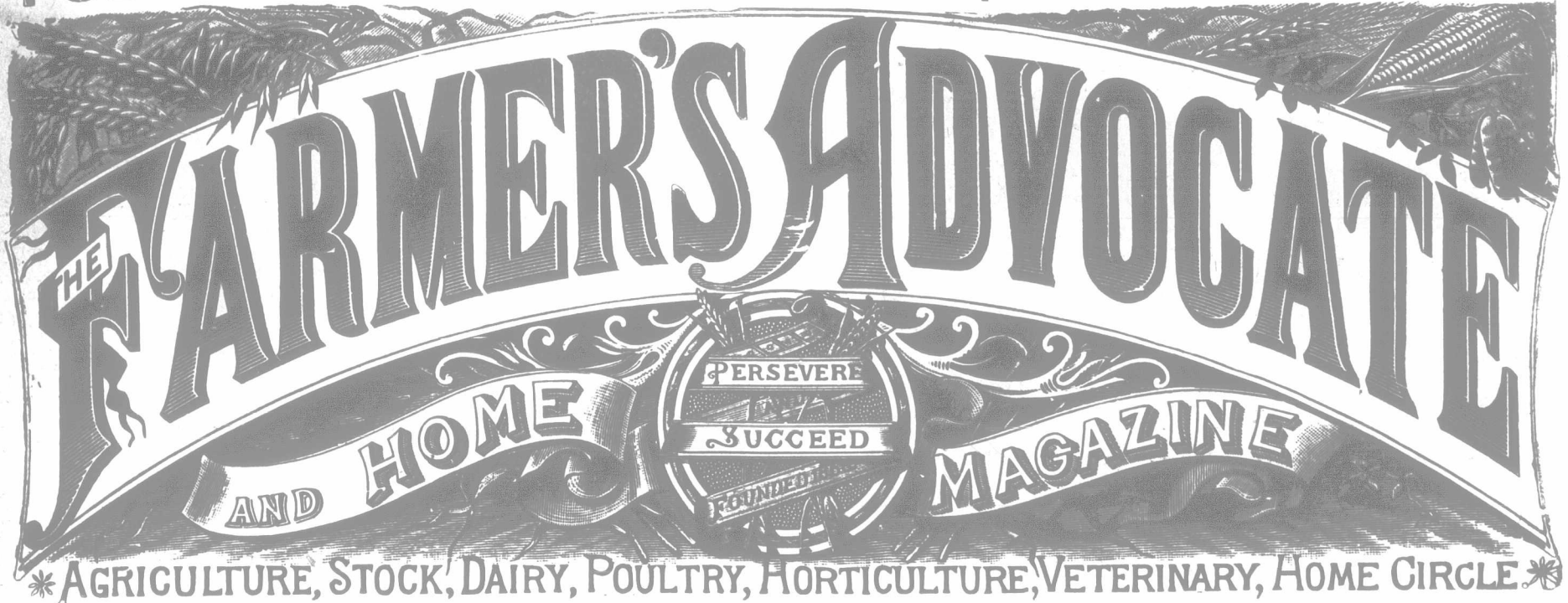


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Vol. XLVII.

LONDON, ONTARIO, JANUARY 18, 1912.

No. 1008

The Binder That Really Satisfies--Always

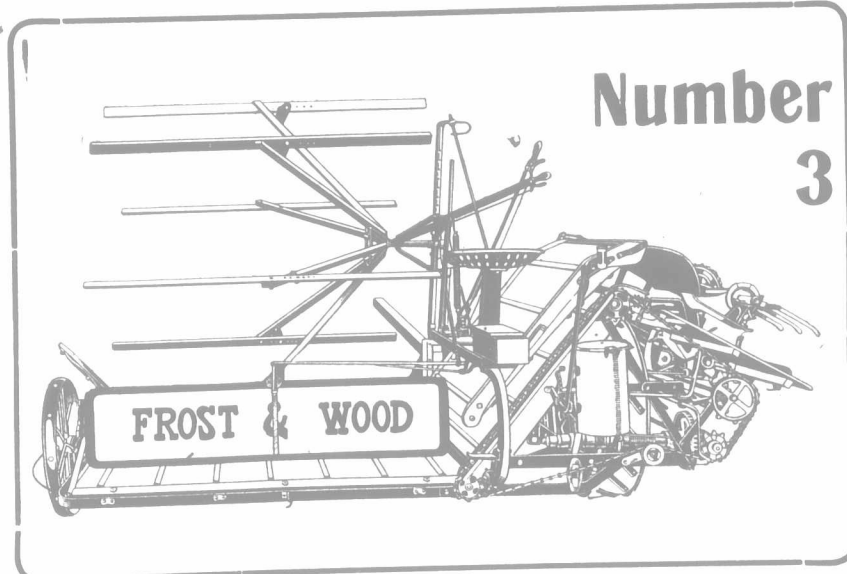
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Number
3

That Perfect Knotter

Another big satisfaction to the owner of a Frost & Wood Binder is the ingenious little knotter. It never misses. You can't work it too hard nor ask it to work too fast. You can be absolutely dead-sure it will tie every sheaf. It is so simple, too, for all its ingenuity, that you never need worry about its getting out of order. Then there are the Roller Bearings that we put on the Number Three at every place where friction may come. These add to our cost, but not to yours; and they save your horses amazingly, besides adding greatly to the life of the machine. These are practical betterments.

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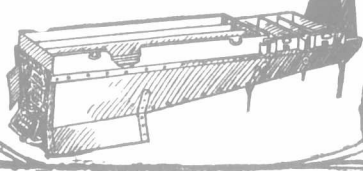
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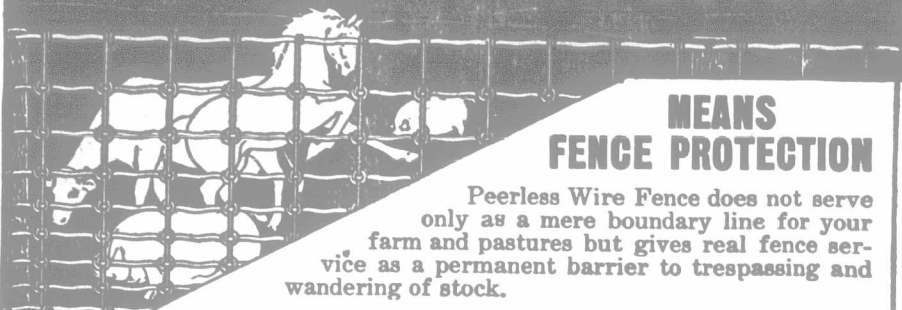


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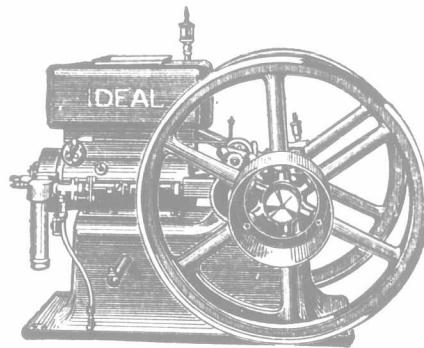
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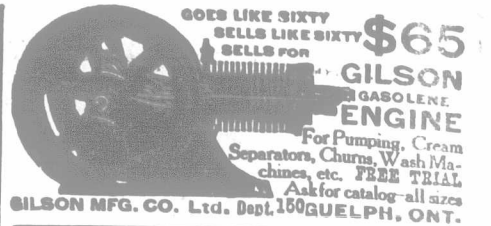
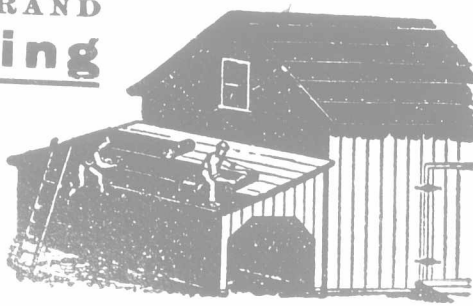
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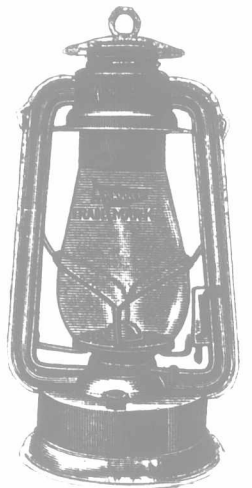
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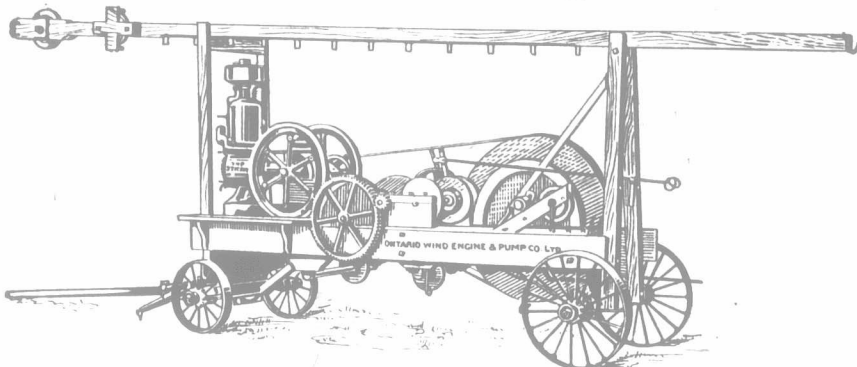
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INVENTIONS

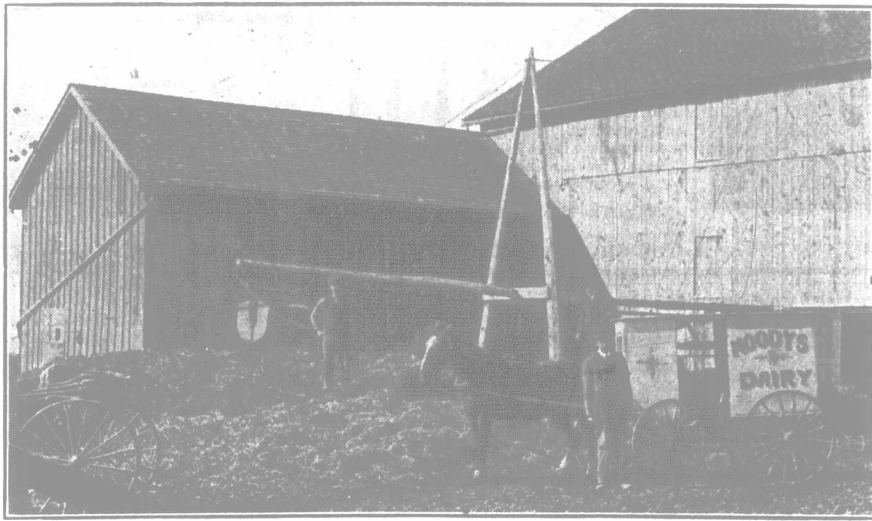
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Cleaning the stables with a barrow is such heavy work, especially in winter, that the manure generally does not get far away from the stable door. The water is backed up, and the result is that the yard is almost impassable. As well, the fumes from the manure are constantly pouring into the stable, affecting the health of the stock and injuring the framework of the barn and the implements stored in or near it.

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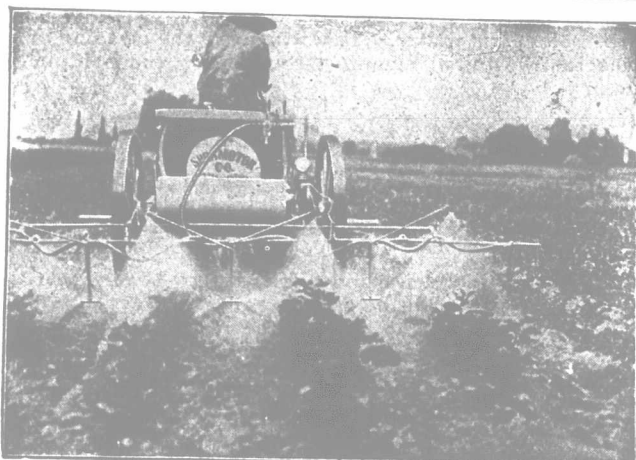
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Cream and butter produced through the use of DE LAVAL CREAM SEPARATORS made the usual clean sweep of all Highest Awards at the great 1911 National Dairy Show (including the annual convention of the National Buttermakers Association) held in Chicago, October 26th—November 4th, just as has always been the case since the organization of the National Association in 1892.

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The sweepstakes or highest award in this class was won by A. J. Anderson, Otisco, Minn., with a score of 97.50, who says: "I have been using De Laval separators for ten years, and would not think of using any other."

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The sweepstakes in the gathered cream factory made butter class was won by R. O. Brye, of the Readstown Creamery Co., Readstown, Wis., with a score of 97.33, this prizewinning butter being made from the cream of farm patrons using De Laval separators exclusively.

Mr. Brye says: "I was raised on a dairy farm, where my father used a De Laval separator, and my own separator experience covers a period of twenty years. I have found the De Laval machines everything that is claimed for them."

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Would-be competitors are naturally forced to make many claims for their separators. But the superiority of De Laval cream and butter, as evidenced by the winning of all highest prize awards the world over for twenty years, is something so overwhelming as to be indisputable and unanswerable even by the most reckless would-be competitor.

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This is the most popular wagon made for farm work, and is in appearance, finish and workmanship equal to any made in Canada. A T-K Handy Farm Wagon will accomplish with one man the work which requires two men with any ordinary wagon. No other wagon can compare with it, even those selling at nearly twice the price.

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"Bissell" does clean work where others make a poor job of it.

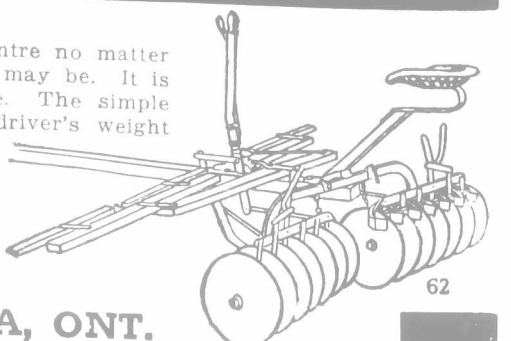
The "Bissell" Scrapers meet the plates chisel fashion and keep the plates clean. Movable Clod Irons—an exclusive feature—keep the space between the plates clear.

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Vol. XLVII.

LONDON, ONTARIO, JANUARY 18, 1912

No. 1008

EDITORIAL.

Who said "old-fashioned winter"?

Snow banked against cold buildings is an excellent safeguard against destructively low temperatures.

Water is more precious than gold, as one quickly realizes when the supply fails during a winter freeze-up or summer drouth.

Water gives off heat in freezing. A tub of it in the cellar will tend to prevent the temperature dropping so low as it would otherwise go.

Bed the stock well these bitter nights. Udder troubles often result from lying on hard, bare, cement floors during extra-cold weather.

The man who does not keep books is like a person carrying a leaky pail of milk without examining to see where the holes are. He knows he is losing the milk, but hasn't the gumption to find out how. One cannot stop a leak till he knows where it is. Accounts show up the leaks.

Ice harvest is on as we write. Don't neglect it. The cheapest kind of a cheap building will serve, especially if judiciously placed. Plenty of sawdust and close packing of the ice are the main requisites. In the milk or cream tank, kitchen and cellar, ice is a midsummer boon. Ice is a cheap crop, which it pays to raise.

During the January cold snap many farmers with water systems had to add plumbing and steamfitting to their various other accomplishments. Fortunately, there is not so very much needed in this exorbitant trade but a few tools and a stock of common sense. The tools are the principal sticker.

From correspondents' returns made to the American Bureau of Statistics, it appears that about five per cent. of the enormous corn acreage of the United States was converted into silage this past fall, as compared with 3.5 per cent. of the 1910 plantings so cut. It is probable that many correspondents included in their estimates all corn cut in a green stage. An increase last year over 1910 is shown in nearly every section of the country, due, largely, no doubt, to the shortage of the hay crop.

