farms are worked by one man, as a rule.

There have been several reasons for young people leaving the farm. For instance, it takes more money to stock a farm and buy the necessary implements to work it than it does to start in a great many other callings in life. Western Canada, therefore, has become the home of a great many young men from this neighborhood, who, through homesteading in that country, have secured farms for themselves with a small outlay of money. Again, some farmers finding it difficult to raise a large family and pay for their farms, have sold their farms and taken their families with them to the Western Provinces.

Besides this many young men have been influenced to leave these parts for the West by hearing of the success of their companions. In some instances farmers not realizing that their position in life is much better financially than a great many working for salaries in cities and towns, advise their children to get an education and make their living in an easier way.

Another cause for the country being depleted of young people may perhaps be traced to our educational institutions, the curricula of which are evidently intended to prepare students for any other business in life than that of an agriculturist. Sometimes the farmer who tries to keep his sons from leaving the farm pursues a course which really defeats his object. Having a family of several boys, he argues thus: "Now, if my boys stay with me and save paying hired help, I can buy a farm for each one." Accordingly everything must bend to the attainment of this object. The boys receive very little schooling; as soon as they are able to work they must stay home and grind. The old adage "All work and no play makes Jack a dull boy" is literally fulfilled. He provides no wholesome entertainment for the boys in the evenings, such as music, games, etc. The boys are expected to work hard all day and go to bed when their work is done, to be able for a repetition of hard labor each and every day. He provides them with food and clothing, and scouts the idea of his boys requiring pocket money. Finally the boys get completely disgusted with this treatment, and leave the farm for more congenial employment.

How to remedy these evils may be more difficult than to draw attention to them. One step toward keeping boys on the farm is for the farmer to put himself in the boy's place and ask himself: "How did I like to be treated when I was a boy?" Then he will probably try to give him a judicious mixture of work and play teaching him duty first and pleasure afterwards. Give the boy an interest in live stock; let him have an animal of his own and teach him to feed and care for it properly, and also teach him how to spend the money wisely when he disposes of it. He should also be given a small plot of ground and seed to sow it. He should be taught how to prepare the ground, how to sow the seed, how to cultivate when growing, also how to harvest the crop. The proceeds, as before, being the boy's very own, and so on through every department of farm work.

Arouse interest in all the different kinds of farm labor by giving the boy a share in the proceeds, if only a small share at first, and increasing it as the time passes. Give him all the wholesome amusement he wants at home; in short make the home such a pleasant place that he will have no desire to leave it. Some attention has lately been given to teaching agriculture in our schools, but there is still room for improvement in this direction.

Last, but by no means least, farmers should organize in order to sell their products to better advantage and also to buy cheaper such necessities as clover seed, timothy seed, cottonseed meal, oil cake meal, etc.

Huron Co., Ont.

G. H. MAGEE.

Co-Operate!

EDITOR "THE FARMER'S ADVOCATE":

The main difficulty with the country community is lack of co-operation, and of education which would lead to co-operation. The farmer has always been impatient of theory; but in this age, practice and experience alone will not make a proficient farmer, any more than they will make a proficient doctor, except at the expense of much time, money and many mistakes. Notwithstanding the splendid work which has already

been done by the Agricultural College, the Short Courses held at the various district centres, and, more recently, the classes in agriculture in the public schools, agricultural education is not yet, as it should be, universal among the young people on the farms. There is also a crying need for business training to enable the farmer to hold his own in the commercial part of his work.

Another difficulty is the attitude of the urbandwellers toward the farmer. They regard him as prosperous, stingy, and behind-the-times, almost as a necessary evil. They have no adequate appreciation of the farmer's difficulties, and the bearing, direct and indirect, of his prosperity or the reverse, on their own, on the whole nation. And what is the result of this? Serious hindrance to development and, when conditions are unfavorable, hard times, and danger of harder to come. The farmer cannot obtain money to finance his projects; legislation which is unfavorable to him is enacted; the producer continues to receive low prices for his produce, and the consumer to pay high for it.

The latter question may be solved, and is beginning to be solved, both by direct selling and buying between producer and consumer, and by the formation of co-operative marketing companies by the farmer.

Another source of loss to the farmer is the fact that advantage is taken of his necessity by the big manufacturing interests, which charge him too dear for his necessary equipment. This also can be combatted only by combining either to form companies for supplying their own manufacturing needs, or to obtain legislation by which all the profits above a certain percentage made by such interests, be shared by the people.

The latter means perhaps cannot be employed, and farmers can never enjoy the privileges and exert the influence in the community which the preponderance of wealth, population, and usefulness should obtain for them, until they organize into one compact political party. It is encouraging to note in this connection, that the time honored custom of voting "like Dad did", merely because Dad did so, is dying out, under the vigorous blows directed against it in late years. But the sooner the farmers support one party, which is bound to do their bidding, the sooner they will come fully into their own. How many members have the farmers of Canada in the House of Commons, who are definitely and irrevocably pledged to the fulfillment of their aims? On the other hand, how many have those industries, the advancement of whose interests is, to say the least, incompatible with that of the farmer's?

The social life of the farming districts, generally, is not very live, partly owing to the decrease, since pioneer days of the direct dependence of man on his neighbors, and, therefore, of his more intimate interest in them. But with our modern improvements and conveniences, it should rather be strengthened, not only among the farmers themselves, but, to some extent at least, between the farmers and the dwellers in towns. For while the two classes must always have distinctly varying aims and modes of living, intercourse between them should conduce to the increased welfare of both in more ways than one. But this will be the natural outcome of working together along other lines.

The tendency of the young people to leave the farm and go to the city will not be eliminated to any extent until they are fitted by their education to occupy at least as high a position, and to command as high salaries in the rural community as they are led to hope they can in a city, and until they see agriculture taking the place in Canadian development which is its right as the most important and indispensable industry of Canada.

The prime factor in all progress will be co-operation. These are the three gates which the farmer must force before he comes into his own: education, legislation and social life. And each gate bears an inscription above it. Above the first is inscribed, "Co-operate!" Above the second, "Co-operate!" and above the third, "Co-operate, and evermore co-operate!"

Essex Co., Ont.

J. RAYMOND KNISTER.

THE DAIRY.

Cheese and Butter Exhibit at Napanee.

The first winter dairy exhibit of the Eastern Ontario Dairymen's Association was held at Cornwall two years ago. A very nice exhibit was arranged, but this year the display of cheese was ten times better than the first. The finish of the 181 on exhibit was excellent and there was noticeable uniformity in appearance. The quality was exceptionally good and the judges experienced a difficult task in placing the awards. The scores were very close. Only one cheese showed gassiness. Geo. H. Barr, one of the judges, advised makers to throw away the old fibre rings and get steel followers which will make it easier to get a smooth finish and is also more sanitary. Very little butter was shown, and the quality was not of the highest. Cheese and butter were sold by auction. Large cheese brought 22 1/3-16 cents; stiltons and flats 22 1/2 cents per pound. Creamery and dairy prints realized 42 cents, and solids 40 cents per pound. The following is a list of winners together with the score.

SEPTEMBER WHITE.—1, A. G. Wiltsie, Vankleek Hill, 97.3; 2, Leith Talman, Elgin, 97.2; 3, J. W. Fretwell, Oxford Mills, 97.15; 4, J. S. Tobin, Martintown, 97.05; 5, Orrie E. Barton, Springbrook, 96.4; 6, C. A. Wilkins, Millie Roche, 96.35; 7, Geo. H. Rose, Stirling, 96.3.

SEPTEMBER COLORED.—1, Jas. S. Tobin, Martintown, 97.8; 2, Ralph Alguire, Northfield, 97.2; 3, W. O. Wort,

Avonmore, 97; 4, John Grant, Lunenburg, 96.8; 5, E. E. Chaffee, Cornwall, 96.7; 6, Alex McMillan, Avonmore, 96.6; 7, John Hall, Rossmore, 96.4.

OCTOBER WHITE.—1, Orrie E. Barton, Springbrook, 97.6; 2, Geo. H. Rose, Stirling, 97.35; 3, Jas. F. King, Almonte, 97.3; 4, John H. Kyle, Navan, 97.2; 5, Geo. W. Chambers, Stirling, 97.2; 6, Walter T. Barker, Stirling, 97; 7, Jas. S. Tobin, Martintown, 97.

OCTOBER COLORED.—1, A. G. Wiltsie, Vankleek Hill, 97.3; 2, Jas. S. Tobin, Martintown, 97.2; 3, Kenny Dewar, Vars, 97.1; 4, J. W. Fretwell, Oxford Mills, 97; 5, Ralph Alguire, Northfield, 96.8; 6, Perry Foxton, Sydenham, 96.7; 7, John Kyle, Navan, 96.7.

CANADIAN FLATS.—1, John Hall, Rossmore, 96.7; 2, Ralph Alguire, Northfield, 96.5; 3, W. J. Potter, MoulINETTE, 96.4; 4, Benson Avery, Kinburn, 95.9.

STILTON.—1, W. J. Potter, MoulINETTE, 95.8; 2, Chas. A. Wilkins, Mille Roche, 95; 3, W. J. Gerow, Napanee, 94.95; 4, Walter T. Barker, Stirling, 94.55.

CREAMERY BUTTER.—56-Pound Box: 1, Belleville Creamery, 93.5; 2, E. E. Chaffee, Cornwall, 93.1; 3, R. S. Southworth, Campbellford, 89.5. 21 pound Prints: 1, R. M. Haley, Lanark, 95.5; 2, Belleville Creamery, 94.2; 3, E. E. Chaffee, Cornwall, 92.3; 4, R. S. Southworth, Campbellford, 89.8.

DAIRY BUTTER.—20-Pound Crock: 1, M. H. Sexsmith, Selby, 92.6; 2, Jos. Cramer, Westbrook, 91.9; 3, Miss N. P. McDonald, Campbellford, 90.9. Ten Pound Prints: 1, Jos. Cramer, Westbrook, 94.2; 2, N. H. Sexsmith, Selby, 91.8; 3, Miss N. P. McDonald, 91.1.

Silver trophies donated by Instructors and Cheesemakers to maker Jas. S. Tobin, Martintown, and instructor J. Buro, Mille Roche.

Know the Truth about Your Cows.

The keeping of dairy records has been responsible for discovering many valuable cows, and for increasing the interest of dairymen in their herds. Chas. F. Whitley, of the Dairy Branch, Ottawa, supervisor of the cow-testing work, claims that testing is the forerunner of true prosperity for dairymen. While only a small percentage of cows are being tested as yet, the number is increasing each year, and success is coming to those who apply the knowledge gained through keeping records. Every dairymen wants to have a high-producing herd, but the average is kept low by the boarder cow. Records point out the low producer, make it possible to feed to better advantage, show the value of well-bred, selected sires, and the real worth of young stock.

Mr. Whitley is a strong advocate of every dairymen keeping records. To show the variation in milk yield and cost of production that does exist, a chart was displayed showing the contrast in cows in dairy record centres east of Napanee, where 800 cows are under test. The average milk yield for the ten best was 6,406 pounds at a cost of 53 cents per 100 pounds of milk, while the average for the ten poorest cows was 2,459 pounds of milk produced at a cost of \$1.13 per 100 pounds, a difference of 3,947 pounds of milk and 60 cents per 100 pounds. One of the best cows made as much profit as 25 of the poorest. "Have you poor cows in your herd? If such differences exist in your herd it is high time you knew it," said the speaker. Good cows are wanted to meet the growing demand for milk.

No dairymen wants to or can afford to keep poor cows that grudgingly give low returns. "There is great need, at the present time, for dairy records, so that man power and cow energy may both be rightly directed," said the speaker. It was stated that 14 out of ever 22 cows across the line do not pay, and in Canada there is evidently many hours of time apparently misspent on poor cows and many tons of feed that are not utilized to best advantage.

Mr. Whitley went on to say that, "there is no cow too good for Ontario dairymen. From amongst our members, who weigh and sample each cow's milk regularly, there come good orders to encourage the forethought of prominent breeders. One week last fall 12 pure-breeds were purchased in one of our centres." It is false security to consider averages so long as there are a few extremely low producers in the herd. That dairymen are increasing the milk and butter-fat yield is shown in the following table, which gives the increase in 4 years in 6 herds in the Listowel Dairy Record Centre.

Herd	No. of Cows.	Last Year's Yield.		Increase Per Cow.		Per Cent of Milk Increase
		Lbs. Milk.	Lbs. Fat.	Lbs. Milk.	Lbs. Fat.	
A	9	7,309	260	3,528	132	93
B	17	8,625	275	2,970	90	52
C	5	9,445	300	3,216	108	51
D	9	10,118	339	3,049	100	43
E	10	10,197	333	3,541	114	53
F	16	10,391	360	2,762	114	36

Weeding out the poor cow, using a good sire and careful feeding are factors which tend to raise the milk yield.—From C. F. Whitley's address, delivered at the Eastern Ontario Dairymen's Association Annual Convention.

The Dairy Situation in Canada.

"Whether dairying pays the individual or not, those districts where the production of milk has been most consistently and extensively followed are the most prosperous," said J. A. Ruddick, Dairy Commissioner for the Dominion. "With the improvement in the herds by following intelligent methods of breeding and selecting, it must surely pay in the future." Rapid strides have been made in the Western Provinces, and Nova Scotia has quadrupled her production of creamery butter in four years. The Western Provinces imported butter to the extent of about 17,000,000 pounds in 1912. Now, they have a surplus after supplying all their own needs. The following table shows the growth of the creamery butter industry in the West.

	1900 lbs.	1907 lbs.	1910 lbs.	1915 lbs.
Manitoba.....	1,557,010	1,561,398	2,050,487	5,839,000
Sask.....	339,014	132,803	1,548,696	3,811,014
Alberta.....	407,970	1,507,697	2,149,121	7,376,871
B. C.....	395,808	1,283,797	1,206,202	1,300,000
Totals.....	2,699,802	4,485,695	6,954,506	18,326,885

The value of all dairy products in the four provinces reached over \$36,000,000 in 1915, and the total value of all dairy production in Canada in 1916 is estimated, by Mr. Ruddick, to be between \$180,000,000 and \$200,000,000. These figures convey some idea of the importance of this great industry, but the speaker emphasized the fact that it is the yield of milk per cow per acre which determines the real value of the industry to the country.

Comparing milk production in different counties, it was pointed out that in Oxford and Leeds the average value of milk per acre of cleared land was \$7.45, while in Lennox and Addington it was \$3.48 in 1915. If the average of the latter two counties equaled that of the former two it would mean an annual increase in revenue of about \$250,000 from the cheese factories.

The decrease in number of cows in Ontario does not necessarily indicate a decline in the industry. In fact, Mr. Ruddick considers it a healthy sign when production is increased with fewer cows. Without adding to the cow population of Ontario it is quite possible to further increase production by 25 per cent., and this would result in an additional revenue of from \$10,000,000 to \$15,000,000.

The marketing of cheese and butter has developed an international character, and prices tend to form a relatively uniform level. The speaker explained that the present high prices were not due to any local condition. The United Kingdom is the world's great market, and the accompanying table discloses the cause of the present high price of butter.

Quantities of Butter Imported Into Great Britain for 11 Months, ended 30th November, 1914, 1915, 1916.

	1914 Cwt.	1915 Cwt.	1916 Cwt.
From Russia.....	596,910	979,743	34,542
" Sweden.....	255,747	128,608	992
" Denmark.....	1,623,295	1,238,764	1,051,570
" Netherlands.....	179,900	44,567	29,842
" France.....	243,952	332,361	124,697
" United States of America.....	7,562	75,029	124,155
" Argentine Republic.....	40,448	69,203	110,247
" Victoria.....	168,371	80,189	59,724
" New South Wales.....	97,725	154,481	26,682
" Queensland.....	103,266	107,424	25,354
" New Zealand.....	305,708	291,033	291,769
" Canada.....	3,149	24,001	97,661
" Other countries.....	30,905	51,990	14,425
Total.....	3,656,938	3,577,393	1,991,660

The supply from many countries is greatly reduced. The demand for cheese has increased, but the supply from Holland and Italy has decreased. Therefore, rise in price for butter and cheese may be attributed to diminishing supplies with the former and the greatly increased demand of the latter for the army.

In the following words Mr. Ruddick showed the extent of the export trade in dairy products. "It is well

March 31, 1916, the total exports were \$29,673,977. This increase is due partly to an increase in the quantity exported, and partly to higher prices. The past season, the year for which will end March 31, 1917, will show a still further increase in quantity as well as in value. The total value of the exports of all dairy products for the current year will probably be over \$40,000,000, the highest on record. The details of the exports for the year ending March 31, 1916, which are the last complete figures available, are as follows:

	Lbs.	Value
Cheese.....	168,961,583	\$26,690,500
Butter.....	3,411,183	1,018,769
Condensed Milk.....	13,247,834	770,566
French Milk, Gallons.....	1,262,280	59,028
Cream, gallons.....	394,831	1,131,832
Casein, lbs.....	50,564	3,282
		\$29,673,977

As already stated there has been a further increase in the exports of butter, cheese and condensed milk for the season of 1916. The quantity of cheese available for export during the current year will be about 182,000,000 pounds or 45,000,000 pounds more than were exported in 1914, in which year the exports of cheese were the smallest since 1903. If we make as much progress in the next three years we will exceed all previous records in quantity as well as in value. I am not, however, making any forecast on this point.

The revival of our exports of butter with a decrease in the quantity imported is a very gratifying turn in the trade. Our record export for butter was 34,128,944 pounds in 1903. After that year the exports of butter fell to 828,323 pounds in 1913, in which year we imported 7,989,269 pounds. Once more the trend is upward, and for the year ended March 31, 1916, the exports were 3,411,183 pounds, while for the current year there will be about 10,000,000 pounds exported and less than 1,000,000 pounds imported. If we add the reduction in the imports to the quantity exported, it shows an increase of 16,000,000 pounds in three years."

So long as the war continues the price of cheese and butter will likely continue to be high, and the speaker prophesied that even after the war it is reasonable to suppose that, owing to millions of soldiers having become accustomed to cheese as an article of diet, the demand will be much greater than previous to the war. At the present time stocks of butter and cheese are accumulating in New Zealand, owing to lack of shipping facilities, but, Canada is more favorably situated as regards ocean transport, and Mr. Ruddick believes that there is every reason to warrant a large increase in production in the next few years.—Synopsis of address delivered by J. A. Ruddick, at Eastern Ontario Dairymen's Association Annual Convention, held at Napanee.

POULTRY.

Selecting the Breeding Hen.

The differences between the laying abilities of individual hens are so great and the ways of selecting the good layers from the poor ones are so simple, that poultrymen are missing a great opportunity by neglecting to spend a little time and thought at the proper time of the year to select their best laying hens for breeders during the coming season.

Many poultrymen select the breeding stock in February or early spring, when all hens, good and poor, are laying. About the only method of selecting a breeder at that time of the year is by size and type, which is not all we should consider.

It is the hen with the laying power that we want, and fall or early winter seems to be the very best time of the year to select her, as good and poor laying qualities then appear plainly.

Some hens will stop laying and molt in early summer; others will continue to lay through the spring, summer, fall and into the early winter. Cornell Experiment Station has found that the early molters are smaller producers than the late molters—that is, a hen molting in July will lay fewer eggs than one molting in September. The hen that does not stop laying until November generally lays close to 200 eggs a year. Practically all the high-record layers at Cornell molt in October, November and December.

A hen of the yellow-shanked breeds that molts early never lays enough eggs to take the yellow pigment out of her shanks. The heavy layer or late molter invariably has pale shanks, which is an excellent indication of high egg production.

The late molting hen has rather rough-looking plumage, some feathers being worn a great deal and others broken, while the early molter has her new plumage early in the fall and is easily distinguished by her general slick condition and also by the bright yellow color of the shanks.

The Test for Layers.

If you wish to know whether or not a bird is laying in the fall examine the pelvic bones and note if they are pliable. If they are well spread, thin and pliable the hen is undoubtedly in laying condition or has only ceased laying a few days before.

The hen that continues to lay until October, November or December should be kept for a breeder, provided she has plenty of reserve energy and shows good egg type. She should have a good space for

consuming feed, indicated by a full and broad breast; she should also have prominent eyes, a good-sized comb, a short and well-curved beak, medium length of neck, medium width of shoulders, medium long back, very wide on the back directly over the thighs, a good space between the end of the keel bone and the pelvic bones, and shanks wide apart.

A hen having these requirements ordinarily has a constitution strong enough to lay heavily and still have sufficient reserve energy during the molt.

It is better to breed from a low producer that has good vitality than from a high producer that has low vitality. A high producer that during her molting period shows a plump condition, has a good colored comb, is very active and perhaps lays through part of the molt, has plenty of reserve energy, and her progeny will fully equal if not surpass the record of the parent stock.

The hen that is of medium-size for her breed makes the most desirable layer and breeder and is fitted to stand heavy egg production and lay eggs large enough to command the highest prices. The hen of abnormal size is usually a poor producer and a small or undersized hen lays a small egg as a rule.

It is well to keep a certain percentage of the most vigorous and heavy laying hens four, five or even six years for breeders. If a hen is a heavy producer and is able to stand up under heavy egg production for years and still have good vitality, her enduring qualities are indicated and by breeding from such hens the longevity of the strain is lengthened. Pullets should never be used for breeders if the best results are desired.—R. S. MOSELEY in Country Gentleman.

HORTICULTURE.

Results From the Dust Method of Treating Orchards and Vineyards.

In Ontario and Nova Scotia the dust method of treating orchards and vineyards for insects and fungous diseases was given a trial in 1916. The results from the Nova Scotia test, which should have been ready last October, are not yet available for publication in this paper. That work was conducted by H. T. Gussow, Dominion Botanist, while the Ontario experiments were supervised by Prof. Lawson Caesar, Provincial Entomologist, and P. W. Hodgetts, Chief of the Fruit Branch. The orchards in which the fruit branch was conducting experiments in Ontario last season were separated somewhat, which necessitated the shipment of their equipment from place to place. This proved a considerable detriment to the work, as the dusting could not always be executed at exactly the proper and most opportune time, as would be possible in the case of an individual grower. Consequently, the outcome was not sufficiently definite to be of value when so many conflicting results have been obtained. However, Prof. Caesar carried on quite a successful experiment in the Niagara District, which he has outlined in the following paragraphs:

"I may say that I tested this method on three acres of very large apple trees, one acre or more of sweet cherries, fifty Lombard plums, fifty early varieties of peaches, and one acre or more of red grapes.

"All the above fruit trees were first given a liquid

spray with strong lime-sulphur to control the San José scale, because I was afraid to rely upon any dust substance for the control of this pest. There is a dust substance which, if thoroughly applied when the trees are moist, will give fairly good results against this scale, but there are certain difficulties in using it which make it quite objectionable at the present time. It may be that these difficulties will be removed later.

"In addition to the first liquid spray, all the apples received two thorough dustings, one just before the blossoms burst, and the other very soon after they fell. Check plots received at the same time thorough sprayings with lime-sulphur and arsenate of lead. The dust substance used was 85 per cent. finely-ground sulphur and 15 per cent. arsenate of lead, powder form. The results obtained were, on the dusted part an average of 97 per cent. free from scab, and a of little over 90 per cent. free from worms. On the liquid sprayed part 99 per cent. free from scab, and about 93 per cent. free from worm. This shows that the liquid spray was a little better, but not a great deal. The foliage was decidedly superior on the dusted part.

"On sweet cherries two dustings were given, the first when the cherries were about one-third full size and the second about two weeks later when they were showing slight signs of turning red. One check plot was sprayed with lime-sulphur and another with Bordeaux mixture. No difference could be seen between the dusted, the lime-sulphur and the Bordeaux plots, and all were much better than the unsprayed trees of the same varieties.

"On plums three applications were given. The variety was Lombard, and the aim was to prevent brown rot. The results were good, the dusted part being much cleaner at picking time than the unsprayed plot of the same variety in the same situation.

"On peaches there was practically no brown rot this season, hence no conclusions could be drawn as to the value of dusting.

"On red grapes four dustings were given and the results again were good, the mildew being entirely controlled both on fruit and foliage, whereas unsprayed red varieties on the same farm had considerable mildew. There was no black rot at all in the vineyard, so no conclusions could be drawn with regard to the value of the dust upon it.

"From the above results on apples, plums, cherries and grapes, one would feel strongly tempted to say that the dust method promises to be very satisfactory, but we must place over against my results the fact that no other person in Ontario so far as I can learn, and only one person in New York, and there only in one orchard, obtained anything near as good results with the dust as with the liquid spray. In New York the average on eight orchards, as reported by Prof. Whetzel, of Cornell University, was from liquid spraying, 46.72 per cent. of apples free from scab and from dusting 27.54 per cent., so that the liquid sprayed part was practically twice as clean as the dusted. I believe practically similar results to these were obtained by most of the men in Ontario, who did the work carefully this year. The high percentage of clean fruit I obtained was possibly due partly to my being able to dust the trees at the ideal time, as the orchard, was in sod and I was ready at any moment to commence the work, and partly to the fact that this year from some, to me, unknown reason, apple scab was not so prevalent in Niagara as in most of the other localities, though unsprayed orchards had a high percentage of fruit infested. There is no doubt that the

dust is much easier washed off than the liquid spray, and in a wet spring special attention would have to be given to the weather to see when an extra application may be necessary.

"I am myself inclined to be hopeful that there is a useful field for the dust method, but am not prepared to advise any person yet to adopt it, though I should say to those who have dust outfits to use them, taking special care to do the work at the times recommended in the Spray Calendar. If an extra application is necessary, owing to excessive wet weather, the arsenate of lead should be omitted, thus lessening the cost by more than half and making it safe to dust even when the trees are in full bloom.

"As to the comparative cost of thorough dusting and thorough liquid spraying, I found that on very large apple trees dusting was the cheaper, but on medium-sized trees spraying with a gasoline outfit was a little cheaper, and on plums, cherries and grapes was much cheaper.

"So far as time and labor go, the dusting requires only two men, where the liquid spraying requires three, and on very large trees the dusting is at least eight times as rapid if one uses the large type of machine. On grapes, plums or other small trees, it is a little more than twice as rapid. Dusting is, of course, no child's play, but requires a careful, interested and intelligent man who will move his hands quickly. It demands just as much care as thorough spraying with the liquid mixture. It can be best done on calm days."

FARM BULLETIN.

Hungry Hungary.

Our English correspondent writes that the most recent issues of the "Budapesti Hirlap," now to hand in London, are not over discreet in their references to the agricultural shortage in Hungary. Baron Kurthy, Hungary's food dictator, is reported, in the issue of December 12, to have stated: "Everybody must give up everything superfluous, lest we should be forced perhaps to go without what is necessary. The principal question is that of wheat. The harvest has not been successful; the harvest having failed to produce the result discounted beforehand, we are faced by a deficit. . . . I propose to undertake a fresh and far stricter requisition."

Nor was the Baron any less pessimistic in regard to potato harvest; for after pointing out what was probably untrue, namely, that the fat shortage was due to transport difficulties, he went on to say:

"Potatoes would also be cheaper if the transport service could be improved. The potato harvest has not been good, but still it has been better than the wheat and maize harvests. The worst fight we have to face is the fight against abuses. Every day we hear of new frauds; every day we hear complaints of food monopolizers. One hundred litres of spirit are worth about 200 k., and the 'monopolizers' sell them at 2,000 and 3,000 k. Private consumers have to pay even far more exorbitant prices. We propose to introduce a reform in dealing with those abuses. A new police service will likewise be introduced." The same paper infers that this declaration "demonstrates that the position is extremely difficult. Human resource is scarcely equal to dealing with these difficulties. We have to reckon with impossible factors, and the wisest measures are counteracted by forces against which it is not possible to fight."

Thirty-eighth Annual Convention of "Union" Experimenters.

It was to a large and attentive audience that Dr. Creelman, President of the Ontario Agricultural College and Commissioner for Agriculture in this Province, addressed words of welcome upon the occasion of the thirty-eighth annual meeting of the Experimental Union, held last week at the O. A. C., Guelph. There were present on the first morning 170 Short Course students, as well as a number of ex-students who attend the Union, and a considerable proportion of the regular students of the College. It was Dr. Creelman's belief that we do not always lay enough stress on experimental work. He had heard Ministers of Agriculture make the remark that the experimental plots at the College might as well be plowed up. But, he believed that the development of new and heavy yielding varieties of field crops and the various other experiments carried on were very valuable to agriculture, and cited the case of O. A. C. No. 72 oats selling at the recent Winter Fair for \$5.50 per bushel. He also outlined the importance of the five Short Courses now being held at the College.

The Secretary's Report Showed Fewer Experimenters.

The Experimental Union was organized in 1879, and the co-operative work has been carried on under the present plan since 1886. Since that time no less than 84,305 distinct tests have been made throughout the province in agriculture alone, and these experiments have consisted of from two to ten plots. The average number of experimenters per annum between 1886 and 1893 was 315; between 1894 and 1901, 2,608; from 1902 to 1909, 3,882, and from 1910 to 1916, 4,280. This shows a substantial increase in each of the four periods. Owing to scarcity of labor and unfavorable weather conditions the number of experimenters in 1916 was only 3,235. Dr. Zavitz cautioned that definite and permanent conclusions should not be drawn from the results of experiments during the past two years, both years being abnormal, but these results were valuable for comparison with those of other years. a

Cut Out the Luxuries.

The President of the Union, J. B. Fairbairn, of Beamsville, Ontario, in his Presidential address drew attention to the importance of the production of foodstuffs at this time. It was his belief that Canadian people had yet to learn what sacrifice means, and that they will yet be called upon to practice economy and thrift to a much greater degree than heretofore, if this country is to do its just share in winning the war. Each dollar of money, every hour of working time, every revolution of every engine, every ray of sunshine, should be used and spent to assist in the war. We are individually spending money daily upon luxuries, which, in reality, should go toward maintaining and equipping our armies. We cannot continue indefinitely spending recklessly on luxuries and on war too. Mr. Fairbairn believed that while we have not had compulsion to fight, we should have compulsion to work at something which our Government regards as useful. Thousands of men are to-day engaged in supplying Canadian people with luxuries, and Mr. Fairbairn thought that the Government should divert this energy and man labor into useful channels, the net results of which would be, more men for the army, more products from the farm, more munitions manufactured, and more money saved with which to finance the great task. Millions of dollars were spent last year on imported American fruits, millions were spent in luxurious restaurants, in high-grade candy, theatres, flowers, etc., while 385,000 of our best men have been making great sacrifices in the war. While we have subscribed to patriotic funds and to other funds necessary in carrying on the war, we have not begun to deprive ourselves of numerous luxuries. Economy and sacrifice would mean that we could finance our fighting as we go. We are a belligerent country, and it does not behoove us to imitate the condition of the contented neutral to the south of us. We must not be content with the part we play in production, but in addition we must deprive ourselves of everything other than necessities. We must practice the most rigid economy, make every

effort in our power to hasten the triumphant issue which we so earnestly and sincerely desire.

H. Sirett, of Brighton, Ontario, Vice-President of the Union, took up the discussion on the President's address. People should, following the two bad seasons of 1915 and 1916, plan to do better in 1917. On the other hand, some are planning to do less. By producing to the utmost, we can in small measure do our bit. He advised the farmer to spend money for labor-saving implements for his farm, and spoke in favor of the small tractor under certain conditions, namely, to take the place of horses which are only worked two or three months in the year. It was not his belief, however, that the tractor could replace horses which worked six or eight or more months in the year. Most farmers are obliged to keep extra horses to tide them over the rush of work in certain short seasons of the year. The tractor could very well supplant some of these horses. He also dwelt at some length on cutting down the luxuries during the war, citing the case of a certain automobile manufacturer who was taking all the men from the farmers round about the town in which his business was located—taking them because he could pay them higher wages than the farmer could, and they were working in war-time on luxuries. Mr. Sirett thought that we could very well do without such luxuries until the war is over, at least.

Highest Yielding Varieties in 1916.

Dr. Zavitz, in his report on the co-operative experiments for the year, laid considerable stress upon the importance of the oat crop in Ontario. It is the one big crop of the cereals in this province. In forty-six tests with O. A. C. No. 72 and O. A. C. No. 3, the former outyielded the latter by about a bushel and a half of grain per acre, and was a little ahead in straw. O. A. C. No. 21 barley outyielded Emmer in four tests. Wild Goose spring wheat yielded a little more than three bushels per acre more than did Marquis wheat in nine tests. Imperial Amber was the highest yielder in eleven tests with four other varieties of winter wheat, namely:

Banatka, American Banner, Yaroslav and Crimean Red. In spring rye O. A. C. No. 61 gave 42.14 bushels per acre as compared with 36.43 bushels for the common variety. Potter, Canadian Beauty, and Early Britain were the three varieties of peas compared in twenty-nine tests. The yield of the first two was very close at a little over 22 bushels per acre, while Early Britain made a little less than 21 bushels. Of three varieties of field beans Pearce's Improved Tree led, with Yellow Eye and Common Pea considerably behind; the first named gave a yield of 22.09 bushels per acre, the others yielding 16.95 and 14.45 bushels respectively. In Soy Beans, the brown variety outyielded the O. A. C. No. 81 in both straw and grain. In mixed grain, oats and barley in the proportion of one bushel of oats to one bushel of barley, has given the best yield in each of the last six years, with an average of 1,720 pounds of grain per acre.

A number of tests were made with root and fodder crops. In mangels last year, Sutton's Mammoth Long Red led the general winner, Yellow Leviathan, by almost a ton per acre, with 23.28 tons. The Ideal was about two tons behind the leader. Bruce's Giant White Feeding Sugar Mangel outyielded Rennie's Tankard Cream by almost a ton in four tests. Steele Briggs' Good Luck Swede turnips were almost three tons per acre heavier in yield than the American Purple Top and Garton's Model. In fall turnips Sutton's Purple Top Mammoth led. In carrots, Bruce's Mammoth Intermediate Smooth White gave a yield of 16.09 tons per acre, and was at the head of the list. Hairy vetches gave a yield of 14.64 tons per acre as compared with 6.20 tons for the common vetch, and 4.41 tons for grass peas. Common winter rye gave 7.64 tons per acre as compared with 5.84 tons for hairy vetches used in this test. In tests with rape, kale and cabbage, Sutton's Earliest Drumhead Cabbage gave 15.14 tons per acre, as compared with 12.34 tons for thousand-headed kale and 12.22 tons of Dwarf Essex Rape. In millet, Japanese Panic gave 10.88 tons; O. A. C. No. 71, 9.68, and Hungarian grass, 8.48.

In potatoes 104 tests were made, the two varieties sent out being the Davies' Warrior and the Extra Early Eureka. The former gave a yield of 101.15 bushels per acre and the latter 89.97, but the Davies' Warrior had twenty-two per cent. small tubers as compared with eighteen per cent. for the Eureka, and the mealiness, when cooked, was 89 for Davies' Warrior as compared with 100 for the Eureka.

Twelve tests were made with sweet corn, with Golden Bantam again leading Stowell's Evergreen.

Sources of Seed.

It was brought out in discussion that it would be advisable for all those who have reasonably good seed of good varieties to clean and keep their own seed for next spring. The danger of weeds in Western oats for seed was pointed out, and emphasis was laid on the danger of these oats being frosted, which renders them of very little value for seeding purposes. Disappointing results generally follow the sowing of Western oats which have been bought for feed and ultimately saved for seed. At the present time, however, Western seed oats are well stored and carefully inspected. Professor Murray, of Macdonald College, drew attention to the fact that the Maritime Provinces had a good crop this year, and that those who have not good seed of their own might get a very satisfactory supply, quite clean, from this source.

Dairy Products in Ontario.

"Milk is the yard-stick of nutrient efficiency, and all food products for humans may be measured with the milk rule as a standard," said Prof. H. H. Dean, in his address on dairy products in Ontario. Milk is the product of *live*, life forces, whereas other foods are the result of *dead* life, if such a term may be allowed. Milk is formed by an animal while alive, and milk and eggs are the only food products produced continuously for a number of years by any of the farm animals. There are no satisfactory substitutes for these; they contain "vitamines" found nowhere else in such available form for the nutrition of mankind, particularly the young. There are two substances necessary for the growth of an animal, one contained abundantly in milk-fat and called "fat-soluble A," and the other found in skim-milk and called "water-soluble B." Milk is high in protein. Dr. Hart, of Wisconsin, says that the cereal grains furnish about 30 per cent. available protein, and milk 65 per cent. The waste proteids are around 70 per cent. in cereals, and 35 per cent. in milk. Milk is essential to the building up of a virile nation.

There are four chief lines of dairy products in Ontario, namely, milk and cream for direct consumption, for the manufacture of butter, cheese-making, and the making of condensed milk. The abnormal growth of towns and cities has unbalanced the production and consumption of milk to such a degree that we have been face to face with a milk famine and prices have gone up, but, compared with the cost of production and the prices of other foods, milk is not unreasonably high in price. Consumers are being educated to the point that ten-cent milk is a cheap food. They also need education to the fact that they may not expect to buy both milk and cream in the same bottle at milk prices. For table use milk containing a smaller proportion of fat is to be preferred. Another common fallacy amongst consumers is the belief that a real food is something you have to chew. Prof. Dean advocated municipal control of town and city milk plants, similar to the plan adopted for water supply, gas, electric light, etc., thus doing away with the expensive duplication of plants and excessive cost of delivery.

"The world needs more butter and better butter for oiling life's machinery. We do not need butter substitutes of any kind." Prof. Dean came out strongly

against oleo, and advised housewives to pack butter in crocks, tubs or boxes in the months of June and September. He also advised that the Government establish or control cold storages where human food products may be stored during times of large production to be sold at only the increased cost of storage and distribution in times of scarcity; thus doing away with the monopoly of food which characterizes present conditions.

The world is beginning to realize the value of cheese as a concentrated food—life-meat. The limited supply of rennet has been a difficulty, but substitutes in the form of pepsin in powder and solution, and a rennet enzyme have come into use, and a mixture of rennet and pepsin has given best results at the College. The rennet seems to be necessary to digest the curd, and the pepsin, no doubt, will aid in the digestion of the cheese. Prof. Dean advised those producing milk for cheese-making to keep it clean and cold and not allow rain-water into it. There is a great waste of human food in the manufacture of cheese and butter where the by-products are not properly utilized. Ontario makes about 125,000,000 pounds of cheese annually, and in the same time there is being run into the whey tank nearly an equal weight of solid material of the most valuable human food ever prepared by Nature. For each ton of cheese produced there are approximately nine tons of whey, which will contain about 1,260 pounds of milk solids. About 40,000 tons of milk solids are practically wasted each year in the whey tanks of the province. Condensed milk and milk powder factories are a partial solution of this problem, as these factories utilize all of the milk solids for human food. Prof. Dean believed that the future production of dairy products will be chiefly along the lines of milk and cream for direct consumption, cream for butter-making and the production of milk for condensing purposes. Any of these lines assures the producer of a good market at paying prices, if he gives a little more attention to the problems of lessening the cost of production and more efficient marketing. Cows should produce at least from 6,000 to 10,000 pounds of milk annually, and heifer calves should be reared from a good, pure-bred dairy bull to be the future dairy cows. A large supply of succulent feed is necessary. Quietness, cleanliness, and constant watchfulness, together with co-operation between the owner and the cow in the production of the largest quantity of the cleanest and best milk will be also necessary.

Weed Eradication.

Prof. J. E. Howitt presented the report of the co-operative experiments in weed eradication which have been conducted for five years. Seven experiments in all have been tried, namely, the use of rape in the destruction of perennial sow thistle, a system of intensive cropping and cultivation for the eradication of perennial sow thistle, the use of rape in the eradication of twitch grass, a method of cultivation and cropping for the destruction of twitch grass, spraying with iron sulphate to destroy mustard in cereal crops, a method of cultivation for the destruction of ox-eye daisy. Some sixty farmers have co-operated in this work, but during the abnormal seasons of the past two years it has not been so satisfactory.

Good cultivation followed by rape sown in drills provides a means of eradicating both perennial sow thistle and twitch grass.

Rape is a more satisfactory crop to use in the destruction of twitch grass than is buckwheat. Rape gives much better results in the eradication of twitch grass and perennial sow thistle when sown in drills and cultivated than it does when sown broadcast. Thorough, deep cultivation in fall and spring, followed by a well-cared-for hoed crop will destroy bladder campion. Mustard may be prevented from seeding in oats, wheat and barley by spraying with a twenty per cent. solution of iron sulphate, without any serious injury to the standing crop or to fresh seeding to clover. In spraying, spray early, just as the plants are coming into bloom. Spray thoroughly with good pressure, walking the horses very slowly.

The committee appointed last year to make suggestions as to how the Provincial Weed Act might be made more effectual, brought in a resolution asking that the Government be requested to amend the Act regarding compensation for sheep killed by dogs, to take in those killed on roadways as well as on private property. The resolution was not passed by the Convention, discussion bringing out the inadvisability of running sheep on the road because of danger to the sheep, loss of fertility to the farm, and danger to those travelling on the public highways.

Ontario and the Potato Industry.

F. C. Hart, of the Co-operation and Markets Branch, Department of Agriculture, Toronto, gave a very interesting address on potato growers' co-operative associations, outlining the work carried on by a number of these associations. Ontario produces 80,000,000 bushels of potatoes annually, or about one-third of the potato crop of all Canada, and this province should be in a better position to supply home markets than are the Maritime Provinces or the Western Provinces. However, New Brunswick potatoes sell for about ten cents per bag more on Ontario markets than do our own. It seems a waste to haul potatoes from the far Western Provinces, and from the far Eastern Provinces to be sold on the markets of a province which is well adapted to produce its own potatoes. Mr. Hart advised associations to produce one type of potato, and if possible specialize in one variety. He preferred to call these associations "Growers' Firms," which he believed would prove to be the ultimate remedy for the potato situation in Ontario. These firms are organizations for business purposes, and they, where properly organized, have

succeeded in bettering the quality and materially increasing the quantity of the output of potatoes in their districts. The individual grower is at a disadvantage when it comes to marketing; he is not known and he has a small quantity, whereas a business reputation may be built up for a growers' firm, which will soon give it a place on the market and make the district noted for the crop. To properly market the goods advertising is necessary, proper packages are essential, and a knowledge of supply and demand is imperative. These things can be known only through business organizations. There are some defects, however, one of which is that each member's product should be graded, and there should be established, in the opinion of Mr. Hart, legal grades for potatoes. Until such time as these legal grades can be had growers should make their own grades. With no grading there is a tendency for the best growers to remain outside the association, because they believe they are producing and marketing a higher class of potatoes than the collective crops of the members of the association or firm. Thus they think if they grow fairly large quantities they can market to better advantage alone. The Co-operation and Markets Branch have outlined three grades of potatoes, Fancy, No. 1, and No. 2, with the requirements of each grade. Mr. Hart pointed out the importance of proper inspection, and while inspection would be costly, cited the case of an association in the United States which spends from \$30,000 to \$40,000 annually on inspecting fifteen to twenty million dollars' worth of potatoes.

Andrew Elliott, of Galt, Ontario, took up the discussion on "What Ontario should do in regard to Potato Production." He placed the potato in a class with wheat in importance as a food product, and pointed out that the potato, unlike wheat, was destructible and could not be carried over year after year. It was his opinion that it was short-sighted policy that the Province of Ontario was not growing more potatoes. He advised market districts to grow the same class of potato and, if possible, the same variety, so as to avoid mixed carloads. He thought there were too many varieties mentioned in the bulletin recently published by Dr. Zavitz. We should have an outside market to steady our home market, and Ontario, particularly the Muskoka and northern districts, should plan to work up and develop to perfection the growing of potatoes for seed and the marketing of this seed in the southern parts of the province and in the middle southern States. He advised selecting the seed from hills which give a large number of good-sized cooking potatoes. He believed that small potatoes from such a hill would be all right for seed, but that selecting small potatoes indiscriminately from a bin would give too large a percentage of these which had come from hills in which there were few if any fair-sized potatoes. So that in the end he advised, "Do not plant small potatoes, as like produces like." Mr. Elliott would not plant potatoes running to a small end, and he advised, in cutting, to have the sets compact and as nearly square as possible, which allows the bud stalk to remain intact, and care should be taken to have the bud as nearly as possible in the centre of the set. It is necessary to give early potatoes a quick start, and so vigorous buds are necessary on the sets. He believed in planting rather shallowly for early potatoes. Land for potatoes should be well drained, and the crop should be sprayed early to prevent blight. A clover sod thoroughly cultivated was his favorite land for potatoes.

Prof. D. H. Jones, of the Bacteriological Department, gave a very interesting address, although rather technical in nature, on some of the diseases affecting the potato, particularly blackleg.

Financially Strong.

The Union had a balance from the previous year to begin 1916, of \$1,515.67. The Government grant was \$2,750; the membership fees of 224 members were \$112, and bank interest amounted to \$66.78, making a total of receipts of \$4,444.45. Expenditures in the different branches of the experimental work, annual meeting, and advertising, were \$2,538.34, leaving a balance on hand of \$1,906.11. It will be noted that the expenditure was a little over \$200 less than the Government grant alone.

Production of Foodstuffs.

Prof. G. E. Day, of the Animal Husbandry Department of the College, a man who always has something worth while to say, gave a valuable talk on the importance of animal foodstuffs, meaning human foodstuffs which come from live stock. Prof. Day gave some of the advisers of the farmer a rap over the knuckles when he contrasted their absolutely worthless advice with what the intelligent farmer really wants, namely—helpful information. Prof. Day hoisted a danger signal in the way of a train of happenings which, as he put it, seems to have got upon the wrong track, and is likely to end in disaster if not checked. He referred particularly to the alarming decrease in the numbers of farm animals, which has continued even more rapidly than ever during the past year. The speaker enumerated a number of the functions of live stock upon our farms, as follows: first, helping to feed and clothe the people; second, keeping up the fertility of the soil, and hence lowering the cost of producing crops; third, returning to the owner higher prices for farm crops than could be obtained as a rule by marketing crops directly; fourth, giving returns in cash for much material which, had it not been fed to the stock, would have had no market value.

In Prof. Day's opinion there are a large number of thoughtful farmers, who appreciate the value of stock and are holding on to their usual number, or as many as they can. This is the one hopeful feature of the situation, and he believed they would reap their reward.

There are two classes of those who are depleting their live stock; first, those who are compelled to sell, and secondly, those who are selling mainly because the prices of food are high. Prof. Day had nothing but sympathy for the former, but addressed a word of warning to the latter, advising him to put to himself the following six questions before selling his stock: 1, Are the unsatisfactory results I am obtaining the fault of the animals or of my methods of feeding and management?; 2, Am I absolutely certain that I am obtaining for my grain, hay, straw, etc., by selling the same on the market more than I could have obtained had I used them in maintaining the live stock?; 3, How about next year's crop, and the years which follow, how am I to keep up my yield and keep down the cost of production?; 4, In the very trying season of 1916, which farms produced the best crops, those which had been heavily stocked for years, or those which had been lightly stocked?; 5, Will not my action and that of others like me in throwing overboard my stock at this juncture result in greater scarcity of stock and in greatly enhanced prices?; 6, When it becomes absolutely necessary for me to restock my farm and I am paying famine prices for animals for this purpose, will I not wish I had held on to the good animals I let go in 1916 and 1917?

Careful consideration of all these questions should convince all stock owners that they will be acting in their own best interests at this critical time to hold on to as many of their animals as possible, keeping their herds and flocks to the normal level. Live stock is the main factor in maintaining a really prosperous agriculture, and the Canadian farmer should not become panicky, but has every reason to regard the future with confidence, if his farm is carrying its normal complement of live stock.

Fertilizers on Potatoes, Mangels and Rape.

Dr. Zavitz gave a short account of the results of co-operative experiments with fertilizers. We can do no better than publish the following tables illustrating the results.

The following table gives the average results of the various tests of each of four fertilizers for five years. In all 95 separate tests were conducted during the five years:

Fertilizers and Manures.	Fertilizer Per Acre.		Yield of Potatoes Per Acre (bushels).				
	Weight Pounds.	Cost	A. Potato Fertilizer 5 years. (24 tests)	B. Royal Canadian 5 years. (24 tests)	C. Home Mixture 5 years. (24 tests)	D. Home Mixture 5 years. (23 tests)	A. B. C. D. Ave. 5 years. (95 tests)
No fertilizer.....			138.9	112.6	99.2	139.1	122.4
Fertilizer.....	320	\$ 6.31	152.0	131.1	123.6	158.5	141.3
Fertilizer.....	640	12.62	158.8	142.0	135.4	170.3	151.6
Fertilizer.....	960	18.93	163.4	156.6	149.0	178.6	161.9
Fertilizer.....	320)	9.31	169.4	155.7	149.8	182.9	164.5
Cow manure.....	10 tons)						
Cow manure.....	20 tons	6.00	176.1	155.3	150.2	184.8	166.6

In the spring of 1914 each of the four groups of fertilizers were used with the potato crop at the College. The plots were sown with barley in 1915, and with oats in 1916, without the application of either fertilizers or manure. The following table gives the yield of potatoes of 1914, of the barley, straw and grain in 1915, and of oats, straw and grain in 1916, being the average in each case of the four groups of fertilizers:

Fertilizers and Manures.	Fertilizer Per Acre.		1914. Potatoes.	1915. Barley.		1916. Oats.	
	Weight Pounds.	Cost.		Yield per acre. (bush.)	Yield per acre.		Yield per acre.
			Straw. (tons)		Grain. (bush.)	Straw. (tons)	Grain. (bush.)
1. No fertilizer.....			79.4	1.01	36.2	1.00	33.0
2. Fertilizer.....	320	\$ 6.31	106.7	1.15	41.7	1.11	35.5
3. Fertilizer.....	640	12.62	115.4	1.16	42.7	1.13	35.9
4. Fertilizer.....	960	18.93	118.8	1.25	47.5	1.12	36.1
5. (Fertilizer.....	320)	9.31	175.7	1.48	55.2	1.30	37.1
6. (Cow manure.....	10 tons)						
6. Cow manure.....	20 tons	6.00	182.8	1.70	59.8	1.39	41.8

Dr. Zavitz stated that the fertilizers were used at a profit. There was one thing, however, we noticed in these tables and that is the very low valuation of barnyard manure, namely, 30 cents per ton when from \$1.50 to \$2.00 per ton would be probably closer to its actual value.

Management of Soil Fertility.

H. G. Bell, of Chicago, gave a most interesting and instructive address on soil fertility. The address was illustrated with a number of especially appropriate charts which showed in a graphic manner the nature of the soil, the value of farm manures, and artificial fertilizers, and all matters in connection with the working of the land and the application of plant food to the soil. It is an extremely difficult matter to attempt to report

such an address. Mr. Bell illustrated the manner in which water rises in the soil by using large and small tubes. Water of course rises highest in small tubes, or, in other words, rises in the soil composed of fine particles to the greatest height. He showed how by plowing down a green manure on a soil with a sand bottom the water might be prevented from rising in the soil, and a crop planted on top would not do well. Green manure acts as a check to the rise of water in the soil, or in other words, it breaks the tubes between the soil particles.

Plants require an abundance of moisture. One pound of dry matter in corn requires 450 pounds of moisture, in oats, 500 pounds, in wheat 450 pounds, and potatoes 400. The best way to prepare a seed bed is to disk, then plow and disk again, which gives a deep layer and a perfect seed bed. While abundance of cultivation is necessary there is a difference between right and wrong cultivation; for instance the roots of a growing crop of corn should not be cut. Cultivation should be light, not deep for corn.

Mr. Bell illustrated the value of drainage, showed its importance in getting the water out of the soil so that bacteria can be developed and showed also the value of bacteria on the roots of clovers and other legumes. He laid stress upon the value of organic matter in the soil, which has the power to catch and hold soluble plant food, to catch and hold water, to open a heavy clay soil, to bind a sandy soil, to form the home and food of bacteria in soil. The speaker illustrated how working a heavy soil too wet, which is commonly known as puddling, excludes the air and is fatal to plant growth. Without air, beneficial bacteria, also, cannot exist in the soil. He illustrated, too, the method of testing soil for sourness with litmus paper, and the value of lime to a sour soil. On an average soil, rich in organic matter, he advised the use of ground limestone. The three forms of lime and the amounts to apply of each were: burnt lime 1 ton per acre, hydrated lime, 1 1/2 tons, or ground limestone 2 tons. Air-slaked, burnt lime is all right for a heavy clay. Mr. Bell said that if he had such soil he would apply ground limestone once in three or four years, alternating with air-slaked burnt lime. The various constituents of the soil necessary to plant growth were outlined, and the green manures, such as clover, alfalfa, vetches, cow peas

and soy beans were contrasted with the non-legumes. The problem of caring for farmyard manure was gone into, and the losses from bad handling were shown to be immense. For instance, in stored manure of good quality there are 12 pounds of nitrogen, 5 pounds of phosphoric acid and 10 pounds of potash. In leached manure, which has not been taken care of, nitrogen would be about 5 pounds, phosphoric acid 2 pounds,

and potash 4 pounds. Mr. Bell showed that phosphoric acid was often needed in conjunction with farmyard manure and that Dr. Thorne of the Ohio Station, had found that from forty to fifty pounds of acid phosphate on the top of a manure-spreader load of manure gave very good results. Phosphoric acid is needed to mature the plant. It produces the grain, maturity and quality. Nitrogen produces plant growth, and potash stalk-strength and kernel filling. Fertilizers supply plant foods; invigorate the growth of the plant; cause soil moisture to rise; give plants a quick start; increase the yield and quality of the plants. Sandy soils are usually poor in nitrogen, poor in phosphoric acid and poor in potash. Clays are medium in nitrogen, medium in phosphoric acid which is largely available, and medium in potash which is largely unavailable. Muck soils

have an abundance of nitrogen largely unavailable, are poor in phosphoric acid and very poor in potash. Hay requires an abundance of nitrogen, a fair supply of phosphoric acid and a fair supply of potash. Grain requires a fair supply of nitrogen, an abundance of phosphoric acid a fair supply of potash, while roots require a good supply of nitrogen, a fair supply of phosphoric acid, and an abundance of potash.

Mr. Bell went into the application of fertilizers and gave as his opinion that they should not be plowed down deeply nor yet left on the surface. Put them down by cultivation to about the depth at which the grain or other crop is planted. Sugar beets were mentioned as an exception, results having shown that turning under fairly deeply was the best practice with sugar beets. Mr. Bell closed his address by illustrating a bridge for the river of failure in the rural community. The keystone of the arch was business management, the two bases, marketing and fertility, with the following to complete the arch: efficient help, efficient machinery, suitable live stock, proper drainage and tillage, favorable weather, judicious liming, crop and seed selection, manuring and fertilizing.

Vegetable Foodstuffs.

Honorable Nelson Monteith, of Stratford, opened a discussion on the production in Ontario of vegetable foodstuffs, such as wheat, peas, beans, cabbage, etc. In Mr. Monteith's opinion we are not specializing as we might in the production of cereals. The wheat crop has proven to be a good one in our rotation, as it gives roughage, as well as concentrated feed to be used in the upkeep of hogs and live stock. Peas, while less exhaustive upon the soil have fallen off in production, leaving Victoria, Peterboro, Renfrew, Simcoe and Durham about the only counties producing in any quantity. Beans are becoming a profitable crop, Kent, Elgin, Huron, Welland and Prince Edward specializing in this crop. Mr. Monteith laid stress upon the fact that good cultivation should be given to all crops and that they should be put in in such a way so as to get the best results.

A discussion on the growing of cabbage followed in which it was pointed out that the price was rather uncertain and when the price was high the yield was low, and vice versa. The crop has however, considerable value in stock feeding. H. Sirett drew attention to its use in feeding milk cows. This latter speaker also commented upon the use of the transplanter in saving seed and in allowing quick cultivation after the plants were out. Seed, he pointed out, could be purchased wholesale for 75 cents a pound in Denmark, whereas in this country the wholesale price was \$3 to \$3.50, and even \$4 per lb. in small lots. It costs about the same to set an acre of cabbage as it does to thin turnips, according to Mr. Sirett.

Experiments in Apiculture.

Morley Pettit, Provincial Apiarist, in his annual report on the co-operative experiments in apiculture, pointed out that it was necessary to carry on the experiments from year to year, as beekeepers are annually confronted with problems peculiar to the individual year. The past season was one of excessive swarming in which most rules of swarm prevention failed. This hampered experimenting as did also scarcity of labor. Several different experiments were offered, and materials for 475 separate tests were sent out. The average sized apiary represented was thirty-one colonies. With the experiment to prevent natural swarming in the production of extracted honey by holding the colony together, instructions were sent to 57 experimenters and 12 reports were received. In only one case was the experiment a failure, and one beekeeper reported that he was able to produce 25 pounds per colony more than by his usual method and to prevent swarming. Experiment No. 2 was for the prevention of natural swarming in comb honey production by artificial shakenswarming. Only two reported out of eleven receiving instructions. Experiment No. 3 was for the prevention of natural swarming by the manipulation of hives instead of combs. We cannot go into this fully at this time, but will publish the outline of the management of a number of hives in a future issue. Twenty-four experimenters tried the method, 14 reported, and all reports were satisfactory, one beekeeper succeeded in completely controlling swarming, others having from five to thirty-five per cent. of swarms, with, in every case, a larger crop. Experiment No. 4 was a method of spring management to get strong colonies for the honey flow. Satisfactory results were sent in in 26 reports. Experiments, Nos. 6 and 7 showed that the fasting method of introducing queens seems to have met with greater success than the smoke method. No. 9 was on the wire cloth bee escape board; 34 experimenters received bee escapes and 18 reported favorably. No. 10 was an experiment in outdoor wintering, and No. 11 was with a new-style wire embedder, which, in any stage, takes a little longer time but does better work after it is in practice. Experiment No. 12 was with a method of wiring frames so that with a full sheet the foundation is held securely without the trouble of fastening to the top bar. The top bar in this frame is made plain, and the frame is wired with four wires instead of three. Experimenters reported favorably on this experiment. A special test was made with 74 queens from different breeders sent to that number of experimenters to test their ability to resist the European foul brood. Queens were introduced into infected colonies and the progress is being noted. On account of the heavy honey flow the disease almost disappeared last year. Fuller particulars of this report may be looked for in following issues of the Farmer's Advocate.

The Home Garden.

A. H. McLennan, of the O. A. C., discussed the home garden, deploring the fact that farmers neglect the opportunity of having a variety of fresh vegetables grown in their own gardens. Vegetables should be taken from the garden in the cool of the morning, and they should not be held long for they lose 50 per cent. of their quality in twenty-four hours. Where space is limited as in city gardens, radish and carrot seed may be sown in the same row, lettuce rows between early cabbage rows, and onion sets between the plants in the cabbage rows. These are simply examples of intensive methods. In country gardens, where more space is available, rows should be at least 30 inches apart so as to admit of horse cultivation. Make a definite plan of your garden this winter on paper. You can get help on this by asking for bulletin 231 of the Ontario Department of Agriculture. Order your seed early and get the amount which the plan of your garden indicates you should have. Plants like tomatoes, peppers, egg plants, melons and early cabbage, are best started in hot beds, and small gardeners are advised to use the dirt bands and paper pots which tend to keep the root system of the young plants in a definite area. The young plants are less injured through transplanting and get a better start. All gardens should be heavily fertilized with barnyard manure, and many vegetables such as lettuce, should have nitrate of soda, and others such as tomatoes should have phosphoric acid. Put plenty of time on the garden to prepare it well, it will save work later on. It is well to plant seeds twice as deep as their diameter. Firm the soil carefully, especially in warm weather, and then rake it to produce a mulch, after which it should be watered well by the use of a fine spray. Plants like cucumbers, melons and tomatoes require heat, while such plants as head lettuce require shade. Careful cultivation and careful watering should be followed throughout the season, but do not get the ground soggy. Gather the crop of the garden in the cool of the early morning, unless wet from the dew.

The Farmer's Apple Orchard.

The farmer's small apple orchard was the topic dealt with by R. S. Duncan, of Port Hope, who went into the subject thoroughly. It was his opinion that there is no acre on the average farm which would yield such handsome dividends as the well-cared-for orchard. The average orchard varies in size from 25 to 200 trees, covering an area from one-half to five acres, consisting of practically all varieties grown for home and export use, and of trees from ten to sixty years of age. In most cases these have been neglected and abandoned. They are badly in need of pruning; some have been butchered rather than pruned; many have rough, scurfy bark; they are never sprayed; some are dying from scale, oyster-shell bark louse, etc. The majority are in sod, or the land is used as a paddock or pasture for the stock. They may get an occasional scant dressing of manure, but it is usually piled around the trunks of the trees. In many cases the farmer wonders whether or not he should cut the trees down. Mr. Duncan said that in many cases these neglected orchards are quite capable of producing returns, if proper care is exercised to bring them back to thriving condition; and to prove his point referred to two demonstration orchards in Northumberland County which had been in much the same state

but which in 1911, 1912 and 1913 had been made yield an average net profit per acre of \$191.08 in one case, and \$150.46 in the other, or an average of 170.77 per acre per year in the two orchards for a period of three years.

The first thing to do in remedying old orchards is to prune with an ideal in view; cut out branches which interfere with one another; thin out to admit the free circulation of air and sunlight. Do not prune too severely the first year. Where large amounts of wood should be cut out it is advisable to remove only the dead wood. Partially dehorn in the first year and then in the second and third year complete the operation. All cuts of two inches in diameter or more should be painted with white lead and oil. Rough-barked trees should be scraped with a hoe in early spring. All trees should be sprayed thoroughly, and a good hand pump is necessary in the average apple orchard of from one to four acres. Pressure should be developed from 150 to 200 pounds. With a one-man pump a two-angle "Friend" nozzle should be used; with a two-man pump two lines of hose should be used instead of one. Spray with the wind. Mr. Duncan went into the spraying rules rather thoroughly and as we publish these each year in our spray calendar we shall not repeat them.

Where possible to get it, from five to ten tons of barnyard manure should be put on per acre each year, and this manure should be distributed evenly over the ground, not piled around the trunks. Where barnyard manure is not available use commercial fertilizers in conjunction with leguminous cover crops. Ashes should be used in place of potash and acid phosphate to a large extent in commercial orchards, in view of the excessive price of potash.

Mr. Duncan favored plowing up the old sod orchards in the spring, not plowing too deeply. Three or four inches is deep enough. Cultivate in July when a cover crop of red clover, mammoth red clover, hairy or common vetch, rye or buckwheat should be used.

Every farmer should endeavor to gain the confidence of the market by putting up a strictly honest grade of carefully picked and carefully packed apples, thus establishing a reputation for himself. Mr. Duncan advised the farmer to go into a co-operative association and drew attention to the Durham Co-operative Fruit Growers' Association, which in 1911, 1912 and 1914 obtained an average price, f.o.b., Port Hope, of \$2.60 per barrel, which netted the grower for No. 1's, 2's, and 3's for three years an average of \$1.60 per barrel, or in other words a net gain of 60 cents per barrel to the grower through selling co-operatively.

Cultivation of the Soil.

Prof. James Murray, of Macdonald College, ably handled the big subject of soil cultivation, placing as the most important of all tillage implements, the plow, which has been in use in some form for almost as long a time as soil has been cultivated. Prof. Murray traced the development of the plow from its crude state up to its present stage. The steel mold-board was first used in 1835 and since that time practically all improvements have come through a study of the construction and function of the mold-board. Until the steel mold-board was invented, plows were made to invert the soil; the modern plow not only inverts but pulverizes. The amount of energy required by

the mold-board is, according to Cornell experiments, only 10 per cent. that expended in pulling the plow, while 55 per cent. is used up in severing the furrow slice and by the action of the land side, and 35 per cent. is required to overcome the friction due to the weight of the plow. It is therefore poor economy to use an unsuitable mold-board, simply to save energy. The modern gang plow had its origin at the time of the American Civil War as an implement to save labor, and should at this time be used on many farms as a real labor-saving device.

Next in importance to the plow, Prof. Murray placed the harrow and emphasized the use of wide harrows and four-horse teams. Then came the cultivator and again the larger sizes were recommended. The relative cost of working land with machines of different sizes is very much in favor of the wide implements; in fact, in disking, the large cut-away will do the work at about half the cost of the small disk and in plowing the two-furrow gang will accomplish the work at a little more than one-half the cost of doing the same work with a single plow. To utilize wide implements to the best advantage sufficient power is necessary. Machinery is now doing the work of the men who have left the farms. Prof. Murray went into the tractor question along very similar lines to those followed in an article written by himself and published in this paper some time ago, and the address was listened to throughout with a great deal of interest.

A lively discussion followed Prof. Murray's paper, with Hon. Nelson Monteith, A. McKenney, Amherstburg, Ontario, and J. R. Spry, O. A. C., leading.

Evening Sessions.

Tuesday evening was given over to the Experimental Union annual supper, given in the College dining hall and at which the staff of the College, the students and ex-students and the winners of the acre-profit and hog feeding competitions in Ontario were present. The speaker of the evening was the Rev. Archdeacon Cody, of Toronto, who gave a fine oration on National Service. Other speakers included a number of ex-students, who enjoyed the unbounded hospitality of Dr. and Mrs. Creelman during the two days of the Union. It is unfortunate that more ex-students do not avail themselves of the opportunity to attend the Experimental Union and to enjoy reunion at that time.

On Wednesday evening, H. G. Bell, of Chicago, gave an illustrated lecture on the manufacture and use of fertilizers, entitled, "Science and the Soil." He took his hearers for a trip to the mines and through fertilizer manufacturing plants and all enjoyed the evening as educative and instructive.

New Officers Elected:

President, H. Sirett, R. R. 4, Brighton, Ont.; Vice-President, H. B. Webster, R. R. 1, St. Mary's, Ont.; Secretary, Dr. C. A. Zavitz, O. A. C., Guelph; Asst. Secretary, Prof. W. J. Squirrell, O. A. C., Guelph; Treasurer, A. W. Mason, O. A. C., Guelph. Directors: Dr. G. C. Creelman, O. A. C., Guelph; Hon. Nelson Monteith, Stratford, Ont.; P. S. McLaren, Perth, Ont.; A. McKenney, Amherstburg, Ont.; Norman James, O. A. C., Guelph, Ont. Auditors, R. R. Graham, S. H. Gandier.

Fifty Years of Progress in Western Ontario Dairying.

The annual meeting of the Western Ontario Dairymen's Association, held at Woodstock, January 10 and 11, marked the half century since the organization of the Association. It has been fifty years of steady progress in the dairy business, and considerable credit for the improvement in care of milk, and methods of manufacture, which have brought Canadian cheese and butter to the present high quality, is due to the work of the Association. Many facts relating to principles governing dairy production have only recently been discovered, and future years will doubtless reveal solutions of some of the present difficult problems. It is a long step from one cheese factory in 1864 and one creamery in 1875 to 150 cheese factories manufacturing 32,000,000 pounds of cheese and 125 creameries producing 21,000,000 pounds of butter in 1915. In addition about 100,000,000 pounds of milk is now sold yearly to powder factories and condensers, and a large amount of milk and cream is consumed direct and in form of ice-cream. The Association was formed in 1866, but the present name was not adopted until 1877 and was changed to Cheese and Butter Association of Western Ontario in 1896, but reverted to the former name again in 1900. The first Provincial Dairy Act was passed in 1869. In 1900 the dairy exhibition became a permanent feature of the annual convention. Instruction at cheese factories was first attempted in 1879, but it was not until 1903 that factories were divided into groups with an instructor in charge, and in 1907 these instructors were given certain powers, as sanitary inspectors of factories and creameries. Legislation provides for proper branding, and the prevention of frauds in connection with the dairy industry. In 1916 steps were taken to inaugurate a system of cream and butter grading. This shows a few of the events which have transpired since the dairymen of Western Ontario organized. Quality has always been the watchword.

The 1917 convention was well attended by cheese and butter manufacturers, who entered into a discussion of the various subjects. On Wednesday there was a fairly large turn out of producers to hear their problems dealt with by experts, and many remarked that the time

in attendance at the convention had been well spent. More dairymen should avail themselves of meetings held in their interests, but the Dairymen's Association annual convention is usually of more interest to those engaged in handling and manufacturing dairy products than to the men behind the cow. The former cannot exist without the latter. The point was well taken by a dairyman in the audience when he suggested that it was time all dairy interests got together in a week's convention to thoroughly thresh out the multitudinous problems and boost the great industry. Nothing but favorable comment was heard on the grading of cream and butter, and no adverse criticism was made on the method of paying for milk by test. Some problems of fifty years ago are problems of to-day, but many which were discussed at the 1917 convention were unknown a few years ago.

President's Address.

During the course of his remarks, President Jas. Bristow pointed out how Oxford County was historically associated with the dairy industry. It was in Norwich in that county where the first cheese factory was started, and in the town of Ingersoll the Western Ontario Dairymen's Association had its inception. The men who planned this association started an organization which has been influential in improving the quality of cheese and butter. These men had a vision of the possibilities of dairying in this province, and many lived to see the output of dairy products increase many fold. It was seen that the production of high-class, uniform quality of dairy products was necessary, and through the work of the Association the present splendid system of dairy instruction was evolved. The speaker went on to show that every country in the world laying claim to progressive civilization had, to a certain extent, adopted dairying as a basis for maintaining soil fertility, thus assisting in productive agricultural operations. Unfavorable seasons and low prices had tended to discourage some dairymen, but all who had stayed with the business through the ups and downs had received a good average price for their milk. Mr. Bristow claimed that, "A superficial survey of world conditions indicates that

never again will there be a surplus of dairy products on the world's markets sufficient to cause a return to the low prices of fifteen and fifty years ago. So far as the future can be gauged there will be a steady market demand for all kinds of dairy products at remunerative prices." The following features were mentioned as factors which affect the dairy industry. "War conditions have stimulated the export trade in dairy products beyond expectations. The scarcity of dairy products throughout the world and the heavy demand have advanced prices to a point never before realized. Labor is scarce and the cost is advancing, although production of dairy products has greatly increased during the past few years. The question of labor will be one of the chief factors in connection with future production. The population of cities and towns is growing and requires increasing quantities of milk and cream. The ice-cream trade is also becoming a factor in the use of milk fat, and the consumption of dairy products in every part of America is increasing, consequently the future opportunities of the dairy farmers are most encouraging. The milk condensers, milk powder factories and auxiliary city milk supply plants are branching out."