That "rejected" grades of Western wheat, depreciated in price because containing large quantities of noxious weed seeds, are bought and used by Eastern millers, the screenings being ground and mixed with mill feed, is the confession a prominent miller frankly made in conversation with an editor of this paper. Particles of the dark hulls of such seeds may often be seen in shorts and other mill stuffs. Apart altogether from the danger of some of them retaining their vitality, they are objectionable from a feeding standpoint. In tests with chickens fed on ground weed seeds, Prof. Graham, of Guelph, found some of them very unwholesome. In fact, birds forced to subsist on this diet for a length of time sickened and died. If they affect poultry thus, will they not likely be more injurious to other animals? Is the Canadian farmer to pay out good money for ground weed seeds that are liable to be actually injurious to his stock? The miller quoted contends that these rejected grades of wheat should never be allowed to leave the mill, but should be cleaned in terminal Government elevators. What say our readers?

Power at Niagara.

An exhaustive report on the "Water-powers of Canada," by the Conservation Commission, treats the power situation in Ontario very fully, special attention being given to the power possibilities at Niagara and the conditions affecting development there. Each of the power companies operating there, whether on the Canadian or American side, is described in detail. A significant reference is made to the granting of franchises to develop power at Niagara Falls. The report states that the low-water flow of the Niagara River would yield, at the Falls, about 2,250,000 horse-power, of which Canada's share (one-half) would be 1,125,000 horse-power. "Franchises have already been granted," it goes on to say, "and plants partially completed, for the development on the Canadian side of the river, of about 450,000 horse-power. In other words, instead of millions of horse-power being available, as has been sometimes stated, it appears that about half, and by all odds the better half, of Canada's usable share of Niagara Falls power has already been placed under private control."

In connection with this item, it should be noted that, while, as stated, franchises have been granted to companies for the development of some four hundred and fifty thousand horse-power on the Canadian side of the river, the Ontario Hydro-Electric Commission fortunately has a large block of power under contract from the Ontario Power Company, and has legislative authority to contract for more, as required. The regrettable feature of the whole matter is that the franchises of the developing companies permit them to export over half of the power they are permitted to generate, and this half cannot be touched by the Commission, at least not without the free consent of the developing companies. The net result is that, while by far the greater part of the water of Niagara River flows over the Canadian falls, much less than half the total power is likely to be available to Canadian users.

It is interesting to add that some nineteen thousand horse-power is already being taken by the Hydro-Electric Commission, and it is anticipated that by the end of the year this will be augmented to twenty-five thousand.

Experience With All Kinds of Powers.

An excellent communication has been received on the subject of gasoline versus electric power, from J. Morgan, of Huron Co., Ont., who gives figures on the cost of operating his four-horse-power gasoline engine. Running cream separator, churn, bone-cutter, fanning mill, root pulper, grindstone, cutting-box and wood saw, and grinding two thousand bushels of grain, his year's expenditure for gasoline and oil has been less than \$25. He wants to hear, as we do, from anyone who has done an equal amount of work more cheaply with electric energy. Indeed, we should like to hear from several dozen careful readers who have used gasoline engines, steam-power, wind, horse-powers (tread or sweep), dog wheels, electricity, or any other kind of power. Full details should be given, not only of fuel cost, but of all other charges, such as repairs, interest, and depreciation on equipment.

So far, the subject of hydro-electric energy on the farm has scarcely emerged from the realm of generalities. Facts we must have to arrive at conclusions. It has seemed pretty clear to us

from the start that the economy of hydro-electric energy on Ontario farms would resolve itself into a comparison of electricity versus gasoline, and unless extensive and fairly regular use can be found for the power, the advantage would appear to be on the side of gasoline. The cost of stringing wires, maintaining the lines and delivering power to widely-scattered rural users is a heavy handicap against the electric fluid, and where only a little power were utilized, the cost per horse-power would be necessarily high. The hope of utilizing electricity profitably clearly lies in the possibility of employing it to do many operations now performed by hand, and, moreover, in utilizing the current as continuously as possible. If one can use it for lighting at night, running cutting boxes, choppers, pulpers, saws, churns, hopcutters, fanning mills and grindstones in the day time, pumping water between times, it may be found possible to make an inexpensive daily current accomplish considerable work. One of the great advantages of electricity is the immense variety of uses to which it may be put. In this connection, we must not overlook household purposes, such as laundry work, running vacuum cleaners, cooking, and possibly heating. An electric toaster on the breakfast table is already a comfort of many city homes. Why not on the farm? Hon. Adam Beck, chairman of the Ontario Hydro-Electric Commission reports that in Germany, where labor is far cheaper than here, electricity is used for a great variety of purposes, and farmers would not be without it for twice the cost. It is hard to say what the future may bring forth in the way of substituting electrically-driven machinery for hand and horse labor. One thing certain, the more uses we can find for electricity, the cheaper it will be, especially on farms. We await with keen interest the progress to be registered, and meantime repeat our request for the facts of experience with all kinds of farm power.

Time Records.

When a railroad man figures on a contract, a builder on a tender, a carpenter, a plumber, or a blacksmith on a job, he tries to estimate as closely as possible how much time it will take, the character of the help required, whether skilled or unskilled, and the cost, in hard cash, allowing for lost time and other vicissitudes. A manufacturer in his plant, or a merchant in his store, wants to know how well each department of his business pays him, and one important factor of the case, is the wages disbursed. It signifies nothing to him that a certain department has a handsome surplus to its credit, if the wage cost of earning that surplus was excessive. It is the net balance that counts.

But time records do more than help to decide which departments pay. They furnish the information necessary to keep tab on the various branches from year to year. In comparison of the annual showing lies the opportunity for economy and the mental stimulus that sets wits working. A wide-awake manufacturer tells us that, by means of such systems he has cut down the cost of production in his factory fifty per cent., although the scale of wages has been steadily rising. It was not all done by means of time records, but these were an important feature.

There is no getting away from the fact that in close competition, where margins are narrow, the man to win, other things being equal, will be the one who acquires and utilizes the most exact

THE FARMER'S ADVOCATE AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL
IN THE DOMINION.

PUBLISHED WEEKLY BY
THE WILLIAM WELD COMPANY (LIMITED).

JOHN WELD, MANAGER.

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

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knowledge concerning his cost of production and marketing. Actual knowledge is superior to the judgment of the shrewdest manager, as the most level-headed among them clearly recognize. Wise is the one who, by means of accumulating data, studiously examined, makes each year's results a basis for improvement. By such means failures are turned to good account, and all the experience of the past is used as a broad foundation for future success. Incredible opportunities open out in this direction, even in those businesses where it was supposed competition had shaved things down to the finest point.

In few businesses are margins much narrower than in farming, and there is none, to our knowledge, more emphatically in need of the information which time records supply. Many of the commonest farm operations, such, for instance, as the cost of making a ton of hay or producing a silo full of corn, are matters of wide divergence of opinion. How can a man decide whether a certain practice pays him, unless he knows how much time it takes? No matter whether he hires the labor or performs it himself, he should see that the employment is profitable; otherwise, he will almost surely come out at the small end of the horn.

With a view to enabling ourselves, and incidentally other farmers, to arrive at just such information, we have devised a simple system of time cards and a time-book, by means of which all such questions can be pretty closely answered. It is entirely "homemade," is very satisfactory, and we heartily commend it to every reader, even though he employs no labor but his own.

In thinking over and comparing the results obtained from the different crops the past season, do not compare them by measure. The bushel measure is very misleading. A bushel of oats and a bushel of corn or wheat is a vastly different quantity by weight, and when it is multiplied thirty, forty, fifty or more times, as is the case when yield per acre is concerned, the folly of comparing an equal measure of these grains is evident.

Rural Well Water.

MANY UNSAFE WELLS.

During the last few years we have examined a large number of samples of rural well waters, and a very large percentage of them have been found to carry such large quantities of impurities that they must be considered unsafe for domestic purposes. A study of the surroundings of many of these wells shows that the water could not very well be other than impure. An ordinary well is but a hole in the ground, and, naturally, it collects the seepage water from the surrounding soil.

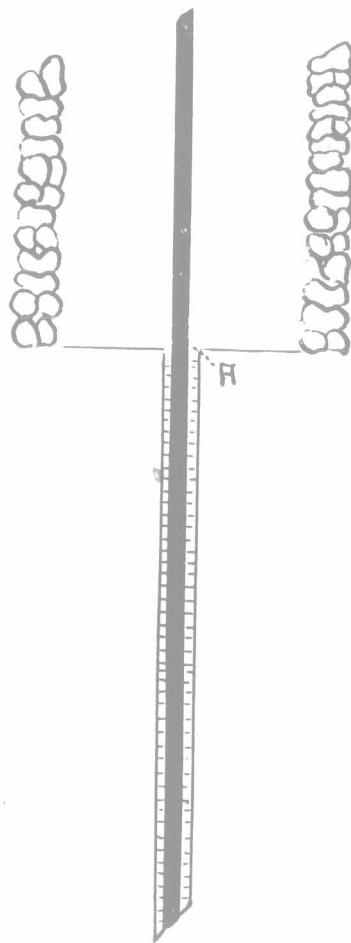


Diagram illustrating how impure water may pass down to source of supply got by drilling. May be overcome by stopping passage of water at A; or, better, by drilling at another point outside of the well.

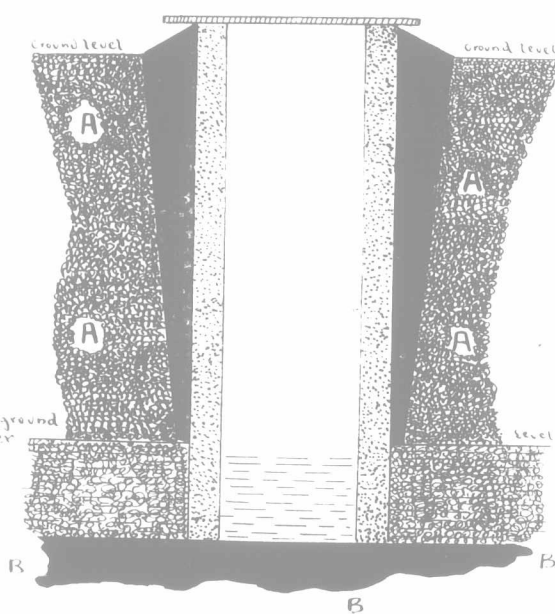


Diagram of well, showing a backing of puddled clay, or other impermeable materials between the cement work and the porous strata through which the well is dug.

A.—Porous strata, such as sand, gravel, loam, etc.
B.—Impervious stratum, such as clay, rock without flaws, etc.

From McGill, in transactions of the Ottawa Literary and Scientific Society.

Consequently, if this soil is saturated with foul and polluted matter, the water that passes through it will be contaminated.

For the sake of convenience, most of the wells on the farms in this country have been dug close either to the house or to the barn. At the time of digging, it is probable that the water got from these wells was as pure as could be procured from wells placed in any other positions about the homestead. It did not matter whether a spring was struck or whether the well simply served to

collect seepage water, the water was likely to be safe for domestic use. However, as time passed, the product of the decay of the waste materials from house and barn have thoroughly saturated the soil, and the water that naturally drains into these wells became less and less pure, until to-day, many wells that once supplied good water have become so contaminated that the water is now so impure that it is unsafe for domestic purposes.

The soil is naturally a good filter, and will, for a time, remove undesirable matters from the water that passes into the well, but there is a limit to its powers of purification, and if the source or sources of contamination are too close, the water must become polluted. Thus, waste materials may be thrown on the ground near the well, where it decays and passes downward into the soil with the percolation of water, and naturally passes to the well. For a time the organic materials in this drainage water are retained by the soil, but when it becomes saturated, or when it passes through only a shallow layer of soil, all the undesirable materials pass on with the water and pollute the original pure supply. Another source of contamination may be due to the fact that the top of the well is not raised sufficiently from the level of the surrounding ground to prevent heavy rains from washing impure matters from the surface into the well. Or, what is even worse, the covering of the well may not be tight, and the water splashed from the pump, or from rains, washes the dirt carried by chickens, or on the feet of those using the pump, into the well. Such pollutions are not filtered through the soil, and may be loaded with all manner of disease germs.

The organic matter in a water is derived from two sources. It may have originated from the normal decay of vegetable matter, and may be harmless from the point of view of health, even though far from appetizing when we remember its origin. Or it may have come from the decay of small animals that have got into the well, owing to an imperfect cover, or from leachings from outhouses, barns, etc., where it may be actively poisonous. This is especially so if the contamination is of human origin, for it then may contain the living germs of specific diseases, such as the various kinds of fevers, cholera, etc.

DRAINAGE IMPROVES NATURAL SOIL FILTER.

As stated above, percolation of these waste materials through the soil tends to purify it, but, to be effective, the soil must be well aerated; i. e., the interspaces of the soil must be kept well drained, in order that air may abound. Under good conditions, the organic matter is changed to harmless compounds, and the disease germs are destroyed. That this action may be complete, the water must filter through several feet of soil, and, although it is impossible to fix a definite minimum limit to the depth of such a natural filter, it is safe to say that one should insist on eight or ten feet, at least, and prefer as much more as we can get. To secure this, it is necessary that the upper ten feet of the wall of the well should be made quite impervious to water. The accompanying diagram will help to illustrate my point. The wall may be made of concrete carefully cemented over, brick and cement, or, if the well is in a clay soil, it may be stoned up, and the clay thoroughly puddled behind the wall. The idea is to so construct the well that no water can find entrance to it without filtration through a depth of soil at least equal to the vertical distance between the ground level and the lowest level of ground water.

LEAKY WELL COVERS.

It is, however, evident that no amount of care bestowed upon the construction of the walls of the well will insure good water if the top is left unprotected. Possibly the best way to make a safe top is to have the mouth of the well raised a foot or more above the surface of the surrounding soil, and to have the wall lining the well backed up by a layer of puddled clay a foot or more in thickness, extended continuously from the level of the ground water quite up to the mouth of the well. Then, the whole should be covered with a good cement cover, or, at least, with a double flooring, so that there will be no cracks.

To procure a greater supply of water, and also to get away from surface-seepage water, many wells have been drilled to great depths in the rock. The water got from this source will, naturally, be harder and purer. But, unfortunately, in many instances the mistake has been made of drilling in the bottom of the old well, and, while the pipe may be brought to the surface, thus bringing the pump in direct contact with the new supply of water, no care has been taken to prevent the water from the old well, which may carry its full charge of seepage materials, from making its way down the outside of the pipe to the new supply below. It is always better to make a fresh opening, and to puddle the clay or to cement around the pipe for some distance down, preferably to the same depth recommended for the dug

well. Furthermore, care must be taken to have this also extend well above the surface of the ground. It is evident that little good will be accomplished by securing a safe supply of water from the rock if it is allowed to be contaminated from above.

STERILIZING IMPURE WATER.

Drinking water, contaminated in some one or more of the ways indicated above, has often been a source of the spread of typhoid fever. It may happen that the water of a well is under suspicion, or that it is known to contain the germs of typhoid fever, and that no other water is within reach. In such a case, a sure method of treating the water to destroy the germs, without rendering the water distasteful, would be of great value. During the last few years, bleaching powder has been used more or less to sterilize water during a typhoid outbreak, and quite recently further application of this method has been made for the continuous treatment of municipal water supply in the United States, and, nearer home, in Toronto; and, wherever it has been properly used, it has not only destroyed typhoid and colon bacilli, but practically all bacteria in water, except a few spore-formers.

It is a valuable means of sterilizing water, because chloride of lime (bleaching powder) may be bought almost anywhere, is very cheap, and, in the infinitesimal quantity used, is not only absolutely harmless, but leaves no taste in the water, and with a few directions may be used by anyone to render an infected water safe for drinking purposes.

Dr. G. G. Nasmith, Director of Health Laboratories, of the City of Toronto, and Dr. R. R. Graham, have worked out a simple method, which can be used by miners, prospectors or campers in Northern Ontario, or elsewhere, to purify immediately and on the spot any water which may be dangerous. This method was published in the Journal of the Royal Army Medical Corps, July, 1911, and is as follows:

"1. Take a teaspoonful of chloride of lime, containing about one-third available chlorine, and remove the excess of powder by rolling a pencil or other round object along the top of the spoon, or by flattening it with a penknife blade, so that the excess will be squeezed off.