Up to the middle of December, 1916, Canada exported about 18,000,000 pounds of cheese and 7,000,000 pounds of creamery butter more than in 1915. While, the export trade is a great factor in the prosperity of Canadian dairymen, Mr. Bristow impressed upon his hearers the importance of the home market, and mentioned that "The aim of all dairymen should be to turn out a quality of dairy products second to none manufactured elsewhere in the world."

Instructor's Report.

The report of the Chief Dairy Instructor and Sanitary Inspector, Frank Hens, shows the extent of the cheese and creamery butter industry in Western Ontario, and is a gauge which records the ups and downs of the industry from year to year. The work of instruction has been carried on similar to that of previous years, with the result that a higher quality product is manufactured each succeeding year. There are five

Cheese Instructors in Western Ontario and they were able to make 354 full-day visits and 488 call visits at the 150 cheese factories. This is an increase of 572 over the previous year; 149 of these patrons were visited by the Instructors. The milk averaged slightly lower in fat than in 1915, although for the season it was 3.37 per cent. In 1915 the average of 11.06 pounds of milk was required to make one pound of cheese. The average price was a little over 15 cents per pound, but in 1916 it reached the high average record of 18 cents. Forty-eight per cent. of the 7,456 sediment tests indicated too much sediment. However, the practice is made of mailing a card, on which is attached the disc, to patrons sending milk containing too high a percentage of sediment. On this card are suggestions for keeping the milk clean, sweet and free from bad flavors. The results are encouraging, and the majority of the patrons are endeavoring to live up to the requirements.

The output of cheese for 1915 amounted to 32,249,561 pounds, which was 11,140,496 pounds more than the previous year. Up to the end of June the quality was reported very fine, but during July and part of August it was difficult to keep up the quality owing to the extremely warm weather. Scarcity of boxes increased the difficulty in some sections. It was necessary to hold some of the cheese, and, as the majority of curing rooms are not constructed to keep the temperature at a point where injury to flavor and texture does not result, the quality and yield suffered. However, the advancing market partially offset this loss. The decrease in the rennet supply was another problem which factory men were forced to contend with. The fall cheese were good, and, taking everything into consideration, Mr. Hens considered that the quality for the season was maintained remarkably well. Cheese makers have been forced to face an advance in cost of factory supplies, but in most cases the patrons have shouldered part of the increased expenditure, so that the makers would not lose. The prices charged for making cheese ten years ago are too low to be in vogue at the present time.

Sixteen of the 150 cheese factories have ice-cooled curing rooms. Whey butter was made in three factories. In seventy-two the whey was pasteurized, and six fed the whey at the factories. Only twenty-two factories paid for the milk by test. Their method was to add two per cent. to the fat reading. A number of patrons tampered with their milk and fines varying from \$10 to \$50 were imposed on forty-three. It is necessary to keep the milk cans in good condition if milk is to be delivered at the factory satisfactorily. In Western Ontario 107 cans were condemned as unfit for use, and 1,151 new cans were purchased. Septic tanks are used at thirteen factories for the disposal of wash water, with the exception of one or two all are reported to be working satisfactorily. The report showed 127 factories to be in a good sanitary condition; others only fair, and it will be necessary for several to be improved before the next factory season opens. A number of factories have been greatly improved during the past year. The total expenditure for improvements amounted to \$26,540. From November 1, 1915 to October 31, 1916, Mr. Hens and the Instructors attended 73 factory meetings, at which there was a total attendance of 3,491.

The three creamery instructors visited 129 creameries and 76 cream-buying stations. There were six new creameries opened and two which closed during the year, which makes an increase of four. Record prices were received for butter, but the output for 1916 was about 15 per cent. lower than the previous year. In 1915 the creameries in Western Ontario produced 21,022,761 pounds of butter. Over 800,000 pounds of butter was also manufactured in the cheese factories during the winter months, thus bringing the total production for 1915 to 1,754,038 pounds greater than 1914. The quality was good, with the exception of a short time during the extremely warm weather. Where proper precautions were taken by the producer, the creamerymen and the transportation companies, high-quality butter was manufactured even in the hottest weather. There were 38,534 creamery patrons, which sent cream averaging 28.97 per cent. butter-fat. The average moisture content of 574 samples of butter was 14.73 per cent., there being only 36 samples which contained over 16 per cent. The percentage of salt used was 5.28, and of this 3.2 per cent. was retained in the butter. Twenty-five creameries pasteurized the cream all or part of the time; 63 used the cooler; 18, pure culture; 5 graded the cream for churning, and 20 creameries are equipped with septic tanks for disposal of sewage. Cream is gathered in different ways; for instance, 14 creameries used cream tanks; 54 used large, jacketed cans, and at 61 creameries the collection was made in individual cans. During the year \$103,598 was spent on general improvements and \$29,700 on new buildings.

In order to find out the difference in grading at the farm and grading at the factory, experiments were conducted by the instructors this past summer. The instructors accompanied the cream haulers on several of their routes and took notes and graded samples of cream according to the standard previously agreed on. The samples were all taken under average conditions and exposed to the average temperature. At the creamery these samples were again graded by the buttermakers and instructors, without in any way referring to the previous grading made by the instructors at the farm. The aim was to find out how the buttermaker's grade would agree with the grading of the instructor at the farm, and also to see what effect the transportation had on the quality. Two hundred and forty lots of cream were graded, and 162 of these graded first;

67 second; 11 third and 7 were considered too poor for even third grade. Practically 90 per cent. of the samples were placed at the creamery in the same grade by the buttermaker and instructor in which the cream was placed or graded at the farm, and 85 per cent. of the buttermakers' grade agreed with that of the instructor. It was concluded that if reasonable precautions are taken in keeping the sample bottles clean and cool during transit, there is every reason to believe that under Ontario conditions the grading might be done closely enough by samples. When the cream is delivered at the creamery in individual cans, grading was considered to be much less difficult than where it was collected in tanks and samples had to be taken for grading. Mr. Hens gave the following summary of the experiments which show the relations between the grade of cream, average temperature and percentage of fat.

Average temperature of all samples.	Average per cent. of fat in all samples.
1st grade—65.3 degrees	30.01 %
2nd grade—68.1 degrees	27.6 %
3rd grade—73 degrees	25.7 %

Fifty Years of Progress.

When commenting on the fifty years of progress since the organization of the association the directors urged the young men present to take an interest in the work of the Association and to endeavor to make a record in the future that will surpass that of the past. The present prices are a stimulation to production, but although there may be a temporary drop in the prices of dairy products after the war, especially during the re-adjustment period, the directors trusted that lower prices for a time would not influence milk pro-



R. W. Stratton.

President of Western Ontario Dairymen's Association for 1917.

ducers to decrease their herds, but that they would continue to make dairying a permanent feature of their operations, for past experience has proven that there is no other line of agriculture which over a period of years pays better than dairy farming. Although the cold, wet spring and the drought of summer of 1916 tended to reduce the feed supply and lower production, statistics given showed a greater export trade than in previous years. The number of cream buying stations increasing did not altogether meet with the approval of the directors on account of possible deterioration of quality. Intense competition, they claimed, usually resulted in the acceptance of inferior raw material. Re-adjustment of manufacturing prices to meet the changed conditions was advised. The dairy exhibition held each year was credited with being an important factor in improving the quality of the cheese and butter of Western Ontario and served to advertise the products on the home market. The instruction work was reported as greatly aiding in improving both the raw material and finished products. The membership of the Association last year was 268 and the books showed a balance of \$469.79.

Securing a Greater Net Profit From the Herd.

The address delivered by A. Leitch, Ontario Agricultural College, Guelph, was much appreciated by the milk producers present. Facts and figures were given to prove that it was possible to solve some of the most vital problems affecting the dairy farmer. It was considered of first importance to cut down the cost of production. "This could be done", said the speaker, "by keeping better cows, producing more to the acre, by growing what the land will grow best, and by reducing labor by use of machinery". Selection and careful breeding will help solve the cow problem, and the milking machine will reduce the labor. Mr. Leitch says, "the milking machine is successful in the

hands of many dairymen, but to get the best results the operator must be a mechanic as well as a dairyman. Tests have shown that the machine will not produce as much or as clean milk as the best hand milking, but is to be preferred to the average hand milking of to-day." The sediment test will show cleaner milk with the machine, especially if the cows flank and side are dirty, but it is difficult to keep the bacteria count low.

The system of producing pasture advocated by the speaker was given in the report of the Eastern Ontario Dairymen's Convention in the issue of January 11. Mr. Leitch mentioned that he had been able to effect an increase of 30 per cent. in production with the same cows, at a saving of labor and many acres of land by growing the spring-sown pasture crop.

Rennet Substitutes.

A technical address outlining the results of experiments with rennet substitutes was given by F. J. McKinney of the Dairy Department, Ontario Agricultural College, Guelph. Using three ounces to each 1,000 pounds of milk of Hansen's and homemade rennet the former coagulated the milk ten minutes quicker than the latter, and showed a smaller average percentage of fat in the whey. The chief drawback to homemade rennet was the difficulty of getting uniform strength. The addition of from one-half to one per cent. of acetic acid to the homemade rennet tended to preserve it without causing any defects in its coagulating qualities.

The average results of 18 experiments comparing pepsin against rennet showed that 37.77 minutes were required to coagulate with pepsin against 28 minutes with rennet, and the yield of cheese from the latter was nearly 2 pounds greater from 1,000 pounds of milk. There was only a slight difference in the score of the cheese. Favorable results were obtained by mixing 1 1/2 ounces rennet and one-quarter ounce of pepsin to 1,000 pounds of milk. Various other materials were tried with more or less success, but Mr. McKinney's conclusions were that, "If it is possible to obtain a sufficient supply of rennet at a reasonable price, it will give the best results, if not, use about 1 1/2 ounces of rennet, and 1/4 ounce of powdered or "spongy" pepsin, strength 1:6000, to coagulate 1,000 lbs. of milk. If pepsin alone is used better results are got by having a slightly higher percentage of acidity on the milk than when using rennet. This increased acidity should be about one to two hundredths of a per cent; that is, if setting at .17 with rennet, have the milk from .18 to .19 for pepsin. Home rennet supplies should be conserved, and used, so far as possible to help out the commercial extracts."

Grading Dairy Products in Alberta.

C. Marker, Dairy Commissioner for Alberta, threw a lot of light on the problems of grading butter and cream by explaining how the method worked out in the West. "By aiding in grading and marketing of butter the Department has established a close connection in terms of dollars and cents between the preferences of the consumer at one end and the pocketbook of the producer of high-grade products at the other", said the speaker. The system works automatically. The consumers have preferences in regard to quality and price, which are met by produce merchants who can afford to pay more for high-grade butter than for average grade. This encourages creamerymen to manufacture butter of first quality because they receive more for it, but it requires high-grade cream, and to secure it they buy their supply on a graded basis from the producer. Thus it will be seen that all are linked up, and payment is made according to quality from the producer to the consumer. When grading is done, a certificate is given and the premium price goes to the best product. By buying on a graded basis Mr. Marker said that, "the wholesale men of the West made it possible to raise the quality of creamery butter in a manner not thought possible. Co-operation between wholesalers, Department of Agriculture, creameries and dairymen has brought results. The butter marketed through the Department graded as follows:

Grade	Per cent. in 1915	Per cent. in 1916
Specials.....	59.68	70.25
Firsts.....	32	16.62
Seconds.....	7.34	4.01
Off Grades.....	.94	.12

This shows a very high percentage of butter to be of high grade and a big increase was made in the specials in one year. Winter dairying is growing rapidly in Alberta and in 1915 ninety-six per cent. of the 7,000,000 pounds of butter was purchased on a quality basis. Through the work of the Department the producer was made acquainted with what the consumer desired and then set about to meet the demand knowing that the higher the quality the bigger the returns. A difference of from two to four cents was made between the grades.

Some Effects of the War on the Dairy Industry.

Figures given by J. A. Ruddick, Dairy Commissioner, Ottawa, showed the rapid development of the dairy industry in Canada, and special mention was made of the great development in Oxford County, where higher returns per cow per acre were secured than in any other County in Ontario. Dairying has forged ahead very rapidly in the Western Provinces. Creamery butter has increased in the four Western Provinces from 2,699,802 in 1900 to 18,326,885 pounds in 1915. During the same period the production of dairy or

homemade butter has also showed a big increase. The question before Canadian dairymen to-day is, what effect has the war had on dairying in the European countries? As the dairy industry is world-wide, conditions overseas will naturally affect the price of the products in this country after the war is over. In order to secure authentic information, Mr. Ruddick communicated with heads of dairy schools in several of the European countries, and their replies will show the standing of the dairy industry at the present time. G. von Elbrecht, of Copenhagen, Denmark, writes: "So far as I know there is a great diminution of cattle in most parts of the continent, and the diminution will be greater and greater. The dairy production is small and it will take a long time before it will be normal again because of the scarcity of money.

maintained on its present level. Milk is a food; therefore the lowering of the supply in other countries would naturally increase the demand for milk products in Canada. Prof. Dean advised against boosting the prices of milk products too high, as it had a tendency to antagonize the consumer who begins to look for substitutes which are cheaper. It is more desirable that the price be such that people will consume dairy products in large quantities. It is essential that dairy products be kept on a paying basis, but extremes should be avoided as they were not considered good for the producer or consumer. It is becoming more important year by year that an effort be made to find out how much it costs to produce 100 pounds of milk, or a pound of butter and cheese. When this is done the producer is in a position to estimate what he should sell his product

is the wide variation in the strength, which makes it necessary to carefully test out the different extracts before using them to any great extent. To date, rennet extract manufactured in Canada has not proved satisfactory, as cheese made with it has gone wrong in flavor. Curdalac, a peptin solution, was found to give equally satisfactory results with good rennet extract, or any of the brands of peptin. The loss in the fat of whey is a point which must be taken into consideration in cheesemaking, and as a rule peptin gives a little greater loss than the rennet extract. Mr. Barr was unable to account for this, as the peptin coagulation was apparently as perfect as with the rennet, and the curd appeared to shrink as well during cooking. In the experimental work, peptin showed an average loss of fat in the whey of .314 per cent.; Hansen's Extract .245 per cent., and Curdalac, .318 per cent.

Extract From Danish Statistics of Live Stock.
MILK COWS AND HEIFER CALVES IN DENMARK.

	1914	1915	1916	Increase	Decrease
Milch cows.....	1,310,268	1,281,547	1,141,246	—	169,022
Heifers over one year not calved.....	379,439	367,307	373,124	—	6,315
Heifers under one year.....	609,115	612,098	638,840	29,725	—
Total.....	2,298,822	2,260,952	2,153,210	net	145,612

Prof. G. Gorini says: "Since the beginning of the war here in Italy, there is a decrease in the number of milk cows, but there is an increase in the number of cattle which are bred. I think that the war will not greatly affect the dairy industry in Italy, but it will affect the other countries of Europe, especially Germany and Austria-Hungary."

Information given by A. Peter, of the Berne Dairy School, Switzerland, is to the effect that in 1911 the total number of cattle in Switzerland was 1,443,371, including 796,533 cows. In 1916 the number of cow had increased by 52,119. This shows that the Swiss people have increased their dairy herds since the beginning of the war. In Germany and Austria-Hungary, Mr. Peter writes, that there has been a large decrease in the number of cattle of all kinds since 1914. Unless the war goes on indefinitely Mr. Peter believes that the European dairy industry will recover fairly rapidly from the setback which it has received by the war. All the Governments are endeavoring to encourage cattle breeding and milk production. Lack of help is the greatest drawback.

Give the Cow a Square Deal.

By quoting figures gathered from the cow-testing centres, Charles F. Whitley, of the Dairy Division, Ottawa, clearly showed that the dairy cow must be dealt with honestly by her owner if the best results are to be obtained. That the cow is the foundation of good dairying is a common saying, but this should be modified to include only cows whose records show that they are giving profitable yields. Many herds require overhauling, as it is not good business to keep cows in the herd which give but a scant supply of milk, when it is possible to select and breed heavy producers. In one herd in Ontario a record showed that one cow gave around 3,474 pounds of milk, yielding 123 pounds of butter-fat in one lactation period, which had a value at 35 cents a pound of \$43.05. Figuring the feed cost at only \$40, there was a profit of but two and one-half cents per pound fat. Another cow in this same herd yielded 9,750 pounds of milk testing 3.1. Putting the same value on the fat and feed as with the previous cow, there was a profit per pound fat of 22 cents. Contrasts of this nature occur in many herds. The average for the herd can only be raised by weeding out the low producers and giving more attention to the cows that indicate their ability to profitably convert feed into milk and butter-fat. In the dairy business, Mr. Whitley pointed out that profits are not merely accidental, but that revenue comes in every day of the year; the amount depending on the quality of cows kept. It is not possible for every dairyman to own champion cows, but it is possible for all to raise the average production of their herd. "Will any of your cows make \$2.50 worth of butter in return for \$1.25 worth of grain? Do you get better results from feeding one pound of grain for every two and one-half pounds of milk produced or for every five pounds? Can you get five or twenty per cent. net profit on your investment?" were questions asked by the speaker, and are answered definitely by cow testing. Arithmetic must be linked up with the cows, as it is necessary to calculate daily where saving retrenchment can be made, or advances made. Unless a certain amount of estimating and accounting is done it is impossible to know exactly what improvements are being made or could be made. Many dairymen who once commence keeping records would never think of neglecting the daily weighing of each cow's milk, and balancing her account yearly. This is proof that keeping records is a valuable asset and is an argument in favor of every dairyman using the scales and the Babcock test.

Problem for Dairymen to Consider in 1917.

"The dairy farmer of 1917 should aim to produce all the milk possible," said Prof. H. H. Dean, of the Ontario Agricultural College, Guelph. Reasons given for the statement were a world-shortage of milk and exceptionally high prices. It can hardly be expected that the milk supply in the European countries can be

for in order to leave him a fair margin of profit. If the consumers could be shown definitely the exact cost of producing these food products, it is doubtful if there would be so many complaints about the price. Prof. Dean quoted the President of the British Board of Trade as saying: "If you do not make the production of milk remunerative for the farmer, there is no arrangement under the sun will make him produce milk." This sums things up pretty well. There is no use advocating increased production unless it pays. The speaker advised dairymen to closely follow all dairy legislation, and to see that it is in the interests of the many and not merely to favor the few. It was advised that the new Dairy Standards Act be given a fair trial before scoring it too severely. If it really proves unworkable, it is time enough then to ask to have it rescinded.

Reasons given for not admitting oleomargarine into Canada were to the effect that experience has proven that it cannot be so regulated as to be sold for what it is and not as butter. Every pound of "oleo" displaces a pound or more of good pure butter, which is detrimental to the dairy farmer's business and to the creamery industry. The source of oleo is uncertain and Canada stands for pure food, and this imitation butter lacks the vital principle found in creamery butter, which is essential for the growth and maintenance of humans.

The speaker also touched on the cream grading question and pointed out that first-grade cream should be sweet and clean in flavor, have an acidity of not over .2 per cent. for sweet, and not over .35 per cent. for churning, and the test should be from 25 to 35 per cent. fat. Owing to the present variation in the quality of cream delivered at creameries, it is almost impossible to manufacture a uniform grade of butter. Paying a premium for good-quality cream will no doubt very quickly raise the average. A difference of from 9 to 52 per cent. in the test of the cream was reported at one creamery. These were extreme tests. By regulating the speed of the cream separator the percentage fat in the cream can be fairly well controlled.

The difference between the terms "fat" and "butter", and the meaning of "overrun", should be clearly understood by dairymen who sell cream, and the speaker explained that for calculating the butter equivalent of fat, the most simple rule is to add one-sixth to the fat in milk, or one-fifth to the fat in cream. This makes up for the moisture, salt and curd incorporated with the fat in the manufacture of butter. The overrun is the excess of butter over the weight of fat. For example, 100 pounds of cream testing 30 per cent. fat will make practically 36 pounds of butter. This 6 pounds is termed the "overrun". With butter selling at 40 cents a pound, the "overrun" in 100 pounds of 30 per cent. cream would amount to \$2.40, or if fat is worth 50 cents per pound, butter at 42 cents is slightly more than the equivalent price.

The dairy cow is considered a means of helping to solve the labor problem by furnishing remunerative labor the year around. The speaker considered that the dairy cow, with hogs, is the only animal which can be profitably kept on land worth more than \$100 per acre.

Pepsin Versus Rennet Extract.

George H. Barr, Chief of the Dairy Division, Ottawa, gave an account of the work done at the Finch Dairy Station in determining the value of different coagulants to substitute rennet. Numerous experiments were tried with pepsin and in no case was the flavor of the pepsin cheese found to be inferior to that of the rennet cheese. Cheese made in May, using pepsin and rennet as a coagulant, were on exhibit at the Convention and in the mind of some the pepsin cheese was slightly better in flavor than those made of rennet extract, and were equally good in texture. The rumors that cheese made of pepsin would not keep their flavor, and that the texture would go wrong as the cheese ripened, are not well founded as has been proven this summer by the work at the Finch Station, and at cheese factories. There are a number of brands of pepsin on the market but one difficulty

When commencing to use pepsin trouble will be avoided if it is remembered that the rennet test will not give a true indication of the curdling strength of a pepsin solution if compared with the rennet extract. Mr Barr found that where 1 c. c. of rennet extract in 6 ounces of milk curdled it in 40 seconds, it was curdled in 16 seconds by using the same quantity of milk and pepsin solution; and that the curds were ready to cut in the same time. Pepsin is hardly as convenient to use as the rennet extract as it has to be dissolved. The practice followed at the Finch Dairy Station was to prepare the solution the previous evening, by dissolving the required quantity of pepsin for the following day at the rate of 2-drams of pepsin to 3 ounces of water and then using the required number of ounces per thousand pounds of milk. This was found to be a safe practice during the summer months. Dissolving one pound of pepsin in 10 pounds of water and adding salt as a preservative has been practiced by some makers, but unless distilled water is used and the solution kept in a cool place the practice is not considered to be as safe as making a fresh solution each day. Enough pepsin should be used to coagulate the curd ready to cut in about 25 minutes, in order to minimize the loss, and it was advised that curds made of pepsin be salted with one-eighth of a pound less salt than if rennet extract is used. Almost 42 per cent. of the factories in Ontario and Quebec used pepsin to some extent in 1916 and as yet no unfavorable reports have been heard from the Old Country as to the quality of cheese.

Grading Butter and Cream.

For several years creamerymen of Ontario have been discussing the problem of grading dairy products, but no definite action was taken until the past summer. New Zealand and Alberta butter, being of high, uniform quality, has been gradually encroaching on Ontario markets, and has aroused creamerymen to the need of doing something in order that their product might compete favorably with butter from the Western Provinces and other countries. It is only fair that producers and creamerymen who turn out first-grade cream and butter should receive a higher price for a superior article, instead of marketing on the "flat-rate system." Good and poor cream being churned in the same vat has resulted in an average quality butter being placed on the market. In an address on grading problems, Frank Hens, Chief Dairy Instructor in Western Ontario, pointed out that first-grade cream and butter has to carry the inferior grades, which means lowering the price in order to avoid loss on second grades. With an ever increasing number of creameries, cream shipping and cream buying stations in Ontario, the problem of adopting some system of grading is made difficult. At the present time there is a demand for all grades of butter, but the time will come when a large surplus of Ontario butter must compete on the export markets. It is then that uniformity of quality will count. It has been stated that it would be almost impossible to work out an acceptable grading plan under the present Ontario creamery conditions, but the Dairy Branch of the Department of Agriculture believed that an effort should be made to evolve some workable plan for the purpose of improving the quality of butter. While a good many butter dealers continue to pay the same price for all grades, a few progressive dealers in the province have been evolving a system of grading in their individual plants. It is fully realized that before any system of grading will be acceptable to the producer, he must be assured of a higher price for first-quality cream and butter. In April, 1916, Mr. Hens and a number of butter dealers in Toronto agreed upon certain standards of grading, and John H. Scott, of Exeter, was engaged as produce grader. He commenced his work with a view to finding out if it was practicable to examine on arrival at the storages any large number of lots of butter, score it according to standard agreed upon, and report the quality to the creameries. Also to find out if it was practicable, under Ontario conditions, to introduce a plan of grading butter by sample, and if it was possible to have disputes on quality between creamerymen and dealers dealt with by the grader. From results obtained so far, it appears practicable to introduce in Ontario a system of commercial grading, which will ultimately improve the quality of butter and ensure the creameries that turn out first-grade butter a more remunerative price than that paid for the average. It may take some time to work out the plan, and Mr. Hens asked for the co-operation and support of all engaged in the creamery industry.

Continuing the discussion on the grading problems, John H. Scott, who has been doing the grading in Toronto the past summer, stated that the quality of butter depends first of all on the quality of the cream, so that primarily any system of improvement must really start with the producer, but the farmer is producing cream with the object of making a profit, and unless

he is paid for producing the higher quality cream, he does not feel justified in going to the extra trouble. Mr. Scott stated that he had always found the producer ready to make any improvements in method when it was demonstrated to him that such improvement would be profitable in dollars and cents. There is no encouragement to carefully look after the cream when it is mixed and paid for on the same basis as the neighbor's cream who is indifferent about the quality. A lack of co-operation between creamery owners and buyers was claimed to be a hindrance to any improvement. Under the present system if one creamery rejected poor-quality cream, the patron left it and went to another creamery. With a uniform system of grading this difficulty would be overcome.

The standard of grades which Mr. Scott used in his work was 92 points for first grade, with a minimum of 39 points for flavor out of a possible 45; second grade was 87 points but under 92; between 82 and 87 was placed in third grade. Two hundred and fourteen shipments were examined up to August 31, and of these 57 per cent. were graded firsts; 41 per cent. seconds, and 1 per cent. third grade. The weather of July and August was unfavorable for the making of really fine butter, and 54 per cent. of the goods received from July 25 to September 25 scored less than 92 points, but in October 70 per cent. graded firsts, which showed that in good weather, when cream will practically care for itself, a high-grade butter is produced. That first-grade butter can be manufactured through the hottest weather was proven by some creameries this year shipping nothing but first grade butter all summer.

When scoring the butter, 23 per cent. showed dirty flavor, and 32 per cent. showed old-cream flavor, caused by cream that had deteriorated. Some of it had a stale flavor, and a small percentage had evidently been kept too close to fish. Mr. Scott reported that while a few creameries shipped their butter well finished, a large percentage of packages presented a general carelessness on the part of the creameryman. At the present time there is little difficulty in finding a market for all the butter that is produced, but it is believed that the time will come when conditions will change and prices will recede to normal. It is then that quality will count, and, unless Ontario butter-makers are ready to guarantee the quality of every car of butter which leaves the province, there is a possibility of the Western Provinces or other countries securing the market which Ontario now has. While the quality of butter depends largely on the quality of cream from which it is manufactured, it appears that by grading the manufactured product and paying a higher price to the creameries which turn out the highest quality product, the producer will be induced to take better care of his cream, as it will pay him to do it. The system will work out automatically.

A good deal of discussion regarding the grading of cream followed the addresses by Messrs. Hens and Scott. There appeared to be no serious objection to adopting some system of grading if a guarantee could be given by the produce men that the difference in price between the different grades would be sufficient to warrant creamerymen grading the cream, and the farmer in taking better care of it.

The Toronto Produce Exchange was represented at the Convention, and their Secretary read a letter which

was to the effect that they considered it in the best interests of the Ontario creamery-butter trade that a proper system of grading be adopted at the earliest possible moment, and the produce men pledged themselves to buy creamery butter on no other system as soon as it could be adopted. They trusted that arrangements could be made by the Department of Agriculture to put a system of grading in operation so that all creamery butter will be properly graded by competent judges, and Government certificates issued accordingly. The creamerymen present at the Convention unanimously passed a resolution endorsing the principle of grading cream and butter.

Conserve the Live Stock.

"Dairying is a permanent, outstanding branch of agriculture," said G. A. Putnam, Superintendent of Institutes and Director of Dairy Instruction in Ontario. The dairy farmer secures a fair return even in a lean year, but it was believed that by having a central organization a saving of many thousands of dollars could be made each year in the purchase of feeds. The speaker advised the paying of wages that would attract capable men to the manufacturing end of the dairy business. The old scale of wages does not look good to-day when the cost of living has advanced so high. In many places the equipment and factory buildings were not considered to be in keeping with a permanent industry. Mr. Putnam believed that any increase in production would have to come through doubling up the teams, using larger machinery and planning the work more carefully. Dairymen should consider the importance of conserving live stock, and if any animals must be sold, owing to lack of feed, let it be the low producers. While economy is necessary at the present time, the speaker refrained from advising farmers to economize any more than they are doing, when in the centres of population people apparently have not begun to do so.

Cheese and Butter Exhibit.

The display of butter and cheese attracted a good deal of attention. There were about 80 entries of large cheese besides flats and stiltons, and 56 entries in butter. The cheese were uniform in appearance and exceptionally well finished. The scores showed the flavor to be of high order. On each entry was a card giving the score. This not only gave the exhibitor an opportunity to know where his product was good or weak, but visitors had a chance to study the scores and note variation. Large cheese sold for 24 1/4 cents per pound, Stiltons 25 3/4 cents, and flats brought 24 1/2 cents. Pound prints of butter realized 44 cents and solids 42 1/2. The following list gives the names of winners and the score.

September, white cheese: 1, Jos. Skelton, Thorndale, 96.99; 2, C. J. Donnelly, Scotsville, 96.66; 3, J. Cuthbertson, Stratford, 96.66; 4, Harold Hammond, Moorefield, 96.33; 5, H. E. Donnelly, Strathroy, 96.33; 6, L. H. Schneider, Gad's Hill, 96.33; 7, Peter Callan, Woodstock, 96.16. September, colored cheese: 1, H. W. Hamilton, Thedford, 96.83; 2, L. H. Schneider, Gad's Hill, 96.33; 3, C. J. Donnelly, 96.16; 4, Wm. Lanyon, Aylmer, 96.16; 5, W. J. Jamieson, Dorchester, 96.15; 6, H. Youn, Listowel, 96; 7, B. A. Holland, Verchoyle, 90.99. October, white cheese: 1, Peter Callan, Woodstock, 96.83; 2, W. C. Laughlin, Thamesford, 96.66; (won on flavor); 3, Harold Hammond, 96.66; 4, W. J.

Jamieson, 96.66; 5, J. Cuthbertson, 96.66; 6, H. W. Hamilton, 96.49; 7, E. M. Johnston, Innerkip, 96.49. October, colored cheese: 1, Peter Callan, 96.00; 2, E. M. Johnston, 95.99; 3, C. J. Donnelly, 95.83; 4, Wm. Morse, Trowbridge, 95.49; 5, W. E. Brown, Brussels, 95.49; 6, H. Youn, Listowel, 95.16; F. E. Eastman, Arkona, 95.08. Fifty-six Pound Box Winter Creamery Butter: 1, R. A. Dennis, Strathroy, 96.50; 2, J. Cuthbertson, 96.49; 3, D. Doan, Southwold Station, 96.16; 4, Geo. W. Phillips, Seaford, 95.32; 5, E. M. Johnston, 94.82; 6, Treleaven & Ranton, Palmerston, 94.49; 7, H. J. Neeb, Tavistock, 94.33. Fifty-six Pound Box October Creamery Butter: 1, W. R. Pollock, Kerrwood, 95.65; 2, H. A. Clark, Warwick, 94.65; 3, W. B. Dinwoodie, Belmont, 94.15; 4, J. E. Wilson, Forest, 93.82; 5, R. A. Davies, London, 93.65; 6, Treleaven & Ranton, 93.28; 7, D. Doan, 93.07. Twenty-One-pound Creamery Prints: 1, R. A. Dennis, 95.99; 2, Geo. A. Phillips, 95.15; 3, E. M. Johnston, 94.83; 4, D. Doan, 94.66; 5, H. A. Clark, 94.49; 6, John Cuthbertson, 94.49; 7, W. R. Pollock, 94.32. Stilton Cheese: 1, Harold Hammond, 96.82; 2, Peter Callan, 96.50; 3, H. Youn, 96.49; 4, Garnet Bain, Lakeside, 96.16; 5, H. E. Donnelly, 96.16. Canadian Flats: 1, E. M. Johnston, 96.99; 2, W. E. Brown, 96.50; 3, Garnet Bain, 96.49; 4, Wm. Lanyon, 96.48; 5, Wm. Morse, Trowbridge, 96.33.

Evening Session.

The evening session, presided over by J. N. Paget, was well attended. Mayor West, of Woodstock, and Mr. Hodson, President of the Board of Trade, in short, pithy addresses welcomed the visitors to the city. W. Bert Roadhouse, Deputy Minister of Agriculture, Toronto, clearly showed the splendid opportunity the British market afforded for the Canadian output of dairy products. Previous to the war it was claimed that Great Britain imported 75 per cent. of her butter supply and of this amount about 61 per cent. was imported from centres outside the British Empire. When readjustment of conditions takes place at determination of the war Canada should be in a position to fill a large portion of this trade. When speaking about the development of the dairy industry in the West, Mr. Roadhouse mentioned that in October of 1916 a carload of creamery butter was shipped from Regina to England. The Western Provinces are destined to become exporters rather than importers of butter.

N. W. Rowell, Leader of Opposition in Provincial House, emphasized the importance of the need of food supply at the present time. England is far from being self-sustaining in food, but can continue purchasing in neutral markets so long as she has gold or secure credit. There will be a great demand on Canada this year for food and munitions, and Mr. Rowell urged agriculturists to plan to produce in greater quantities than ever before.

Association Officers.

President, R. W. Stratton, Guelph; 1st Vice-Pres., Jas. Donaldson, Atwood; 2nd Vice-Pres., F. Boyes, Dorchester; 3rd Vice-Pres., G. F. Mahon, Woodstock; Sec.-Treas., Frank Hens, London. Directors: J. Scott, Woodstock; J. N. Paget, Canboro; T. Ballantyne, Stratford; Geo. E. Booth, Ingersoll; W. G. Meed, Winchelsea; Robt. Myrick, Springford.

Toronto, Montreal, Buffalo, and Other Leading Markets.

Toronto.

Receipts of live stock at the Union Stock Yards, West Toronto, on Monday, January 15, 1917, consisted of 189 cars, 3,761 cattle, 202 calves, 978 hogs. Good to choice cattle, strong and ten to 15 cents higher. Common to medium cattle, weaker and slow at last week's prices. Hogs, sheep, lambs and calves all strong at last week's close.

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

	City	Union	Total
Cars.....	62	489	551
Cattle.....	909	5,943	6,852
Calves.....	196	630	826
Hogs.....	776	12,161	12,937
Sheep.....	522	1,554	2,076
Horses.....	16	1,053	1,069

The total receipts at the two markets for the corresponding week of 1916 were:

	City	Union	Total
Cars.....	46	469	515
Cattle.....	484	4,111	4,595
Hogs.....	1,211	11,685	12,896
Sheep.....	435	1,738	2,173
Calves.....	18	339	357
Horses.....	58	2,017	2,075

The combined receipts of live stock at the two markets for the past week show an increase of 36 cars, 2,257 cattle, 469 calves, 41 hogs, but a decrease of 97 sheep and lambs and 1,006 horses, compared with the corresponding week of 1916.

The live stock market has been exceptionally active this week. Cattle of all grades are at least 50 cents per cwt.

higher than the previous week, and \$2 per cwt. higher than a year ago.

The live-stock market opened in Toronto on Monday with 2,426 cattle of all kinds on sale. An early clearance was made at prices 25c. higher than the close of the previous week. While the market was fairly large for this season of the year, trade was decidedly active. The following list gives the reader a fair idea of the prices of heavy steers and butcher steers and heifers of the good to choice class. One steer, 1,050 lbs., at \$10; 1 steer, 1,190 lbs., at \$10.50; 18 steers, 1,300 lbs., at \$10.25; 41 steers, 1,250 lbs., at \$10.20, and 420 butcher steers and heifers, weighing from 1,010 to 1,240 lbs., at from \$9.10 to \$9.90 per cwt. Trade in cows was also active and 25c. higher, a few extra choice fat cows sold at from \$8.25 to \$8.50, but the bulk sold at \$7.50 to \$8 for choice; \$7 to \$7.35 for good, and common to medium at from \$6 to \$7. Bulls were strong at \$8.25 to \$8.75 for choice, and \$7.50 to \$8 for good. Stockers and feeders were also in demand at \$7.50 to \$8 for choice. Milkers and springers—Trade in this class has been somewhat slow of late, and this last week's trade has been no exception. On Tuesday the run of cattle was light, only 838 being on sale. The quality was decidedly poor. The majority being green, unfinished animals. This, however, did not prevent trade being active in every department at Monday's figures. On Wednesday there were 1,681 cattle on sale, the quality was again anything but good, but prices advanced another 25c. on all grades. A few extra choice cows, average weight 1,010 lbs., sold at \$9.05

per cwt. Bulls also advanced and sold at \$8.50 to \$9 for choice. Cannery and cutters, stockers and feeders, as well as butcher steers, were in keen demand at the above advance. Thursday saw a good, strong market in every department with prices firm. Sheep and lamb receipts were fairly light, and the demand was strong with higher prices. Light butcher sheep sold at from 9 1/2c. to 10c. per lb.; a few extra choice lots, average weight 130 lbs., sold at 10 1/2c. per lb. The lamb market opened with choice selling at 13c. to 13 1/4c. per lb, but advanced quickly, choice selling at 14c. to 14 1/4c. per lb.; good at 12c. to 13 1/4c. per lb., while a number of extra choice Black-faces brought 14 1/4c. per lb. Calves were also active at prices much higher than a week ago; choice veal selling at from 12c. to 13 1/2c. per lb., and a few extra choice at 14c. per lb. Hogs—The hog market opened with fed and watered selling at \$12.60. They advanced nearly every day throughout the week, and Thursday's market was very strong, in fact there was a regular scramble for them at \$13.25, fed and watered, and \$13.50 weighed off cars.

Live Stock Quotations.—Heavy steers, choice, \$9.75 to \$10.50; good, \$9.50 to \$9.75. Butcher steers and heifers, choice, \$9.75 to \$10.25; good, \$9 to \$9.50; medium, \$8.50 to \$8.75; common, \$6.50 to \$7.50. Cows, choice, \$8 to \$8.50; good, \$7.25 to \$7.50; medium, \$6.75 to \$7; common, \$5.75 to \$6.50. Cannery and cutters, \$4.75 to \$5.75. Bulls, choice, \$8.50 to \$9; good, \$7.60 to \$8.15; medium, \$6.75 to \$7.30; common, \$5.50 to \$6.50. Stockers and feeders, choice, \$7.50 to

\$8; medium, \$6.75 to \$7.25; common, \$5.50 to \$6. Milkers and springers, best, \$8.50 to \$11.00; medium, \$6.00 to \$7.00. Lambs, choice, 14c. to 14 1/2c. per lb.; good, 12c. to 13 1/4c. per lb.; culls, 8 1/2c. to 10 1/2c. per lb. Sheep, light, 9 1/2c. to 10c. per lb.; heavy, 7c. to 9c. per lb.; culls, 4c. to 6c. per lb. Calves, choice, 12c. to 13 1/2c. per lb.; medium, 9c. to 11c. per lb.; heavy fat, 7 1/2c. to 9c. per lb.; grassers and common, 5 1/2c. to 8c. per lb. Hogs, fed and watered, \$13.25; weighed off cars, \$13.50. 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.

Breadstuffs.

Wheat.—Ontario, No. 2 winter, new, per car lot, \$1.78 to \$1.80; No. 3 winter, per car lot, \$1.76 to \$1.78, (according to freights outside). Manitoba, track, bay ports—No. 1 northern, new, \$2.10 1/4; No. 2 northern, new, \$2.04 1/2; No. 3 northern, new, \$2.01 1/2; No. 4 wheat, new, \$1.86 1/2; old crop trading 4c. above new crop. Oats.—Ontario, No. 2 white, 64c. to 66c., nominal; No. 3 white, 63c. to 65c., nominal. Manitoba oats (track, bay ports)—No. 2 C. W., 70 3/4c.

Barley.—Malting barley, according to freights outside, \$1.18 to \$1.20, nominal; feed barley, nominal.

Peas.—According to freights outside; No. 2, \$2.40.

Buckwheat.—According to freights outside, \$1.25.

Corn.—American (track, Toronto) No. 3 yellow, \$1.03 1/2, shipment within 30 days.

THE ROYAL BANK OF CANADA

Capital Authorized - - - \$ 25,000,000
 Capital Paid Up - - - 12,900,000
 Reserve Funds - - - 14,300,000
 Total Assets - - - 270,000,000

HEAD OFFICE: MONTREAL

Branches throughout every Province
 of the Dominion of Canada

Accounts of Farmers
 Invited
 Sale Notes Collected

Savings Department at all
 Branches

Rye.—No. 2, \$1.37 to \$1.39.
 Flour.—Manitoba first patents, in jute bags, \$9.90; second patents, in jute bags \$9.40; strong bakers', in jute bags, \$9. Ontario, new, winter, according to sample, in bags, \$7.30 to \$7.50, track, Toronto.

Hay and Millfeed.

Hay.—Track, Toronto, No. 1 per ton, \$12.50 to \$13.50; No. 2, per ton, \$9 to \$11. Straw.—Car lots, per ton, \$9.50 to \$10, track, Toronto.
 Bran.—Per ton, \$32.
 Shorts.—Per ton, \$37.
 Good feed flour, per bag, \$2.70 to \$2.80

Hides and Skins.

City hides, flat 22c.; country hides, cured, 21c.; country hides, part cured, 19c.; country hides, green, 35c.; calf skins, per lb., 18c.; kip skins, per lb., 22c.; 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.

Country Produce.

Butter.—Creamery butter remained stationary in price on the wholesales during the past week, but the dairy declined slightly. Creamery, fresh-made pound squares, 48c. to 49c. per lb.; creamery solids, 44c. to 45c. per lb.; dairy, 38c. to 40c. per lb.; separator dairy, 43c. to 44c. per lb.

Eggs.—New-laid eggs also declined slightly, the other classes remaining unchanged in price on the wholesales during the past week; new-laid eggs, in cartons, 60c. per dozen; cold storage selects bringing 43c. per dozen; fresh, in case lots, 40c. per dozen.

Poultry.—Poultry have been quite firm in price during the past week, receipts being much lighter. They now bring the following live-weight prices: spring chickens, per lb., 15c.; spring ducks, per lb., 15c.; geese, per lb., 12c.; turkeys, young, per lb., 22c.; fowl, 4 lbs. and over, per lb., 16c.; fowl, under 4 lbs., per lb., 10c.; squabs, per dozen, dressed, \$3.50 to \$4.

Cheese.—June, 26c. per lb.; new, 26c. per lb.; new, twins, 26½c. to 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.

Wholesale Fruits and Vegetables.
 Business has again been quite dull in fruits and vegetables during the last week, and receipts have not been very heavy.

Potatoes were the feature of the market, as they advanced sharply in price; the New Brunswick Delawares now selling at \$2.40 to \$2.50 per bag; British Columbias and Quebecs, at \$2.25 per bag; Prince Edward Islands at \$2.10 per bag—(90 lbs.).

Onions also have been quite firm. They are very scarce and expected to advance in price shortly. The American variety sell at \$4.50 per 100-lb. sack; the British Columbias at \$4 per 100 lbs.; Ontarios at \$3.25 per 75-lb. sack; the Spanish at \$4.75 to \$5 per case.

Cabbage is so scarce it is a difficult matter to obtain any, and the price for the small quantity offered is \$4.50 per bbl.

The other vegetables have remained practically unchanged in price, as follows: beets, \$1.50 to \$1.75; carrots, \$1.25

per bag; parsnips, \$1.35 to \$1.50 per bag; turnips, 65c. per bag.

Celery has been very scarce; the last shipment of California selling at \$7 to \$7.50 per case, and Thedford at \$4.50 to \$5 per case.

Leaf lettuce has only been shipped in very lightly, and was a good sale at 25c. to 35c. per dozen.

Navel oranges have firmed somewhat, the price now ranging from \$2.50 to \$2.75, \$3 to \$3.25 and \$3.50 per case. The Florida orange season is just about over; they now sell at \$3 to \$3.50 per case; Mexican oranges bringing \$2.75 per case.

Grapefruit has been and still is a very slow sale; Florida bringing \$3.90, \$4 and \$4.25 per case; Jamaica, \$2.75 to \$3 per case; Porto Rico, \$3 to \$3.50 per case.

Bananas have declined a little, the bulk now selling at \$2 per bunch, an odd one bringing \$2.25 and \$2.50 per bunch.

Lemons have kept about stationary; Messinas selling at \$3.50 per case, and Californias at \$3.75 per case.

Pineapples declined; Porto Ricos selling at \$3.75, \$4 and \$4.25 per case.

Florida strawberries continued to arrive, and now sell at 50c. per box.

Tomatoes (hot-house) which came in so freely last week, they were a very slow sale, eased off somewhat during the past week, and brought better prices. No. 1's selling at 22c., 25c., and a few at 27c. per lb.; and No. 2's at 17c. to 20c. per lb.

Montreal.

Offerings of live-stock at the cattle markets last week were about normal, there being no extraordinary weather to affect the supply. Demand was very good and some choice steers brought as high as 10c. per lb., although good to fine stock was generally sold at from 9c. to 9½c. The great bulk of the trade was done at prices ranging from 8c. to 9c., although some steers changed hands at 7½c. Butchers' cows were in good demand all the way from 6c. to 7½c. per lb., while bulls brought about ½c. to ¾c. below the price of cows. Demand for sheep and lambs continued active and supplies were on the light side. Ontario lambs continued to bring 13c. to 13½c. per lb., while Quebecs were quoted at 12½c. to 12¾c. and sheep sold at 8½c. to 9c. per lb. Milk-fed calves were scarce and in good demand, the price ranging from 9 to 11c. per lb., according to quality. Grass-fed calves were as usual about 5c. to 7½c. per lb. There was a very good market for hogs and prices ranged all the way from 13c. to 13¾c. for choice stock.

Poultry.—There was a good seasonable demand for poultry of all kinds, and prices were practically unchanged. Turkeys ranged from 25c. to 31c. per lb., wholesale, covering all qualities, while chickens were 18c. to 24c. Fowl sold at 15c. to 22c. and geese around 20c. per lb. for fine. Ducks were 20c. to 23c. per lb.

Dressed Hogs.—The market for dressed hogs was at a new, high record for this time of year, 20c. having been realized for abattoir fresh killed stock. The general range, however, was around 19½c. Country dressed hogs ranged from 18¾c. to 19c. for light weights and ½c. less for heavies.

Potatoes.—The market seems to be steadying down to a quotable figure and dealers are looking for an improvement. Meantime Green Mountains were quoted at \$1.90 to \$1.95 per bag of 90 lbs., and Quebec potatoes at \$1.70 to \$1.75, ex-store.

Eggs.—Prices showed very little change, although the present tendency can hardly be said to be upward. The market, however, was quite firm and strictly new laid stock was quoted at 65c. to 70c. per doz., while fresh eggs were 55c. to 60c. No. 1 selected stock was quoted at 42c.; No. 1 candled at 40c. and No. 2 candled at 34c. to 36c.

Butter.—Fall-made creamery held its own at the top of the list so far as prices were concerned and was dealt in at 42½c. to 43½c. per lb., covering the finer grades. Winter creamery ranged from 41c. to 42c. and undergrades around 40c. Dairy butter sold at 37½c. to 39c., according to quality.

Cheese.—There was no change in the market for cheese. Finest Western colored was 25½c., to 25¾c., white being ¼c. less. Finest Eastern colored was 24½c. to 24¾c. with white about ¼c. less.

Grain.—Wheat continued to fluctuate but none of it was dealt in here with the exception of some feed wheat which

sold at \$1.15 per bushel, ex-store. Manitoba feed barley was quoted at \$1.00. The market for oats was quiet and car lots of No. 2 Canadian Western were quoted at 71c., while No. 3 and extra No. 1 feed were 69c. and No. 2 feed 66c. per bushel, ex-store.

Flour.—The market held steady at the recent advance, being \$10 per barrel, in bags, for Manitoba first patents, \$9.50 for seconds and \$9.30 for strong bakers'. Ontario Winter wheat flour was \$8.50 to \$8.80 per barrel, in wood for 90 per cent. patents, and \$4.10 to \$4.25 per bag.

Millfeed.—The market was steady at \$32 per ton for bran, in bags; \$35 for shorts; \$38 to \$40 for middlings; \$43 for mixed mouille and \$45 to \$48 for pure grain mouille.

Hay.—The market continued unchanged at \$13 per ton for No. 2 hay; \$11.50 for No. 3 and \$10.50 for clover mixed, ex-track.

Buffalo.

Shipping Steers.—Choice to primenatives \$10.00 to \$11.25; fair to good, \$9.00 to \$9.75; plain, \$8.00 to \$8.75; very coarse and common, \$7.50 to \$7.75; best heavy Canadians, \$9.75 to \$10.35; fair to good, \$8.25 to \$8.60; common and plain, \$7.75 to \$8.00.

Butchering Steers.—Choice heavy, \$9 to \$9.75; fair to good, \$8.50 to \$8.75; best handy, \$8.75 to \$9.30; fair to good, \$7.75 to \$8.50; light and common, \$6.75 to \$7.25; yearlings, prime, \$9.50 to \$10.25; fair to good, \$8.50 to \$9.00.

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.

Sheep and Lambs.—Active at the highest prices on record was the way the market stood the past week. Monday, Tuesday and Thursday top lambs sold up to \$14.50 and Friday bulk moved at \$14.50, with two loads reaching 14.60. Best cull lambs brought up to \$13.50 and \$13.75; yearlings scored a \$13.00 top, wether sheep made \$10.50 and ewes went from \$9.50 down. Receipts the past week were 16,500 head, being against 14,953 head for the week previous and 18,200 for the same week a year ago.

Calves.—Prices held to a very high level again the past week. Monday tops sold up to \$15.00, with bulk going at \$14.75; Tuesday best veals showed a \$15.25 top and the next three days best lots brought from \$15.00 to \$15.50. Cull grades that were desirable brought up to \$12.50 and \$13.00 and inferior or light, thin calves went from \$11.50 down. Receipts the past week totaled 2,300 head, as against 2,358 head for the week previous and 2,100 head for the corresponding week a year ago.

Chicago.

Cattle.—Beeves, \$7.75 to \$11.80; Texas steers, \$7.50 to \$10; stockers and feeders, \$5.50 to \$8.85; cows and heifers, \$4.40 to \$10; calves, \$9.75 to \$14.25.

Hogs.—Ten cents to 15c. higher. Light, \$10.10 to \$10.70; mixed, \$10.40 to \$10.85; heavy, \$10.45 to \$10.90.

Sheep.—Lambs, native, \$11.60 to \$14.15.

Cheese Markets.

Montreal, finest westerns, 25c.; finest easterns, 24c.; New York, specials, 24½c. to 24¾c.; average fancy, 23¾c. to 24c.

Coming Events.

Feb. 5 to 9.—Live Stock Meetings, Toronto.

Feb. 6 to 7.—Fairs and Exhibitions Convention, Toronto, 2 p.m. at Forrester's Hall.

Feb. 8.—Annual Meeting of the Ontario Vegetable Growers' Association, Parliament Bldgs., Toronto, 9 a.m.

Feb. 8.—Annual Meeting of the Ontario Plowman's Association, Forrester's Hall, Toronto, 2.30 p.m.

Feb. 8 and 9.—Annual Convention of the Ontario Fruit Grower's Association Toronto.

Feb. 13 to 16.—Corn Show and Convention, Kingsville.

Feb. 28 to March 2.—Annual Convention of the United Farmers of Ontario, Toronto.

Gossip.

We wish to call the attention of our readers again to the program of the Social Service Congress of Ontario to be held in Convocation Hall, Toronto University, on January 31 and February 1 and 2, 1917. The object of this Congress is to arouse interest and enlist all Canadians in behalf of social righteousness, with the purpose of improving social, economic, and ethical conditions in Canada. A larger announcement was made in the issue of January 11.

Sale Dates.

Jan. 30, Victoria County Pure-bred Stock Association sale at Lindsay, Ont.; Shorthorns and Herefords.

Jan. 31, Brant District Holstein Con-signment Sale.

Feb. 1, J. H. Chalk, Dunboyne, Ont.; Holsteins.

Feb. 1-2, Canadian Breeders, Union Stock Yards, Toronto, Ont., R. Miller, Stouffville, Manager.

Feb. 7, Thos. Thomson, Headford, Ont.; Shorthorns.

Much Interest Taken in Coming Shorthorn Sale.

We learn that interest in the Canadian Shorthorn sale at Toronto, is, as usual, being taken by the breeders and by those who want to become breeders. There is scarcely one of the contributors but could sell his cattle privately but this is a fixed affair and they feel that the sale should be held each year. They cannot let it stand still so they are contributing the very best possible to make it bigger and better than ever before. The herds from which these cattle come are amongst the best in any country, nothing but the best of breeding is good enough for them, so that the consignment is as select in breeding as could be found in any country, and the form is assured when we are told that some of the best bulls and heifers too, that have ever been sold in Canada, will be uncovered at this sale, and there are not just a few good ones, but a lot that will be hard to choose from.

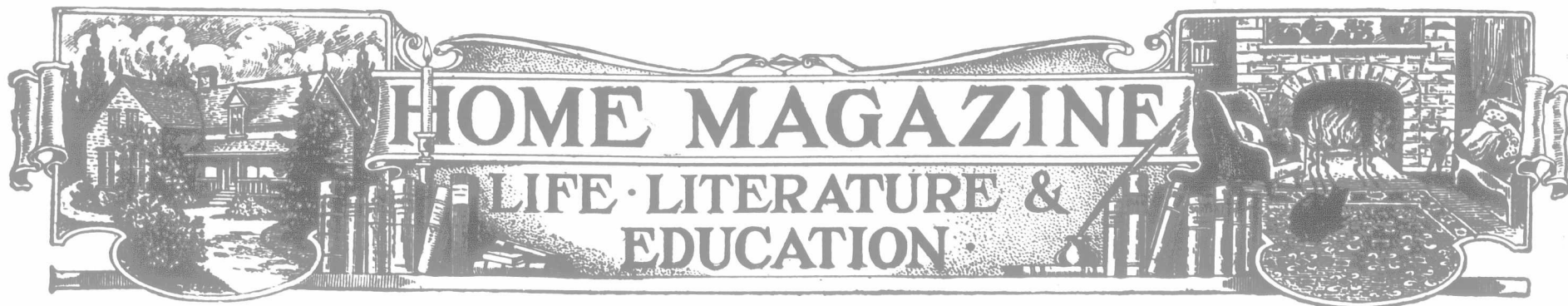
A very full review of Canada's present financial situation is given in the addresses published in this issue of Sir Edmund Walker and John Aird to the shareholders of the Canadian Bank of Commerce. In preparing these addresses the President and the General Manager of the bank had at their disposal the reports sent in from their agents and branches in the United States and Canada, and the information given is therefore of the utmost value.

The share which Canada is taking in the great war, both in supplying munitions and the money to pay for these is dealt with, and a word of warning as to the great necessity of thrift is given. It is pointed out that the total deposits in Canadian Banks on the 30th of November last amounted to \$1,521,349,000 as compared with \$1,288,985,000 at the same date in 1914, an increase of \$232,364,000. In the Canadian Bank of Commerce the deposits for the year showed a satisfactory growth, the increase being \$35,373,000.

To assist in meeting the demand for agricultural laborers in Ontario during the season of 1917, H. A. Macdonell, Director of Colonization of the Department of Lands, Forests and Mines, is sending a number of agents to points in United States to attract men to this Province for the coming season. A year ago this experiment met with considerable success, and the results amply justified the enterprise of the Department.

In order that the services may be of real benefit to the farmers of the Province it will be necessary for those desiring this class of help to agree to accept the services of such as early as February 1st if possible and notify the Director of Colonization, Parliament Buildings, Toronto, accordingly. Those engaging help early will escape the inevitable scarcity following the spring rush.

While it is expected that the supply of men available will be in excess to what it was last year there is no doubt the number who respond will be more or less limited, and it is most desirable that the farmers should co-operate with the Department in making the endeavor this year a complete success.—Adv.



Somewhere in Canada.

PETER MCARTHUR.

[In "Somewhere in Canada" Peter McArthur speaks from the depths of his heart, for he is one of the many in Canada who have a son at the front. The little poem will touch many a responsive chord.]

Somewhere in Canada mothers are yearning

For news of their heroes who rushed to the fray,

"Somewhere in France" their valor is burning—

Our loved ones are striking for Freedom to-day.

By the ocean, "unplumbed and estranging," they're parted,

But together they're fronting the battle's mischance,

Mothers and sons are alike hero-hearted—

Somewhere in Canada, "Somewhere in France."

Somewhere in Canada children are pleading

For tales of their fathers from mothers who weep—

"Somewhere in France" where the world lies a-bleeding,

Through the lightnings of hell for their dear ones they leap,

Husbands and wives whom the war storm has stricken

Have eyes that still flash with the old lion glance,

Beholding their goal through the terrors that thicken—

Somewhere in Canada, "Somewhere in France."

Somewhere in Canada maidens are dreaming

Of home-coming lovers—sent proudly away—

Somewhere in France, where the death-tide is streaming

Their lovers are battling for Liberty's "Day."

O God of the nations, how grim is the reaping,

Where Death and his legions their banners advance—

Sweethearts and lovers have Thou in Thy keeping—

Somewhere in Canada, "Somewhere in France."

Among the Books.

The Wrack of the Storm.

BY MAURICE MAETERLINCK.

[Maurice Maeterlinck, the famous Belgian author, on the outbreak of the war wished to enlist in the Belgian army, but was too much above the age limit. Since then he has worked in the fields, and has lectured in England and Italy to secure help for suffering Belgium. He is a mystic, and besides many books of prose has written poems and plays. Among the most widely known of his works are: *The Treasure of the Humble*, *The Life of the Bee*, *Wisdom and Destiny*, *The Measure of the Hours*, *The Unknown Guest*, *Pelleas and Melisande*, and *The Blue Bird*. . . . *The Wrack of the Storm*, his latest book, (published by Dodd, Mead & Co., New York, \$1.50) was written since the war began. It is a running commentary on events, as they happened, intermingled with the author's reflections and theories and prophecies in regard to what is likely to happen in the future. A few chapters are devoted to comments on life after death. Maeterlinck, like the English scientist, Sir Oliver Lodge, is convinced that the spirits of the departed return to us, probably to help and inspire us, and he is by no means skeptical that communication with them may not, to some extent, be established

or, indeed, has not been already established. At the beginning of the book he is exceedingly bitter against the enemy who has inflicted such unspeakable suffering on his country; by the time he has reached the end he has learned to think, even in the face of all his sorrows, with charity if still with justice. . . . The following selection, which gives some idea of the style and content of *The Wrack of the Storm*, may be read with interest.]

In *A Beleaguered City* a little book which, in its curious way, is a masterpiece, Mrs. Oliphant shows us the dead of a provincial town suddenly waxing indignant over the conduct and the morals of those inhabiting the town which they had founded. They rise up in rebellion, thrust them out of doors and, setting a strict watch, permit them to return to their roof-trees only after a treaty of peace and penitence has purified their hearts, atoned for their offences and ensured a more worthy future.

There is undoubtedly a great truth beneath this fiction, which appears too far-fetched because we perceive only material and ephemeral realities. The dead live and move in our midst far more really and effectually than the most venturesome imagination could depict. It is very doubtful whether they remain in their graves. It even seems increasingly certain that they never allowed themselves to be confined there. Under the tombstones, where we believe them to lie imprisoned there are only a few ashes, which are no longer theirs, which they have abandoned without regret and which, in all probability, they no longer deign to remember. All that was themselves continues to have its being in our midst. How and under what aspect? After all these thousands, perhaps millions of years, we do not yet know; and no religion has been able to tell us with satisfying certainty, though all have striven to do so; but we may, by means of certain tokens, hope to learn.

Without further considering a mighty but obscure truth, which it is for the moment impossible to state precisely or to render palpable, let us concern ourselves with one which cannot be disputed. As I have said elsewhere, whatever our religious faith may be, there is in any case one place where our dead cannot perish, where they continue to exist as really as when they were in the flesh, and often more actively; and this living abiding-place, this consecrated spot, which for those whom we have lost becomes heaven or hell, according as we draw close to or depart from their thoughts and their desires, is in us.

And their thoughts and desires are always higher than our own. It is, therefore, by uplifting ourselves that we approach them. It is we who must take the first steps, for they can no longer descend, whereas it is always possible for us to rise; for the dead, whatever they have been in life, become better than the best of us. The least worthy of them, in shedding the body have shed its vices, its littlenesses, its weaknesses, which soon pass from our memory as well; and the spirit alone remains, which is pure in every man and able to desire only what is good. There are no wicked dead because there are no wicked souls. This is why, as we purify ourselves, we restore life to those who were no more and transform our memory, which they inhabit, into heaven.

And what was always true of all the dead is far more true to-day when only the best are chosen for the tomb. In the region which we believe to be under the earth, which we call the kingdom of the shades and which in reality is the ethereal region and the kingdom of light, there are at this moment perturbations no less profound than those which we are experiencing on the surface of our earth. The young dead are invading it from every side; and since the beginning of the

world they have never been so numerous, so full of energy and zeal. . . . Not one of them but has gone up, not down, to his death, clad in the greatest sacrifice that man can make for an idea which cannot die. All that we have hitherto believed, all that we have striven to attain beyond ourselves, all that has lifted us to the level at which we stand, all that has overcome the evil days and the evil instincts of human nature: all this could have been no more than lies and illusions if such men as these, such a mass of merit and of glory, were really annihilated, had really forever disappeared, were forever useless and voiceless, forever without influence in a world to which they have given life.

We shall live henceforward under their laws, which will be more just but not more severe nor more cheerless than ours; for it is a mistake to suppose that the dead love nothing but gloom; they love only the justice and the truth, which are the eternal forms of happiness. From the depths of this justice and this truth in which they are all immersed, they will help us to destroy the great falsehoods of existence: for war and death, if they sow innumerable miseries and misfortunes, have at least the merit of destroying as many lies as they occasion evils. And all the sacrifices which they have made for us will have been in vain—and this is not possible—if they do not first of all bring about the fall of the lies on which we live and which it is not necessary to name, for each of us knows his own and is ashamed of them and will be eager to make an end of them. They will teach us, before all else, from the depths of our hearts which are their living tombs, to love those who outlive them, since it is in them alone that they wholly exist.

Hope's Quiet Hour.

What is a Soul Worth?

What shall it profit a man, if he shall gain the whole world, and lose his own soul? Or what shall a man give in exchange for his soul?—St. Mark 8 : 36, 37.

The barns are bursting with their store
Of grain like yellow gold;
A full, fat year has brought good cheer,
—Black is the night and cold—
But . . . What care I for teeming barns?
And what care I for gold?
Oh . . . where is my lamb—
My one ewe lamb—
That strayed from the fold?
JOHN OXENHAM.

What is the value of a soul? The question of our text required no answer, because the answer was self-evident. Our Lord was calmly announcing the manner his His swiftly approaching death—(He was only a little over thirty!)—when St. Peter interposed. He could not bear to hear that his loved Master must suffer such a dreadful death, and eagerly assured Him that such a thing could not be. Instantly our Lord turned and looked at the friend who desired to turn Him aside from the way of self-sacrifice, and stern was the rebuke which the astonished disciple received: "Get thee behind Me, Satan; for thou savourest not the things that be of God, but the things that be of men." The temptation suggested was very real and strong, or the words would not have been so stern.

Many young men, in these days, may understand the conflict in the Master's soul as they stand at the parting of the ways. Dear friends may be using the mighty influence of affection to keep them out of danger, while Duty may be calling them straight towards the danger-line. Our Lord was not content to make the

great decision Himself. He wanted His disciples, and all the world, to see that in such a case there is really no choice. If duty calls a man, neither family affection nor fear of danger must be permitted to hamper his footsteps. So, with the people gathered around Him, and the "disciples also"—we can imagine how tenderly His hand was laid on the drooping shoulder of the apostle, whose expression of affection had been so severely rebuked a moment before—He explained that every disciple of His must be prepared for the cross and ready, if necessary, to lay down his life for his Master's sake. Then was asked the great question of our text—the question which we may ignore if we choose, but which has only one answer. That question is thundering in the ears of this generation, as it has thundered in the ears of every generation before us. If a soul is offered for sale, what shall be a fitting price? The Master took a comprehensive survey of the riches of the whole world, and asked—confident that there could be only one sincere answer—"What shall it profit a man, if he shall gain the whole world, and lose his own soul?" We know that if any man should make such an exchange he would be an utter fool. Satan had already offered that splendid bribe, and his offer had been instantly refused. The soul of the Master—the Son of Man—was beyond all price. So is the soul of every child of man. To lose one's soul is inestimable loss, no matter what may be the price paid. We all know that. It goes without saying! We know it, but often live as if souls—our own souls and the souls of other people—were of very small importance.

Our Lord was so sure that souls were priceless, that He asked His question to open their eyes to the fact that was plain as day to Himself. How often He reminded His forgetful hearers that they were of priceless worth in the eyes of their Father. He is close to every sparrow, in its hour of need, and men are—we know it well—of "more value than many sparrows." A lost sheep is never given up, but the Shepherd seeks until it is found. The Father's eager feet run to welcome the returning prodigal. The little children are so royal that any kindness done to the tiniest of unresponsive babies is accepted as a gift laid at the feet of the Creator Himself. One who injures the soul of a child of God must beware! It were better for him to be flung into the ocean depths, with a great stone to drag him down, than to tarnish the whiteness of one of God's trusting little ones.

It is said of Napoleon that on one occasion, when he was warned that a campaign would cost a million men, he answered carelessly: "What are a million men to me?" So it is often said that "Nature is careful of the race but careless of the individual." If "Nature" is another name for "God," then that saying is anything but true. God is careful of the individual. He numbers the hairs of your boy's head. The soul for which you pray is of priceless value to Him. We may feel more troubled over the news that an ancient cathedral has been destroyed than over the tidings that a man has been lying, in a drunken stupor, in a ditch. We fancy that a great work of art is priceless because it is unique; but God know that, though there are so many millions of men, each one is worth more than all the works of art that were ever made. When one degraded sinner on earth repents, the courts of heaven are ringing with songs of joy.

Did our Lord consider that the souls of the Pharisees were of priceless value? We know how He lashed the hypocrites with indignant words, because they cheated poor widows to make themselves rich, yet made a great show of being religious.

If a man saw his dear friend attempting to fling himself over a precipice, he would fight with all his strength to save him.

He might be bruised and wounded, he might be forced to deal many heavy blows himself, he might be dragged into fearful danger, yet still he would persist in his determination to save his friend.

The Lover of souls could not stand aside and allow self-satisfied men to drift complacently to ruin. He tore off the white-washed, outward covering and forced them to see the decay within. There was still hope, if only they would acknowledge their sinfulness and turn to the All-Mighty Physician of souls. They turned on Him with fierce hatred and dragged Him to a terrible death; but He still loved them and pleaded the only possible excuse: "They know not what they do."

Let us accept His valuation and prize souls above all other treasures. Your own soul is a sacred trust from the Creator. You can spoil its purity and sow the seeds of horrible decay within it, by reading debasing books, by taking pleasure in hearing debasing conversation, by secretly indulging unclean thoughts. You do any of these things at your peril! As you may harden your soul by selfishness—like the rich man, who lived in luxury, caring nothing for the unrelieved misery of the sick beggar at his gate. Or you may blind your spiritual vision by fixing your whole attention on earthly gain or pleasure. What can it profit a man to gain the whole world and lose himself? Or you may be dishonest. Is it gain—or deadly loss?—to defraud others by "graft," by short weight, by putting the best quality of goods on top and hiding poorer quality below, by pretence of any kind! Can we afford to injure the quality of our souls for the sake of gaining five cents, a dollar, or a million dollars? This morning I read in the paper an account of some deported Belgians who were given their choice of work, good food—and dishonor!—or practical starvation and honor. They chose the latter, for they valued their souls more than their bodily life. Dare we—living in easy comfort—say that their choice was foolish? God grant that we may be brave and clear-sighted enough to choose as wisely and nobly when our hour of testing comes!

What of the souls of others? Are we satisfied to come to God ourselves, without making any effort to help others to

climb? Do we despise anyone as "of no account?" Do we consider anyone uninteresting, commonplace, worthless? The person we venture to despise is as dear to God as we are ourselves, and as worth saving. As we are sure that our own souls are of priceless value, so we know that—as H. E. Foschick declares—"in God's sight all the suns and stars that people infinite space, are of inferior worth to one human spirit dwelling, it may be, in the degraded body of some victim of drink or lust, some member of the gutter population of a great city."

"Tho' world in world in myriad myriads roll Round us, each with different powers, And other forms of life than ours, What know we greater than the soul?" DORA FARNCOMB.

Gifts From Readers.

Although Christmas is over, the Christmas spirit still prevails. Two of our readers have sent "gifts for the needy" this week—one letter contained \$3.00, and the other \$2.00. I will do my best to carry out the wishes of the donors. With thanks. HOPE.

Current Events.

Hon. Albert Seigny was sworn into the Cabinet as Minister of Inland Revenue.

Casualties to the Canadian overseas forces up to the end of December aggregated 67,890, of whom 10,854 were killed, 4,010 died of wounds, 494 died of sickness and 2,970 are missing.

The huge munition plant of the Canadian Car Company, near Kingsland, N. J., was destroyed on Jan 11th by fire and a series of explosions.

The cotton supply of Germany, necessary in making explosives, is said to be nearing an end.