"2. Dissolve the teaspoonful of chloride of lime in a cupful of water, making sure that all lumps are thoroughly broken up, and to it, in any convenient receptacle, add three more cupfuls of water.

"3. Stir up the mixture, allow to stand for a few seconds in order to let any particles settle (this stock solution, if kept in a tightly-stoppered bottle, may be used for four or five days), and add one teaspoonful of this milky stock solution to two gallons of the water to be purified in a pail or other receptacle. Stir thoroughly, in order that the weak chlorine solution will come into contact with all of the bacteria, and allow to stand for ten minutes. This will give approximately one-half part of free chlorine to a million parts of water, and will effectually destroy all typhoid and colon bacilli, or other dysentery-producing bacilli in the water. The water will be without taste or odor, and the trace of free chlorine added rapidly disappears.

"The writers have followed this procedure repeatedly, using only the simple apparatus mentioned, consisting of a teaspoon, a cup and a two-gallon pail. The water in the pail has been inoculated with typhoid and colon bacilli, and examined before and after chlorination. The result was invariably the same, namely, that all typhoid and colon bacilli were destroyed."

This method is equally applicable to the sterilization of water drawn from a farm well, and it may also be used to sterilize wells which have been infected, provided, of course, that the source of the infection has been removed. It would obviously be futile to sterilize a well situated in a farmyard from which organic matter and bacteria are constantly draining into the well.

CALCULATING THE WATER IN A WELL.

The calculation of the amount of bleaching powder required to disinfect the water of a well is simple. Suppose the well is six feet in diameter, and the water four feet deep, the formula would be radius (half the diameter) squared x 22/7 x depth of the water = 3 x 3 x 22/7 x 4 = 113 cubic feet of water in the well. Or, a simpler formula is the diameter of the well squared x .7854 x depth of the water = 6 x 6 x .7854 x 4 = 113 cubic feet of water in the well. One cubic foot contains 6.25 gallons of water, so that 113 x 6.25 = about 700 gallons of water in the well.

One and one-half pounds of bleaching powder is sufficient for the treatment of 1,000,000 pounds, or 100,000 gallons of water. Therefore, if 100,000 gallons require 1.5 pounds of bleaching powder, 700 gallons will require 1.5 : 100,000 x 700 = .0105 pounds, or about one-sixth of an ounce of the bleaching powder will be required to purify the 700 gallons of water. After weighing out the

bleaching powder, mix with a little water, dilute, and pour into the well, and thoroughly mix with the water. This may be done by taking a long pole and nailing a couple of strips of wood across one end, and plunging this up and down in the water. If the well is too deep for this method, a rope may be attached to the pole, and the whole weighted so that it will sink in the water.

This method of treating an infected well has proved very satisfactory, and the amount of bleaching powder added is so small that it can scarcely be detected in the water. More than the indicated quantity is not required, and will do no good. It is important that the bleaching powder be fresh, and investigations by Nasmith and Graham show that the material in cardboard containers was not as strong as that put up in zinc packages. Naturally, if the powder is weak, more of it will be required to do the work.

It is our purpose to prepare a bulletin on the subject of farm well water, when we will be able to go more fully into the whole question.

R. HARCOURT,
O. A. C., Guelph. Professor of Chemistry.

Sowing Good Seed.

Satisfactory results in the operations of the farm are determined largely by the volume and quality of the field crops produced, and these depend primarily upon the quality of the seed sown. Public recognition of this condition has been tardy, when compared with the encouragement and

the Act, farmers are exempt from the necessity of grading timothy, alsike, red clover and alfalfa seed, according to the standards fixed when the seed is grown, sold and delivered on their own premises; but they are not allowed to sell any of their seeds for seedling purposes that do not come up to No. 3 standard. Farmers are also exempt from the necessity of labelling seed with the names of the noxious weeds which it contains when grown, sold and delivered on their own premises. With these two exceptions, the Act applies to farmers throughout. When acting as agents selling seed not grown by themselves, or in selling their own seed on the market, or any place but their own premises, they are on the same basis as seedsmen. Through the co-operation of the leading wholesale merchants in the seed trade, the application of the Act has effected a wholesome improvement, the chief violations latterly being by local dealers in some districts. Unquestionably, the trade in seed and grain of low grade is being steadily cut down, and the demand for seed of high quality nearly everywhere is rapidly increasing. Encouragement has been given the production of Canadian-grown seeds, with fairly encouraging results; so much so, that the Dominion Canners' organization are now devoting the old Bow Park Farm of nearly 1,000 acres, near Brantford, Ont., to that purpose, for the patrons of the canning industry. In one year, with the assistance of the Seed Branch officers, the Dominion Government distributed to farmers in Alberta and Saskatchewan, whose crops had been seriously

damaged by frosts, over 1,250,000 bushels of wheat, oats and barley for seed. In two editions, 40,000 copies of the volume entitled "Farm Weeds of Canada," illustrated in natural colors, were issued, and have proven of inestimable value in the campaign against weeds. A corresponding work on "The Grasses of Canada," is now in course of preparation.

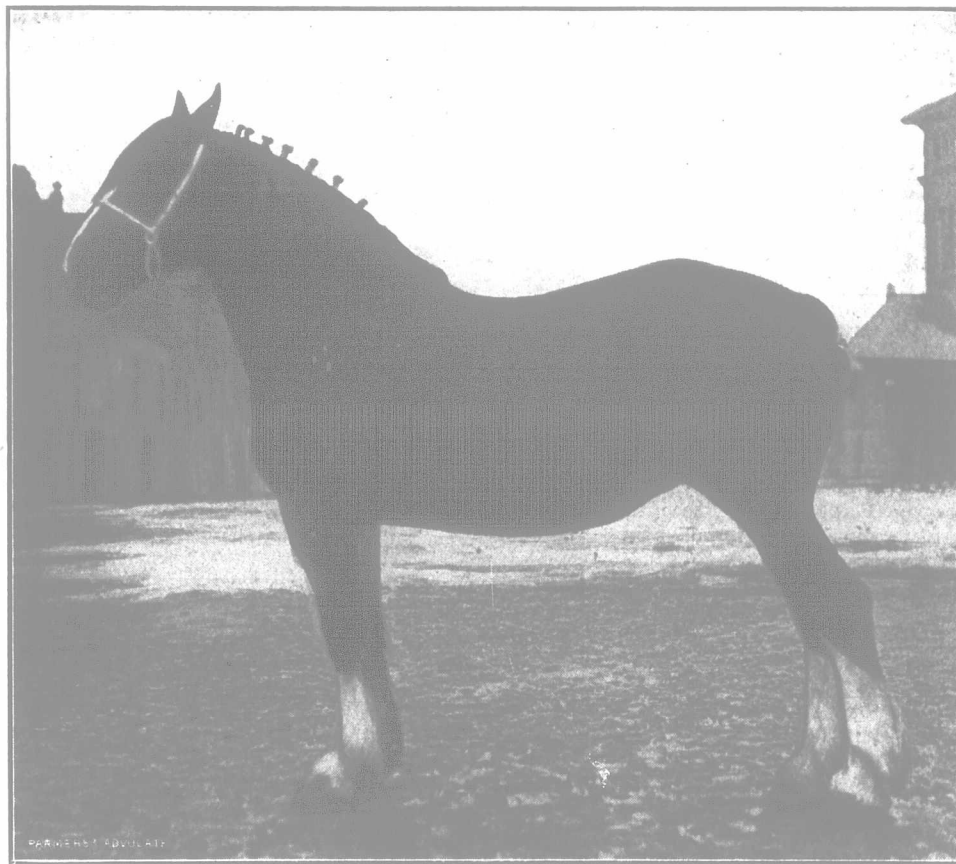
A great deal of the valuable work referred to in the foregoing does not lend itself to elaboration in annual documents, but the Seed Commissioner and chief officer of the Branch, Geo. H. Clark, is to be congratulated upon taking the time to prepare a 100-page report covering the period from 1905 to 1911—a model of conciseness, clear in its statements,

and of actual use to farmers and seed dealers. It describes and illustrates the twenty-seven noxious weeds classed in the Seed Control Act Order-in-Council of 1911, and nearly seventy other species of weeds more or less injurious, against which farmers should be on the alert. The report is admirably printed, being readable in style and free from the prosiness of many official volumes. Its appearance is timely, just at the beginning of the New Year, and it should find its way into the hands of every farmer, young or old, in Canada. We presume a postcard to the Seed Commissioner, Ottawa, would secure a copy, and such requests should be promptly made. There is no excuse for being in the dark about good seed and weeds, when such a wealth of knowledge can be secured for one cent.

Don't Monkey With Lanterns.

Editor "The Farmer's Advocate": We notice an article in your issue of Jan. 4th, on page 14, signed by W. J. Lycett, Durham Co., Ont., "To Prevent Lantern Glass Breaking." We quote from a portion of his article as follows: "By rimming out a row or two of the holes a little around the outside of the perforated base on which the globe rests, and also a row or two on top of the lantern just above the globe, it will allow greater circulation of air to pass through the globe, which will keep it from becoming too warm."

We would respectfully point out to your readers that these holes are made in the part men-



Sally of Burnbrae (imp.) [13528].
Clydesdale mare; brown; foaled in 1904. First in open class, Ontario Winter Fair, Guelph, 1911. Exhibited by W. H. Mancell, Fletcher, Ont. Sire Mont-rave Ronald, dam by Invincible.

direct public aid given the use of pure-bred animals in live-stock husbandry. However, in the Dominion Department of Agriculture, from small beginnings, the Seed Branch has made steady and substantial growth since 1904, and is now one of the most alive, practical and directly useful to Canadian agriculture of all the departments at the Capital. It grew out of a competition (Macdonald-Robertson) in the selection of seed grain in 1899, followed by the establishment of seed-testing stations, distribution of weed seed collections, seed fairs, Provincial seed exhibitions, field-crop competitions, and other educational work, which in 1904 acquired the standing of a regular branch of the Department of Agriculture. Contemporaneous with and closely related to the foregoing, was the growth of the Canadian Seed-growers' Association, to encourage the production of high-class seed grain, and its registration and sale. A seed laboratory for testing seeds for vitality and purity was established at Ottawa, and an investigation made into the seed trade, particularly in relation to the grass and clover seeds. As an outcome of the inquiry and the testing for farmers and merchants, it soon became apparent that legislation would be necessary to cope with the growth of the weed evil, and this took the form of the Seed Control Act of 1905, the standard and working of which have steadily improved. Capable and specially-trained men were appointed in the different Provinces who aid in the administration of the Act and share in the educational programme of the Branch, co-operating helpfully with Provincial agencies in that respect. Under

THE FARM

Gasoline and Electric Power.

Editor "The Farmer's Advocate":

I have read with attention the various articles on electric power for the farm, as the question of farm power is becoming of greater moment every year. For myself, I thought I had solved the problem three years ago, when I bought a gasoline engine. The machine I got was one of two horse-power, and air-cooled. At first I thought the engine too small, and was doubtful about the air-cooling, as I had been warned that this type was not very satisfactory. The makers of the engine agreed to allow me to try it, with the understanding that I could return it if not entirely satisfied. As it did all the work I wanted in a satisfactory manner, I kept it for two years. When I decided to try grinding my own grain, I took a four-horse-power engine of the same make, and on the same terms; it was to suit me, or no deal.

Now, in the articles on electric power, I have seen no statement as to the cost, except that it is the cheapest power known. Therefore, I will give the figures as to cost of my power, and would like to hear from farmers who are using electric power, for I am willing to change, as I am told it is more convenient than the engine.

To begin with, the two-horse-power engine cost \$135; 36 feet line shaft, hangers, pulley and belting, \$35. When I changed to the four-horse-power engine, I paid \$100 additional, so that at present my power plant has cost \$270. This does not include the machines I am running, as all of these I had before, with the exception of the grain-grinder.

The two-horse-power engine was used to run cream separator, churn, bone-cutter, fanning mill, root-pulper, grindstone, cutting-box and wood saw.

My average stock is seven horses, forty cattle, twenty pigs, and two hundred hens and turkeys. Now, I ran all these machines with the small engine for 25 months on a cost of \$8.00 for gasoline and oil. A year ago I got the larger engine, with which I have run all these machines and, in addition, have ground two thousand bushels of grain, and my expense for the year is less than \$25. During the winter months, or while I am feeding all my stock in the stables, the engine is used an average of two hours a day, while in the summer it is run about one-half hour night

and morning. I have had some trouble, but have always had the power to run separator twice a day for the past three years.

There are quite a number of gasoline engines in this locality, and most of the farmers report experiences similar to my own, both as to the service given and the cost.

Now, I would like to know the cost of an outfit such as Mr. Clark describes in "The Farmer's Advocate," issue of December 14th, five-horse-power motor, also small motor for the house; how far the wires were run to his place; the cost of wires, poles, etc., and who pays for the wires, etc. How much does it cost for light per month? How many lights are used? How much does it cost for power, and is the power available while the lights are lit, for, with the engine, during the winter months, especially, I use it almost entirely by lantern light? Then, is there likely to be any danger from fires, as I notice from time to time the mention of fires from defective wiring? As my silo is a long way from where I would place a motor, I would want to move it, too, if possible, for filling the silo, and also for cutting wood, as I do with the engine. J. MORGAN, Huron Co., Ont.

[Note—In the September 21st issue of "The Farmer's Advocate," page 1571, there appeared an article, "Silo Filling by Electric Power." This explains how the line was secured. The distance is, we presume, between two and three miles. The motor could be mounted on wheels and moved from place to place. The wiring, if properly done, should not be dangerous from a standpoint of fire. The Government has decided to extend the hydro-electric power to rural districts. High-voltage lines of 13,000 and 2,200 volts will be

tioned after a good deal of thought and study on the part of experts to decide exactly the size and location of these holes. These are provided to admit exactly the quantity of air necessary to perfect combustion of the coal oil burning, and to produce the whitest flame possible. During the experiments necessary to decide exactly the size and position of these holes, it has been found that too large or too small holes, or too many or too few of them, will tend to deteriorate light received and the wind-proof quality of the lantern, and it has also been found that in certain cases an explosion would eventually follow the enlarging of these holes.

We would, therefore, suggest that your readers do not monkey with the working parts of the lantern, but that they, rather, buy a better quality globe from the dealer, as globes can undoubtedly be found which will stand many times the wear of those in general use, if the consumer can be induced to pay a reasonable price for them.

F. W. HALLINGSWORTH,
Sales Manager, Ontario Lantern Co., Ltd.
Hamilton.

HORSES.

If you have never tried feeding a few roots to the idle horses, do so now. A good turnip, mangold or a few carrots will be greatly relished.

There is nothing like a variety of foods to keep the horse's appetite keen, and there is nothing like a good appetite to aid in keeping the animal in condition. It is difficult to fatten a horse that will not eat.

Remember that horses which are being highly fed and fitted for sale are more susceptible to thrush than those on a more scanty diet. It is necessary to take greater precaution in keeping the animals' feet clean and dry.

In exercising the horses during the winter months, it must be remembered that an amount sufficient for one animal will not always be the correct amount for another. Study the animal's needs in this matter as you do their feed requirements.

According to the Oregon Experiment Station, a horse which receives a larger quantity of hay than he needs cannot do as much work as one receiving just the required amount, because an over-distended stomach imposes greater work upon the respiratory system, and indigestion in some of its many forms is also likely to follow. Fifteen pounds is given as a better feed for a 1,000-pound horse than twenty pounds, and it is said that a horse of this weight fed five pounds in the morning and ten pounds at night, will be able to do more work than one which has a manger of hay before him at all times. For a fifteen to eighteen hundred-pound horse, twenty pounds of hay is given as enough roughage, and the remainder of the ration should be grain.

A Lack of Good Brood Mares.