Greece has agreed to the terms called for by the ultimatum of the Entente Allies, and will continue to remove the troops menacing Salonika.

The Russian Premier, Alexander Trepoff, has resigned.

Baron Devonport, Food Controller for Great Britain, has fixed the prices on certain foodstuffs including wheat, oats and potatoes. This step will prevent

speculators from interfering with the nutrition and efficiency of the people.

More than 40 persons are now imprisoned in Rome as a result of investigations into the destruction of the Italian battleships Benedetto Brin and Leonardo da Vinci. An Austrian, Mgr. Gerlach, who has been private chamberlain to the Pope is believed to have been one of the conspirators.

A new development of the war has been opened by the British victory over the Turks at Rafa on the southern frontier of Palestine, a step which may be followed, in the early future, by military operations in the Holy Land itself, where, it is believed, with the aim of assisting in striking a blow at the Suez Canal, the Germans have built a railway from Jerusalem to Beersheba. To lessen the pressure on Roumania, where the Teutons are still gaining, although they have not yet taken Galatz, the Russians have launched a strong offensive near Riga at the other end of the long Eastern line, and have reported marked gains. In Mesopotamia the fortunes of war seem to have turned with the Entente Allies, and Kut-el-Amara is now surrounded by British troops.

The reply of the Entente Allies to President Wilson's note requesting the belligerents to state the terms on which they would consider peace, was last week presented. In it the Allies state their wish to be associated with the project for the creation of a league of nations to ensure peace in the world. They do not hold themselves in any way responsible for the war, and regard as a fact established the wilful aggression of the Teutons to secure their hegemony of Europe and economic domination of the world. The statement recalls notice to the violation of the rights of Belgium and of established practices of war, the latter including the judicial murder of Miss Cavell and Captain Fryatt, the acts of certain submarine and airship commanders, and the deportation and reduction to slavery of civilians in Belgium and Poland. Before peace can be made, it is pointed out, there must be restoration, with indemnities, of Belgium, Serbia and Montenegro; evacuation of invaded territory in France, Russia and Roumania, with just reparation; the reorganization of Europe, with guarantees for liberty, freedom from attack, and a chance for the economic development of all nations; the restitution of provinces wrested in

the past and held against the will of the people living in them; and the reconstitution of the Kingdom of Poland.

The Dollar Chain

A fund maintained by readers of The Farmer's Advocate and Home Magazine for soldiers and all others suffering because of the war in Europe.

With this date also begins a department of the Dollar Chain which will be devoted to furnishing a ward in the new Military Hospital for tuberculous soldiers at Byron, near this city. The sum of \$500 will be required, and, if received, the ward will have placed over its door an inscription giving credit to Readers of the Farmer's Advocate.

Contributions from Jan 5th to Jan 12th: M. L. Swart, Nileston, Ont., \$2.00; "Malcolm and Russel", Bright, Ont., \$1.00; I. H. G., \$1.00; Albert Hawkins, Markham, Ont., \$1.50; W. Teasdale, Cayuga, Ont., \$5.00; Alfred Harwood, R. 6, Woodstock, Ont., \$3.50; Mrs. La Touzel, London, Ont., \$1.00; R. E. Hodgson, Ste. Marthe, Que., \$5.00; Mrs. P. McTavish, R. 4, Alvinston, Ont., \$3.00; Jas. R. Bain, Loring, Ont., \$3.50; "Toronto", \$2.00; "Scotia", London, Ont., (for Byron Military Hospital), \$5.00; Joseph Sproule, R. 3, Kingston, Ont., \$1.00.

By mistake the contribution of "Just Me", Florence, Ont., who sent \$5.00 on Dec. 21st, was not acknowledged at the right time, but is so now with great pleasure.

Previously acknowledged.....\$3,448.25

Total to Jan. 12th.....\$3,482.7

Kindly address contributions to "The 5 Farmer's Advocate and Home Magazine," London, Ont.

A military journal relates an amusing story of a Highlander who, on being shown over a man-o'-war for the first time in his life, was keenly interested in all he saw. The marines seemed particularly to impress him, and going up to one, he pointed to the badge on the marine's cap and asked him what it was. The marine, anxious to score off the visitor, looked at him in surprise. "Don't you know what it is?" he asked. "Why, that's a turnip, of course." "Man," replied the Scot, impatiently "I was no' axin' about yer heid".—"Tit-Bits".



Women Working in Munition Factory, Peterborough, Ont.

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) A low one month in this Department for answers to questions to appear.]

Last night at a friend's house the conversation turned on the advantages that are likely to come out of the war,—for, from the midst of the welter, even out from the midst of all that is hampering and retrogressive wherever war reigns, some advantages are sure to come. However slowly, to our impatient eyes, the wheels of the universe may move, the trend in the long run is for improvement, and the constant tendency is for beauty to cover up and smother ugliness, even as the vines and tall grasses wreath over, in time, the rusting debris of the cannon that has once belched forth flame and horridness of destruction.

The more natural, human status for woman, of course, was touched upon, the fact that henceforth she will more surely be judged not as an inferior mentality nor yet as an emotional doll to be petted and pampered, but as a human being, capable of thinking and acting as a reasoning human being should.

The talk passed on to prohibition, now becoming with fair rapidity world-spread, as it would not have become in all probability, had it not been for the war, in a thousand years. When men have been forced to recognize that prohibition is absolutely necessary in time of war to the efficiency, in munition plants and ship-yards, that must be achieved if victory is to follow, it will be rather hard to force upon them that it is not equally as productive of efficiency in useful arts in time of peace. It is a rather strong indictment of drink that the only really useful place found for it in war has been to madden and inflame men, deaden their sensibilities and fire their brute passions, in getting ready for the awfulness of a bayonet charge. . . . Finally, someone mentioned the wonderful discoveries in surgery and relief of pain that have come as at a bound during the past two years. It is as though the composite minds of scientists and great physicians, stung to the quick by the immediate and awful need, have risen to the pinnacle of activity, and from it have poured down upon burned and bleeding humanity a thousand expedients that may give surcease to a myriad sufferings for all the years to come.—Such simple, and inexpensive remedies too, born of the great need, for need always taps the resourcefulness of real men to the last degree.—Exposure of cleaned wounds to sunshine, the dripping of water sterilized and salted, "amberin" to make tissue grow again on burned surfaces, newer and better methods of dressing and bandaging, additional deftness and quickness in surgery,—these are but a few of the things in the medical world that have grown out of the war.

And there are other things. If one does not mistake, the age to come will be a very great one. Can you imagine yourself living in the days when tens of thousands of air-vessels, released from the fighting lines, will be free to fare forth on errands of peace, carrying mail by short-cuts over rough lands and mountain-tops, hurrying doctors to bedsides of suffering, going on every mission that demands speed?—And yet this very thing you are likely to see. Underseas travel, too, will, no doubt, be a commonplace of the immediate future. Following in the wake of the Deutschland (for we must give credit for brave venture even to our enemies) vessels of all the nations will ply over the seas, sailing in the fresh dustless air, under the blue heavens, for the most part, but dipping to safe and calm depths when the storm-king howls, clearing the air as storms invariably do, but impotent to harm the vessels sailing snugly below. Indeed it seems that by the expedients for life-saving that have been hurriedly invented to serve during the war, the deficit in population may be made up more quickly than we think. All these good things would have come, to be sure, but the war has very materially hurried them.

Another improvement, in all probability will be the more rapid uplift by education

of all the people. Recognizing that humanity is not so "cheap" as it was, and that it is necessary to conserve it to the utmost, public health will be a matter of greater concern, and one of the first steps in the new education will be to teach people how to take care of themselves. Medical and dental inspection of all the schools will be a certainty of the immediate future. The feeble-minded will be prevented from propagating their kind. Lectures on sanitation, first aid, and disease-prevention are sure to come. Indeed it is not inconceivable that doctors may be paid by the state to keep the people well,—although we may not go the whole way of the Chinese—pay the doctor so long as he keeps the family well and cease to pay him so soon as anyone falls ill.

In every way, in short, the education of the whole people is likely to make great strides. All the useful arts and sciences will be taught as never before; music, literature and art will occupy a greater place than ever, because it will be recognized that the mind needs its flowers as well as its bread and butter; and, last but not least, will come a greater study of geography and world-conditions. The people will demand to know why they have fought in wars and why they may ever have to do so again. They will recognize that education, the training of the mind, will help them to see through things better, and so, for self-protection, and for the power of real self-government, they will demand the most liberal education that can be achieved.

It is more than possible, of course, that when the war is over a great league to enforce peace—or at least settlement by arbitration—forever more, may be established among the nations. If the world is willing to pay out even the cost of one six months of this war for a peace propaganda, the thing may be done, and if done the lads who have fallen will not have fallen in vain.

Yes, surely we are coming to a great age, an age in which all mankind will advance, in many ways, by great strides, an age in which it will be harder for individuals to shine, but which will give such opportunity and impetus to the brightest minds as to send them to heights that may now seem unattainable, and so there will always be the few at the top to set the standard for the masses in the next great advance.

But the millenium will not yet have come. One may still be afraid of some of the old hang-overs, and one of the most persistent will be the worship of the Dollar, one of the most evident gods of the present day. A rich man, it is true, may be a very good man. There are some men gifted with a genius for making money, quite honestly too, and so long as such money is well used it may be a great privilege. The danger lies in the general regard of evidences of money as the most desirable thing in life. And so the shop-girl often gives her whole time and money to the getting of costly clothes; and the struggling business man and his wife wear themselves out in getting and maintaining a very fine house; and the farmer keeps his whole family poor while buying more land; and the rich man who is unscrupulous underpays his work-people, overcharges and over-rides, in order that he may pose in the roll of what he deems "the big man" in his city or community. It's not the fault of the shop-girl, nor of the social climber. The fault lies in the general consent that has placed the folk who wear the marks of money on a pedestal. The pedestal is enshrined in a rosy glamor, and it is for this, for the sake of the imagined romance, that the shop-girl wastes her life, and the struggling business folk, theirs, and the unscrupulous rich.

But after all what a confession of cheapness worship of mere money, with nothing else to back it up, is. For the glamorous way of money is the very easiest route by which utterly commonplace people may wear a halo.—And yet the really discerning are not fooled.

Once again, there is no evil either in money or in making it, so long as the thing is kept in its proper place; everyone must have enough for comfort and independence as long as life lasts, else there is likely to be unhappiness and, perhaps injustice—a burden left unshouldered must fall on someone else. But it is the worship of money and its evidences as the biggest end in life that is to be guarded against, the giving it

first place instead of second. There are things so much bigger, so much more essential to real happiness and real development. And so we may well be afraid of trusts that chance to be unscrupulous, and of all educational systems that run too much to the economic, and of people who value one for the sort of house one lives in and the costliness of the furs and velvets one wears. We are hearing much these days of the great farmers' combinations out West, and it must be confessed that farmers have been forced into such united action in self-defence,—for so many, many years they have been faced by fleecing combinations on all sides, out-numbered in parliament (partly because of their own fault, it must be admitted), and practically forced to come out usually at the "small end of the horn". "The worm will turn," but it is to be hoped that when it has grown to a great power it will not follow the example of its one-time enemies and become all-devouring. The united farmers are likely to do great things, but it is to be hoped that they will be big enough to ask nothing more than a fair deal all round, that they will be public-spirited, and so pointed to for their real greatness rather than for their great oppressions and their great acquisitions. Only so, it seems to me, will they ever rest on a great and sure basis, for anything that is unfair must totter in the end.

Only by care in our whole educational system, in the homes and in the schools and in the churches—but above all in the conversations of the parents—can a right and sane foundation be laid for a really great Canada and a really great world. We are prone to look at the top of a "sky-scraper," but it is on the under-structure down at the ground that the whole fabric rests. Let us look to our foundations.

—JUNIA.

Language of Flowers.

Dear Junia.—I, like many others enjoy your page every week, but have never yet told you so. How much better it would be if we all occasionally wrote a little word of appreciation!

I fancy writers are human—just like other people, and would welcome sincere appreciation. If some day the weekly literary feast provided by "Junia" failed to come, how much we should miss it!

We have all been delighted with the Christmas Number—every year it is better than the one before.

And now I have a request. Could you or any of the Ingle Nook friends oblige me with "The Language of Flowers"? What is the meaning of the different flowers? What does the rose represent, the lily, pansy, daisy, etc.? Hoping someone may be able to give it in "The Ingle Nook, with best wishes. Ont. Co. "JEANIE".

I am sorry I do not know the language of flowers.—Perhaps someone else will be kind enough to send us the formula. Thank you for your appreciative words. —J.

Pasteurizing Food.

"An Old Subscriber", P. Q. encloses a clipping which deals with pasteurized food, asking how it is done. So far as we can judge from the article the "pasteurizing" referred to as being done in Germany is simply our process of canning, by sterilizing both jars and food and sealing air-tight while boiling hot. The scientific process for pasteurizing milk merely requires that it be heated to 145 degrees F., and kept at that temperature for 20 to 30 minutes. This kills a number of harmful germs while preventing the cooked taste that is caused by a higher temperature.

"The Fairies".

To "Redwing", Simcoe Co., Ont., we may say that she should be able to buy the beautiful little song "The Fairies" from any music dealer or from the T. Eaton Co., Toronto. The music firm, Whaley, Royce & Co., Toronto, likely have it in stock. Write them.

Rug for Dining Room.

Our dining-room is 22 feet by 14 feet. It has a hardwood floor. I would like to purchase a rug for it. Would a 10 foot by 12 foot rug be large enough

for it. The room faces the southeast. The woodwork is grained. The paper on the walls is a soft green and fawn. What color should the rug be?

Peel Co., Ont.

W. S.

A 12 foot by 15 foot rug would be better for a room of the size given. If impossible to have one of this size why not have the whole floor nicely stained and finished and use a number of smaller oblong ones? With the green and fawn paper the predominant tone of the rug should be green or brown.

Debates.

Almost every week we are compelled to write to someone that it is "against our rules" to send points for debates, Women's Institute papers, and so on. We are always anxious to help in every way possible, but surely it must be evident to anyone who thinks about the matter at all, that we cannot help in this way. If we were to give assistance to a few we should have to give it to everyone, and before any length of time we should be literally bombarded with requests, and should have no time left to work for our "paper" which, we may tell you, goes to almost every country in the world. . . . Besides it is really much better for people to think out their own points, seeking assistance from outside only when it is necessary to ascertain or verify facts. It is only by self effort that the preparing of any debate or essay can be of use to oneself. It is by far too easy just to start out to gather ideas as one might pick raspberries off bushes. No mind can grow by that process. An arm that is not used will soon shrivel up and grow helpless, and just so will a mind that is not used lose the power of real work. On every count, it is more productive of good, more interesting and more honest to think out for oneself the points for any debate or paper that may be in hand. Winning the debate, or receiving praise for a paper, is only a secondary consideration; it is the effort that counts.

The Horse's Prayer.

In a country church on a winter night
There was warmth and cheer, and a
brilliant light
Shone from the chandeliers in ruddy glow
On the faces bright of the crowd below.

All were warmly clad in their winter's
dress,
With a carpet soft for their feet to press,
When the pastor knelt and in silent prayer
Asked the Father's aid and protecting
care,

Fell a sacred hush—for a form divine
Seemed to hover now by that hallowed
shrine.
With a thankful joy was his warm heart
thrilled
As he rose and glanced o'er the house well
filled.

And he offered thanks that their hearts
were right,
As their presence proved on that winter
night.
They had braved the blast and the sting-
ing cold
For the sacred courts of the sheltering
fold.

For his text he chose Matthew 5 and 7,
"To the merciful shall be mercy given."
And he proved on earth such would bless-
ing gain
And the final rest of the blest obtain.

Then they sang, "Praise God whence all
blessings flow,
And all creatures join in His praise below."
In the snow—outside—where the wind
blew cold,
Stood a poor old horse with no sheltering
fold.

Does the poor old horse thus the penance
pay
For the sins of men while they praise and
pray:
Through the summer's heat and the
winter's chill
As he faithfully serves his master's will?
S. J. Stevens, in Our Dumb Animals.

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The Hon. the Minister of Lands, Forests and Mines is sending a number of agents to the bordering States for the purpose of inducing FARM HANDS to come over to ONTARIO.

Farmers requiring help during the season of 1917 are requested to communicate at once with

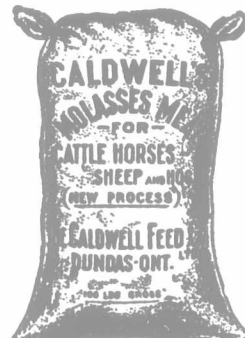
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The Windrow

Kaiser Wilhelm has bestowed 10,000 iron crosses and 5,000,000 wooden crosses. —Boston Transcript.

Field-Marshal von Hindenburg, in a letter to the Imperial Chancellor, has stated that fat has to be secured for the food of the munition-workers, or else Germany must look forward to a marked decrease in the output of urgently needed war material.

A mammoth artificial lake, 18 miles long, has been completed in Mysore, India. By means of a dam at one end the water is held back until needed for irrigation purposes.

More than 1,250,000 Belgian children are without food except what is given them by people outside of Belgium.

"If I were to read, much less answer, all the attacks made on me, this shop might as well close", said President Lincoln. "I do the very best I know how—the very best I can—and I mean to keeping doing so until the end.

"If the end brings me out all right, what is said against me won't amount to anything; if the end brings me out wrong, ten angels swearing I was right would make no difference."—Sel.

Combating the Evil of the Feeble Minded.

It is an old saying that prevention is better than cure, and in the case of the feeble-minded, this fact is brought home to us very forcibly.

Until proper preventative measures are taken, we will always have this difficult problem before us. It is all very well to provide institutions for these people, and very necessary, but why let the birth of idiots and criminals go on?

Why not get down to the root of the matter, by providing a home for the women of children-bearing age? It has been demonstrated that these women can manage a poultry and egg farm, with proper supervision, of course, and grow vegetables, fruit and flowers. How much better it would be if these people were given an opportunity to live a healthy out-of-door life, to become self-supporting and of some use to the community, instead of either roaming at large, a menace to society, and perpetuating their own kind, or housed in institutions in a most unsuitable environment, because the way the feeble-minded of all grades are obliged to live side by side, is both harmful and inhuman. There is no reason why the comparatively bright person should be obliged to live in the environment of a person of very low mentality.

If the Government, instead of building expensive and imposing edifices, would put the money into the land, on which could be built a number of smaller houses, the feeble-minded could be sorted out, as it were, and live in more or less congenial groups. There is so much talk about humanity to-day, let us get a little of it into our institutions.

Another way to combat this evil would be to have a health certificate with the marriage certificate, and so prevent, not only the feeble-minded from marrying, but also syphilitics, who are also responsible for idiots and criminals.

Instead of vaguely saying that something ought to be done, let us really stamp out this evil by uprooting the cause, not dealing with the effect.—Woman's Century.

I wonder why Shakespeare didn't make Hamlet say he would rather be a dog and bay the moon.

"Why Hamlet?"
"Because he was already a great Dane."
—Baltimore American.

A humane society had secured a shop window and filled it with attractive pictures of wild animals in their native haunts. A placard in the middle of the exhibit read: "We were skinned to provide women with fashionable furs." A weary-looking man paused before the window, and his harassed expression for a moment gave place to one of sympathy "I know just how you feel," he muttered. "So was I."



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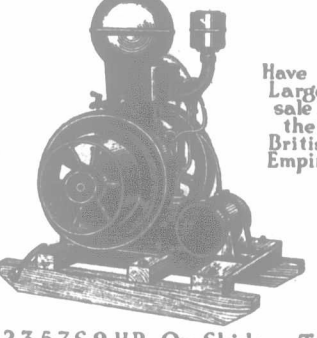
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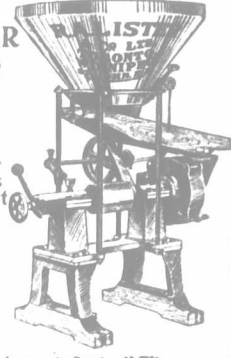


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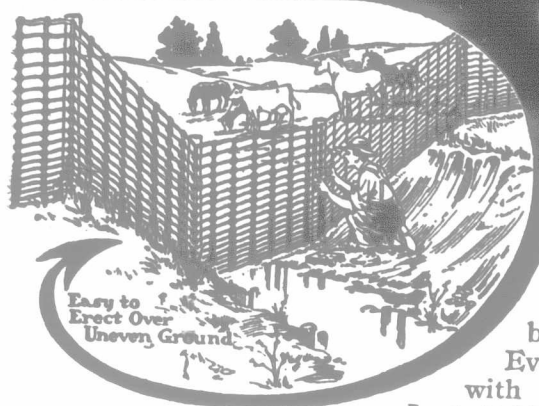


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The Brown Mouse.

CHAPTER XIV.

Continued from last week.

"Any of the home folks coming in to see?"

"Yes, seh," answered Calista. "All the school board have stopped by this morning."

Jim looked about him. He wished he could see and shake hands with his enemies, Bronson, Peterson and Bonner; and if he could tell them of his success with Professor Withers of the State Agricultural College, perhaps they would feel differently toward him. There they were now, over in a corner, with their heads together. Perhaps they were agreeing among themselves that he was right in his school methods, and they wrong. He went toward them, his face still beaming with that radiance which had shone so plainly to the eyes of Calista Simms, but they saw in it only a grin of exultation over his defeat of them at the hearing before Jennie Woodruff. When Jim had drawn so close as almost to call for the extended hand, he felt the repulsion of their attitudes and sheered off on some pretended errand to a dark corner across the room.

They resumed their talk. "I'm a Democrat," said Con Bonner, "and you fellers is Republicans, and we've fought each other about who we was to hire for teacher; but when it comes electing my successor, I think we shouldn't divide on party lines."

"The fight about the teacher," said Haakon Peterson, "is a thing of the past. All our candidates got odder jobs now."

"Yes," said Ezra Bronson. "Prue Foster wouldn't take our school now if she could get it."

"And as I was sayin'," went on Bonner, "I want to get this guy, Jim Irwin. An' bein' the cause of his gittin' the school, I'd like to be on the board to kick him off; but if you fellers would like to have some one else, I won't run, and if the right feller is named, I'll line up what friends I got for him."

"You got no friend can git as many votes as you can," said Peterson. "I tank you better run."

"What say, Ez?" asked Bonner. "Suits me all right," said Bronson. "I guess we three have had our fight out and understand each other."

"All right," returned Bonner, "I'll take the office again. Let's not start too soon, but say we begin about a week from Sunday to line up our friends, to go to the school election and vote kind of unanimous-like?"

"Suits me," said Bronson.

"Very well," said Peterson.

"I don't like the way Colonel Woodruff acts," said Bonner. "He rounded up that gang of kids that shot us all to pieces at that hearing, didn't he?"

"I tank not," replied Peterson. "I tank he was yust interested in how Yennie managed it."

"Looked mighty like he was managin' the demonstration," said Bonner. "What d'ye think, Ez?"

"Too small a matter for the colonel to monkey with," said Bronson. "I reckon he was just interested in Jennie's dilemmer. It ain't reasonable that Colonel Woodruff, after the p'litical career he's had, would mix up in school district politics."

"Well," Bonner, "he seems to take a lot of interest in this exhibition here. I think we'd better watch the colonel. That decision of Jennie's might have been because she's stuck on Jim Irwin, or because she takes a lot of notice of what her father says."

"Or she might have thought the decision was right," said Bronson. "Some people do, you know."

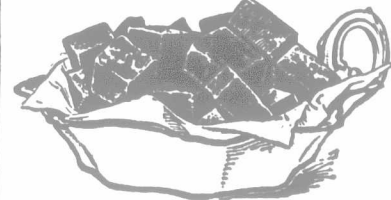
"Right!" scoffed Bonner. "In a pig's wrist! I tell you that decision was crooked."

"Vell," said Haakon Peterson, "talk of crookedness wit' Yennie Woodruff don't get very fur wit' me."

"Oh, I don't mean anything bad, Haakon," replied Bonner, "but it wasn't an all-right decision. I think she's struck on the guy."

The caucus broke up after making

sure that the three members of the school board would be as one man in maintaining a hostile front to Jim Irwin and his tenure of office. It looked rather like a foregone conclusion, in a little district wherein there were scarcely twenty-five votes. The three members of the board with their immediate friends and dependents could muster two or three ballots each—and who was there to oppose them? Who wanted to be school director? It was a post of no profit, little honor and much vexation. And yet, there are always men to be found who covet such places. Curiously there are always those who covet them for no ascertainable reason, for often they



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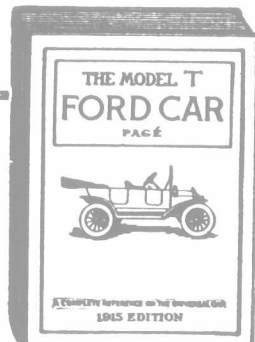
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13 43	8	14 17		
14 50	9	15 23		
14 16	10	14 87		
13 82	11	14 51		
13 48	12	14 15		
13 14	13	13 79		
12 80	14	13 43		
12 46	15	13 07		
12 12	16	12 71		
13 02	17	13 68		
12 77	18	13 42		
12 52	19	13 16		
12 27	20	12 90		
12 02	21	12 69		
11 93	22	12 48		
11 74	23	12 27		
11 55	24	12 04		
11 36	25	11 83		
11 27	26	11 74		
11 02	27	11 47		
10 85	28	11 37		
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are men who have no theory of education to further, and no fondness for affairs of the intellect. In the Woodruff District, however, the incumbents saw no candidate in view who could be expected to stand up against the rather redoubtable Con Bonner. Jim's hold upon his work seemed fairly secure for the term of his contract, since Jennie had decided that he was competent; and after that he himself had no plans. He could not expect to be retained by the men who had so bitterly attacked him. Perhaps the publicity of his Ames address would get him another place with a sufficient stipend so that he could support his mother without the aid of the little garden, the cows and the fowls—and perhaps he would ask Colonel Woodruff to take him back as a farm-hand. These thoughts thronged his mind as he stood apart and alone after his rebuff by the caucusing members of the school board.

"I don't see," said a voice over against the cooking exhibit, "what there is in this to set people talking? Buttonholes! Cookies! Humph!"

It was Mrs. Bonner who had clearly come to scoff. With her was Mrs. Bronson, whose attitude was that of a person torn between conflicting influences. Her husband had indicated to the crafty Bonner and the subtle Peterson that while he was still loyal to the school board, and hence perforce opposed to Jim Irwin, and resentful to the decision of the county superintendent, his adhesion to the institutions of the Woodruff District as handed down by the fathers was not quite of the thick-and-thin type. For he had suggested that Jennie might have been sincere in rendering her decision, and that some people agreed with her; so Mrs. Bronson, while consorting with the censorious Mrs. Bonner evinced restiveness when the school and its work was condemned. Was not her Newton in charge of a part of this show! Had he not taken great interest in the project? Was he not an open and defiant champion of Jim Irwin, and a constant and enthusiastic attendant upon, not only his classes, but a variety of evening and Saturday affairs at which the children studied arithmetic, grammar, geography, writing and spelling, by working on cows, pigs, chickens, grains, grasses, soils and weeds? And had not Newton become a better boy—a wonderfully better boy? Mrs. Bronson's heart was filled with resentment that she also could not be enrolled among Jim Irwin's supporters. And when Mrs. Bonner sneered at the buttonholes and cookies, Mrs. Bronson, knowing how the little fingers had puzzled themselves over the one, and young faces had become floury and red over the other, flared up a little.

"And I don't see, said she, "anything to laugh at when the young girls do the best they can to make themselves capable housekeepers. I'd like to help them."

She turned to Mrs. Bonner as if to add "If this be treason, make the most of it!" but that lady was far too good a diplomat to be cornered in the same enclosure with a rupture of relations.

"And quite right, too," said she, "in the proper place, and at the proper time. The little things ought to be helped by every real woman—of course!"

"Of course," repeated Mrs. Bronson. "At home, now, and by their mothers," added Mrs. Bonner.

"Well," said Mrs. Bronson, "take them Simms girls, now. They have to have help outside their home if they are ever going to be like other folks."

"Yes," agreed Mrs. Bonner, "and a lot more help than a farm-hand can give 'em in school. Pretty poor trash, they, and I shouldn't wonder if there was a lot we don't know about why they come north."

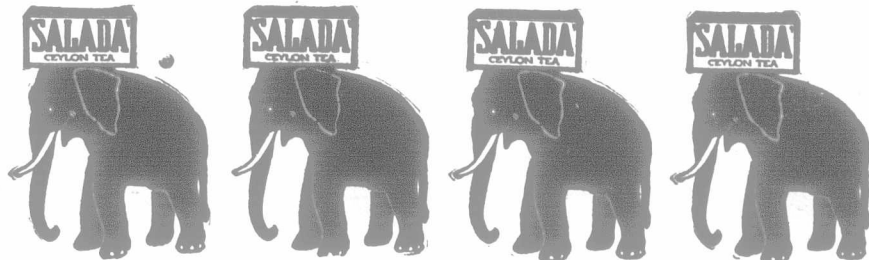
"As for that," replied Mrs. Bronson, "I don't know as it's any of my business so long as they behave themselves."

Again Mrs. Bonner felt the situation getting out of hand, and again she returned to the task of keeping Mrs. Bronson in alignment with the forces of accepted Woodruff District conditions.

"Ain't it some of our business?" she queried. "I wonder now! By the way Newton keeps his eye on that Simms girl, I shouldn't wonder if it might turn out your business."

"Pshaw!" scoffed Mrs. Bronson. "Puppy love!"

"You can't tell how far it'll go," persisted Mrs. Bonner. "I tell you these schools are getting to be nothing



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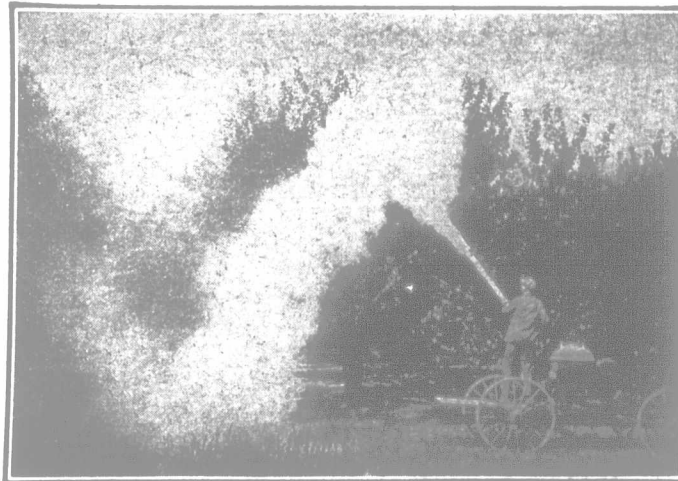
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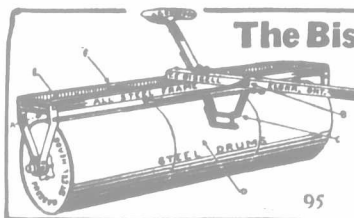
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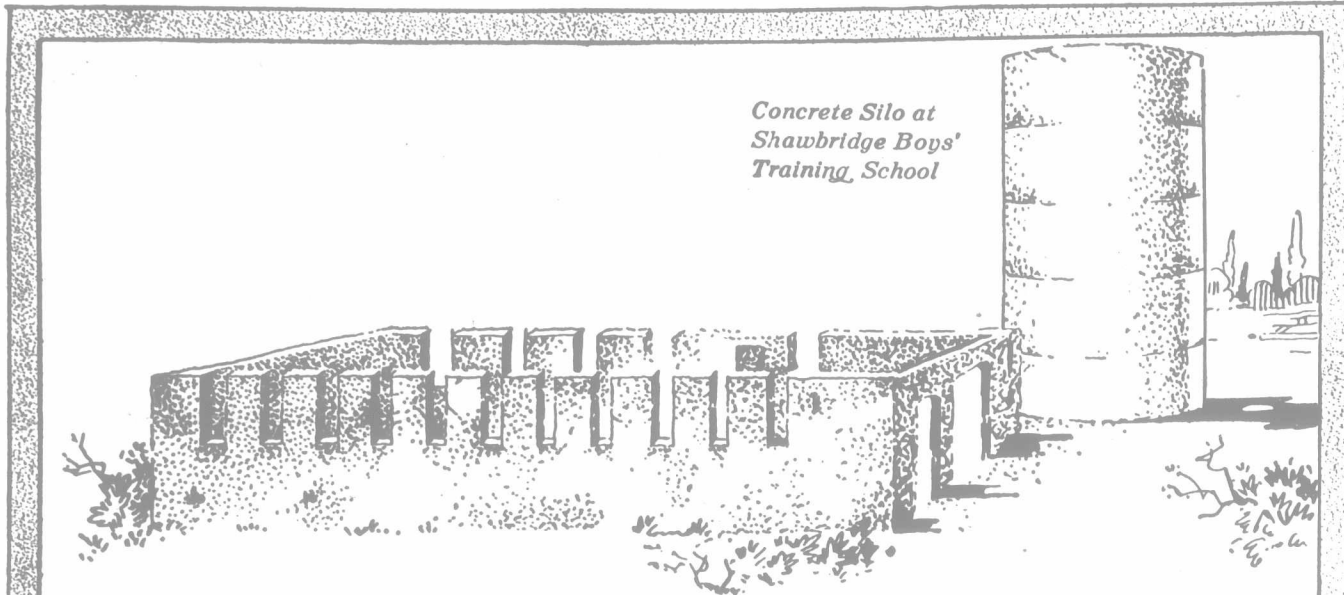
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more than sparkin' bees, from the county superintendent down."

"Well, maybe," said Mrs. Bronson, "but I don't see sparkin' in everything boys and girls do as quick as some."

"I wonder," said Mrs. Bonner, "if Colonel Woodruff would be as friendly to Jim Irwin if he knew that everybody says Jennie decided he was to keep his certifikit because she wants him to get along in the world, so he can marry her?"

"I don't know as she is so very friendly to him," replied Mrs. Bronson; "and Jim and Jennie are both of age, you know."

"Yes, but how about our schools bein' ruined by a love affair?" interogated Mrs. Bonner, as they moved away. "Ain't that your business and mine?"

Instead of desiring further knowledge of what they were discussing, Jim felt a dreadful disgust at the whole thing. Disgust at being the subject of gossip, at the horrible falsity of the picture he had been able to paint to the people of his objects and his ambitions, and especially at the desecration of Jennie by such misconstruction of her attitude toward him officially and personally. Jennie was vexed at him, and wanted him to resign from his position. He firmly believed that she was surprised at finding herself convinced that he was entitled to a decision in the matter of his competency as a teacher. She was against him, he believed, and as for her being in love with him—to hear these women discuss it was intolerable.

He felt his face redden as at the hearing of some horrible indecency. He felt himself stripped naked, and he was hotly ashamed that Jennie should be associated with him in the exposure. And while he was raging inwardly, paying the penalty of his new-found place in the public eye—a publicity to which he was not yet hardened—he heard other voices. Professor Withers, County Superintendent Jennie and Colonel Woodruff were making an inspection of the rural-school exhibit.

"I hear he has been having some trouble with his school board," the professor was saying.

"Yes," said Jennie, "he has."

"Wasn't there an effort made to remove him from his position?" asked the professor.

"Proceedings before me to revoke his certificate," replied Jennie.

"On what grounds?"

"Incompetency," answered Jennie. "I found that his pupils were really doing very well in the regular course of study—which he seems to be neglecting."

"I'm glad you supported him," said the professor. "I'm glad to find you helping him."

"Really," protested Jennie, "I don't think myself—"

"What do you think of his notions?" asked the colonel.

"Very advanced," replied Professor Withers. "Where did he imbibe them all?"

"He's a Brown Mouse," said the colonel.

"I beg your pardon," said the puzzled professor. "I didn't quite understand. A—a—what?"

"One of papa's breeding jokes," said Jennie. "He means a phenomenon in heredity—perhaps a genius, you know."

"Ah, I see," replied the professor, "a Mendelian segregation, you mean?"

"Certainly," said the colonel. "The sort of mind that imbibes things from itself."

"Well, he's rather wonderful," declared the professor. "I had him to lunch to-day. He surprised me. I have invited him to make an address at Ames next winter during farmers' week."

"He?"

Jennie's tone showed her astonishment. Jim the underling. Jim the off ox. Jim the thorn in the county superintendent's side. Jim the country teacher! It was stupefying.

"Oh, musn't judge him by his looks," said the professor. "I really do hope he'll take some advice on the matter of clothes—put on a cravat and a different shirt and collar when he comes to Ames—but I have no doubt he will."

"He hasn't any other," said the colonel.

"Well, it won't signify, if he has the truth to tell us," said the professor.

"Has he?" asked Jennie.

"Miss Woodruff," replied the professor earnestly, "he has something that looks toward truth, and something that we

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need. Just how far he will go, just what he will amount to, it is impossible to say. But something must be done for the rural schools—something along the lines he is trying to follow. He is a struggling soul, and he is worth helping. You won't make any mistake if you make the most of Mr. Irwin."

Jim slipped out of a side door and fled. As in the case of the conversation between Mrs. Bronson and Mrs. Bonner, he was unable to discern the favorable auspices in the showing of adverse things. He had not sensed Mrs. Bronson's half-concealed friendliness for him, though it was disagreeably plain to Mrs. Bonner. And now he neglected the colonel's evident support of him, and Professor Withers' praise, in Jennie's manifest surprise that old Jim had been accorded the recognition of a place on a college program, and the professor's criticism of his dress and general appearance.

It was unjust! What chance had he been given to discover what it was fashionable to wear, even if he had the money to buy such clothes as other young men possessed? He would never go near Ames! He would stay in the Woodruff District where the people knew him, and some of them liked him. He would finish his school year, and go back to work on the farm. He would abandon the struggle.

He started home, on foot as he had come. A mile or so out he was over-

taken by the colonel, driving briskly along with room in his buggy for Jim.

"Climb in, Jim!" said he. "Dan and Dolly didn't like to see you walk."

"They're looking fine," said Jim.

There is a good deal to say whenever two horse lovers get together. Hoofs and coats and frogs and eyes and teeth and the queer sympathies between horse and man may sometimes quite take the place of the weather for an hour or so. But when Jim had alighted at his own door, the colonel spoke of what had been in his mind all the time.

"I saw Bonner and Haakon and Ez. doing some caucusing to-day," said he. "They expect to elect Bonner to the board again."

"Oh, I suppose so," replied Jim.

"Well, what shall we do about it?" asked the colonel.

"If the people want him—" began Jim.

"The people," said the colonel, "must have a choice offered to 'em, or how can you or any man tell what they want? How can they tell themselves?"

Jim was silent. Here was a matter on which he really had no ideas except the broad and general one that truth is mighty and shall prevail—but that the speed of its forward march is problematical.

"I think," said the colonel, "that it's up to us to see that the people have

a chance to decide. It's really Bonner against Jim Irwin."

"That's rather startling," said Jim, "but I suppose it's true. And much chance Jim Irwin has!"

"I calculate," rejoined the colonel, "that what you need is a champion."

"To do what?"

"To take that office away from Bonner."

"Who can do that?"

"Well, I'm free to say I don't know that any one can, but I'm willing to try. I think that in about a week I shall pass the word around that I'd like to serve my country on the school board."

Jim's face lighted up—and then darkened.

"Even then they'd be two to one, Colonel."

"Maybe," replied the colonel, "and maybe not. That would have to be figured on. A cracked log splits easy."

"Anyhow," Jim went on, "what's the use? I shan't be disturbed this year—and after that—what's the use?"

"Why, Jim," said the colonel, "you aren't getting short of breath are you? Do I see frost on your boots? I thought you good for the mile, and you aren't turning out a quarter horse, are you? I don't know what all it is you want to do, but I don't believe you can do it in nine months, can you?"

"Not in nine years!" replied Jim.

"Well, then, let's plan for ten years,"

said the colonel. "I ain't going to become a reformer at my time of life as a temporary job. Will you stick if we can swing the thing for you?"

"I will," said Jim, in the manner of a person taking the vows in some solemn initiation.

"All right," said the colonel. "We'll keep quiet and see how many votes we can muster up at the election. How many can you speak for?"

Jim gave himself for a few minutes to thought. It was a new thing to him, this matter of mustering votes—and a thing which he had always looked upon as rather reprehensible. The citizen should go forth with no coercion, no persuasion, no suggestion, and vote his sentiments.

"How many can you round up?" persisted the colonel.

"I think," said Jim, "that I can speak for myself and Old Man Simms!"

The colonel laughed.

"Fine politician!" he repeated. "Fine politician! Well, Jim, we may get beaten in this, but if we are, let's not have them going away picking their noses and saying they've had no fight. You round up yourself and Old Man Simms and I'll see what I can do—I'll see what I can do!"

To be continued.

PROGRESS OF CANADA

Interesting address by the President and General Manager of the Canadian Bank of Commerce at the Annual Meeting of the Bank.

We have grown accustomed to look to Sir Edmund Walker's address at the Annual Meeting of The Canadian Bank of Commerce for a comprehensive review of the history of the year, and instructive comment upon prevailing conditions. In his recent address we note the following passages of general interest:

I shall not apologize as I did a year ago for asking you to devote your attention to the material affairs of Canada at a time when the Empire and its Allies are fighting for the greatest of all causes—the liberty of the world. Canada has in that short time so enlarged her sphere of action that only the blind could fail to see that every detail of our national life which aids or hinders our power to serve in the great conflict is of supreme importance. In the terrible winter of 1914-15 we did not realize that our aid was to count for much in the struggle, greatly as we desired to help. We did not really believe, despite the warning of Kitchener, that the war would still be raging in 1917 with the end not nearly in sight. Now we do not talk of any definite time for the end; we only know that the last man, the last gun, the last dollar, may be needed, but that we shall win beyond any peradventure, if the people in all the Allied countries can be made to understand what is required of them.

Exports Exceed Imports.

Turning at once to our trade with other countries, that being the best indication of the tendency of affairs at the moment, we find that, leaving out the shipments of gold and bullion, both inwards and outwards, our exports for the fiscal year ending 31st March, 1916, exceeded our imports by \$249,088,274, and that for the six months ending 30th September, 1916, the excess was \$141,100,898. We cannot keep in mind too clearly what has happened since the end of our period of expansion in 1913, and a repetition of the figures given last year will aid us to do so:

Fiscal Year	Imports	Exports
1912-13	\$686,515,536	\$377,068,355
1913-14	635,383,222	455,437,224
1914-15	497,376,961	461,442,509
1915-16	530,211,796	779,300,070
6 mos. end- ing Sept.)	405,901,765	547,002,663

Fiscal Year	Excess Imports	Excess Exports
1912-13	\$309,447,181
1913-14	179,945,998
1914-15	35,934,452
1915-16	\$249,088,274
6 mos. end- ing Sept.)	141,100,898

The improvement from year to year is as follows:

1913 to 1914.....	\$129,501,183
1914 to 1915.....	144,011,546
1915 to 1916.....	285,022,726

1913 to 1916.....	\$558,535,455
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For the six months of the present year the gain over the astonishing figures for the first half of last year is nearly another 100 millions.

The gain of 285 millions in our foreign trade as compared with March, 1915, is almost all due to the increase in the value of the exports, the increase in the imports being only 32 millions.

Effective Economy.

If we are really to exercise an effective economy we should be very jealous as to the nature of any imports not necessary for the production of war supplies or for our national existence. There is some improvement in this respect, but it is not pleasant to see about 10 millions sent abroad for motors and about as much more for silk goods and velvets. The chief increases are in iron and steel bars and goods, and in iron ores, in machinery, in wool, cotton and jute and goods made therefrom, in raw rubber, in various chemicals, oils, explosives, etc., needed for making munitions, in various articles for the army and navy, and to a considerable extent in foodstuffs, so that apparently the chief increases are in necessary articles although we regret that many of them were not made in Canada. There is a large increase in our exports under every

general heading, especially under manufactures, mining, agriculture and animals and their products. The total of our imports and exports of merchandise in the fiscal year ending March, 1916, was \$1,309,511,866, against \$241,025,360 in 1896, that being also a period of excess exports. This enormous foreign trade is of course coincident with a great decline in all domestic trade not connected with the war, and is swollen largely by purchases of steel and other material imported from the United States to be used here in making munitions; the money result is abnormal because of the high price of almost every known commodity. I am not putting forward the figures, however, as a guide to what may be possible after the war, I am putting them forward as an indication of what may be accomplished when we are spurred by great events. The financial ideal for us at the moment is to pay interest on our foreign indebtedness, to provide our share of the cost of the war, and to lend as much as possible to Great Britain to pay for munitions made for her by Canada. We are apparently accomplishing this, but in the absence of figures we cannot estimate what amount of profit from our home trade is eventually invested in war securities. We are, however, being helped to accomplish this result, in a manner which may deceive us, by the large market in the United States for our securities, and also by the many subscriptions received from our wealthy neighbors when issues of our own war loans are made in Canada.

Agricultural Production.

The only direction in which the tide of prosperity in the United States is not at the full in agricultural production. In a year when the world is facing the highest prices of recent times, the great decrease in the wheat crop, the moderate yields of corn and oats, the small yields of minor products, and the adverse effect of high-priced feed on the live stock situation, are matters of deep concern. The individual producer may be compensated, at least partially, for the low yield by the higher price, but no comfort for the consumer, weary of high prices, can be found in a world short of food and of almost every commodity that enters into his daily needs.

A matter of supreme importance to Canada, and for the frequent reference to which no excuse is needed, is that we must as far as possible provide the cost of the war at home.

Cost of the War.

At the end of October the war had cost us a little over 350 millions and at our present rate of spending, 300 millions more may be added during the coming year. From the excess of revenue over expenditure we may at the end of the fiscal year have 50 millions, or even more, to apply on war charges. To provide for so great a proportion of the total cost of the war in this manner reflects great credit on those who are responsible for Dominion finance. We have managed to finance the remainder of the cost thus far partly by an account with the Imperial Government of overseas and other disbursements, and partly by loans floated in Canada. Over 100 millions of the amount due the Imperial Government has been funded permanently, and most of the balance is offset by payments on Great Britain's account. Some loans for ordinary capital expenditures which could not be deferred were made in New York in 1915. In March, 1916, a second loan was placed in New York amounting to 75 millions, of which 25 millions was used to take up a corresponding amount of the 45 millions borrowed in July, 1915. In September a second loan in Canada was offered. This time the Finance Minister asked for 100 millions and the subscriptions exceeded 200 millions, the banks receiving nothing on their underwriting of a portion of the loan. These are such notable achievements that I am sure they cannot

have escaped the memory of any Canadian but I mention them for the benefit of the very large number of people outside Canada who read our annual reports.

War Finance.

In this review of the finances of the year it is necessary to recall that the proceeds of the first war loan of November, 1915, 100 millions were used mainly, if not altogether, in the year 1916. There is one feature in Canadian war finance which differs in a marked degree from that of Great Britain. Our Finance Minister has as far as possible funded the debt as it has been incurred, with maturities neither so long as to involve present rates of interest for too many years, nor so short as to trouble the Government during a period of some years beyond any probable duration of the war. One of the disturbing features of the finance of Great Britain is the enormous quantity of Treasury Bills which must be renewed at very short intervals.

Thrift for the Empire.

Thrift for the individual is excellent, but just now that is of minor importance. Thrift for the sake of Canada, thrift for the sake of the Empire, thrift to win the war should be our cry. We shall not fail for men, difficult as enlistment may be. We shall not fail because of inability to make or to procure war supplies. If we fail it will be because we have wasted on unnecessary things the money that would have won the war. The man or woman who works hard at making shells may take much comfort in helping to win the war, but the man or woman who, in addition, saves a part of the present high wages due to the war and buys a war security, or helps a bank to do so, has helped twice, and the second kind of help is the most vital. The manufacturers of the United States will make war supplies for money. We are doing better only if we supply them on credit.

In addition to the credits for munitions, the Canadian banks are at the moment giving credits to the British Government for the purchase of wheat to the extent of 20 millions, but the transactions are for a shorter duration than the obligations already mentioned.

Bank Deposits.

The total of the deposits of Canadian banks at 30th November last was \$1,521,349,000, as compared with \$1,288,985,000 at the same date in 1914, an increase of \$222,364,000. Our deposits will, we trust, continue to increase, but the extent of the increase will depend on the results of the campaign of thrift, and only to a proportionate extent shall we be able to help in the way which we believe most vital in winning the war. We must, of course, bear in mind that the war securities held by the banks are only a part of the resources which are being used for war purposes and that the loans made to every manufacturer of war supplies have to be included to indicate the total extent to which their resources are so used.

Prosperity General.

The Review of Business Conditions which accompanies our annual report records prosperity beyond anything we have ever known in almost every part of Canada. This results from the existence of a market which needs almost everything we produce and which must pay almost anything the seller asks. If it is true that ninety per cent. of the exports of the United States are a result of the war, much the same must be true of Canada, and in addition a large part of our home consumption is due to the requirements of the Canadian army. As individuals, almost all are gaining by the war, except those with more or less fixed incomes and without power to adjust the same when prices are high, and those who are engaged in business not connected with war supplies. The money made by the individual, however, has, so far as the nation is concerned, to be provided by a war debt incurred partly by Canada and partly by Great Britain. We do not, like the United States, receive gold in exchange for a large part of our products, we even borrow from the United States part of the cost of the war.

The Dollar Saved.

If we could free ourselves from the habit of thinking of commodities merely in the terms of their money value, we should discover that what we are doing is to provide material to help our gallant

sons and their fellow Britons to win the war, and that there is no one to pay for this material ultimately but ourselves and the Motherland. Therefore, in the monthly letters issued by this Bank we have constantly preached thrift in order to discourage people from spending that which as a nation we cannot afford to spend. We repeat once more that every dollar any Canadian saves, whether he buys a war bond therewith or indirectly enables the banks to do so, is one dollar more of power to win the war, and that particular dollar no one else can provide if he fails to do so. We are told by every one who visits England, and especially by those who have also seen the battle line and the conditions there, that in Canada we act as if no war existed.

Extravagance.

I have referred to the motors and the silks, but they are only examples of an extravagance which is observable in every direction. We should undoubtedly forbid, or at all events heavily penalize, the importation of all luxuries; municipal expenditures should be further curtailed and all projected improvements first submitted to the criticism of Provincial commissions; we should not think it amiss if the expenditures of individuals at eating places are legally restrained and meatless days are instituted. I am not endeavoring to say in what directions economy should be enforced in Canada as it has been in England, but beyond a doubt it must be enforced in many directions if it is not voluntarily adopted by our people.

Production and Prices.

It is not easy to conjecture how far the prosperity of Canada is due to the activity in production of all kinds, to the ready market and high prices, and how far to the grain crop of 1915, a crop so extraordinary that it exceeded some estimates by seventy million bushels and our own by fifty-seven millions, but it is well to remember that our prosperity was due to both causes and that the crops this year have not been good. If we have throughout Canada a fair average result, that is the best we can say of our agricultural and pastoral production. High prices will make up for this to the producer, but nothing can make up to the nation for the shortage of foodstuffs at such a time. The liquidation of debts following the great crop in the West, the improvement in the towns and cities of the Prairie Provinces and British Columbia, the growth in bank deposits, the marked improvement in railroad earning, and the increase of the figures of every clearing house in Canada, are all things so directly dependent upon the great crop that we must expect a lesser degree of prosperity in the West in 1917.

War Purchases.

The purchases on Imperial account by the Department of Agriculture for the year to 23rd December, amount to 186,000 long tons of hay, 450,000 tons of oats, equalling nearly 30,000,000 bushels and 187,000 tons of flour, the amount expended in this way being over \$37,500,000.

Among the purchases of the British War Office Purchasing Department at Montreal for the past year, are the following items:

Cottons and woollens.....	\$ 1,000,000
Foodstuffs—cheese, canned meats and vegetables, etc.....	20,000,000
Miscellaneous merchandise of iron and steel.....	1,500,000
Other miscellaneous merchandise.....	1,500,000
	<hr/>
	\$24,000,000

There are, of course, thousands of articles not mentioned here which are made in Canada, the cost of which represents many millions; indeed it is a most gratifying fact that Canada has been able to produce nearly everything required by our army, the exceptions being binoculars, machine guns, revolvers, motor trucks, and some less important articles.

Since the war began we have learned much in the workshop, in the chemical and physical laboratory, in the refinery, in the counting house, in finance, indeed in every walk of life. We have been able to form some estimate of our value among the forces of the Allies, from the boy in the trenches to the father at home who is backing his son in so many ways, but do we realize that what we do, or do not do, may turn the scale on which depends victory or defeat? Our responsibility for the future of the Empire and of Canada is so great that there is no room

for slackness. We must do, not many things, but everything that will help to win the war.

General Manager's Address.

Our great banks touch the life of the community so closely and at so many points that the remarks of Mr. John Aird, the General Manager, who dealt chiefly with the progress of the Bank, must interest every Canadian.

The shadow of the great European war has been the dominating influence in business affairs during the year through which we have just passed. No important new transaction could be undertaken without considering the effect of the war, and in the conduct of the affairs of a great fiduciary institution such as a bank it has been necessary to give more consideration to the factor of safety than to the factor of profit. Under these circumstances we feel that you will be well content with the results which we lay before you to-day.

The Bank's profits for the year under review were \$2,439,415, an increase of \$87,380 over the figures of the preceding year, a trifling sum when you consider the increased amount of business on which it has been earned, and the great activity which has prevailed throughout the year. We have felt it our duty to render a large amount of assistance in their financing to both the Imperial Government and the Dominion Government, and as rates of interest on this class of business are naturally low, our profits have been reduced correspondingly.

Increased Turnover.

Apart from this, however, there has been a greatly increased turnover during the past year which is not reflected in an increase of the profits of the Bank, and this tendency towards a steady reduction in profits has been apparent for some years past. The ratio of our profits to total assets during the five years ending 1915 ranged from 1.45 per cent. to 1.13 per cent., but in almost every year the tendency has been downwards.

We have paid the usual dividends at the rate of ten per cent. per annum, with bonuses of one per cent. at the end of each half year; the war tax on our note circulation has called for \$147,288, the Officers' Pension Fund for \$80,000, and sundry subscriptions for patriotic purposes for \$71,700, leaving a balance at credit of Profit and Loss of \$802,319 to be carried forward to the accounts of next year. As long as present conditions continue we must, I fear, accept a low rate of profit, and it is, of course, possible that there may be still further depreciation in the market value of securities, so that we think it wise to carry forward a large balance in Profit and Loss account. During the past year the values of investment securities have depreciated further, which is only natural as long as the governments of the great nations engaged in the war are obliged to increase the rates of interest which their securities bear. Up to the present, however, we have not found it necessary to add to the sum of \$1,000,000 reserved last year for possible further depreciation, and we believe that we have provided for anything which is likely to occur.

Growth in Deposits.

Our deposits show a satisfactory growth, the increase being \$35,373,000, of which over \$25,000,000 is in deposits, bearing interest; these include the savings of the people and are, therefore, less subject to fluctuation than demand deposits not bearing interest. Through the medium of our Monthly Commercial Letter we have endeavored to impress upon the public mind the necessity for the exercise of economy to a degree never before known in Canada, and we should like to think that some part of the increase to which we have just referred has been due to the advice thus given. Canadians cannot too often be reminded that only by the universal exercise of economy and thrift to an extent to which they have in the past been strangers, and by the setting aside of what is thus saved for investment in government loans or as bank deposits, can we do our share to provide the wherewithal necessary to carry the war to a victorious conclusion.

Strong Cash Reserves.

Our total holdings of coin and legal tender are \$46,291,000, an increase of \$6,389,000 over the figures of a year ago, but of this sum \$6,000,000 is represented by a deposit in the Central Gold Reserves to cover the issue of note circulation in excess of our paid-up capital, already referred to. These holdings of cash represent 18.5 per cent. of the total of our deposits and

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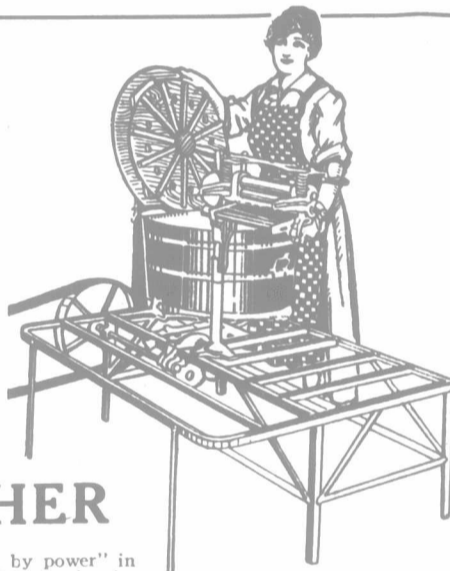
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circulation, and 17.9 per cent. of our total liabilities to the public, and in view of the uncertainties of war conditions we are sure that you will approve our policy of keeping strong in this respect. Our immediate available assets total \$129,341,000, equal to fifty-six per cent. of our deposits, and fifty per cent. of our total liabilities to the public. The largest increase in any one item composing this amount is in British, foreign and colonial securities, etc., which show an increase of over \$15,500,000, and include the securities purchased and held for the advances which we have made to the Imperial Government to finance their purchases in the Dominion. There has been a slight increase of \$858,000 in our holdings of Dominion and Provincial securities and a decrease of \$1,802,000 in our holdings of railway and other bonds, debentures and stocks. We have thought it desirable, in view of the exigencies of the war and of the requirements of the governments of Great Britain and Canada to realize on these securities as opportunity offered. This has seemed the more advisable, because of the doubtful outlook as to the future trend in the value of such securities.

Their Supreme Sacrifice.

Since our last annual meeting an additional fifty-nine brave and promising young men of our staff have laid down their lives on the field of battle. Our complete casualty list, as at December 31st, is as follows:

Killed.....	84
Wounded.....	175
Missing.....	8
Prisoners.....	9
Ill.....	20

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We have received many indications that our men are measuring well up to what is required of them, and are capable of taking their full share in the wonderful operations at the front which are thrilling the world. Six of our officers have been awarded the Military Cross, and three more have been recommended for it.

Staff at Home.

We do not think that it would be fair to express our pride in our banker soldiers without adding a further word in commendation of the staff at home. While we still have to expect that some of them will take up military duty, we are satisfied that those who have remained at home thus far have been actuated by the highest motives; indeed, the work of the Bank could not be efficiently carried on without retaining the services of many men who in other respects would be available for military service.



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Cut roomy, yet trim—of flannels, drills, tweeds and serges that are soft, yet substantial—made with turned, felled and double-stitched seams, collars in all the popular styles, and half or full-length sleeves. DEACON Shirts look well, feel good, and wear better. Every shirt guaranteed—your money back for any defect in material or workmanship. At good stores.

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JACOB LORENTZ
St. Clemente Ontario

Gossip.

The complete dispersal sale of J. Harvey Chalk, Dunboyne, Ontario, on February 1, will include 32 head of registered Holstein cattle. The rigs will leave Aylmer, Ontario, (Brown House), at one o'clock p.m., for the sale. The herd is headed by the young sire, Netherland Hengerveld King. His dam, Netherland Aaggie, with 21,666 lbs. of milk in one year, was the Canadian champion R. O. P. cow in 1909. See the advertisement in this issue and write Mr. Chalk for a catalogue and particulars.

The Victoria County Pure-Bred Stock Association are making complete preparations for the sale to be held on January 30. Thirty-two Shorthorn bulls, six Shorthorn heifers, and three Hereford bulls have been selected from the best breeders in the County. All females of breeding age have been bred to a good imported bull. The sires of the offering are good herd headers and first-prize winners. The advertisement of this sale appears in this issue. The Secretary is A. A. Knight, Lindsay, Ontario. Apply to him for a catalogue and all particulars with regard to the sale.

Salem Shorthorns Selling.

J. A. Watt, Elora, Ont., writes: "During December, I sold fifteen heifers and a young bull, sired by Gainford Marquis, to Wm. Braid, New Westminster, B.C. This was a beautiful bunch of Scotch heifers, and the Marquis bull selected to head this new herd belongs to the Orange Blossom family. His breeding is excellent, combined with great Shorthorn character. A. W. Cutten, Downer's Grove, Illinois, also purchased a carload of young cows and heifers along with a roan son of Gainford Perfection. These young bulls cost their respective buyers \$1,000 each. Herbert Wright of Dinton, Alta., has just purchased the young bull, Perfection Stamp, at \$600. This is a very choice calf and belongs to our favorite Stamford family. His sire is Gainford Perfection, the \$3,000 son of Gainford Marquis. Gainford Perfection was never beaten for grand championship but twice, and then by his sire. We have made several other sales of single animals during the last thirty days, but the herd still numbers over sixty. Have at present eight fine young bulls for sale."

Sales from Plaster Hill Herd.

Messrs. F. Martindale & Son of Caledonia, report the following sales of dual-purpose Shorthorns from their Plaster Hill herd:

"One cow, Seneca Lass, and heifer calf, also a two-year-old heifer, Rosebud Lass, went to F. M. Webb of Winnipeg, Man. Mr. Webb has made a valuable addition to his dual-purpose herd by purchasing these animals, as they are of the deep-milking strain and will no doubt be heard from later in R. O. P. reports. One bull, nine months old, has gone to James McAvoy, Marmora, Ont. This is the third bull we have sent to Mr. McAvoy on order. One bull nine months old was taken by John Gillespie, Galt Ont.; this calf belongs to the famous Pansy family, and is a grandson of Alice of York, whose official record is about 10,000 lbs. We have bought from S. W. Jackson, Woodstock, the three-year-old cow, Butterfly Rose, with a two-year-old record of 6,400 lbs. of milk testing 4.6 fat, also the 18-months bull Butterfly Rose. These animals are sired by Butterfly King 19th sired by that great bull, Butterfly King (Imp.), known as the greatest sire of dual-purpose Shorthorns in Canada. Butterfly King 19th has qualified in official R. O. P. by having four daughters that have official certificates."

Parties wanting dual-purpose bulls should write Messrs Martindale. Their advertisement appears in another column they have five bulls to offer from eight to 13 months old.



KING SEGIS PONTIAC POSCH—Senior sire in service at Manor Farm. Sire—King Segis Pontiac Alcartra (the \$50,000 sire). Dam—Fairmont Netherland Posch, 32,59 lbs., 4 years old.

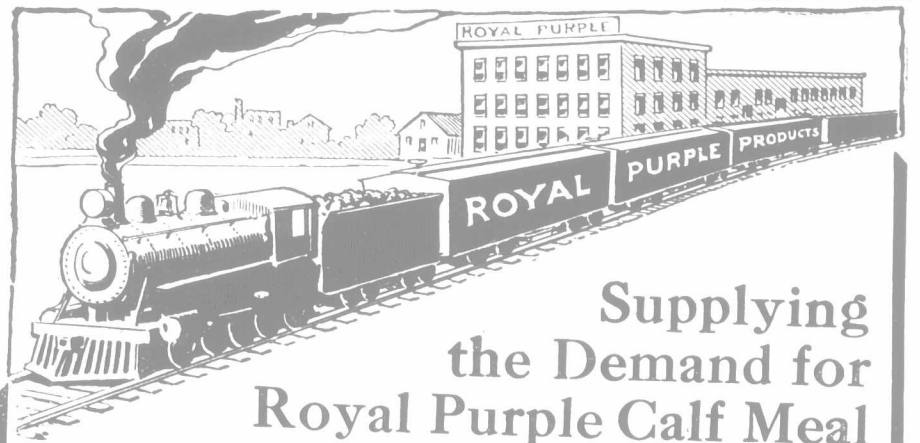
Important Announcement!

For the first time since our fire in February, 1915, we are in a position to invite all those interested in the Black and White breed to visit MANOR FARM and inspect our herd of

100 PURE-BRED HOLSTEINS

Since this announcement first appeared a few weeks ago, I have been flooded with inquiries for young sons of King Segis Pontiac Posch. His great individuality is stamped in every one of his offspring, and this, combined with his extremely rich breeding, has made the demand for his young sons of serviceable age greater than the supply. If you have been thinking about one of these for your next herd sire, you should get your order in early.

GORDON S. GOODERHAM, MANOR FARM, Clarkson, Ont.



Supplying the Demand for Royal Purple Calf Meal

This baby food for young animals is partially pre-digested, and can be fed to the youngest animals with perfect safety. It WILL NOT cause stomach or bowel trouble, which are serious ailments in young animals. Royal Purple is a sure preventive for scouring.

Calves Gain Rapidly Without Milk

When the calves are 3 or 4 days old they can be fed Royal Purple Calf Meal and raised just as well without one drop of milk. What prominent breeders remark: "Gentlemen,—In regard to your Calf Meal, I think you have the best on the market, as people who have bought it give it great praise. Some have taken their calves off sweet milk, and feed them nothing but your Calf Meal and water, and say they are doing as well on it as they did on the whole milk."

To Whom It May Concern: This is to certify that I have secured your "Royal Purple" Calf Meal from our druggist, Mr. T. C. Nicholls, of Uxbridge, and can speak of this meal in the highest terms. I have used other calf meals, but this one is the best I ever tried. I never saw a calf gain more rapidly and thrive better than mine did while using your "Royal Purple" Calf Meal. I can cheerfully recommend it to all our stockmen who wish to raise large, healthy calves.—Stanley W. Crossall.


Note—The above Mr. Crossall keeps a large herd of pure-bred Holstein cattle, and is an excellent authority on Calf Feeds.

Royal Purple Calf Meal is equally good for young colts, lambs and young pigs. Put up in 25-lb., 50-lb. and 100-lb. bags. Secure it from our dealer in your town.

W. A. Jenkins Mfg. Co., Ltd., London, Can.

FREE BOOK

Send for our 80-page book which describes the common diseases of stock and poultry; also methods of feeding and our many products. Get a copy to-day.



130-Egg Incubator and Brooder Both \$14.50

If ordered together we send both machines for only \$14.50 and we pay all freight and duty charges to any R. R. station in Canada. We have branch warehouses in Winnipeg, Man. and Toronto, Ont. Orders shipped from nearest warehouse to your R. R. station. Hot water, double walls, dead-air space between, double glass egg trays. Especially adapted to Canadian climate. Incubator and Brooder shipped complete with thermometers, lamps, egg testers—ready to use when you get them. Ten year guarantee—30 days trial. Incubators finished in natural colors showing the high grade California Redwood lumber used—not painted to cover inferior material. If you will compare our machines with others, we feel sure of your order. Don't buy until you do this—you'll save money—it pays to investigate before you buy. Remember our price of \$14.50 is for both Incubator and Brooder and covers freight and duty charges. Send for FREE catalog today, or send in your order and save time. Write us today. Don't delay.

WISCONSIN INCUBATOR CO., Box 228, Racine, Wis., U. S. A.

Men's Clothing For Sale

Get your new suit from Catesby's, London, England, for half what you pay local tailor. Best materials, style, fit guaranteed or money back. Write for free catalogue, self-measurement form and patterns. Address:

CATESBY'S LIMITED, Canadian Office,
119 West Wellington Street, Toronto
Mention "Farmer's Advocate".

Stallions Wanted

Six or eight Clydesdale stallions, rising three to five years; Canadian bred, large and thick with good quality. Describe and give price.

Wm. Meharey, Russell, Ont.

Gossip.

The Brant District Holstein Sale.

There will be 50 females offered at the Brant County District Holstein Breeders' sale on January 31, and 75 per cent. of them will be fresh around freshening at that time. Five bulls are also being offered and several of them are ready for service. The reputation of this sale is now established, so see the advertisement in this issue and write to the Secretary, N. P. Sager, St. George, Ont., for a catalogue and particulars. The breeding is right and the individuals are right.

The Smith and Richardson Stables at Columbus.

Canada's pure-bred live-stock importers have, in the two years just passed, been up against rather hard problems. In the first place all breeding stock in the British Isles, cattle and horses particularly, have been selling at almost prohibitive prices. This is the first difficulty that confronts the Canadian buyer in the Old Land; then the increased ocean rates, to say nothing about the excessive rates for insurance while the stock are in transit, tends to curtail the industry that has meant so much to the Canadian farmer. Obstacles such as these, however, were not allowed to interfere in any way with the usual routine of the noted Clydesdale firm of Smith & Richardson, of Columbus, Ont. Early in August, Mr. Richardson, as usual, left for Scotland to personally select the 1916 importation, and arrived back safely a few weeks later with as good a lot of stallions as the firm has ever brought across the Atlantic. Showing now in their own stables they are in excellent fit, and in mentioning a few of them individually we shall also include several other excellent breeding sires of previous importations. Space will permit only a short running comment on the breeding of a few. Scotia's Pride, 16631, is a massive, big bay, got by the good breeding sire Crossrig. Showing at both the fall and winter shows at Ottawa in the past two years he has never been below second, and also won this placing at Guelph in both 1915 and 1916. Royal Farrow, 18361, by Royal Favorite, dam by Baronson, is also a big bay, 6 years old. He is one of the new importations and has a long string of five-numbered dams, which no doubt accounts for his quality both top and bottom. Baron Arthur, 18362, a nice bay four-year-old by Baron's Pride, is also one of the best bred things in Canada. His dam, Maud of High Borgen, a noted winner as a three-year-old, was got by the well-known sire Montrave Mac, a son of the famous MacGregor. Aside from his breeding it can truthfully be said that Baron Arthur has bone and quality which compare favorably with the best of the breed produces. Silver Prince, 18364, a thick, pleasing fellow by Revelanta, and Everard 16333, by Everlasting, dam by Sir Everard, are two of the best three-year-olds that have been in the stables for some time. The latter horse has five-numbered dams, and does not look unlike his famous half-brother, Black Ivory. He was first at Guelph and Ottawa as a yearling in 1914, and won same honors at Guelph again last month as a 3-year-old. Royal Design 17286 and Client 18363 are two well-grown, two-year-olds. The latter has won four firsts at Guelph and Ottawa in his year and two-year-old forms, and still looks like a candidate for championship honors. There are several other three, four and five-year-old horses that have all done good seasons in 1916 which we would like to mention if space permitted, as well as a whole lot of choice Canadian-bred things which, in a great number of cases, are quite on a par with the imported ones. These, too, include a lot of Guelph and Ottawa winners. In mares and fillies the choice is equally as varied. There are a number of prominent winners in the lot, the majority of which are in foal. If you are in need of a stallion or mare let them know your wants.