Horse-breeders are, as years go by, putting forth extra efforts to improve the class of horses in the country. No amount of money is spared in the purchasing of good sires, and considerable is also spent in bringing good fillies into the country, but it is quite noticeable in most show-rings, as well as in travelling throughout the country, that the stallions are of a higher order than the fillies; that is, proportionately, there are more "top-notchers" amongst the males than amongst the females in our heavy-horse breeds. True, there is an improvement noticeable in the quality of some of the best fillies exhibited, but many are somewhat plain. It is not so apparent, perhaps, in the show-ring as on the farms. Buyers come and offer a seemingly large price for the good young filly, and, after hesitating a short time, she is sold, and a few nondescript cross-breeds or "scrubs" kept for breeding purposes, and the owner wonders why he doesn't get a prizewinning colt from mating this class of mare with the champion stallion of our largest shows. The stallion will do his part, but he is not the only influence exerted upon the colt. The maternal influence cannot but be great, and it matters not how prepotent the sire is in transmitting his desirable quality and conformation to his offspring, eleven months spent in the fetal stage, together with all the inherent qualities of the dam's ancestors passed down through the ovum to the foal, must have their effect, and a very noticeable effect it is. It is just about as possible to get the best colt from a good sire and a poor dam as it is to get a good machine from an expert mechanic and defective material.

To obtain the highest possible level in our horse-breeding, the fillies which are being raised

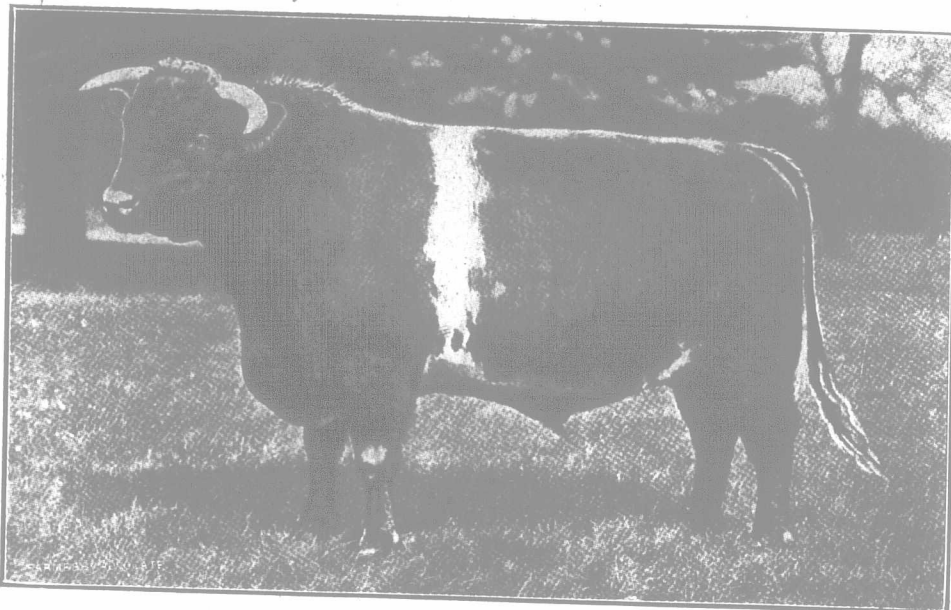
for breeding purposes must receive the attention they merit. Select the mares as scrupulously as stallions are selected in the districts; where the best of our drafters are bred, and see how quickly an improvement will be noticed. The remedy is in the hands of the farmers and horse-breeders. The time is approaching when buyers will be scouring the country for horses. They will offer good prices, but turn a deaf ear when they insist upon purchasing your brood mares or good fillies.

Keep them. They are valuable in your horse business. Too many make the mistake of breeding to defective stallions, but far more are guilty of the fault of breeding too few mares, and these often of a very faulty type. Why is this so? Mainly because they feel that the risk in keeping the mares for which a high price has been offered is too great. "She might die," is the common comment, "and see what I would lose." If kept, there are fifty chances to one that she will live, if she is healthy and well cared for. This being so, wherein is the gain from selling? A brood mare in foal and a good breeder is a developed gold mine to a farm. The young filly which gives promise of becoming a satisfactory breeder is an exploited mine of wealth which it will pay the owner to develop. Do not sell the good fillies, and be equally tardy about breeding the undesirable mares.

LIVE STOCK.

Co-operative Live Stock Shipping

Co-operation in the shipping and marketing of live stock is being taken seriously in some of the States. In Minnesota this co-operation has reached the second stage—that of organization of the scattered local co-operative associations into a central body, "The Minnesota Co-operative Live-stock Shippers' Association."



Shorthorn Bull Evander.

Which has been sold out of the King's herd at Windsor, to R. O. Lamb, Cumberland. See Gossip note, issue January 11th.

The Association's object is such a unification of forces in gathering information, securing fair transportation, and influencing legislation, as shall insure to every local organization, along with the best returns from every shipment, just treatment from railroad and packing interests, and protection against abuses of all sorts. Such a state-wide organization can naturally accomplish more, and at smaller expense, than any number of local associations working each independently of the others. And unless they thus are united, the local associations may often be placed in the unfortunate position of competing with one another.

The Association at Cannon Falls, Minn., is an example of a successful association. This organization pays its manager or buyer 10 cents per hundred weight on all live stock handled. This price secures a thoroughly competent man. This is a new association, and, according to C. R. Barns, of Minnesota Agricultural College, the first four carloads of hogs shipped netted the farmer 39 cents per hundred pounds more than was being paid by local buyers. Also, it is stated, instead of a deduction being made for shrinkage in transit, the hogs were reported as having actually gained in weight, to the further advantage of the co-operative shipper. These associations claim to have proved that, by simply getting together co-operatively, stock-raisers can everywhere realize from 5 to 20 per cent. more than by the old plan on their cattle, hogs and sheep. Such an increased return is no mean consideration, and this would make a good topic for discussion in the Farmers' Clubs of our country during the winter months. Other organizations have been successful, and, properly managed, there is no reason why they should not prove equally successful in this country.

run through the country districts, and the municipalities can then take up the matter and extend the power from these high-voltage lines. Subscribers having had experience with this power are invited to give our readers the benefit of their experience through these columns.—Editor.]

Pea - and - Oat Hay.

Unless next spring and summer turn out unexpectedly favorable, many farmers in Ontario and other parts of the continent will be confronted with the prospect of a scanty hay crop. Thousands of fields of new seeding were burned out by the blazing drouth of last midsummer. Many were plowed up, while others were left with a very weak stand. Unusual interest will, therefore, be taken in the various crops commonly recommended as substitutes for the ordinary hay and pasture, grasses and clovers. For grazing, many of our readers will doubtless try Prof. Zavitz's annual pasture mixture of 1½ bushels of oats, 30 pounds Early Amber sugar cane, and 7 pounds red clover. On the soil at Guelph this mixture has certainly produced remarkable results. Whether it would give equal satisfaction on heavy clay, is a point concerning which we would welcome the testimony of readers.

As crops to produce winter forage, Professor Andrew Boss, of Minnesota, recommends that old and well-tried stand-by, oats and peas, or even oats alone. Two bushels of oats and one-half to one bushel of peas, are the quantities he suggests. Such a mixture, grown in 1911 on a farm where quackgrass investigations are under way, produced two and a half to three tons per acre of cured hay, relished by horses and cattle, and especially valuable as sheep feed. Millet and fodder corn are also commended. "The Farmer's Advocate" is convinced that, in the search for new forage crops, many farmers go further and fare worse than if relying upon peas and oats. At Weldwood, last summer, we cut with the mower a load or two of this mixture, which had been sown about half and half, with a view to threshing. The prevalence of bindweed induced us to cut early, at a stage about half way between blossoming and maturity. Notwithstanding that a succession of sprinkles prolonged the curing process to about a week, this mixture made very appetizing winter feed, relished, apparently, about as well as good timothy hay. And, by the way, the cattle did not seem to object to the bindweed twined about the stalks.

Of course, as dry-weather forage crops, ensilage corn and alfalfa make an ideal combination, but where these have not been provided for, or where it is desired to supplement them, we strongly recommend peas and oats, sown early, either two-thirds oats and one-third peas, or even half and half, depending somewhat upon the variety of peas one uses. Too large a proportion of peas sometimes pulls the oats down, making them hard to harvest. In this connection, we may refer to the claim of the Cornell authorities, that oats grown with peas have a rather higher protein content than where grown alone. At all events, the mixture is most excellent. If not used for hay, it may be ripened and threshed. We add Henry's analysis of oat-and-pea hay, compared with timothy and clover:

	Digestible Protein	Digestible Carbohyd's	Digestible Ether Ex.
Oat-and-pea Hay	7.6	41.5	1.5
Timothy Hay	2.8	42.4	1.3
Red Clover	7.1	37.8	1.8

Clover Growing Benefits.

Attention is called, in a recent bulletin (by T. L. Lyon and J. A. Bizzell) of the New York College of Agriculture, to a "heretofore unnoted benefit from the growth of legumes such as clover and peas. It is well known that such crops, when vigorous and abundant, exercise a beneficial effect on the soil and on succeeding crops. But that a legume may benefit a non-legume growing with it, by causing the non-legume to contain a larger quantity of nitrogen or protein, seems never to have been ascertained. The trials in question at the Cornell University Experiment Station with timothy, growing with alfalfa, timothy growing with red clover, and oats growing with peas, show that the timothy and oats contain more protein than when grown alone. The yield of the mixed oats and peas, when cut for hay, was considerably greater than the yield of oats alone.

The increased value of the non-legume, due to its greater nitrogen content, when grown with a legume, is of some economic importance. A method of increasing the protein content of certain forage crops by growing them with legumes is thus suggested.

The increased supply of available nitrogen, which these results indicate to be due to the presence of the legume, must have a very important influence on the yield of the non-legume on soils

where nitrogen is the limiting factor in the growth of the crop.

Soil on which alfalfa had grown for five years contained more nitrates than did soil which had grown timothy for the same length of time. Sections of these same plots kept bare of vegetation for the summer gave similar results.

The rate of nitrification of ammonium sulphate was greater in alfalfa soil than in timothy soil, thus indicating an influence of the plant on the conditions favoring nitrification. The higher protein content of non-legumes growing with legumes than of the non-legumes growing alone, is probably due to the more active nitrification caused by the presence of the legume.

Time Records at Weldwood.

One of the first things done at Weldwood was to devise a system of time-cards, by means of which a record could easily be kept of the amount and value of time spent on the care of every class of stock; the production, harvesting and marketing of every crop; and the making of every improvement effected. Simplicity was sought above everything else, for very few farmers have bookkeepers to assist them, and very few farm hands would be capable, even were they willing, to enter into the details of a complicated system. In the first cards used, we attempted to carry out partially the idea of R. J. Case.

HORSE Time Card for week ending Dec 2, 1911

Date	Hrs	Job
Sunday		
Monday	18	Trip for telephone poles
	18	Trip for straw
Tuesday	4	Trip to Lambeth for chop

The nitrifying power of a soil which grew alfalfa for five years, and which was then kept bare of vegetation for a summer, was greater than that of adjacent plots on which timothy had been grown for the same length of time, and which was likewise kept bare for a summer. This indicates a benefit arising from the influence of the legume on the rate at which nitrification goes on in the soil, even after the crop has been removed.

Alfalfa grown on soil in need of lime contained a higher percentage of protein when lime was added to the soil than when none was added. The weed Erigeron annuus growing with the alfalfa possessed a higher protein content when grown on the limed soil. Ammonium sulphate, when added to the limed and to the unlimed soil, nitrified more rapidly in the former.

the New York State fruit-grower, whose time-cards were illustrated in "The Farmer's Advocate" last winter. Mr. Case had a separate column for every branch of his business—apples, peaches, etc. It was soon perceived, however, that it would require too large a card to provide a column for every farm job of which separate account was desired, so that we soon modified the card to provide a column each for work on cattle and horses, leaving one column for all other work, and a space to the right in which to specify the job. Each man employed keeps such a record. Sometimes, in the case of unlettered or merely casual employees, the foreman keeps the card for him. Thanks to the example and influence of the foreman, who appreciates the purpose of the time-cards, no difficulty has been experienced in persuad-

Time Card for week ending Dec. 2, 1911.

Date	Hrs	Cattle		Specify job in each case.
		Hrs	Other work	
Sunday	5			
Monday	3			6 took grain to mill & brought load of straw.
				2 general chores.
Tuesday	2			1 unloading straw
				1 general chg respig
				1 cutting up pig
				1 work on feed cart
				4 putting up poles for telephone

Thos Rogers

The greater protein content of a non-legume when grown on a soil containing sufficient lime, as compared with one deficient in lime, is apparently due to the more abundant formation of nitrates under these conditions.

Thousands have renewed their subscription by taking advantage of our special renewal offer. Have you? The date of the offer has been extended to January 31st, and you will find particulars of the same on another page of this issue.

ing the men to co-operate in this matter, though we realize that in some cases there might be a little. Also, a card is kept for the horses, whose time is computed on the basis of one horse per hour. If a team is employed ten hours hauling gravel, the horses are credited with twenty hours of horse time. If four horses are used nine hours at plowing, it is put down as thirty-six hours of horse time, and so on. As all our horses are of approximately the same weight and working capacity, separate account is not kept for each horse.

although this could easily be done on another card with a column for each horse.

The time-cards consist simply of plain card-board, about 8 x 11 inches, ruled out and written in by hand. In the horse-card it will be observed that there are four horizontal spaces for each weekday in which to specify various jobs. We find, as a matter of experience, that this is about the right number. It is very seldom that any or all of our horses are working at more than four different jobs on any one day.

At the end of the week, or the first of the ensuing one, these cards are handed in to the manager of the farm, who takes them to the office and has the figures transferred into a stiff-backed book kept for that purpose. In this book every account has a page of its own, and on it is entered from week to week the total number of hours and the estimated value of the time spent on that particular job. In the case of such accounts as that for the corn crop, separate items are made for before-planting cultivation, after-planting cultivation, cutting corn, silo-filling, etc. The weekly entries are summarized at the end of the year into some such form as shown in the accompanying table.

The value of the time is computed on a basis of so much per hour, this basis being struck according to monthly, weekly or daily wages paid to each respective man, with a reasonable margin to allow for lost time and the services of the foreman directing the work. Thus, if a man receives thirty-five dollars a month, counting board, and works an average of twelve hours a day for 26 days, with six hours' chores every alternate Sunday, his working time amounts to 324 hours, which stand us nearly 11 cents an hour. Adding a margin makes it 12 or 13 cents, according to the amount of margin allowed. Probably it would be better to charge different rates for fair-weather and rainy-weather jobs, but we have not done so as yet. Horse-time was calculated at 10 cents per horse per hour until winter closed in; since then it is figured at 5 cents.

In our system of bookkeeping, all money paid out for wages is charged directly to wages account, and all money paid out or feed used for the horses is charged to the horse account. At the end of the farm-account year, in April, the various other accounts will be debited to the value of the men's and horses' time expended upon the several crops, classes of live stock, or the improvements, as shown by the totals in the time-book. The wages and horse accounts will be credited with the value of time charged against these other accounts. The horse account will also be debited to the value of men's time spent as chores in the horse stable. The aim is so to adjust matters that the wages account will practically balance even. It is expected and hoped that the horse account will show some profit.

QUESTIONS ANSWERED BY THESE RECORDS
As illustrating the information obtained by means of these records, it will suffice to submit certain figures arrived at.

The cost of mowing, raking, coiling, hauling in and mowing away an estimated forty-five tons of hay cured from thirty-two acres was \$1.20 per ton, or \$1.70 per acre.

The cost of putting in 22 acres of spring grain, including the plowing of 13 acres of sod, was \$63.10, less than three dollars per acre. The total labor (except threshing) involved in growing and harvesting the crop from 25 acres of spring grain, yielding 563 bushels, besides some green feed and unthreshed fodder, was 370½ hours of men's labor, costing \$61.89, and 485 hours of horse-time, valued at \$48.58—a total cost of \$110.47. This does not include the cost of preparing land for three acres of barley sown thinly as a nurse crop for alfalfa.

The harvesting and storing of 150 bushels of fall wheat, grown on about six acres, involved 50½ hours of men's and boys' labor, valued at \$7.53, and 36 hours of horse time, valued at \$3.60—making a total of \$11.13.