FENCE BUYERS—NOTICE!

Any reports to the effect that we have stopped dealing with the consumer are untrue. We are still selling the highest grade of fencing to the user direct, and we expect to continue this course. We believe the fence user has a right to buy direct from the maker, and further, we have the right to give him our best fence.

We are aware that there is an almost universal belief that mail-order houses supply goods made to sell at a lower price than the regular grade, and it must be admitted that there is considerable ground for this belief.

But by giving our customers the very best article possible for anyone to produce we expect to sooner or later have it known everywhere that the Page Company sells direct to the user, and sells the same high grade fence it always sold. This policy is rapidly winning for us the fence business of Canada.

We confine our list of dealers to those known for honorable dealing and those who, selling for cash only, are able and willing to do business on a small margin of profit.

It is because so many dealers place profit first and "satisfaction to the customer" second, that we find it necessary in our own interest and that of the farmer, to do the bulk of our selling direct from factory to farm.

THE PAGE WIRE FENCE COMPANY LIMITED.

Walkerville, Toronto, Montreal, St. John
New Toronto Address: 255 King Street West

Advertisement for Maxwell Power Bench Washer. Includes an illustration of the machine and text: "Let your Gas Engine or Electric Power Lighten the Labor of Wash Day. THE Maxwell Power Bench Washer is a wonderful boon to your wife when washday comes round. It can be operated equally as well by gas engine or electric power. It is made in one, two or three tub machines. Easy to operate. Simple but strong in construction and the mechanism is as perfect as science can invent. Write to-day for further particulars. Dept. F 25"

Is This Your Kitchen?

He was going to clean out the soot next week, but his wife had an extra big fire today. That is the story of fire after fire.

Here is the result, ending in ruination, perhaps, in the home that is not insured. The only safe way is to take out a policy in the London Mutual Fire Insurance Co.—the widest and most liberal policy in force to-day for farmers.

Write us to-day for full particulars.

LONDON MUTUAL FIRE INSURANCE COMPANY. F. D. WILLIAMS, MANAGING DIRECTOR. HEAD OFFICE - 33 SCOTT ST. TORONTO.

\$200,000 To lend on farms, first and second mortgages. Old mortgages paid off. Low interest. E. R. REYNOLDS 171 Yonge St. Toronto

Headquarters for COTTON SEED MEAL. Creamo Brand 20% to 24% protein, Security Brand 36% to 38 1/2% protein, Forfat Brand 38 1/2% to 41% protein. Car Lots or Less. Prices on application. FRED SMITH 163 1/2 CHURCH ST., TORONTO

New COAL OIL LIGHT BEATS ELECTRIC OR GASOLINE 10 Days FREE—Send No Money. We don't ask you to pay us a cent until you have used this wonderful modern white light in your own home ten days. Burns 70 Hours on One Gallon. Men With Rigs Make \$100 to \$300 Per Mo. MANTLE LAMP COMPANY, 508 Aladdin Building, MONTREAL

Cost and Service

The two factors considered before a purchase is made.

Steel Truss Barns

measure up to every requirement. They are as sturdy as a skyscraper. They have no cross-beams to hinder unloading or mowing away. They are fire and lightning-proof. They have metal-clad, roller doors, lift roof-lights, sliding side windows and "Acorn" ventilators. The cost will compare favorably with a wood frame barn.

Send for a copy of new book, "The Steel Truss Barn."

The Metal Shingle & Siding Co., Limited

Preston, Ont. Montreal, Que.



Beats Out Humane Society

Don't take chances driving a lame horse. Read this man's experience:

"C. O. Brown, 340 Emerson Place, Youngstown, O., writes: 'I used Save-The-Horse for a splint; she was so dead lame 'Humane Society' would have had me arrested had they seen her. Veterinary said stop work and blister. Instead sent for Save-The-Horse. Never let her up. She was worked right through and no one ever saw her take a lame step.'"

SAVE-The-HORSE

(Trade-Mark, Registered)

is sold with a signed Contract-Bond to return money if it fails on SPAVIN—Ringbone—Thorpin or ANY Shoulder, Knee, Ankle, Hoof or Tendon Disease.

Our free 96 Page BOOK goes to the root of 58 kinds of lameness and our expert veterinary advice is free to horse owners and managers. Be sure to send today for this FREE BOOK and also sample copy of Contract-Bond.

TROY CHEMICAL CO., 145 Van Horn St., Toronto, Ont.

Druggists Everywhere sell Save-The-Horse with CONTRACT or we send by Parcel Post or Express Paid.

SEED GRAINS

Now is the time to place your order for Seed Oats, Barley, Peas, Corn, Buckwheat etc. We have some good, clean seed and can quote reasonable prices.

We can also supply Cotton Seed Meal, Oil Cake Meal, Gluten Meal, Distillers Grains, Tankage, Bran, Shorts, etc.

We are buyers of Hay, Straw, Beans and Coarse Grains.

Write for prices.

Crampsey & Kelly, Toronto, Ont.



ABSORBINE STOPS LAMENESS

from a Bone Spavin, Ring Bone, Splint, Curb, Side Bone, or similar trouble and gets horse going sound. Does not blister or remove the hair and horse can be worked. Page 17 in pamphlet with each bottle tells how. \$2.00 a bottle delivered. Horse Book 9 K free.

ABSORBINE, JR., antiseptic liniment for mankind. Reduces Painful Swellings, Enlarged Glands, Gout, Wens, Bruises, Varicose Veins, Nerve Pains, heals Old Sores, Allay Pain. Will tell you more if you write. \$1 and \$2 a bottle at dealers or delivered. Book "Evidence" free. Manufactured only by W. F. YOUNG, P. D. F. 258 Lyman Bldg., Montreal, Can.

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.

Veterinary.

Congenital Abnormality.

When calf was born it had a soft, spongy lump extending from the base of the ear to the corner of the jaw, and somewhat along the neck. This lump has grown in proportion to the growth of the calf.

Ans.—As this growth is congenital it is not probable that any applications or the internal administration of medicines would cause its removal. Neither is it possible for any person to give a valuable idea as to its nature without an examination. It is possible that it might be safely dissected out by a veterinarian.

Fatality in Sheep.

When my sheep and some of my neighbor's were brought home, some of them were dull, poor and weak, and died in a few days. After death they turned a kind of green.

J. A. McD.

Ans.—The facts indicate that the sheep did not receive sufficient nourishment while on pasture and were so weak when brought in that they could not revive. It is normal for the flesh of animals that have not been bled, to turn a greenish color after death. It would have required a careful post-mortem to enable a person to determine whether they suffered from any special disease.

Crippled Pigs.

I have lost a number of pigs out of each of the last three litters. They are kept in a good pen with cement floor and get plenty of outdoor exercise. When about 2 months old they commence to get stiff in the legs, some in one, some in more, gradually they stiffen on all four legs and cannot get to the trough, but retain their appetites. After a while they die.

J. J. B.

Ans.—As your pigs get regular exercise the trouble must be the cement floor. A cement floor is all right in a pig pen where there is a wooden platform for the pigs to sleep on, but pigs that sleep on cement, even in warm weather usually become crippled, and show symptoms simulating those of acute rheumatism. Purge each with 1 to 2 oz. Epsom salts and follow up with 5 grains of salicylic acid three times daily. Feed on laxative food, see that they get regular exercise, and build a wooden platform for them to sleep on.

J. M. Gardhouse, Weston, Ont., writes:

"The past year has been the best year I have handled Shorthorn cattle. During the last 12 months I have purchased 4 herds of Shorthorns en bloc numbering 127 head. We have sold 130 head, 70 of which were sold by public auction and 60 by private sale. We have sold to every province in the Dominion and many states in the U.S. Some important sales in December were 5 imported cows and 3 Canadian-bred, to A. W. Cutten, Chicago; also 17 head to F. R. Cromwell, M. P., Cookshire, Que. We have 56 head on hand at the present time and will contribute 20 head of which 10 are imported, to a public sale at Union Stock Exchange on February 1st. These are a valuable lot of young bulls, and cows with calves.

"In horses we sold and shipped to Tom Rawlinson of Alberta, in November, five Clyde and Shire stud colts and one imported Shire mare which was a first-prize winner at Toronto Show three years in succession. Have also sold three ponies. In Leicester sheep the demand has been beyond the supply; every ram on the farm has been sold and only six shearling and ewe lambs have been reserved.

"It is very gratifying to learn that the champion and grand champion Clydesdale mare at Guelph show is a daughter of our Imp. Clydesdale Stallion, Bydand, which is one of the best sires in Canada to-day."

IN THE FIELD MAKING MONEY—

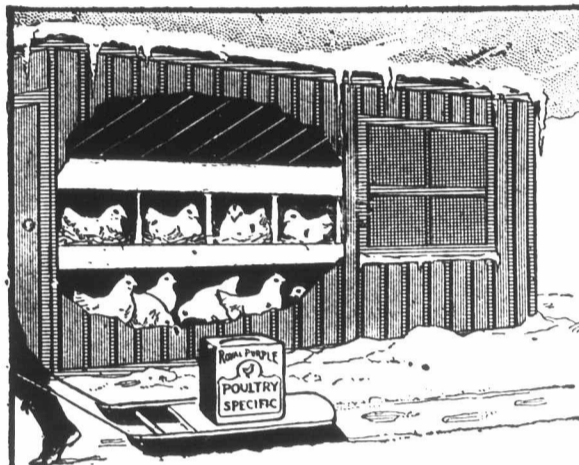


or lame in the barn, "eating their heads off"? One means profit—the other means loss. When a horse goes lame—develops a Spavin, Curb, Splint, Ringbone—don't risk losing him through neglect—don't run just as great a risk by experimenting with unknown "cures". Get the old reliable standby—

KENDALL'S SPAVIN CURE

Mr. David Yerex, Sonya, Ont., writes—"I have used your Spavin Cure for fifteen years, and know it to be a good cure". Be ready for emergencies, keep a bottle of Kendall's in the barn. Then, if a horse goes lame, you have the remedy on hand to cure the trouble quickly, \$1 a bottle—6 for \$5, at druggists. Ask your dealer for free copy of book—"Treatise On The Horse"—or write us direct.

Dr. B. J. KENDALL CO., ENOSBURG FALLS, VERMONT, U.S.A. 110



On the Job Laying

Though Snowed In

Under the most severe weather conditions, you will get plenty of eggs if your hens are properly housed and fed Royal Purple Poultry Specific as directed.

Jno. Cutting, Ospringe, Ont., writes as follows:

"Dear Sirs,—Kindly send me your free booklet on Stock and Poultry. I have used your Poultry Specific all winter, and I would not want to be without it. For fattening chickens, and making hens lay it can't be beaten. I have also used the Stock Specific, and find it as represented."

Royal Purple Poultry Specific

In summer, fowl get grain, herbs, grass and insects, which are Nature's assistants for producing eggs. In the winter and spring, fowl get practically the same grain, but must have a substitute for the herbs, insects. Royal Purple Poultry Specific, manufactured from Roots, Herbs, Minerals, etc., is a most perfect substitute, increases the egg production at once, and makes the hens lay as well in winter as summer—keeps the fowl active, vigorous and healthy—prevents chicken cholera and kindred diseases.

Sold in 25 and 50c. packages, also \$1.50 and \$5.00 air-tight tins. We also manufacture Lice Killer, 25 and 50c. packages; Rouge Cure, 25c.; Disinfectant 25c., 50c., \$1 sizes.

Secure these products from our dealer in your town, W. A. Jenkins Mfg. Co., Limited

London, Canada

FREE BOOK

Write for FREE 80-page booklet describing all common diseases of stock and poultry. It tells how to build hen-houses and how to raise calves without milk.

Imported & Canadian-bred Clydesdales

We have some big, drafty, good-quality stallions, from our 1915 fall importation. They have been winners wherever shown. We have other proven sires, imported a year ago, as well as a choice lot of Canadian-bred stallions and mares. SMITH & RICHARDSON, COLUMBUS, ONTARIO

Highest Quality Hillsdale Clydesdales 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.

Pear Lawn Clydesdales, Shorthorns, Improved Yorkshires and 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, Ont. R.R. 1

WOODLANDS BROWN SWISS AND PONIES

We have no Clydes. left for sale. Our special offering is Brown Swiss bulls, out of high-testing and big producing dams. Strictly high-class. Also Shetland and Welsh ponies.

R. BALLAGH & SON,

GUELPH, ONTARIO

ELM PARK ABERDEEN-ANGUS BULLS

OUR SPECIAL OFFERING (Three of our prize bulls). At Toronto and London 1916 shows, out of a possible five champion prizes and a possible ten first prizes, our bulls won all the championships and nine of the ten first prizes. The bulls we are offering are all proved breeders.

JAMES BOWMAN, ELM PARK, GUELPH, ONT.

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

ORCHARD GROVE HEREFORDS

Have several young bulls and heifers for sale. Satisfaction Guaranteed. L. O. CLIFFORD, Oshawa, Ontario

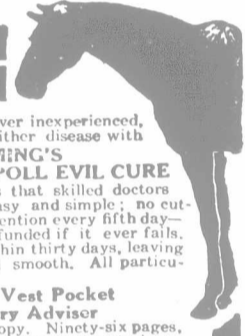
Warranted to Give Satisfaction.
Gombault's
Caustic Balsam



Has Imitators But No Competitors.
A Safe, Speedy and Positive Cure for
 Curb, Splint, Sweeny, Capped Hock,
 Strained Tendons, Founder, Wind
 Puffs, and all lameness from Spavin,
 Ringbone and other bony tumors.
 Cures all skin diseases or Parasites,
 Thrush, Diphtheria. Removes all
 Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism,
 Sprains, Sore Throat, etc., it is invaluable.
 Every bottle of Caustic Balsam sold is
 warranted to give satisfaction. Price \$1.50
 per bottle. Sold by druggists, or sent by ex-
 press, charges paid, with full directions for
 its use. Send for descriptive circulars,
 testimonials, etc. Address
The Lawrence-Williams Co., Toronto, Ont.

Fistula
and
Poll
Evil



Any person, however inexperienced,
 can readily cure either disease with
FLEMING'S
FISTULA AND POLL EVIL CURE
 —even had old cases that skilled doctors
 have abandoned. Easy and simple; no cut-
 ting; 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 particu-
 lars given in
Fleming's Vest Pocket
Veterinary Adviser
 Write us for a free copy. Ninety-six pages,
 covering more than a hundred veterinary
 subjects. Durably bound, indexed and illus-
 trated.
Fleming Bros., Chemists
75 Church Street, Toronto, Ont.

Dr. Page's English Spavin Cure

Cures the lameness from Bone-Spavins, Side-
 Bones, Ringbones, Curbs, Splints, etc., and
 absorbs the
 bunches; 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.



CHURCH BELLS
CHIMES AND PEALS
MEMORIAL BELLS A SPECIALTY
FULLY WARRANTED
McSHANE BELL FOUNDRY CO.,
BALTIMORE, Md., U. S. A.
 Chicago Office: Room 64, 154 W. Randolph St.
 Established 1854



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, SOUTH DOWNS, COLLIES,
PRIZE BULL CALVES AND
RAMS, COLLIE PUPS.

ROBT. McEWEN, R. R. 4,
 London, Ont.

Beaver Hill Aberdeen-Angus
 Males and females, all ages, for sale. Prices right.
ALEX. McKINNEY
 Cheltenham, G.T.R. R.R. No. 1, Erin, C.P.R.

Questions and Answers.
 Miscellaneous.

Electric Light Plant.
 Where may I get information, also
 who handles the electric lighting plants
 referred to in your paper of Nov. 16,
 1916, under the heading, Automobiles,
 Farm Machinery and Farm Motors.
 Sub-heading, Some Facts about Electric
 Lighting Plants?

W. R. K.
 Ans.—R. A. Lister & Co., of Toronto,
 manufacture an automatic lighting plant.
 The Domestic Engineering Co., Dayton,
 Ohio, manufacture what is known as the
 Delco Light, which may be used for both
 light and power. Write these firms for
 information.

Anti-Freeze Mixture.
 Can you tell me what mixture to use
 in an auto radiator so it will not freeze
 during the winter?

P. R.
 Ans.—Wood or denatured alcohol is the
 material generally used. To this is
 sometimes added three or four ounces
 of glycerine. A small radiator requires
 2 quarts of wood alcohol and 2½ quarts
 of denatured alcohol. The medium size,
 1 gallon of the former and 5 quarts of
 the latter, and the large size radiator,
 5½ and 7 quarts respectively. This
 amount of alcohol in the water that the
 size radiator mentioned will hold, will
 prevent freezing at zero. Where the
 mercury drops to 20 degrees below,
 3, 6 and 9 quarts of wood alcohol should
 be used for the small, medium and large
 sizes, respectively. Alcohol has a tendency
 to evaporate and more must be added
 from time to time to keep the solution
 up to the desired strength.

Paying for Milk at the Cheese Factory.
 We understand according to an answer
 given to a question on December 21,
 that there are two methods of paying for
 cheese-factory milk; on the basis of its
 fat content, as determined by the Babcock
 test, or on the basis of the fat content
 plus the factor 2. Wherein do the two
 methods differ, or what is meant by
 adding the factor 2? Could you possibly
 give us a clear example of how a patron's
 milk would be made up by each method
 for a month?

H. A. C.
 Ans.—When paying on a fat basis the
 weight of milk would be multiplied by
 the percentage fat, in order to find the
 total fat content. Having determined
 the price per pound butter-fat, the value
 of the milk would be the weight of fat
 multiplied by the price; for instance,
 supposing 4,000 lbs. of milk were sent to
 the cheese factory and it tested 3.5,
 there would be 140 lbs. of butter-fat,
 which, at 30 cents a pound, would come
 to \$42.00. With the other method the
 factor 2 represents the casein content
 of the milk, and is merely added to the
 percentage fat and figured out the same
 way. The 4,000 lbs. would be multiplied
 by 5.5, instead of 3.5. This would give a
 larger number of pounds of solids, but
 the price would not be so high, as price per
 pound is determined by the total number
 of pounds divided into the price. In the
 Dairy Department of this issue a table
 is published which shows clearly the
 value of 100 pounds of milk according to
 the different methods of paying.

Gossip.
 The book entitled "Home Water-
 works", by Lynde, which was listed at
 84 cents in the books recommended for
 farm reading, in the issue of December 28,
 1916, should have been priced at \$1.00.

The Live Stock Journal Almanac.
 The Live Stock Journal Almanac
 for 1917 is now from the press and in
 general circulation. Vinton & Co., Ltd.,
 8 Brems Building, Chancery Lane,
 London, England, have excelled previous
 numbers in the 1917 Almanac. The
 text is interesting, for practically all the
 different breeds of live stock in this
 United Kingdom are discussed from the
 viewpoint of their progress during the
 year, 1916. General articles are in-
 cluded, the breed societies are listed
 and many of the prominent breeders
 have illustrated their good animals in
 the pages of this edition.

Sydney Basic Slag

Let Us Learn Even From Our Enemies

In a Bulletin recently issued by the Minister of Agri-
 culture in England, he points out that the food production
 in Germany per acre is 50% greater than in the United
 Kingdom, notwithstanding that German soils and climate
 are distinctly inferior to those of Britain.

What is the Reason?

The Minister replies :
 "That the chief cause of the increased production of
 German soil is the increase in the use of fertilizers."

BASIC SLAG is the leading fertilizer used in Ger-
 many, and there is on record the purchase by one single
 German Agricultural Society of 620,000 tons in one year.

Isn't it Worth Your While to Investigate?

Send us your address, and we will post you some in-
 structive literature, telling you all about BASIC SLAG.

The Cross Fertilizer Co., Limited

Sydney, Nova Scotia

Mr. Farmer!

Get your bricks in now during slighing. We have a large
 stock of the famous Milton Red Pressed Brick on hand and can
 give you immediate delivery.

Owing to the coal situation, later deliveries will doubtless be
 advanced in price, so secure yours at once.

MILTON BRICK

For 25 years Milton Brick has been the standard of quality
 and durability—and still leads.

Write to-day for samples and prices.

MILTON PRESSED BRICK CO., LTD.

MILTON, ONTARIO

IMPORTED SHORTHORNS

Cows and heifers in calf, or with calf at foot. Yearling bulls and bull calves. One of the best
 importations of the year. You will be surprised when you see them.
WILL A. DRYDEN, Maple Shade Farm **BROOKLIN, ONT.**

SHORTHORNS AND SHROPSHIRE—T. L. Mercer, Markdale, Ont.

Have sold all the Shropshires I can spare this season. Present offering in Shorthorns—ten really choice
 young bulls, sired by Broadhooks, Golden Fame =50018= Imp., and out of such noted families as
 Campbell-bred Clarets, Nonpareils, Marr Missies, Stamfords, Crimson Flowers, Village Girls and
 Charming Gems, ranging from 9 to 16 months old. All good reds and roans.

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

SCOTCH SHORTHORNS, YORKSHIRES & 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

ROYAL BREEDING SCOTCH SHORTHORNS HIGH-CLASS TYPE
 of high-class, fashionably-bred Scotch Shorthorns in calf to Sittyton 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.**

SALEM SHORTHORNS

Herd headed by Gainford Marquis (imp.). A large number of either sex for
 sale at all times.
J. A. WATT, Elora, Ontario

DOUGLAS EGYPTIAN LINIMENT

Cures
Chilblains and
Frostbites

For Sale Everywhere

DOUGLAS & COMPANY MFRS.
NAPANEE ONTARIO

Oil Cake Meal
(Old Process)
AND
Cotton Seed Meal

Special Price for January
and February Shipments.
Carlots and less.

Write, 'phone or wire.

The Chisholm Milling Company, Limited
Toronto, Ontario

CREAM

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

We want more individual ship-
pers, and more men to gather cream
for us.

Write for our proposition.

SILVERWOODS LIMITED
London, Ontario

CREAM WANTED
Churning cream, also cream for table
use.

We hesitate to quote prices, because
the figures for to-day may be too low
for to-morrow.

Our guarantee is:
Prompt Service
Accurate Records
Highest Prices
Write for particulars—it will be
worth your while.

TORONTO CREAMERY CO., Ltd.
9 Church Street, TORONTO

CREAM WANTED

Ship your cream to us.
We pay all express charges.
We supply cans.
We remit weekly.
We guarantee highest market price.

Ontario Creameries, Limited
London, - Ontario

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

DUAL-PURPOSE SHORTHORNS

Plaster Hill Herd—Five young bulls, seven to
fifteen months old. A number of cows in our herd
with high records. Visitors always welcome.

F. Martindale & Son, Caledonia, Ont.

Northlynd R.O.P. Shorthorns and Jerseys—
Butterfly King 19th heads our
Shorthorn herd. Edgeley 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.**

Buy Your Seed Oats Now—Now is the time to
get your seed oats to make sure of getting good Ontario-grown seed. I
have a limited amount of good, clean seed oats
left, which I will sell reasonably. Samples and
prices sent on request. Apply soon.

BENJ. J. WAECHTER, Gold Medal Farm
R. R. No. 3 Walkerton, Ontario

Questions and Answers.
Miscellaneous.

Notaries Public.

Of which department should I enquire for information in regard to qualifications for a person to be eligible for the office of Notary Public, drawer of mortgages, conveyances, etc.

Ontario. SUBSCRIBER.

Ans.—Enquiry may be made in the Attorney General's Department, Parliament Buildings, Toronto, as to appointment as a Notary Public, etc. Any person, other than a barrister or solicitor, desirous of being appointed a Notary Public, must be examined in regard to his qualification for the office by the judge of the County Court of the County in which he resides, or by such other person as may be appointed in that behalf by the Lieutenant Governor, who by commission appoints such persons as he thinks fit Notaries Public for Ontario.

Warty Teats.

Is there any way of permanently removing warts from a cow's teats? I have a heifer two years old in milk; she freshened last spring and has a wart on her teat a short distance from the end. It appears to be deeply seated, and makes milking hard. Have tried applications of iodine after milking without any result.

B. E. J.

Ans.—Warts have been removed by tying a silk thread or horse hair tightly around them. As a rule in three or four days they will drop off. The spots may be touched with caustic to prevent the warts growing again. Care should be taken not to apply too much caustic, as there may be danger of making a nasty sore. Pure acetic acid dropped on the wart until it is saturated often destroys it in the early stage. It may be touched with a little terchloride of antimony. If a scab forms, remove it and apply the chemical again. If a sore forms use an ointment made of four tablespoonfuls of oxide of zinc and eight tablespoonfuls of lard.

Sweet Clover.

I noticed in your paper of November issue an article on growing sweet clover. As I am not accustomed to growing it I thought it would be wise to get a little information about the plant.

1. What color flower has the plant which we should use?
2. Where can one secure the seed and get it clean of wild seeds?
3. Is it as dangerous for bloating as alfalfa?
4. Would it make a good manure to plough down for corn on stony loam soil?
5. About what price per bushel?
6. How many pounds per acre?
7. What stage should it be in when ready to cut for hay?

SUBSCRIBER.

Ans.—1 and 2. White-flowered sweet clover (*Melilotus alba*) is the variety used for pasture and hay. The seed can usually be secured from any reliable seed firm, or a person might get in touch with some one who is making a specialty of growing sweet clover for seed.

3. It is very much the same nature as alfalfa in regard to causing bloat. Care must be taken when first turning the stock into a field.

4. Sweet clover is generally considered to be one of the best of green manures. It produces an abundant growth, and when plowed under furnishes a large amount of humus-forming material. It should put a loam soil in good condition for corn.

5. The seed varies in price but usually is about the same as other clovers.

6. Of the hulled seed about 20 pounds to the acre should be used. If unhulled, it requires about 5 pounds more.

7. Sweetclover must be cut in the proper time in order to make first-class hay. The time must be governed largely by the stems; cutting should take place before they become woody. About the time that first blossom is ready to appear may be taken as a guide. When cutting sweet clover for hay care should be taken to tilt the cutting-bar of the mower, so that it will not cut too close. We have known of fields being entirely killed out by cutting the first crop too closely.

8TH ANNUAL PURE-BRED STOCK SALE
Butler House Yards, Lindsay, Ont., on
Tuesday, January 30th, 1917
at 1 p.m. sharp, the
VICTORIA COUNTY PURE-BRED STOCK ASSOCIATION
will sell by public auction

**32 Shorthorn Bulls, 3 Hereford Bulls
6 Shorthorn Heifers**

The offering has been selected from the best breeders in the County; Proven Sires, Herd Headers and First Prize Winners. All females of breeding age bred to a good imported bull. Terms: Cash or 10 months' credit will be allowed on approved joint notes. All notes to bear interest at 6 per cent. per annum from date of sale. Customers wishing to settle by cheque should bring marked cheque or letter of credit from banker. Apply to Secretary for catalogue. Sale under cover if stormy.

Auctioneers, Wm. Marquis, Jas. Casey, Peter Hawkins.
President, Jas. Casey, Secretary, A. A. Knight, Lindsay, Ont.

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
Arkell Station, R. 2, Guelph, Ont.

FIELD MARSHALL =100215= the calf of 1915, sold June 7, 1916, for \$3,775.

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.

Mail orders a specialty. Satisfaction guaranteed.

MITCHELL BROS., BURLINGTON P.O., ONT.
Jos. McCrudden, Manager. Farm ¼ mile from Burlington Jct.

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

S. A. MOORE, Prop. CALEDONIA, ONT

IRVINDEALE 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.

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.

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

Creekside Farm Shorthorns We have for sale at present, a number of young things by our former herd sire, *Clan Alpine*, (the Claret bred bull by Proud Monarch). We like them, so will you. If it's young bulls, or a few females you need, we would welcome a visit from you. Write or phone, visitors met by appointment.

Geo. Ferguson, Elora Sta. C.P.R., G.T.R., Salem, Ontario

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, Brown Dale =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.

Choice Breeding SCOTCH SHORTHORNS High Quality

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.

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

Spruce Glen Shorthorns When in want of Shorthorns visit our herd. We have 70 head to select from, Minns, Fames, Miss Ramsdens, Florences, Emils, 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.

Pleasant Valley Herds—For sale: Several good young bulls, reds and roans, of the very best breeding; also females of all ages; all the leading families represented; 100 head to select from. Inspection invited. Farm 11 miles east of Guelph, C. P. R., ½ mile from station.

Geo. Amos & Sons, Moffat, Ont.

Glengow Shorthorns, Cotswolds

For the present we have sold all the Cotswolds we wish to spare, but we have a choice offering in young bulls fit for service. They are all of pure Scotch breeding and are thick, mellow fellows, bred in the purple. **WM SMITH, COLUMBUS, ONT. Merrie C.P.R. Presid. C.T.P. Cash-w. C.N.R.**

IMPORTED SHORTHORN BULLS

We have several newly-imported bulls of serviceable age. Cruickshank, Marr and Duthie Breeding, as well as a number of choice home-bred young steers, got by our noted herd sire, Proud Monarch, by Blood Royal. Get our prices before buying elsewhere.

RICHARDSON BROS., Columbus, Ont.

Questions and Answers.

Miscellaneous.

Farm Problems.

1. Explain the best way to farm 50 acres successfully as a dairy farm. Mention what to sow for pasture, for grain crops, and number of cows that can be kept.
2. How many acres of ordinary corn will fill a silo 10 feet by 25 feet?
3. Which do you think best, a small farm and one man or a large farm and chance getting help?
4. What kind of corn grows the most and best ears for silo purposes?
5. Can a man move oat sheaves off a rented farm either cut or in the sheaf without it being in the lease. The oat sheaves were moved on the place when the tenant moved on.
6. How long will it take to get pure-bred stock from good grade cows by using a pure-bred sire each year?

E. P. F.

Ans.—To explain a satisfactory method of working a 50-acre dairy farm, without being familiar with the type of soil, lay of land, etc., is a difficult problem. The variety of crops to grow depends a good deal on the nature of the soil. Consequently, in order to arrive at the number of cows which could profitably be kept, it would be necessary to know the amount of roughage at least that the farm would produce in an average season. The general consensus of opinion is that all roughage should be grown on the farm, and if anything must be purchased let it be the concentrates, and if possible some of them should be grown. The crops should be rotated so as to work in a hoe crop, hay, pasture and grain. The grain will be the least profitable, but it is necessary to grow it in order to secure straw. There is no crop that will yield the amount of feed per acre equal to corn, and for feeding dairy cows a legume hay should be grown. If alfalfa does well it will possibly give the heaviest yield, although cows do well on red clover. Legume hay and corn silage make a very good dairy ration for cows giving a medium flow of milk. The amount of grain to feed will depend on the milk flow. Oats, cottonseed meal, linseed meal, brewer's grains, are all good and feeds of this nature, high in protein, should constitute the concentrates. A few mangels might also be grown.

Summer feeding will be found the most difficult, as the ordinary pasture is about the most expensive form of feed. It becomes parched during July and August and it requires, as a rule, two or three acres per cow for the season. Here is where a saving could be made, so as to enable the carrying of a larger number of cattle on the farm and reduce the acreage devoted to pasture. This may be done in several ways. We have known dairymen to give their cows all the hay and corn silage they will eat in the stable night and morning, but allow them to run on pasture. They do not eat much grass, and a small field is all that is required for a large herd. This method necessitates harvesting the crop and feeding in the stable, which is considered by some to be an expensive way. However, ten acres will furnish more feed in corn or clover than in pasture. Pasture should have the same amount of attention as spring-sown crops, in order to get the most out of it. Instead of leaving a large acreage in grass, break up part of it and sow with one bushel each of wheat, barley and oats, and 6 or 7 pounds of clover in the spring. This will be ready for pasture by July, and it is claimed that one acre will supply an abundance of roughage for a cow from July until the snow flies. The success depends on having a thick mat, and in turning the cattle on before the grain heads out. Clover sown in a spring pasture seldom fails to catch, and will give a crop of hay the next year. By growing this crop for pasture, a greater acreage can be left for grain, hay or corn. Do not keep any more cows than you can grow roughage for. As previously mentioned, the number will depend on what the land is capable of producing. It is not out of the way to suppose that 50 acres of good land should carry 20 or 25 head of cattle. It will depend largely on the bulk of hay and corn that can be produced. It will be a matter of intensive farming and making every acre produce. Possibly the farm is well adapted for wheat; if so, a certain acreage could be grown, as it furnishes a lot of straw and the grain could be sold to buy

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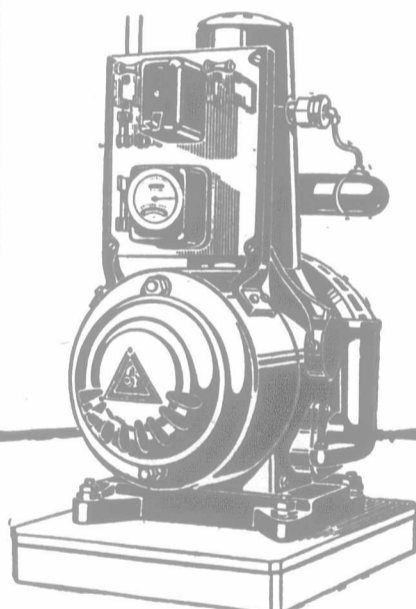
A day's hard toil around the farm and what then? Half-an-hour cleaning and filling those old-fashioned kerosene lamps and lanterns? And this—just to get a dim, unsatisfactory, dangerous glimmer—a light that gives off smoke and smell. But the day of the oil lamp is past. Delco-Light is here—a complete, reliable isolated electric plant—that lights every nook and corner of your farm at the turning of a switch. Home can now be as brilliant and cheerful at nights as any home in the city. Chores in the outbuilding can be attended to in a good, bright, safe light that makes the work just half as long and better done. Just turn the switch—house, upstairs, downstairs, hay-loft stables, at the pump, down the lane—everywhere you can have a flood of brilliant light—without a minute's trouble.

BIG FOLDER FREE

Our space is too limited to tell you here all that the Delco-Light plant is, and all the advantages it brings. You cannot afford any longer to be without electricity on your farm. Write, then to your nearest Canadian Office, get our big illustrated folder describing Delco-Light. Study it closely—the more you think about Delco-Light—the greater do its possibilities on your farm appear.

Delco-Light was developed by the same company making the world-famous Delco starting and lighting and ignition plants for automobiles.