The spring preparation of about ten acres of fall-plowed land for alfalfa (including the seeding of six acres where no nurse crop was used, also treating of the seed with nitro-culture, etc.), took 57½ hours of men's time, worth \$9.82, and 134 hours of horse time, worth \$13.40, or a total of \$23.22.

Threshing 715 bushels of grain cost \$14.56 in labor, and, of course, board, which is always allowed for in these statements, besides the threshermen's bill of \$15.80, making a total of \$30.36, exclusive of fuel and such items. This works out to about 4½ cents per bushel.

To produce and harvest some eight hundred bushels of roots on spring-plowed new ground required, exclusive of clearing and breaking, 318 hours of men's labor and 121½ hours of horse time, at a combined cost of \$55.71, or nearly 7 cents per bushel. Late seeding, drouth and growing trees cut down the yield and made the bushel cost high.

Details as to cost of growing corn and filling silo, the accompanying tabular summary will supply.

SPECIMEN PAGE FROM SUMMARY IN TIME-BOOK.

Operation.	Men's time.		Horses' Time.	
	Hrs.	Value.	Hrs.	Value.
Plowing and cultivation (before planting).....	156½	\$28.02	428	\$42.80
Planting	32	5.34	37	3.70
Cultivation (after planting)	124	20.79	173	17.30
Hoing	73	18.45		
Shelling	8	1.20		
Protecting seeds from birds	5	.75		
Harrowing	9½	1.58	12	1.20
Cutting 16 acres hill corn with hoes	81½	15.21		
Shocking	20	3.85		
Hauling ear corn and some of the stalks	5½	.83	9	.80
Husking 82 bushels		5.00		
Silo-filling	286	51.00	201	22.35
	801	\$152.02	860	\$88.15
Silo-filling outfit and two men		23.00		
		\$175.02		

Total cost of cutting 15 acres and filling silo twice, \$111.56.

Cost per acre of cutting and ensiling corn, \$7.43.

Cost per ton of silo capacity (estimated), 74c. Total labor cost (men and horses) of growing 16 acres hill corn, ensiling about 15 1-3 acres, and husking the balance, \$263.17.

Total labor cost per acre of growing and harvesting corn crop, \$16.44.

Total labor cost per ton of growing and storing silage on about 15 1-3 acres (estimated), \$1.65.

(Note.—The cost of filling our silo, while lower than many authorities have calculated, was, nevertheless, higher than it might have been, for several reasons. Some time was lost through refilling, through bad weather at the second filling, through the stalks having been badly bent by an August gale, and through having six teams the first day, whereas four were found plenty to keep the outfit going. The corn was cut in three quarter inch lengths.

Crop Production.

It matters not what line of farming you are following, or choose to follow, there is no getting away from the fact that crop production is the foundation upon which all the many phases of agriculture rests. The live-stock or dairy farmer must, to be most economical, produce as much as he can of the feed which his stock consumes. It stands to reason that the grower can produce the feed at less cost than if it goes through the hands of one or more feed warehouses, each adding its commission. The fruit farmer and market gardener are, like the grain farmer, entirely dependent upon the crop in which they are specializing, and so must pay particular attention to all the details, that the crop may be a good one. All the produce of the farm must come from the soil, and upon the condition of the soil, the kind of seed sown, and care given to the crop while growing, depends to a large extent the amount and quality of the yield. True, the weather conditions and amount of rainfall play an important part, but if the greatest precaution is taken, by thorough fertilization, cultivation and good seed, to guard against loss from unfavorable conditions of heat and drouth, these banes of the poor farmer are not so severely felt. One must always be prepared for a bad season, and if the preparation is sufficiently thorough, little fear need be entertained about the outcome. The farm which is in a poor state of cultivation, and is seeded to poor, shrunken, light, dirty seed, scratched in on the surface with worn-out implements, and receives poor care during growth, is usually harvested in a slipshod manner, and the stream of grain which runs from the spout of the threshing machine is usually a short and small one, composed of an inferior quality of seed which sells for a low price on the market, or, if used for feed, is of such poor quality as to require larger quantities, which are often not given, and thin stock or short milk supplies result. The farmer becomes discouraged and more careless, and as a result his crops become lighter and lighter from year to year, until a bad season arrives and puts a stop to the process. Failure or success depends on the crops, and crop production depends largely upon the man in charge.

What can be done at this season, when the frozen ground is covered with snow, to insure

heavier crops next summer? There are several little things which can be attended to, and a few of them are "big" when the results are noted. What better time is there than now to select the seed for the coming spring? Everyone agrees that there is no time like the present, but many do not avail themselves of the opportunity. Selection in the field would be a better beginning, but where this has not been done, a selection of the best seed in the best bin from the best field cannot help making a difference in the stand of the coming crop. Get the fanning mill going before the grain has dwindled to a small amount, scarcely more than is required for seed. Clean and reclean, and, where possible, for small acreages, even hand picking may be profitable. Is seed selection profitable? Would you consider anything which can be done with so little labor, and at a time when other work is not pressing, and which will add to your crop yield twenty per cent., profitable? Experiments have proven this. Why not take advantage of it? It stands to reason that plump, heavy, uniform seed will insure a better germination and, with the better germination, stronger plants, resulting in a more uniform stand and ultimately a larger yield. It is the large yield you are endeavoring to produce, and what easier and more effective method can you conceive than the cleaning the worthless, shrunken, weak-germed seeds out of the seed grain. Use the screen and plenty of wind. Blow out all the light kernels, and screen out all the medium to undersized, leaving only the large, plump seed.

While doing this, think of how you can improve your rotation next spring. The winter offers an opportunity for thinking and studying, and the summer for trying out the plans. Only a small percentage of our farms are handled under a rotation system, and when it is known that such a system has actually increased the returns from some farms fifty, sixty, and even one hundred per cent., such a practice is surely worth a trial. Make an effort so to lay out your crops as to start a suitable rotation for your farm. Three or four-year cycles have proven the best, with one hood crop, one cereal and one clover crop, or, in the longer period, two hay crops, or one hay and one pasture. Think about this now. Try it in the spring.

The farmyard manure is a great boon to your crops, and the treatment of it is a matter which concerns all farmers at the present time. If there isn't too much snow in your district, a good plan is to draw it green and spread it over the land as fast as it is made. Where the snow is deep it should be piled, if drawn on the land, in fair-sized heaps, to be spread as soon as the snow goes. The drawing of a large portion of this material in the winter is a labor-saving practice, and gives good results in following crops. If the manure is to be held, place it in a shed where the cattle can run over it and keep it tramped. This will prevent it from becoming fire-fanged. Many farms do not even have a shed. In such cases, less loss from run-off and leaching will follow the application of the manure in the green state; but where this is not done, take the precaution to carefully pile the manure in the yard in a place where it will be removed from the cave soilage, and where there is least likelihood of leaching. If it is impossible to haul the manure in the winter, a shed for storing it would be a profitable investment.

These are only a few of the main points which are now seasonable in regard to the growing of heavier crops. There are many other so-called "little things" which can be attended to at this season of snow and ice, and when all are combined, it is generally shown that the winter is a big consideration in crop production, when properly employed.

Trim the Corners of the Wick.

Editor "The Farmer's Advocate":

I noticed where a subscriber was telling how to prevent lantern glasses breaking. I had the same difficulty myself until I solved the problem by the manner in which I trimmed the wick. After cutting the wick off squarely, clip the corners slightly. I have found, by this method, that we have a nicer, fuller blaze, and have never lost a glass by overheating since. Try it.
Kent Co., Ont. E. C. McGEACHY.

THE DAIRY.

Outlook for Butter and Cheese Industries.

At the recent Dairymen's Convention, J. A. Ruddick, Dominion Dairy and Cold-storage Commissioner, again discussed the outlook for our Canadian butter-and-cheese-making industries. In these days of improved transportation, with trade routes established which bring the ends of the earth together, it is absolutely necessary, he claims, that we should know what is being done in other countries, if we are to determine with any degree of accuracy as to the best policy for the future of the industry in Canada, said Mr. Ruddick, in opening his address.

The hot, dry weather which prevailed in Great Britain and on the Continent of Europe the past summer caused a great shortage in milk, thus the output of cheese and butter was reduced, and the imports from France and Belgium fell off one-half. The production in Canada showed a shrinkage, and the unexpected decrease in shipments from New Zealand resulted in very high market prices. The United States sent over 16,000,000 pounds of cheese to Britain. This caused a surprise, as it was thought they would soon be importers, but stocks of butter and cheese are now very light in the United States, and there has already been an advance in prices, which are now too high for export trade, and the home trade has increased because of the low prices, so that the quantity exported from the States during this year will likely be very much smaller than it was in 1911.

The total quantities of different dairy products, including cheese, butter, casein, cream, fresh and condensed milk exported from Canada was practically the same for 1911 as for 1910.

The value of Canadian exports in 1911 was nearly a million dollars more than in 1910, being \$24,716,967, and we exported 168,256,026 pounds of cream, 9,753,386 pounds of butter, 1,172,268 pounds of casein, 6,209,162 pounds of condensed milk, 291,250 pounds of fresh milk, and 1,073,765 gallons of cream.

Owing to the low prices in the United States, the exports of cream have been much less than they were in 1910, but with normal conditions again prevailing, the United States demand for cream may easily reach, or even exceed, its former proportions.

The total value of our exports has shown an annual increase for the past three years, and for the year ending Nov. 30th last, it is under seven million dollars less than it was for the record year of 1903.

Against this decrease we have the increase in home consumption, which is at least \$25,000,000 a year more now than it was in 1903. This would leave a net increase of over \$18,000,000 in the annual production. It is said that the number of milk cows is less in Ontario than it was a few years ago. There has been a very great improvement in the average yield of milk; there is more milk now being produced in Ontario than ever before. This is due, in part, at least, to the Cow-testing movement.

Australia and New Zealand are likely to be our greatest competitors in dairy products. In 1903 these countries shipped 10,628 tons of butter to the United Kingdom, and in 1911, 60,247 tons, showing an increase, in eight years, of 49,619 tons (one ton equals 2,240 pounds).

About 75 per cent., or, to be exact, 44,395 tons of butter came from Australia in 1911, as against only 1,053 tons in 1903.

In cheese, there is the same story to tell. In 1902 these countries exported to Britain 2,710 tons and in 1911, 20,873 tons, an increase of 18,163 tons. Practically the whole of the cheese comes from New Zealand, Australia having sent only 1,935 tons during the whole ten years covered by the table.

In 1902 Canada sent 76,297 tons of cheese to the United Kingdom, and in 1911, 76,457 tons; and the figures of the entire period show a de-

crease in Canadian exports, from 1904-1910, of 18,645 tons, while New Zealand's exports increased 18,540 tons.

Mr. Ruddick said that he believed that Australasia is destined, in the not distant future, to take first place in the international trade in dairy products; or, in other words, that the combined exports of butter and cheese from Australia and New Zealand will exceed in value, before many years, the exports from any other country. The old practice of sheep-ranching is giving way to dairying in those countries, mechanical refrigeration is aiding the industry, and the slow growth of population makes it possible, with the rapid increase in production, to export enormous quantities. The rapid growth of population in Canada, most of which does not go into dairying, has had the effect of increasing our home market and decreasing our exports. Mild winters in Australia favor heavy winter production, and the long pasturing period is also favorable. Of course, in a bad season, cattle suffer much from drouths.

The imports of cheese into the United Kingdom were the smallest last year since 1908, and amounted to 110,709 long tons. If we take into account this decrease in the imports, along with the big shortage in the production in England and Scotland, on account of the prolonged drouth last summer, it would seem as though the statistical position of cheese was very strong for the coming season. The United Kingdom is, next to the United States, the largest producer of cheese in the world. The home production exceeds the total importation by many thousands of tons, and, therefore, a small percentage of shrinkage amounts to a large quantity in the aggregate.

The imports of butter, on the other hand, have increased as much or more than the decrease in cheese, if both were reduced to their equivalents in milk. It may be of interest to state that the annual importation of butter into the United Kingdom is from 200,000 to 220,000 long tons.

Germany is now an importer of dairy products. Canada's home trade must increase over \$2,000,000 yearly, including milk and all its products. This means that our home market absorbs probably \$25,000,000 more of the dairy production than it did ten years ago. The total home trade, including milk, cannot be far from \$80,000,000 a year, and, therefore, it is much the most important market that we have.

The United Kingdom absorbs more dairy products yearly, the home market in Canada is expanding with the increase of population, and the likelihood is that the United States will soon be importing; the quality of the products is improving, and all points to a greater future for the business.

The most outstanding feature of the dairy trade at the present moment is the growing demand for milk for the larger towns and cities. It is quite as noticeable in Canada as elsewhere. Winnipeg is now obliged to obtain a large quantity of milk daily from such a distant point as St. Paul, Minn. The demand in Vancouver is closing many of the creameries in the Fraser Valley. The same thing is occurring in other parts of the country.

The increased per capita consumption of milk and cream is very large, not only in Canada, but in all countries where these articles are included in the daily dietary of the people. The improved sanitary conditions surrounding the production and distribution of market milk have given a great stimulus to its use, and there is still much to be accomplished in that direction.

The conditions do not point to any danger of overproduction, and the outlook for dairying in Canada, said Mr. Ruddick, is as good as, if not better, than it ever was, and it seems to be particularly bright for the coming season.

NEW ZEALAND'S CHEESE, AND CANADIAN TRADE.

New Zealand cheese begins to arrive in England a little after the close of the manufacturing season in Canada, so it supplies, to some extent, the demand which formerly existed for Canadian cheese during the winter months.

The point Mr. Ruddick emphasized was this: When the quantity of New Zealand cheese becomes large enough to supply the consumptive demand during the time it comes on the market, say from November to June, Canadian cheese will have to be consumed very largely during the period in which it is produced. The effect of this is already felt to a limited extent. Our cheese are needed more than ever for immediate consumption. That being the case, they should be well cured before we put them on the market. They should be more mature now than was necessary under the old conditions, when they were held much longer in storage.

New Zealand cheese is all cool-cured, and is landed in cold weather. Canadian cheesemakers, by adopting the cool-curing principle, can meet this advantage on even terms. The process of shipping green cheese is suicidal. They must be more mature. A good reputation for quality of product is essential, and our cheesemakers must be careful to put out the best possible.

What Cow-Testing Has Done and Will Do.

"If each cow in the herd does not pay, the fault lies in ourselves not in the cows," said Chas. F. Whitley, at the Eastern Ontario Dairymen's Convention, speaking of the present value of cow-testing. This being true, the remedy is obvious. Give cow-testing a trial. The work is simple. It requires less than ten minutes a month for each cow in the herd to take samples and keep weight records. The avenue of success lies through the gate of decision, and along the main road of endeavor and persistence our mental ear should be unstopped and alert to this call of modern common-sense dairying.

What is the paying basis for a cow? If we agree that it takes \$40 to feed a cow, then with milk at \$1 per 100 lbs., the mature animal must give over 4,000 lbs. before she returns a profit of even one cent. Do all your cows give over 4,000 lbs.? On examining the records of 1,600 cows for the last year, he found that 35 gave less than 4,000 lbs.; that is, 7 out of every 20 cows scattered over several counties could not be said to yield any profit above the cost of feed.

CONTRAST BETWEEN TWO ONTARIO HERDS.

11 cows (Lanark).
Average yield, 3,794 lbs. milk.
3.4 test; 131 lbs. fat.
Total yield, 41,737 lbs. milk.
1,445 lbs. fat.
\$5 profit per cow.

5 cows (Oxford).
Average yield, 12,068 lbs. milk.
3.3 test; 400 lbs. fat.
Total yield, 60,340 lbs. milk.
2,003 lbs. fat.
\$80 profit per cow.

Note that the 5 cows gave nine tons of milk and a quarter of a ton of fat more than the 11 cows.

Every time the 11 cows filled one factory milk can the 5 cows filled not one but three similar cans.

The 11 cows gave a bare profit over cost of feed, averaging only \$5, but the 5 cows gave an average profit of eighty dollars, thus one good cow equals sixteen of the poorer kind.

Dairy records show that some cows produce milk at a cost of 65 cents per 100 lbs., while others under the same roof run the cost up to \$1.20. "Cow-testing is of great immediate value, because for one thing it enables us to individualize, to detect unerringly the useless animated machine that does not produce milk economically. We don't want the kind that only turns out \$35 worth, while in the next stall is one keyed up to the tune of \$80 or \$100," said Mr. Whitley. The record system insures more intimate and analytical examination of cows, transferring the unit of value from the herd to the individual. "I have addressed this Association on this topic for seven consecutive years, and had the initial remarks been heeded even only three years ago, any dairy farmer might now be keeping cows, giving at least 300 pounds of butter or 6,000 or 7,000 pounds of milk," was Mr. Whitley's decisive statement.

Handling poor cows is a serious waste of energy. In milking alone, cutting the 35% of poor cows down to 20%, and allowing 60 hours per cow for 10 months' milking, it means a waste every year of 30 million hours in milking unprofitable cows. This is energy equal to that used in horse power for plowing 375,000 acres of land. A stupendous waste, which must be stopped. Testing is the remedy. It is the substitution of definite knowledge for mere guess work. Cow testing has increased the milk yield in Ontario 128 per cent.; in Quebec, 91 per cent.; in Nova Scotia, 278 per cent.; in New Brunswick, 70 per cent.; in Prince Edward Island, 300 per cent., and in British Columbia, 100 per cent.; and the present yield per cow in these Provinces, respectively, is: 8,000 lbs., 5,520 lbs., 7,835 lbs., 5,800 lbs., and 6,180 lbs. This shows that there is everything to gain from cow-testing. Cow-testing pays, and is of increasing value yearly. The factory patron wants the business cow, the "old reliable," that month after month rolls up a good record; one good cow will make more profits that can come from six poor cows. There is a sum of over twenty million dollars a year lying dormant in undeveloped cow quality in Canada. Cow-testing will make a good part of this direct profit to the milk producers. The practice will lengthen the factory season; will cause the stock and milk to be better cared for; will advertise the district; will increase cash income, and advance the estimation of the maker and progressive dairy practice.

POULTRY.

External Parasites of Poultry.

Practically all poultry are attacked by certain species of parasites. This infestation causes more loss to poultry-raisers than most of us imagine. Birds are seldom examined closely enough to detect the presence of parasites, unless these are present in large numbers. It is probably the irritation produced by these creatures, as much as the actual loss of blood and skin, that causes the poor condition of the birds. The parasites common on poultry may be divided into three groups: (1) Fleas, (2) lice, (3) mites. Fleas and lice are true insects having six legs, the same as all insects, but they belong to different orders. Mites are not insects, since they have only four legs.

Most mites work chiefly in the summer. An article on the ravages and means of control of the common red mite appeared in a June issue of "The Farmer's Advocate." A variety of mite that causes much trouble both in winter and summer is the Scaly Leg Mite, producing the disease known as "scaly leg." This mite hides under the natural scales on the legs, and the irritation produced results in the formation of the scaly growths.

Treatment.—First clean the house, and use liquid lice-killer freely about the roosts, etc., to prevent the spread of the disease. To effect a cure, use an ointment composed of one teaspoonful of coal oil mixed with a cupful of lard. Rub some of this well into the scales several times. Another method is to dissolve as many naphthalene flakes as possible in some coal oil, and then dip the bird's legs into the solution every two or three days until the scales are easily removed. Three or four applications are usually sufficient to cure the worst case.

Fleas belong to the same order as the common fly. They feed on blood, but only one species, the bird flea, lives continually on its victim. The common hen flea thrives in muddy runs and straw nests, and so is not likely to be troublesome in the winter time.

There are eight or nine species of lice attacking the bodies of poultry. They resemble one another in appearance, but every variety but two has a particular region that it frequents, and it is seldom found away from the preferred location. The two varieties that are exceptions have no special feeding-ground, and are known as wandering lice. They are, however, most common among the fluffy feathers of the abdomen. They travel from fowl to fowl at night, and sometimes get onto human beings handling the birds. The other species favor the head, neck, rump, under the wings, and the abdomen, chiefly.

Lice have not piercing mouth-parts, and do not, as most people suppose, suck the blood of their victims. Their mouths are constructed for biting and chewing, consequently sucking blood would be impossible. They chew and bit the feathers and the scales of the skin, causing so much irritation by their running around and scratching the skin with their sharp claws and jaws that the fowls often become sick. Lice spread quickly from an infested bird to the rest of the flock, and may also carry disease germs with them. Lice are most fatal to chickens, but practically every mature bird is more or less infested with lice. An odd louse or two on the birds need not cause any worry, but where present in considerable numbers, remedial measures should be taken. It requires a quick hand and eye to detect lice, if present only in small numbers; hence, if a farmer can find lice quite readily, they are in all probability rather numerous. The fact that fowls are infested, even when the owner thinks they are free from vermin is generally proven when the birds are killed and plucked.

Prevention.—A dust-bath is one of the best means of keeping the pest in check. The bath which hens seem to enjoy most is fine, soft, slightly-moistened earth. If a box of this is placed in one corner of the house, they will dust themselves so frequently that the parasites are made very uncomfortable, and will seldom prove troublesome.

Remedy.—By dusting every bird carefully with insect powder, preferably one containing considerable tobacco dust, they can be cleared of vermin, but a homemade insecticide is usually cheaper and equally effective. One good powder is composed of ½ ounce strong carbolic thoroughly stirred with 1 peck of freshly air-slaked lime. Another good dusting powder is made of equal parts of sifted coal ashes and tobacco dust, with a small quantity of any strong liquid lice-killer that will thoroughly mix with the ashes and tobacco dust.

In using these powders, it is necessary to work them well into the skin, so as to smother the lice. The applications will have to be repeated several times, at intervals of about a week to destroy the young lice that hatch from the eggs or nits about a week after they are laid. Liquid lice-killer should also be used on the roosts and

the dropping-boards to prevent the lice spreading to any untreated birds.

All parasites flourish most on unhealthy birds, and when a bird is seen to be in an unthrifty condition, it ought to be examined and treated carefully. They also flourish in damp, dirty, dark, badly-ventilated quarters, and when the birds receive too uniform or insufficient food. Therefore, remedying bad existing conditions is essential.

The poultry-keeper will find that, by keeping the pens and roosts clean, and by preventing the inroads of vermin, his birds will grow and fatten more quickly, will require less food, the hens will lay much better, and his profits will be larger.

Middlesex Co., Ont.

C. W. S.

Laying and Breeding Stock.

THE SELECTION AND CARE OF BREEDING STOCK.

The poultry industry has made rapid progress during the last few years, and has already taken its place as one of the great branches of Ontario agriculture. Statistics collected by the Bureau of Industries show that in Ontario, during the year ending June 30, 1911, over 5,000,000 birds of various kinds, but principally chickens, were sold or killed. This was an increase of nearly 850,000 over the preceding corresponding year.

In past years, the breeding of chickens has been carried on in a very unscientific manner—a practice that has been the source of much loss in poultry-keeping. The usual practice is to allow two or three males to run with the whole flock throughout the entire year. Occasionally one of them is traded with a neighbor for another one of different strain. The result is that many more eggs than are needed for hatching purposes are fertilized, but often very poorly. This state of affairs accounts for many of the weak, puny chickens hatched, as well as for the unfertilized eggs, or those containing dead germs.

In exhibition birds, most of the attention is devoted to appearance. In general-purpose or utility stock, constitution and performance should be the important consideration. For this reason a high-priced exhibition bird is not always a valuable requisition to a flock intended to produce eggs and meat. On the other hand, the practice of not introducing any new blood, or very little is likely to prove much more disastrous. For the ordinary farmer, who is not an experienced or efficient poultry-keeper, the process of in-breeding, or the continued breeding together of near relatives—for this would be the result if new strains were not secured—is not to be recommended. In-breeding intensifies the good qualities of a particular strain, but it acts similarly with the weak and undesirable characteristics. Consequently, if the male or females are weak in constitution, the vigor of the offspring will rapidly deteriorate.

The more advisable course would be to buy a first-class bird from some breeder or farmer who has reliable utility stock of the desired breed. If the farmer who intends paying some attention to the poultry side of farming has a nondescript flock of mongrels, it might pay him to buy several settings of good eggs in the spring, and to replace his mongrels directly by pure-breds, and buy a cockerel or two for the next year.

Whatever be the course adopted or the breed selected, several points hold good in the selection of birds for the breeding pen, if the results are to be satisfactory:

1. All birds must be well matured in growth, healthy, vigorous, and free from hereditary weaknesses.

2. The birds, both male and female, should be of medium size for the breed. The large, coarse birds are not the best, as a rule. The male is generally a couple of pounds heavier than the female.

3. They should be of the low-set, blocky type, with short, straight legs, set well apart; full breast, broad back; short, stout, curved bill, and bright-colored eyes.

4. They should have light-colored legs, free from coarse scales and stubs.

5. They should be of a uniform shape, and pure-bred, if possible.

The male bird should have strong masculine characteristics; that is, he well spurred, always ready to fight any intruder to a finish, very gallant and attentive with the females in his charge, and always dancing and showing himself off. His plumage, especially the hackle, saddle and tail-feathers, should be rich and abundant, and his crow loud and clear, indicating good lungs.

The hens, on the other hand, should have an entire absence of masculinity. A "cocky" hen, or one on which spurs are noticed, seldom makes an egg record that would justify keeping her, much less giving her a place in the breeding pen. From ten to fifteen promising-looking females, chosen from the flock, should be mated with the best male obtainable—the number of hens depending on the activity of the male. The birds are mated twelve or fourteen days before the eggs for

hatching are required. The birds for breeding should have particular attention during the winter, but the hens should not be expected to lay heavily, as the first eggs laid are considered preferable for hatching. They should have dry, bright, well-ventilated houses at all times, but particularly during the winter.

If convenient, when the weather becomes warm, the breeding pen may be housed in a colony house and placed away from the rest of the flock, where they can obtain plenty of outdoor exercise and animal food, without any expense for fencing or animal and vegetable food.

In securing fertile eggs containing healthy germs, the fowls must have (1) exercise either in an outdoor range or in bright, dry scratching pens, the floors of which are covered with three or four inches of chaff or clover; (2) three meals a day in cold weather, two in warm. The third meal usually takes the form of a mash, preferably of mixed meals, table scraps and a little skim milk. In the absence of milk, use water. Mixed grains, oats, wheat, corn, barley, buckwheat, etc., scattered in the litter, constitute the other two; (3) animal food—scraps, green-cut bone, liver—should be fed in small quantities every other day; (4) vegetable food—mangels, turnips, alfalfa, cabbage—should be fed every day. When on a range in the spring, this, as well as much of the animal food, will be picked up by the hens. (5) Grit—coal ashes, sand, broken crockery—and shell-forming material—lime, broken plaster, oyster-shells—should always be before the hens. (6) The hens should be kept in moderate flesh; an overly-fat hen will seldom lay. Grain goes chiefly to produce heat and fat, hence the need for vegetable food, if eggs are desired.

Middlesex Co., Ont.

C. W. S.

APIARY.

Co-operative Experiments in Apiculture.

At the annual meeting of the Ontario Experimental Union, Morley Pettit, Provincial Apiarist, O. A. C., Guelph, presented a report on "Co-operative Experiments in Apiculture," of which the following is a summary:

During the season of 1911 the following co-operative experiments were sent out:

1. The prevention of natural swarming in the production of extracted honey.

2. The prevention of natural swarming in the production of comb honey.

3. Races of bees—general.

4. Races of bees—with reference to their power to resist European foul brood.

The materials for No. 1 and No. 2 were circulars describing improved methods of management by which the natural swarming of bees could be greatly reduced, if not prevented entirely. The material for No. 3 and No. 4 were queen bees of improved races, sent to experimenters for testing.

In reference to European foul brood, which is causing thousands of dollars' damage by the destruction of bees, and the consequent loss of honey, fruit and seed in Welland and in some of the Eastern counties, it is well established that certain races of bees are better resisters of this disease than others. Some few strains of Italians have been found by experts to be practically immune. Others are good honey-producers, but have not been tested in this respect. Experiment No. 4 was sent out for this purpose, and will be reported on next year.

The Prevention of Swarming.—This experiment was very successful, as the experimenters were able, by the method taught them, to reduce natural swarming, with all its attendant loss and inconvenience, from 70 per cent. to 24 per cent. of the number of colonies kept. At the same time, the average crop of honey was increased by 11 pounds per colony. This means that, if the 991 colonies, spring count, owned by the experimenters had all been managed according to directions, their honey crop would have been increased more than 10,000 pounds in the aggregate. The increase of colonies by natural swarming cannot be counted on the other side of the sheet, as this could be made artificially, if desired, without extra expense.

Educational Value.—Numerous notes of appreciation were received from experimenters, stating the great benefit they had derived from the work.

Experiments in these and other lines will be continued during 1912.

Abreast of the Times.

Enclosed find remittance for two subscriptions for one year, my own renewal and a new subscriber. "The Farmer's Advocate" is the best farm paper yet. Could not get along without it now, as it is always abreast of the times. The Christmas Number is a great credit to any publisher—the best yet. Wishing your paper every success for 1912.

Oxford Co., Ont. JAS. BRECKENRIDGE.

GARDEN  ORCHARD.

Topical Fruit Notes.
VARIETIES OF PEARS.

In considering the planting of the fruits for the coming spring, it seems to me that the pear is one of our fruits that is worthy of more attention than it usually receives. When properly grown, it is a delicious and desirable fruit, and there are few more tempting to the palate than a well-ripened Bartlett or Sheldon pear. As prices were last year, there are few fruits that pay better. There is a large and growing demand for pears by canning factories, especially for the Keiffer, for which 1½ to 1¾ cents per pound was paid last season. Bartletts No. 1 and No. 2 brought 40 to 45 cents per 11-quart basket, and other fall and winter pears 35 to 40 cents for same package.

In Ontario, according to a Provincial Fruit Division report, the pear may be grown commercially in the Lake Ontario counties west of Toronto, in the Niagara Peninsula, in the Lake Erie, Lake Huron and Georgian Bay counties. It is a little more difficult to grow than the apple, and suffers more from neglect. The "fire blight," a disease caused by bacteria, is very disastrous to the pear, and from the pear psylla and San Jose scale it suffers considerably unless carefully sprayed. However, under ordinary circumstances it does not require more attention than most other fruit trees.

It will thrive on a variety of soils, but the ideal one is a clay loam which is somewhat retentive of moisture, and with a porous and well-drained subsoil. Bailey claims that, on sandy and loamy lands it tends to be short-lived, and that it thrives best on a rather hard clay. With us it does not do well on a hard, compact clay, as it produces little wood growth, and seems to be more subject to blight than when grown on a clay loam. It is also claimed that an over-luxuriant growth of wood makes the pear more susceptible to the blight, but this, I think, is somewhat open to doubt.

In the matter of choosing varieties, there is always a difference of opinion, but most growers agree that certain varieties are of outstanding value for a commercial orchard.

The Bartlett is the best pear, and it can be grown in all the districts above mentioned. The tree is a vigorous grower on loamy soils, a fairly early bearer and good cropper. The fruit is from medium to large in size, yellow in color when ripe, very juicy, and delicious in flavor. It is in great demand, and can always be sold at a very remunerative price. The season runs from the latter part of August to mid-September. Earlier than this, there are only two pears of commercial importance—the Giffard and Clapp.

The Giffard is our earliest pear of value, ripening, in the Niagara fruit belt, in the latter part of July. The tree is fairly vigorous and productive; the fruit delicious. Its value lies in serving the early demand, and thus should only be planted to a limited extent.

The Clapp ripens about mid-August, and this fills in between the Giffard and Bartlett. The tree is vigorous and productive, but subject to "blight." The fruit has a beautiful appearance, and is of very good quality, but with the serious defect that, if allowed to ripen up perfectly, it is very likely to rot at the core. This pear has also only a limited demand.