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Mechanically Right Economical, Safe, Easy to Operate, Trouble Proof

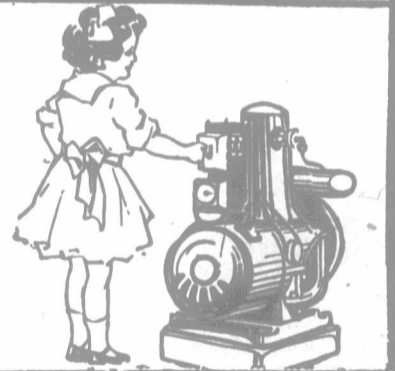
Delco-Light is a complete electric plant all in itself. It combines in one compact unit, gas engine, dynamo for generating current, specially designed storage batteries, and switchboard. It is the first completely reliable electric plant ever introduced in so compact a form and able to deliver 750 watts. It is mechanically correct—yet needs no mechanical skill to operate. Gas engine is air-cooled, starts on pressing a lever, stops itself when batteries are fully charged. Current for all the lights required. Battery alone—without engine running will carry fifteen 20-watt lights for eight hours. Low-voltage system—32 volts—saves expense, eliminates any conceivable danger, yet sufficiently powerful to run small machines. Churn, cream separator, washer, food-chopper—can all be run by Delco-Light. Water too can be pumped by electric power. Saves hours of time and toil. Cannot go wrong—it is practically trouble-proof. And any average farm can be lighted for less than 5 cents a day. The full cost of Delco-Light plant with batteries fully charged is **\$375**

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C. H. ROOKE

Delco-Light Distributor
168 Bay Street
TORONTO



Robert Miller Pays the Freight.—I have now ready for sale some extra choice young bulls of gilt-edged breeding, some young bulls bred from the best milking Shorthorns 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 rear station. **ROBERT MILLER, Stouffville, Ontario**

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 yards from Burlington Jct., G.T.R.
Young Bulls of serviceable age. Young cows with calves by their side and reared. Heifers well on in calf. A few good Shropshire ewes bred to good rams. A nice bunch of ewe lambs.
Myrtle Station—C. P. R. and G. T. R.
John Miller, Ashburn, Ontario

Oakland Shorthorns
John Elder & Sons, Hensall, Ontario
Fifty-one to select from. Twenty 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.

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, Ontario

GLENFOYLE SHORTHORNS

7 bulls, big, straight, smooth, fleshy fellows, some from cows milking 40 to 60 lbs. a day. Also a few out-standing heifers that are bred. Three young cows. Prices right. Bell phone.
Stewart M. Graham, Lindsay, Ont.

Shorthorn Bulls for sale, by Mina Boy 18th, sire of first-prize calf at Guelph. Also one imported Clydesdale stallion.
GEO. B. ARMSTRONG, Teeswater, Ontario
Mildmay, G.T.R. Teeswater, C.P.R.

Please mention "The Advocate"

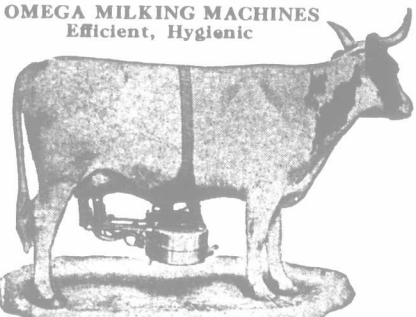


My Dad wears

BOB LONG
UNION MADE
GLOVES and OVERALLS

Known from Coast to Coast
R.G. LONG & CO. LIMITED
WINNIPEG TORONTO

OMEGA MILKING MACHINES
Efficient, Hygienic



The pail and teat-cups are suspended from the cow's back. The teat-cups cannot fall to the floor and suck up manure or straw. The Omega has no rubber tubes. The Omega milks as fast and as clean as is possible by hand. Leading dairymen in Canada, U.S.A., and Europe, are using the Omega. It's a perfect milker.

WRITE TO-DAY for free booklet describing the special features of the Omega.
C. Richardson & Co., St. Mary's, Ont.

"King Segis Pontiac Duplicate" is a son of "King Segis Pontiac," sire of more high-priced bulls than any other in U.S.A. Duplicate's dam is by King of the Pontiacs, having made 21 lbs. butter, 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 Ormsby, first heifer in Canada to give 600 lbs. milk in seven days. Write and get a brother of this great heifer for your next sire. **R. M. Holtby, Port Perry, Ont.**

H. Fraleigh, Forest

LINSEED MEAL
FLAX SEED
OIL CAKE
COTTON SEED MEAL

Write for Prices.

Food Value

From experiments made at the Ontario Experimental Farms of the different breeds of cattle during 221 days' test, the Ayrshires produced the greatest number of pounds of milk, fat and casein. The real value of a herd is the amount of food it can produce from year to year. Ayrshires are high-testing, heavy-producers. For information about establishing a herd, write:—

The Canadian Ayrshire Breeders' Association
W. F. Stephen, Sec., Huntingdon, Quebec

CRAIGIELEA FARM

The home of high-quality Ayrshires. Look up our records in public dairy tests and R. O. P., made under normal conditions. A few young bulls and females up to a carload.

H. C. HAMILL, R. K. No. 1, Markham, G. T. R. Station
Locust Hill, C. P. R. Home 'phone. Bell connection at Markham.

Choice Offering in Ayrshires

At Special Prices—Several young bulls of serviceable ages. All from R.O.P. sires and dams. Come and see them.
Jno. A. Morrison, Mount Elgin, Ontario

Glencairn Ayrshires Herd established 40 years. Producing ability from 8,000 to 11,022 lbs. If that sort of production appeals to you, we have heifers all ages and young bulls for sale. **Thos. J. McCormick, Rockton, Ont., Copetown Stn., G. T. R.**

the highly nitrogenous feeds. One year is all clover should be left down, as the clover largely dies out the second year. A 50-acre farm might very nicely be divided to work a three-year rotation—grain, hay and a hoed crop. It would hardly be feasible to divide it evenly into these three crops. The pasture could be counted as part hay and part grain, especially if the spring grains are sown for pasture. The seeding down could be done with the spring pasture and the fall wheat, or, in case no wheat was grown, with some other spring grain. The land which furnishes pasture up to the first of July could be broken up for the wheat, and what is left for hay could be plowed either fall or spring for corn.

2. A little over three acres of a ten-ton-per-acre crop would be required.

3. There are arguments in favor of both methods. A small farm well worked usually returns a greater net profit per acre than a larger farm, but where only one man does the work, he is continually tied down. It will be necessary for him to have almost as many implements to work a small farm as are required for a large one. This brings the overhead expenses a little high. Again, it will depend on the line of farming followed. For grain and stock, 100 acres or more make a very nice-sized farm. This cannot be termed a large farm, but at the same time it will furnish sufficient work to keep two men busy the year around, if the farm is run right.

4. The variety of corn depends considerably on the season. In some localities one variety is recommended, while in another an entirely different variety gives the best results. Any of the standard varieties are good. Of the Dents, Golden Glow and White Cap are possibly a little earlier than Bailey and Wisconsin No. 7. All are heavy yielders, but there appears to be different strains in each variety.

5. It is a matter of agreement between landlord and tenant, but it is usually an unwritten law that straw grown on the place remains there.

6. Five or six crosses give practically pure-bred stock, although only with very few breeds are they eligible for registration.

Gossip.

A Good Year with Oxfords.

Henry Arkell & Son, of Arkell Station and Guelph Post Office, Ontario, write "The Farmer's Advocate" that the past year has been a successful one with them. Regarding their sales, they write thus, "The year of 1916 is now past; it has been a very successful one with us. We have retained in crates the past season 140 head of both sexes, and about 200 in carlots. They have gone from the Atlantic to the Pacific, both in Canada and the United States; to the Northwest, to the Maritime Provinces and as far as the States of Oregon and Washington. Our advertisement will commence with "The Advocate" again in June, when we shall be able to supply our customers again in a lot of good yearling rams and ewes. We wish to thank "The Advocate" for a goodly number of our sales made through it."

Some Good Shorthorns at Woodslee.

Sometime ago a representative of the Farmer's Advocate visited the farm of Gordon Smith, Woodslee, Ontario, and found there a Shorthorn herd which will compare favorably with other good breeding herds in Ontario. Although this herd numbers only about 40 head, there is a good percentage of outstanding individuals in the lot, and this one would expect, for the breeding females are the get of such good sires as Scottish Prince Imp. = 50090 = (84728), Prince of Archers Imp. = 60861 = (92900); Bud's Emblem = 63860 =; Spicy Count Imp. = 50095 = (104020); Count Nonpareil = 78443 =; Lord Lavender = 70558 =; and Lavender Victor = 83341 =. Along blood lines they represent such noted families as Golden Drops, Lavenders, Butterflys, Wedding Gifts, Rosebuds, Nonpareils, Duchess of Glosters, Lovelys, and others. These coupled with the massive, smooth, and successful sire, Broadhooks' Star = 90857 =, now in service, make the progeny high classed. There is elsewhere advertised in these columns a number of bulls bred along these lines. Parties wanting such stock, at a moderate price, should write to Mr. Smith about this offering.

Rock and Brick Face "METALLIC" Siding

Gives an armour-clad building that defies time—weather—fire—storms.

PUT heavy, full gauge Galvanized "Metallic" Steel Siding plates on your building and you have a steel coat that simply laughs at old Father Time.

Needn't paint for years unless you want to—unlike inflammable wood that needs constant protection. "Metallic" plates are absolutely wind, snow, rain, fire and storm proof. "Metallic" patterns are many and pleasing, the Rock and Brick-face and Clapboard being the most popular.

Send for price list today. We can save you money. We also make "Eastlake" Galvanized Shingles; "Empire" Corrugated Iron "Metallic" Ceiling Plates; Ventilators; Roof-lights; Silo-roofs, etc.

The Metallic Roofing Co., Limited, - Winnipeg and Toronto 170

COMPLETE DISPERSAL SALE OF
32 Head of REGISTERED HOLSTEIN CATTLE

The Property of J. Harvey Chalk, will be held at the farm on
THURSDAY, FEBRUARY 1st, 1917

Rigs will leave Avlmer, Ont., (Brown House), at 1 o'clock p.m. This herd is one of the best small herds in Western Ontario, and is headed by the young sire, Netherland Hengerveld King. His dam, Netherland Aaggie, with 21,660 lbs. of milk in one year was the Canadian champ. R.O.P. cow in 1909. Many of the females have good official records and several are freshening around sale time. 20 pure-bred Tamworth swine, 7 horses, hay and grain and farm implements will all be sold. Write for catalogues. TERMS CASH.

LINDSAY & POUND Auctioneers J. Harvey Chalk, Prop., Dunboyne, Ont.

Yearling Heifers For Sale

As our stables are full, and expect several more calves shortly, offer for quick sale 3 yearling daughters of Dutchland Colantha Sir Mona; also 2 beautiful daughters of Pontiac Korndyke Het Loo. The 35-lb. bull is sold. 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.

W. L. Shaw, Newmarket, Ont. Stops 69 Yonge St., Toronto and York Radial Cars.

Gordon H. Manhard, Supt.

Highland Lake Farms Jointly, with J. Alex. Wallace, of Simcoe, we have leased for the season the great young bull, **AVONDALE PONTIAC ECHO**, a son of **MAY ECHO SYLVIA**, 41 lbs. butter in seven days, 152 lbs. milk in one day, and other world's records for milk production.

Two fine young bulls of serviceable age for sale, one from a 34-lb. bull and a daughter of a 30-lb. son of the great **KING SEGIS**, the other from a son of the \$35,000 bull, both grand individuals and from high R. O. M. cows. Over seventy females to choose from. Send for pedigrees and prices.

R. M. E. BURNABY, Jefferson, Ont.
(Farm at Stop 55, Yonge Street Radial.)

Two Holstein Bulls—Born April, 1916

Either will make show animal. No. 1: Two nearest dams average 100 lbs. milk a day, and over 30 lbs. butter a week. No. 2: Dam and granddam average 24,000 lbs. milk in the year. Three nearest dams average 100 lbs. milk a day and over 30 lbs. butter a week. Can spare a few females.

D. C. FLATT & SON, R. R. 2, HAMILTON, ONT.
LONG-DISTANCE 'PHONE.

Cloverlea Dairy Farms ready for service, from R. O. M. dams. Write for price and extended pedigrees. **GRIESBACH BROS., Proprietors, Collingwood, Ont., L.-D. 'phone.**

OFFER FOR SALE Two Choice Bulls

Dumfries Farm Holsteins 175 head to choose from. We have on hand at present about 20 young bulls by De Kol Mechthilde Prince, a son of Prince Aaggie Mechthilde. Can also spare a few fresh cows. Visitors always welcome. **S. G. & ERLE 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.

ORCHARD LEIGH HOLSTEINS

Special offering—2 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-lb. junior two-year-old. Write, or better, come and see them.
(Electric car stops at the gate.) **JAS. G. CURRIE & SON, Ingersoll, Ont**

HOLSTEIN BULLS READY FOR SERVICE

Two are by King Korndyke De Kol, a son of the great Pontiac Korndyke. One is from a 25-lb. 3-year-old, and the other from Queen of Oxford, dam of Queen Butter Baroness. We have others younger, by King Walker Pride, a 24.36-lb. son of King Walker. Write us also for females.
COLLVER V. ROBBINS, WELLANDPORT, ONTARIO
BELL PHONE

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 Hartogs 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

Ayrshires & Yorkshires

We are only offering a few bulls, as our Club intends holding a sale on or about March 6. We will hold our stock for that. July and October Yorkshires.

ALEX. HUME & CO., CAMPBELLFORD, R. R. No. 3

Glenhurst Ayrshires For 50 years I have been breeding the great Flos tribe of Ayrshires. Dozens of them have been 60-lb. cows. I have lots of them get 60 lbs. a day on twice-a-day milking. Young bulls, 1 to 10 months of age; females all ages. If this kind of production appeals to you, write me.

James Benning, Williamstown, Ont.

Make \$20 Profit out of Every Acre of Maple Trees

If you have a grove of maple trees we will gladly show you how to make an average of \$20 profit out of every acre that contains 100 or more average size maple trees. Some farmers make \$40 to \$50 per 100 trees.

You will be surprised to know that, acre for acre, maple trees will produce a bigger profit than any other crop that you raise, and there is no seed to buy, no ploughing or cultivating and very little labor, all you have to do is to harvest, which requires only about two weeks at a time when you can not do any other kind of work.

We not only show you how to make the most dollars out of your maple grove, but will supply you with economical equipment and allow you to pay for it in three years if you want to.

Ask us to tell you about maple sugar making—the most profitable of all crops.

Grimm Mfg. Co., Limited.
40 Wellington Street, Montreal

Ring-Bone

There is no case so old or bad that we will not guarantee

Fleming's

Spavin and Ringbone Paste
to remove the lameness and make the horse go sound. Money refunded if it ever fails. Easy to use and one to three 45-minute applications cure. Works just as well on sidebone and Bone Spavin. Before ordering or buying any kind of a remedy for any kind of a blemish, write for a free copy of

Fleming's Vest Pocket Veterinary Adviser
Ninety-six pages of veterinary information, with special attention to the treatment of blemishes. Durable bound, indexed and illustrated. Make a right beginning by sending for this book.

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HIDES, SKINS, HORSEHAIR,
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FREE SPORTSMEN'S CATALOG
OF GUNS, TRAPS, NETS,
FISHING TACKLE, & C.

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No. 3 HALLAM BUILDING - TORONTO

LIVINGSTON BRAND

The purest and best

OIL CAKE MEAL

THE DOMINION LINSEED OIL CO., Ltd.
Manufacturers, Baden, Ont.

JERSEY BULLS. For sale—Knoolwood's Raleigh, sire Fairy Glen's Raleigh (Imp.), 22 daughters R. O. P.; dam Eminent Honey-moon (Imp.) R. O. P. 896 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

LABELS
Live-stock Labels for cattle, sheep and hogs, manufactured by the Ketchum Manufacturing Co.
Box 501, Ottawa, Ont. Write for samples and prices

Maple Leaf Shropshires & Shorthorns
In Shropshires, have only ewe lambs now to offer. In Shorthorns one good 3-year-old Missie bull, bul calves and heifers of popular families.
JOHN BAKER, R. R. No. 1, Hampton, Ont.

Tower Farm Oxfords
Champion Oxford flock of Canada. Choice Oxfords of all ages for sale. Prices reasonable.
E. Barbour & Sons, R.R. 2, Hillsburg, Ont.

Willowbank Dorsets
Our present offering, while not large, includes some extra good yearling and ram lambs. All imported sires. **Jas. Robertson & Sons, Hornby, Ont.**

SHROPSHIRE
We have something particularly good in ram and ewe lambs this year, and a choice lot of young Shorthorns, bulls and heifers. **Peter Christie & Son, Manchester P. O., Port Perry, Ont.**

Questions and Answers. Miscellaneous.

Switching Mare.

Have a mare that will become peevish when working and switch her tail around in a circle, sometimes catching the reins, and kicking. Is there any method of breaking or curing the habit?

A. B.

Ans.—If using a harness with a breeching try tying the tail to it. A hole can be bored in the breeching and a string fastened there for tying the tail. Some have found a thick crupper to cure a switcher. At any rate the line cannot be held fast. A piece of iron about 18 inches long can be bent the shape of a crupper at one end and covered with leather so as to be buckled on in place of the regular crupper. The tail is strapped to the piece of iron which extends the length of tail bone.

Feed for Hens.

How much buckwheat and fall wheat should 70 hens get twice a day to make them lay?

R. J. McR.

Ans.—No hard and fast rules can be laid down regarding the amount of feed to give a bunch of hens. A guide which is followed by many poultrymen with a degree of success is a handful of grain per bird per day, buried in a litter. Grain alone will not make hens lay; conditions must be similar to summer feeding. Therefore, green feed and meat feed must be included. For the winter we would be inclined to add a little corn to the grain mentioned; keep some rolled oats in a hopper and feed a mash occasionally. Ground bone, beef scrap or milk will furnish the meat part of the diet, and clover leaves, cabbage, mangels, or sprouted oats will supply green feed. Grit and oyster shell are also necessary.

Yeast Treatment.

I have a registered Shorthorn heifer that I have been breeding all summer and fall, which does not get in calf. I have had two veterinarians examine her. They say they see no reason why she should not breed. Is there some treatment that I could give her that would be likely to make her get in calf?

A. M.

Ans.—What is known as the yeast treatment may give the desired results if the heifer is physically all right. Mix an ordinary cake of yeast to a paste with a little warm water and allow to stand for 12 hours in a moderately warm place, then stir in one pint of freshly-boiled luke-warm water, and allow to stand for another eight or ten hours. The mixture will then be ready for use, and the entire quantity should be injected into the vagina of the animal to be bred. Use the mixture when period of heat is first noticed and breed when period is about ended.

Cement for Wall—Drain from Sink.

Last summer two of our hens took sick; one of them died, but the other got all right again. When stooping to pick up feed they acted as though blind, and did not appear to be able to measure distance. What was the trouble with them?

1. How many barrels of cement will it take to build a cistern 8 feet square? How many barrels of water will it hold?
2. Would an ordinary 3-inch tile be all right to take away the sink water and the overflow from the cistern?

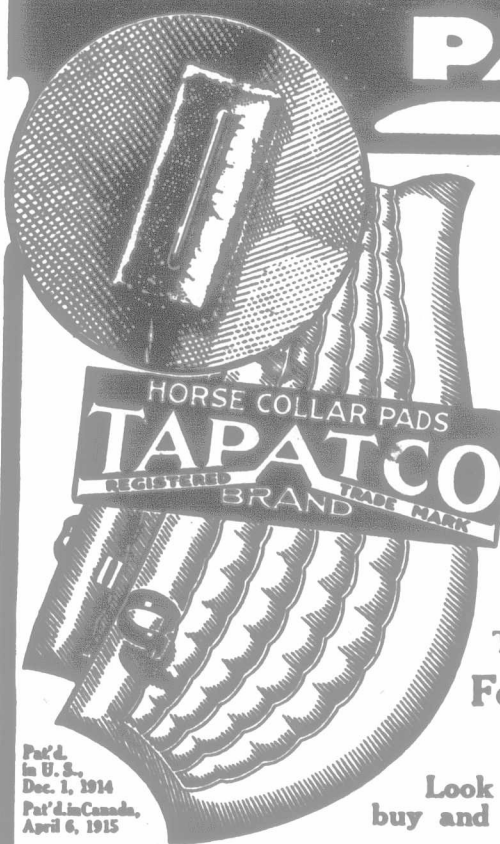
J. W.

Ans.—1. Evidently the birds were affected with some brain trouble which may have been caused by the heat, or tumors causing pressure on the blood vessels. It may have been caused by fright. It is advisable to administer a laxative, as 2 teaspoonfuls of castor oil and keep the birds in a cool, quiet place.

2. The depth of the cistern and thickness of walls are not mentioned, but, presuming that it is to be 6 feet deep and a 10-inch wall, it will require about 5 barrels of cement if the concrete is mixed one to eight. The cistern will hold about 60 barrels.

3. If the tile are well laid and do not run anywhere near the well they should be satisfactory for carrying off the sink water and overflow. If a well happens to be near, it would be advisable to cement the joints of the tile in order to prevent water from the sink contaminating the well.

A LARGER HOLD FOR HOOKS ON HORSE COLLAR PADS



At the left we show our new patented staple and felt reinforcing device which prevents the hooks from coming off easily.

This attachment overcomes a large per cent of trouble formerly experienced by pad users. It is the greatest single improvement on horse collar pads since pads were invented, and adds greatly to their long-lasting quality. This form of attachment is

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Thousands In Use giving splendid satisfaction justifies investigating our wonderful offer: a brand new, well made, easy running, easily cleaned, perfect skimming separator only \$16.95. Skims warm or cold milk thoroughly. Makes thick or thin cream. Different from picture, which illustrates our low priced, large capacity machines. Bowl is a sanitary marvel, and embodies our latest improvements. Our Absolute Guarantee Protects You. Besides wonderfully low prices and generous trial terms, our offer includes our



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AMERICAN SEPARATOR CO., Box 1200, Bainbridge, New York

EDGELEY STOCK FARM The home of Canada's greatest producing Jersey SUNBEAM OF EDGELEY, the Sweepstakes Dairy Cow at the recent Guelph test; is also the champion R.O.P. butter cow for Canada. Would a grandson or a great-grandson of this famous cow improve your herd? We have them. Write for particulars.
JAS. BAGG & SON, Woodbridge, C.P.R., Concord, G.T.R. EDGELEY, ONT.

YOUNG BRAMPTON JERSEYS BULLS
For the next fortnight we are making a special offering on young bulls, bred from the highest producing families ever introduced into Canada. Brampton Jerseys and their descendants hold all Jersey R.O.P. records save one. Females, all ages, also for sale. **B. H. BULL & SON, Brampton, Ont.**

THE WOODVIEW FARM JERSEYS Canada's Most Beautiful Jersey Herd Present Offering—Some high-class bull calves ready for service, from Record of Performance dams, including grand champion bull at last Western Fair and his full brother; also cows and heifers. State distinctly what is wanted, if writing. We work our show cows and show our work cows
Jno. Pringle, Prop.

H. ARKELL W. J. ARKELL F. S. ARKELL
SUMMER HILL STOCK FARM
Largest and oldest importers and breeders of
OXFORDS

in Canada. Look up our show record. It will give you an idea of the kind of Oxfords we have for sale.
PETER ARKELL & SONS, Proprietors, Teeswater, Ontario
Customers, beware of imitations of this advertisement.

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When you buy a ton of fertilizer remember you are buying what is in the goods and not merely two thousand pounds.

When a smelter buys a ton of gold ore he insists on knowing the number of ounces of gold it contains, and you should know the amount of active Nitrogen, Nitrate of Soda, the gold of the fertilizer.

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DR. WILLIAM S. MYERS
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Fatten Hogs Quickly
Shorten the feeding season and get "Top-notchers" with **PRATT'S Animal Regulator** 25-lb. pail \$3.50.
Pratt Food Co. of Canada, Limited
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Valuable Booklet FREE

TAMWORTHS
FOR SALE
Large number of choice males and females. All ages.
Herold's Farms, Beamsville, Ont.

Meadow Brook Yorkshires Am offering sows ready to breed and a few choice boars fit for service; also several litters ready to wean Dec. 1st. All bred from prize-winning stock. Prices reasonable.
G. W. MINERS, R. R. 3, EXETER, ONT.

Yorkshires Sows bred and younger; boars 2 and 3 months, sire Our Champion, winner of 12 firsts and 5 championships in 2 years' showing at Toronto and Ottawa.
Bronze turkeys, from prize-winning stock.
Wm. Manning & Sons, Woodville, Ont.

Morrison Tamworths and Shorthorns. Bred from the prize-winning herds of England. Tamworths, both sexes, 140 to choose from; Shorthorns, 5 bulls, from 5 to 10 months old, reds and roans, dandies. Females of the best milking strains. Chas. Currie, Morrison, Ont.

Cloverdale Berkshires and Shropshires - In Berkshires I can furnish boars or sows, all ages, pairs not akin. All breeding stock imp. or from imp. stock. In Shropshires can furnish rams or ewes, any age, from imp. stock. Prices reasonable.
C. J. LANG, R. R. NO. 3, BURKETON, ONT.

Duroc Jersey Swine. I have been importing Duroc Jerseys for twenty-five years. Present offering choice sows, bred; a few sows six months old and a number of pigs two months old.
Charles Farough R. R. 1, Maidstone, Ont.

TAMWORTHS
Young sows bred for April and May farrow, and a nice lot of young boars for sale. Write:
JOHN W. TODD, R. R. No. 1, Corinth, Ont.

Pine Grove Yorkshires. Bred from prize-winning stock of England and Canada. Have a choice lot of young pigs of both sexes, pairs not akin, to offer at reasonable prices. Guaranteed satisfaction.
Joseph Featherston & Son, Streetsville, Ont.

Prospect Hill Berkshires
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.

Pollands, Durocs, & Berkshires
Young stock at all times, both sexes, and all ages. Can also supply anything in Dorsets or South-downs. Everything priced to sell.
CECIL STOBBS, Leamington, Ont.

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.

Yorkshires & Shorthorns
Choice young sows, four months; two good young bulls, six and eleven months.
B. ARMSTRONG & SON, Codrington, Ont.

Questions and Answers. Miscellaneous.

Religious Population.

Would you tell me whether there are more Catholics than Protestants in the Dominion of Canada and just how many more?
W. C.

According to the 1911 Census, which gives the last figures available regarding the population of the country, there were 2,833,041 Roman Catholics, or 39.31 per cent. of the total population of the Dominion. Presbyterians, 1,115,325, or 15.48 per cent.; Methodists, 1,079,892, or 14.98 per cent.; Anglicans, 1,043,017, or 14.47 per cent.; Baptists, 382,666, or 5.31 per cent.; Lutherans, 229,864, or 3.19 per cent.; Congregationalists, 34,054; Greek Church, 88,507, or 1.23 per cent.; Jews, 74,564, or 1.03 per cent.

Unthrifty Bull.

We have a pure-bred bull purchased last spring. He was then 13 months old and weighed 1,000 lbs. He was rather thin, so we allowed him to run with the herd on grass, thinking the grass would benefit him, but he has lost more flesh, has grown very little, and has a very unthrifty appearance. He eats well but lacks vim. We still use him as a stock bull on account of his high breeding, but he never serves more than one cow a week. Lately a thick creamy matter has escaped from his nose. He has no cough. Can you suggest anything?
F. H. W.

Ans.—From the description given it is rather difficult to accurately diagnose the case. There is a possibility that there is a gathering in the animal's head which has been the cause of him losing in flesh and taking on the unthrifty appearance. The matter escaping from the nostrils would indicate that pus had developed in the head. We have known animals to get in very much the same condition as the one mentioned, and have known a gathering to break near the horns and also for the pus to run out the nostrils. Unless the exact spot of the gathering can be located it is difficult to treat. Bathing around the head may help, but now that pus is escaping there is a possibility that the trouble will be overcome. A veterinarian might be able to locate the place and operate so as to facilitate recovery.

Lump on Jaw.

I have a young cow that has a hard lump on each side of right jaw bone, directly opposite each other, they seem very sore to the touch. The cow is in calf.

1. What treatment would you advise?
2. Would it be safe to let cow raise her calf?
3. Would calf be apt to inherit disease?

Ans.—1. Without seeing the animal it is difficult to tell just what would cause the lumps. There is a possibility that it is due to bad teeth. We have seen lumps caused by an animal striking its head on a sharp object, and again it might be lump jaw. Examine the teeth; see that barley awns or substance of a similar nature haven't lodged at the side of the jaw and started an ulcer. Bathe the lump thoroughly with hot water, and some absorbent material might be rubbed on. If the trouble is lump jaw and the lumps are not attached to the bone, they may be carefully dissected out, the wound stitched, and dressed with a 5 per cent. solution of carbolic acid, twice daily. The growth of the lumps can be arrested by what is called the "iodide-of-potassium treatment." This consists in giving a dram of potassium iodide three times daily and gradually increasing the dose until the appetite fails; the cow refuses water, slavers, and tears run from her eyes. When any of these symptoms appear, discontinue the use of the drug for three weeks and then repeat treatment if necessary.

2 and 3. There is very little, if any, danger of the milk being affected, except in a very advanced case where the general health was affected. Therefore, it will be safe to allow the cow to raise her calf, and it is not generally considered that the disease will be inherited. It is not considered contagious in the early stages; the danger lies in discharges from the lumps falling on grass or other feed and being taken into the systems of other animals.

Secure More Pails of Milk From Your Herd

Royal Purple will increase the flow of milk from 3 to 5 lbs. a day if used according to directions. Mr. Norman C. Charlton, Scott, Sask., states:
"I am from Ontario and fed your Royal Purple Stock Specific when in Brownville. My cows made the largest average and tested 5 pounds over average at C. M. P. Brownville. I believe you make the best conditioner on the market."

Royal Purple Stock Specific

The great farm animal conditioner and fattener is used in almost every progressive stock-raiser's stable in Canada. Good for all stock in a run-down condition. Can be used occasionally or continually without showing bad after-effects. Royal Purple Stock Specific is purely a digester and blood purifier. It aids digestion to such an extent as to produce the very best results and obtain the maximum amount of good from the food eaten. It will enable you to fatten your steers and hogs a month earlier, thereby saving a month's feed and labor.

Mr. Malcolm Gray, of Comoka, states:
"In regard to the feeding of Royal Purple Stock Specific, I had two lots of hogs. To the first lot I fed Royal Purple Stock Specific, and when I sold them they averaged 196 lbs. each. On the second lot I did not use Royal Purple Stock Specific, and at the same age they averaged only 150 lbs. each. They were both the same breed and one lot had as good a chance as the other. We have also fed Royal Purple Poultry Specific with excellent results."

Royal Purple Stock Specific is put up in 50c. packages and large \$1.50 and \$5.00 tins. Secure our products from our dealer in your town. Write for free booklet on how to treat all common diseases of stock and poultry. Tells how to build hen houses and how to raise calves without milk.

W. A. Jenkins Mfg. Co., Ltd.
London - Canada 36

Zenoleum Kills Lice

Every owner of Poultry or Live Stock is constantly fighting against those pesky parasite pests, lice, mites, fleas and ticks, that torment his cows, horses, pigs, sheep and poultry. Zenoleum kills these pests. Zenoleum is harmless, will not burn, is not greasy or dirty, and will not poison. It is the cheapest and most powerful Germicide; it is used at the Dominion Experimental Farms at Ottawa, at Guelph and by 50 Agricultural Colleges in Canada and U.S.A. A \$1.50 tin makes 80 gallons of Disinfectant dip. Write for Booklet. Ask your dealer or send 25 cents for a tin containing enough for 5 gallons of dip, carriage prepaid. Write for Booklet—"How to Cure Sick Livestock."

ZENNER DISINFECTANT CO., Sandwich St., Windsor, Ont.

YORKSHIRES FOR SALE

We have a large number of choice males and females, all ages.
Weldwood Farm, Farmer's Advocate, London, Ont.

TAMWORTHS AND SHORTHORNS

Young sow due to farrow within a month. Young pigs, both sexes, all descendants of Imp. and Silver Medal Stock. Ten young heifers and cows, grand milking strain, in calf to Broadlands No. 87903.
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In Duroc Jerseys we have either sex of any desired age, bred from winners and champions for generations back. In Jerseys we have young cows in calf and young bulls, high in quality and high in producing blood.
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From our recent importation of sows, together with the stock boar, Suddon Torredor, we can supply select breeding stock, all ages. Satisfaction and safe delivery guaranteed.
H. M. VANDERLIP, Breeder and Importer, R. R. 1, Brantford, Ont.
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In 1915 we made a clean sweep at all the Western shows in Berkshires and Tamworths; we have for sale both breeds of any desired age, winners in the West. First and third prize Berkshire boars at S. DOLSON & SON, NORVAL STATION, ONT.

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MAIL CONTRACT

SEALED TENDERS, addressed to the Postmaster-General, will be received at Ottawa until noon, on Friday, the 9th day of February, 1917, for the conveyance of His Majesty's Mails, on a proposed Contract for four years, six times per week, over Belmont No. 2 Rural Route, from the 1st of April, next.

Printed notices containing further information as to conditions of proposed Contract may be seen and blank forms of Tender may be obtained at the Post Offices of Belmont, Glanworth and Harrietsville, and at the office of the Post Office Inspector, London.

G. C. ANDERSON,
Superintendent.

Post Office Department, Canada, Mail Service Branch, Ottawa, 29th Dec., 1916.



MAIL CONTRACT

SEALED TENDERS, addressed to the Postmaster General, will be received at Ottawa until noon, on Friday, the 9th day of February, 1917 for the conveyance of His Majesty's Mails, on a proposed Contract for four years, six times per week over Dorchester Station No. 2 Rural Route from the 1st of April, 1917, next.

Printed notices containing further information as to conditions of proposed Contract may be seen and blank forms of Tender may be obtained at the Post Offices of Dorchester Station, Nilesstown Mossley and Thamesford, and at the office of the Post Office Inspector, London.

G. C. ANDERSON,
Superintendent.

Post Office Department, Canada, Mail Service Branch, Ottawa, 29th Dec., 1916.



MAIL CONTRACT

SEALED TENDERS, addressed to the Postmaster General, will be received at Ottawa until noon, on Friday, the 9th day of February, 1917 for the conveyance of His Majesty's Mails, on a proposed Contract for four years, six times per week over Hyde Park Corner No. 1 Rural Route from the 1st of April, 1917, next.

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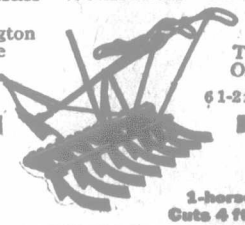


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THE morning paper tells us the most important events that have happened during the *past* twenty-four hours.

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And what of the events of the incoming year—to what chance and change we and our fortunes will be exposed: we should reflect that—

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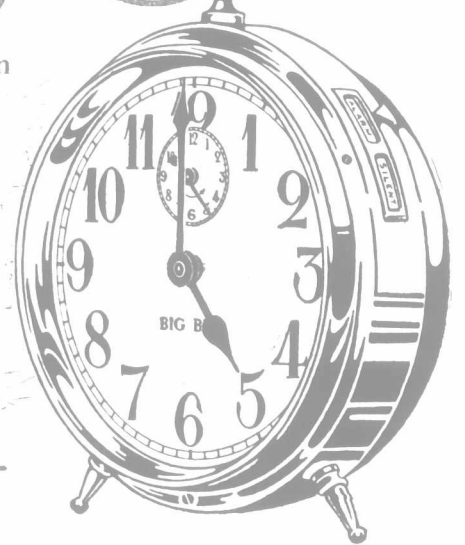
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