After the Bartlett, I would recommend, from local experience, the following, in their order of ripening: Howell, Flemish Beauty, Seckel, Bosc, Clairgeau, Duchess, Anjou and Keiffer.

The Howell is a regular cropper, and supplies the demand after the Bartlett begins to fall short. The quality of the fruit, however, is inferior.

The Flemish Beauty is very hardy for northern planting, and bears heavy crops. The tree is subject to "blight," and the fruit especially bad for "scabbing" and cracking. However, by attention and spraying, these defects can be overcome.

The Seckel is usually considered the gauge to the quality of flavor in pears, but, unfortunately, its small size prohibits the planting of it as a commercial variety. It has a certain demand for Northwest trade, but even this is limited. For a garden variety, it should never be omitted.

The Bosc and Clairgeau are two good pears for export. They are regular bearers, and the quality of the fruit is first-class, but it is doubtful if they have any features outstanding enough to commend them for extensive planting. They would supply the demand from mid-October to November.

The Duchess, for commercial value, probably ranks next to the Bartlett. Some prominent growers recommend it first from a money-producing standpoint, because it is generally productive, and sells well on account of its size. However, it is of indifferent quality, and would not satisfy a discriminating market. It does best as a

dwarf on rich soil. It is being planted to a considerable extent in the Niagara District.

The Anjou is a good winter pear—one that will keep well in cold-storage. It is very slow to come into bearing, but when it does start, it soon becomes a regular and heavy bearer. Do not plant these trees close together, with the intention of taking out alternate ones later on, for that will likely have to be done before the trees begin to bear.

The Keiffer is the main canning pear, and as such is paying well at present. For dessert, it has very poor quality, but when picked before ripe, and allowed to ripen off the tree, it will gain twenty-five per cent. in flavor. It is a very early and regular bearer.

As our trade in pears at present is mostly limited to Canada, and, unless very extensive plantings are made, likely to remain so for some time, the above list should be found fairly comprehensive. For export trade to England, we would have to add some other varieties. Oregon and Washington are this winter supplying Covent Garden markets extensively with Cornice and Winter Nelis. For the same market, Geo. T. Powell, of New York State, strongly recommends Josephine and Easter Beurre. W. R. D. Wentworth Co., Ont.

To Hold a Provincial Orchard Competition.

A meeting of the Directors of the Ontario Fruit-growers Association was held in Toronto on Tuesday, Jan. 11th, for the election of officers, etc., with the following results: President, D. Johnson, Forest; Vice-President, J. W. Smith, Winoona; Secretary-Treasurer, P. W. Hodgetts. These three, with W. L. Hamilton, Lorne Park and W. H. Dempsey, of Trenton, constitute the Executive Committee for 1912. An entire change of the Transportation Committee was made, the number being reduced, and the following appointed: W. L. Hamilton, Lorne Park; A. Onslow, Niagara-on-the-Lake; W. J. Bragg, Bowmanville; George French, Sarnia. This committee was given authority to engage a competent man to look after the collection of claims and to otherwise watch the fruit-growers' interests with the express and freight companies. The directors all felt that fruit-growers had not secured the advantages from the decisions of the Railway Commission that were coming to them, and many thought this was due to the Transportation Committee not following up the decisions of the Commission closely enough. The other committees were re-elected, with practically no change.

It was decided to conduct an orchard competition for the coming season, the Province to be divided into districts, and suitable awards to be given for the best orchards in each district. This competition will be carried out for four years, awards, however, to be made yearly, with final awards for the orchard making the best showing for the full period, at the end of the fourth year.

Many changes were made in the prize list for the apple show to be held next November. Prizes will be offered for half carloads and 50-box lots of Spy, Baldwin and McIntosh. Some of the varieties now on the list will be eliminated, so as to still further reduce the list of kinds that are recommended for Ontario planting. This is in accordance with modern orchard practice.

At the close of the directors' meeting, the representatives of the Dominion Conference, who were appointed last November, met and decided on the action to be taken in connection with the various resolutions which were forwarded to Ottawa, and the gist of which we published in November. Certain of the committee were allotted to bring forward each resolution, and will, between now and the conference, secure the necessary data. They will press for a number of changes which it is believed will further the fruit industry of the Province.

A Book for Apple Growers.

More and more, apple-growing is destined to become one of the most profitable and popular specialties on the farms of Ontario and the other Provinces of Eastern Canada. On this subject there is no better authority than The Canadian Apple-growers' Guide, by Linus Woolverton, who needs no introduction to "Farmer's Advocate" readers. The book embodies the best teachings of at least fifty years' experience, and farmers who are putting out new plantations of apple trees or renovating and renewing old orchards will find it invaluable, especially on the subject of varieties and methods of cultivation. It contains over 250 pages, generously illustrated, printed on good paper with readable type, and is well bound in cloth. Postage paid, the book costs \$2.25 per copy, but we have been fortunate in making arrangements so that readers of "The Farmer's Advocate" may secure a copy with the renewal of their subscription to "The Farmer's Advocate" for another year, for a total remittance of

\$2.75; or, any present subscriber, by sending us two new subscribers and \$3.00 will obtain a copy as a premium. Our readers interested in apple-growing should lose no time in taking advantage of one of these favorable offers.

California Grape-Storage Experiments.

United States Secretary Wilson calls attention to the very important advance accomplished this season in the progress of the table-grape storage experiments being conducted by the Bureau of Plant Industry of the Department of Agriculture. Two carloads of Red Emperor grapes were packed and shipped by Geo. C. Roeding, of Fresno, California, for holding in cold storage in accordance with the results of the Bureau investigations, with a view to testing the commercial application of the work. The sale of these grapes occurred the last week of December in New York and Chicago, where the fruit has been in storage for over two months, and very satisfactory prices were obtained, averaging \$2.57 per drum, or 8 to 9 cents per pound.

The Department grape-storage investigations were begun six years ago, with two objects in view: A study of the factors which affect the keeping qualities of table grapes while in transit and in storage, and the possibility of extending the marketing season of California grapes by holding them in cold or common storage, with a view to the possible replacing of the imported, fresh Spanish grapes with the California product. The importations of fresh grapes from Spain during the present season amount to nearly 900,000 barrels, which have sold at wholesale prices ranging from \$2.50 to \$7.00 per barrel, or from 5 to 15 cents per pound, the bulk selling at the lower price. Under ordinary conditions, most of the California table grapes must be marketed within a period of a little over two months, and early attempts to hold them in storage for the holiday markets did not prove entirely successful.

The Bureau investigations have shown the importance of handling grapes with care to insure their being packed in sound condition. It has also been found that it is impossible to hold the varieties of grapes that are commercially grown in California any appreciable length of time without a filler of some kind. The Spanish grapes are packed with a filler of ground cork. As this material is both scarce and expensive in California, special efforts were made to obtain a satisfactory substitute. Many different materials were tested, but only one has thus far proved satisfactory. This is redwood sawdust, which is a waste product of the California sawmills. Much to the surprise and gratification of the Department investigators, this material has proven superior in many ways to the ground cork. It is found that the grapes hold longer and in better condition when packed with the redwood sawdust. Great pains have been taken to corroborate the results, and the data have been consistent throughout. It was necessary to learn how to prepare the sawdust in order to have the grapes remain in attractive and salable condition. The sawdust must be perfectly dry, and the finer particles must be removed.

A number of varieties have been under investigation, and naturally their behaviour under storage conditions has been different. Of the varieties grown in commercial quantities, Red Emperor, Malaga and Flame Tokay have been found to hold best in storage. The length of time which these varieties may be held varies from 60 to 70 days for the Flame Tokay and Malaga, and from 90 to 110 for the Emperor.

In the commercial test of the application of this work during the present storage season, the grapes were packed in drums holding about 27 pounds, and the work of packing and shipping was done largely under the supervision of one of the Bureau representatives. The drums were forwarded from California to Chicago and New York under refrigeration, where they have been held at a temperature of 32 degrees in cold storage. The Emperors have proved to be the best for storage purposes, and form the bulk of the grapes sold for the Christmas trade. The best grapes of Flame Tokay may be held until Christmas, but the ordinary run of this variety will not hold in first-class condition beyond December 1st. The Malaga varies considerably in its behavior in storage, depending upon the conditions under which it is produced. Some lots of this variety have been held in first-class condition until January 1st in past years, while others are not safe beyond December 1st.

The value of this work to the grape industry of California is apparent, when the full significance of the extension of the marketing season is appreciated. The production of table grapes in California is increasing, and unless some way can be found either to broaden the area over which the fruit may be distributed, or to lengthen the marketing season, the industry will be face to face with a serious problem of over-production.

When it is considered that the United States uses large quantities of imported grapes, the demonstration of the possibility of replacing the foreign product by one home-grown is worthy of the most strenuous effort.

The possibilities of packing California grapes with the redwood sawdust filler for export are also recognized, and efforts are being made to extend the marketing area by this means. A small test shipment of California Tokay grapes shipped to England was made during the past season, and the fruit arrived in excellent condition. The sawdust pack in drums is well adapted to ocean transportation, because the necessarily rather rough handling aboard does not affect the grapes when packed in this way, while the ordinary open crates are too weak to withstand rough handling, and, in addition, the grapes deteriorate during a long trip, unless a filler is used.

It is expected that a considerable number of carloads of grapes will be packed for storage next season.

Are there in these experiments any suggestions of value to Canadian grape-growers, commercial or domestic? Readers' experience in storing grapes for autumn or winter use is invited. Wrapping in paper is a common method, but has anyone ever used sawdust for the purpose?

Orchard Notes.

This is a good time of year to prepare for the early spring work in the orchard. The tools for pruning should be looked after and put in good repair. If the farmer is not in a position to do his own pruning, he will do well to engage the services of someone in whom he has confidence to do this work. In this work it pays to take time by the forelock, as early spring usually brings such a multitude of farm work that the care of the orchard is liable to be overlooked till it is too late. When the tools are ready, and the farmer has the courage and skill to do his own pruning, he will find many an hour between now and next seeding when he may trim up his trees for their next summer's work. Further, the spraying apparatus should be gone over carefully, and all adjustments and repairs made. Every part should be examined, and the machine assembled ready for use on the instant. Further, the supplies for spraying should be secured and laid by for service. The importance of this is recognized when one remembers that the occasions on which spraying is efficacious are brief. Very often this essential work is not done simply because the material is not available when it is needed. Large districts suffered in this way last year.

Again, it is good practice to look over the trees as carefully as possible in the search for pests. Pieces of loose bark or leaves curled up snugly in the branches may be sheltering an enemy biding his time for mischief next summer. There are few perfect trees in any orchard, and a farmer who knows his business rarely looks at a tree without discovering some condition which he may remove or remedy. Pains taken in the orchard result in profits. W. S. York Co., Ont.

Nova Scotia Planting Suggestions

Editor "The Farmer's Advocate":

On account of the immense crop of fine apples in the Annapolis Valley in 1911, orcharding has received quite an impetus, and the planting of more apple trees will still go on. Perhaps not as many trees will be planted in 1912, for most farmers had more apples last fall than they could well take care of; and yet one and all realize more than ever that apple-growing pays better than any other branch of farming in the Annapolis Valley.

In a fruit belt, an enterprising farmer with one hundred acres of land could easily plant and look after fifty acres of orchard. If, on the other hand, he were situated in a district not well adapted for fruit-growing, or at least a district in which fruit-growing had not previously been attempted, ten acres, or even five, might be sufficient.

Other conditions being suitable, I would prefer a sandy or gravelly loam, situated on a northerly slope, as the soil and situation of my orchard.

If I were planting now in the Annapolis Valley, I should plant chiefly Gravenstein, King, Wagener, Baldwin, and Northern Spy.

I would buy only from reliable nurseries which try to employ reliable agents. In a large order, it might pay to buy directly from the nurseries. I would order early, so as to insure a selection of good stock. I prefer three-year-old trees for planting.

Unless land was very valuable, I would not plant closer than two rods apart each way, in a square, so as to leave plenty of room for spraying, picking, and for sunshine to reach all parts of the tree. JOHN DONALDSON.

King's County, N. S.

Try Onions.

Editor "The Farmer's Advocate":

I have not seen anything in "The Farmer's Advocate" for the vegetable-grower for months past, when all the papers were full of praises for the Ontario Horticultural Exhibition. The flowers, fruit and honey were praised up to the top notch, but not a word about vegetables. Why should this be, when, to my eye, those long tables of the finest vegetables that could be produced in any part of the world, were the best part of the exhibition? But we do not see alike. But when we think of the number of visitors that looked at those tables of vegetables—those onions, the largest ever exhibited; cauliflower and celery that no other country but Ontario can produce, it must have awakened the thought in some young men and boys that they would like to produce the like, if they had the science, or knew how.

Now, there is plenty of room in Ontario for beginners to try. There is a greater demand for good vegetables every year to supply our growing towns and cities, more especially with the easily-grown vegetables. The greenhouse supply pretty well equals the demand. There is always a good sale for onions, and almost every farm has suitable land to grow an acre or more of onions. For instance, part of that five acres at Weldwood to be planted with apple trees would be just an ideal spot to try onions on, and would be a much better paying crop than orchards No. 1 and No. 2 were this year. Mr. Editor, have your foreman try an acre, and give us your experience next New Year's. Onions can be grown on almost any soil, provided it is well drained and fertilized. The soil I would prefer is a rich sod, clay or sandy loam, worked to corn or potatoes last year. Clear of all rubbish, then put on about twenty loads of barnyard manure, and work well in, not too deep, but thoroughly incorporate the manure and soil with a disk. Then, when you think you have worked it enough, just go over about four times more with the levelling harrow, to be sure you are right. Get your seed ready then. Make up your mind which way you intend to cultivate—by hand or horse. If by horse, set ridges two feet apart, as you would for turnips. Keep ridges low. Be sure you get the best Globe Danvers onion seed. Try for the best seed every time. Then sow on ridge nice and thick, about four pounds of this best seed to the acre. If for hand cultivating, set your drill at the 15-inch mark, set drill to drop about six pounds of seed per acre, and run drill through. When you have finished drilling, if the land is in any way loose, foot-tramp back and forward on each row, or, for trial, leave a few rows not tramped, to see the difference, if any, in crop. Some will ask, why sow seed too thick? You know, the preacher says, "Sow sparingly, and reap sparingly." I have grown onions every year since the spring of 1868, and in that 44 years' experience, if I had a poor crop, it was when the crop was thin from poor seed or thin sowing. If rather thick, the onion will ripen without any thick neck. A thin sowing has a tendency to produce thick neck and poor quality of onion.

Now that you have finished tramping, if the soil is dry get the cultivator and run between the rows before you lose sight of the drill mark. Then the crop will start with the weeds. Sow any time you can get the soil ready. With us, near Toronto, from April 10th to May 10th; not later. Keep the cultivator run through crop once a week until July 10th, weeds or no weeds, then you will insure a good crop.

Now, you say, what is a good crop? The latest Federal statistics of onion production in the United States are those relating to the crop of 1898. Their average crop was 266 bushels per acre. The average crop for Ontario, 1909, was 312 bushels per acre, that taking nineteen counties, where most of the onions are grown. C. C. James, Deputy Minister of Agriculture tells us that the crops of Ontario might be increased 50 per cent., and we have no reason to doubt him. As a vegetable-grower, I would think a good crop, on good soil, well taken care of, would yield from 800 to 1,000 bushels per acre. Our president, T. Delworth, says he has had 860 bushels to the acre (see Vegetable-growers' Report, 1908, page 12). I have seen my neighbor, Brown, have at the rate of 1,000 bushels per acre, on rather strong clay soil. Those large onions, weighing from 2 to 3 pounds per onion, are grown on rather strong, clay soil. I mean those you see at the Ontario Horticultural Exhibition, that the newspaper men forgot to speak about.

What about the price of onions? What may we expect to make of our crop? The average price for the last ten years has been about \$1.40 per bag of 75 pounds. That is not so bad. Then,

what about an overproduction? Well, we have not had it for many years past. Onions are good sale in Toronto to-day at \$2.25 per bag. If we should have more than Ontario needs, there is a market across the line. The United States buys quantities of onions from Ontario, although last September some of the politicians said they did not. Now, I see by the Vegetable-growers' Report (1908), page 14, that the United States bought from Ontario 118,920 bushels of onions, and paid 40 cents per bushel duty on them, \$45,568, in the year 1905, and nearly every year they are after onions. The Ontario onions are the best that can be grown, possessing a quality and flavor superior to those of any other onion grown. So we need have no fear of a market for our crop.

Now, what about blight and such pests? Well, on soil that has not produced an onion crop before, it is most likely to be free from those troublesome things. A good treatment for the fly maggot is a pinch on the neck. But we sow, about May 24th, a mixture of air-slaked lime and salt, about six bushels lime to sack of salt, per acre, sown alongside the row. It will do no harm, and has a tendency to keep the fly away. If you keep the fly away, there will be no maggot. I need not say anything on harvesting the crop. Let's get it grown first, then ask me to come and see it. J. W. RUSH.

York County, Ont.

In regard to the special classes in box and barrel packing to be held at Guelph, Ont., at the time of the O. A. C. short course in fruit-growing, which commences January 23rd, we are advised that the instruction in box-packing will be given by Jas. Gibb, head packer of the Kelowna, B. C., Farmers' Exchange. The class in box-packing is dated for January 29th to February 3rd. The class in barrel-packing follows, lasting from February 5th to February 10th. These classes are conducted in a very practical way; while, for the regular short course, which concludes February 2nd, a meaty programme has been provided. Details appear in a fuller announcement in the back of this paper.

THE FARM BULLETIN.

Renewal Offer Extended.

Thousands of our subscribers have taken advantage of this Special Renewal Offer, but we want to see a great many more take advantage of it, and to this end are making the offer good till JANUARY 31st.

The offer is: For one new yearly subscription and your own renewal for 12 months we will accept \$2.00. For each new name in addition to the first one, we will accept from you \$1.00, the balance of 50c. being retained by you as commission. Or, if preferred, you may send in the new names, accompanied by the full subscription price of \$1.50 each (United States subscriptions \$2.50 per year) and have your choice of some of our splendid premiums.

About Ferrets.

Noticing in last weeks issue a request from "One Interested" about how to raise ferrets, I thought I would give you a little of my experience. A good pen, 3 x 10 feet, is required, giving them a good nest and plenty of room for exercise. A small box in one corner, with a small hole in one end, will do for the nest. They will breed twice a year, but usually once, bearing from four to nine at a litter. The female carries her young six weeks. They are born blind; their eyes open at from four to six weeks old. Wean them when they are from seven to eight weeks old, or when they are eating well. Feed on bread and new milk, mice, rats, rabbits. Never feed salt meat. A pinch of sulphur twice a week in their milk is good. Do not change their food from two weeks before they have their young until two weeks after. Keep clean. They are subject to foot-rot. Wash their feet, and apply vaseline. Allow one female to each pen during the breeding season. SUBSCRIBER.

It has been announced at Toronto that the Hydro-electric Power business will not be made a department of the Ontario Provincial Government, as proposed some time ago, but will continue as a commission, under the chairmanship of Hon. Adam Beck. The reason given is the extensions anticipated in the eastern and northern portions of the Province, and the machinery being available to carry out a much more extended project than was originally intended. We believe the proposed change has been wisely deferred.

Western Ontario Dairymen in Convention.

Ingersoll, the birthplace of the Western Ontario Dairymen's Association, and situated in the banner dairy county of Oxford, was, despite the unfavorable weather conditions which prevailed through the meeting, Wednesday and Thursday last, the scene of unusual activity during the forty-fifth annual convention of this Association. The cold was intense, and trains were running anywhere from one to three hours late. Nevertheless, a goodly number assembled, and interest never lagged. Those present were well repaid for coming. Many important topics were discussed by men who have made special investigation in the particular part of the dairy industry upon which they spoke, and who were thus in a very good position to set forth the facts of their subject, and it is facts that carry weight.

Several of the speakers dealt with the same topics as were assigned them at the Eastern Ontario Dairymen's Convention held the previous week at Campbellford, and a report of which appeared in our last week's issue. Two very important addresses, one by J. A. Ruddick, Chief of the Dairy Division, Ottawa, on "The Outlook for Cheese and Buttermaking Industries for Canada," and the other by C. F. Whitley, of the Dairy Division, on "The Present Value of Cow-testing," appear in this issue in the "Dairy" department. These are very instructive addresses, and readers interested in dairying would do well to read the reports of all the meetings carefully.

The one outstanding feature of the appeals made by the speakers was the need of extra endeavor to raise the quality of our dairy products. The best of our butter and cheese is of good quality, but what makers and patrons should strive to do is to "make all as good as the best." This was the keynote of G. G. Publow's speech on "Our Dairy Products in the Old Land." This slogan, if it may be called such, was reiterated by nearly all the speakers; and, while our output is of good quality, there seems to be plenty of room for improvement, and if the patrons and makers act upon the suggestions made by the speakers, there is no doubt but that an improvement in the quality of Canadian cheese and butter will be noticeable.

The need of more thorough cooling of cream on the farms brought out considerable discussion. Geo. H. Barr showed its advantages in a speech, the report of which was given in our last week's issue, and Frank Hens, the Secretary, in his report, suggested that the following resolution be passed:

RESOLUTION.

"That, whereas, in the opinion of this meeting, some definite temperature should be established for the delivery of milk sent to cheese factories; be it resolved that the night's milk for daily delivery be cooled immediately after milking to a temperature of 65 degrees or under, and that the temperature of this milk should not be higher than 70 degrees when delivered at the factory. If for any reason it is found necessary to mix the night's and morning's milk, the night's milk under these conditions should be cooled to a temperature of 60 degrees F., or under, immediately after milking, and milk so mixed should be delivered at the factory at a temperature not higher than 75 degrees F. To keep milk over Sunday for Monday morning's delivery, it is recommended that the milk be cooled immediately after milking to a temperature of 60 degrees or under, and held at this temperature until delivered at the factory."

The resolution was moved by J. N. Paget, and seconded by J. J. Parsons, and carried unanimously.

The real value of casein in milk was shown by Prof. H. H. Dean to be great, and, as it is essential in cheesemaking, he thought it should receive more attention.

The very complicated composition of milk was clearly set forth by Prof. R. Harcourt, and its value as a food impressed upon the convention. "It is not merely a beverage, it is a food of great value," said Prof. Harcourt.

C. Marker, of Calgary, showed the great advancement of dairying in Alberta, as an outcome of the method used there of paying for cream and butter according to grade. Most other products and articles are purchased according to grade or quality, and why should dairy products not be marketed on a similar basis? He showed that the system had worked out in Alberta very satisfactorily.

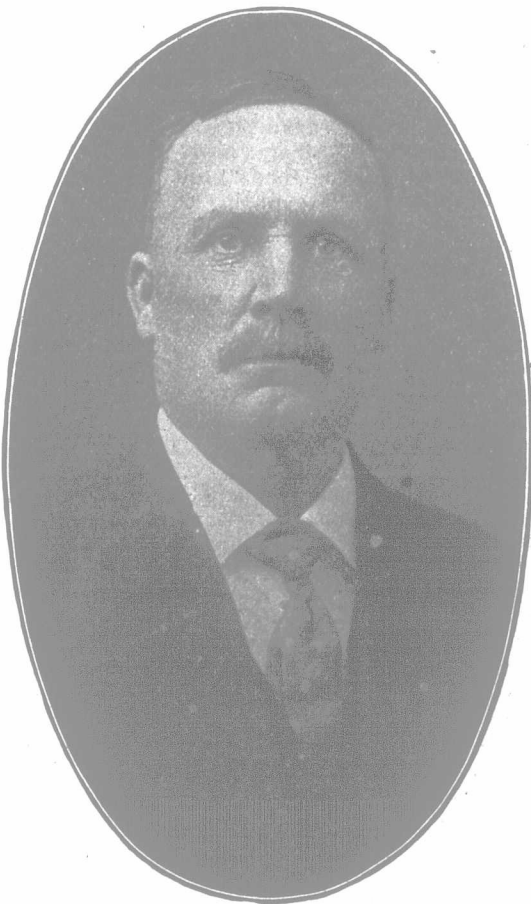
The raising of pigs is connected to some extent with the dairy business, and their housing and a discussion of feeding methods by J. H. Grisdale, brought out many useful hints.

A good feature of the convention was the large percentage of farmers present. It is encouraging to see the producers taking more interest in the work, for it is largely through their efforts that the makers are enabled to turn out a high-class product. The milk or cream must be properly handled from the beginning, if the premier quality is to be attained in the finished product.

As is always the case, great interest centered around the cheese and butter exhibition in connection with the meeting. The entries, while not quite so numerous as on some former occasions, were of the highest quality every seen at the exhibition.

The dairy-herd competition also showed good results, and the winners in both the cheese-factory and creamery classes again raised the standard for the amount of milk and butter-fat per cow over previous years. One hundred dollars in cash prizes was donated by the Association, and silver and bronze medals by Ryrie Bros., Toronto.

Dr. Coleridge, Mayor of Ingersoll, and Mr. Bachelor, President of the Board of Trade, in a few well-chosen remarks, welcomed the convention to Ingersoll.



D. A. Dempsey.

President for 1912 of the Western Ontario Dairymen's Association.

T. R. Mayberry, M. L. A., reviewed the dairy situation in South Oxford. He stated that condensaries in the constituency pay out three-quarters of a million dollars annually for milk; that there are thirty creameries paying out \$900,000 annually, and that much milk is shipped, so that the yearly returns from dairying on the 213,000 acres in the riding are \$2,000,000, or \$800 per acre, which he figures out to be \$55 to \$60 per cow. Eighty per cent. of the defects of the business, he believed, to be due to lack of system in handling the milk, and he thought it was the duty of the cheese and butter makers and buyers to show the producers what to do, and he believed the latter would comply with their suggestions.

Dr. Creelman, President of the O. A. C., reviewed the work of the College as it applies to the farmers, showing that much good was growing out of the scientific research in the various departments of the work.

PRESIDENT'S ADDRESS.

President W. W. Waddell, in a few well-chosen remarks, welcomed those present to the forty-fifth annual convention of the Dairymen of Western Ontario. Ingersoll, the meeting-place, is situated in the noted dairy county of Oxford. It was in this section that the cheese-factory system originated. Here the first and one of the largest cheese was made and exported, which did much to advertise Canada and bring our dairy possibilities to the notice of the outside world, and more especially to the English markets, said Mr. Waddell. He outlined the changes in the dairy business which he has noticed since he attended the first convention in Ingersoll, forty years ago. The annual convention was then about the only source of instruction in dairy methods, outside of the practical training in factories. These were the foundations on which our dairy business was established. The necessity of producing a uniform quality of goods was then foreseen. Out of this grew the present splendid system of dairy instruction in force in Ontario. Prof. Arnold was the first instructor engaged to visit the factories, and at that time the only one; and from that small beginning, and from the splendid assistance given by the Federal and Provincial Governments, schools have been established and a system inaugurated which has reached every maker in our Province, and many of the producers, as well, and

we should not rest until every producer has been informed as to the best method of handling dairy products, said the speaker.

Prices the past season were low at first, but the market soon recovered, and record prices were reached on the boards. While unfavorable weather conditions had something to do with the high prices, the real reason for the advance was that consumers will have dairy products of good quality.

The decrease of 68,000 boxes in cheese exported, and the increase of 107,000 boxes of butter, was referred to, also the decrease in export of cream to the United States.

The outstanding feature of the dairy business at the present time is the scarcity of milk for towns and cities. This is having a serious effect on some cheese factories and creameries, but, on the whole, Mr. Waddell considered the dairy situation to be in a "most healthy condition," and no fear need be entertained as to the future market for dairy products.

He eulogized the work of C. C. Chadwick, E. Caswell, James Noxon, J. S. Hegler, Prof. Arnold, X. A. Willard, Harris Lewis, Harvey Farington, H. P. Lossee, Thos. Ballantyne, B. Hopkins, and others, who, in the early days of dairy work, gave their aid in stimulating the industry, and were largely instrumental in bringing about the present system of dairy instruction.

The financial statement showed the Association to be on a sound business basis. Total receipts for the year were \$4,981.85, and the total expenditure \$4,820.46, leaving a balance of \$161.39, which is \$83.25 more than was on hand at the beginning of the year.

DIRECTORS' REPORT.

The directors' report showed the membership of the Association to be 315.

It is expected that legislation will be put through at this session of the Dominion Parliament to amend the "Inspection and Sales Act" to include whey butter.

All competent factory operators were granted "Makers' Certificates" by the Ontario Department of Agriculture, and the plan is reported to be working out well, and is having a good effect on the business.

Undue competition between factories was believed by the directors not to be having a good influence on the business. They suggested that the manufacturers in the districts meet and decide on a respective territory, thus dispensing with the expense of having wagons from different factories hauling milk and cream over the same routes.

The tendency was also noticed, during the factory season, of a few producers to ship milk and cream away, thus weakening the local factories. The reducing of the output of these factories to any extent increases the cost of manufacturing, while those who do not patronize the home factories may not at certain seasons of the year get a profitable increase in price, especially if the local factory is obliged to close early in the season, owing to curtailed milk supply.

Several new factories have been erected, and many improvements made, and the dairy-herd competition and dairy exhibit have again been a decided success. The work of the instructors is resulting in gradual improvement in both the raw material and the finished product, and the year 1911, on the whole, has shown marked advancement.

THE REPORT OF THE CHIEF INSTRUCTOR AND SANITARY INSPECTOR FOR WESTERN ONTARIO.

Six instructors were employed for cheese, and two for creamery work. Some July and August cheese were somewhat rough-textured and acidic. Some May cheese were considerably heated, but the fall cheese were of exceptionally good quality. Fewer complaints were heard than the previous year.

In 1910, 33,617,847 pounds of cheese, or 420,223 boxes of 80 pounds each, were made in Western Ontario. This is 2,148,153 pounds less than in 1909. The returns for 1911 show twenty-five factories making more cheese, twenty-five the same amount, and one hundred and forty-four less than in 1910, which indicates a decrease in 1911, compared with 1910. It required 11,078 pounds of milk to make a pound of cheese in 1910, or .012 of a pound less than in 1909. The net price to patrons in 1910 was 10.68 cents per pound, or .74 cents per pound less than 1909, while in 1911 the average price was the highest in the history of the trade. The average temperature of curing-rooms was 71 degrees in July and August. The number of cheese-factory patrons was 13,004, or 2,071 less than last year. The average percentage of fat in the milk was 3.44, a decrease of .06 per cent., compared with 1910. The warm weather caused the delivery of considerable overripe and gassy milk at the factories. The dry, hot weather caused a decrease in milk supply at several factories, and, while little general improvement was noticed, there seems to be less difficulty with yeasty and bitter milk. The average loss of fat in whey was .216 per cent.

One hundred and ninety-four factories were visited by inspectors, 514 full-day and 535 call visits being made. Only twelve factories made casein and shipped cream, while 7 made butter exclusively, and 7 made both cheese and butter. Five factories made whey butter, and 564 patrons were called on. These patrons bought 1,829 new milk cans the past season. Sixteen factories have ice-cool-curing-rooms, and five others have sufficient insulation to control temperature. Thirty-two factories, an increase of five, paid by test. Ninety-two factories pasteurized whey, and 157 are kept clean and in a sanitary condition. General improvements to the value of \$30,814 were made.

Experiments were carried on with cooling milk, with the following results: In every case the cooled milk made a greater quantity and a better quality of cheese than the uncooled milk delivered by the same patrons the previous day. The cooled milk arrived at the factory with less acidity, was not gassy, and there was a less loss of fat in the whey. The greater yield of cheese from the cooled milk increased the value about 3 cents per 100 pounds milk.

SALTING CURDS WITH DIFFERENT AMOUNTS OF SALT.

Buyers frequently call attention to the fact that some makers are inclined to apply more salt to the curds than is necessary during the warm weather. When the curing-rooms are very warm, makers can hardly be blamed for salting sufficiently to keep the cheese close, but this may be overdone. At the district meeting last year, during a discussion of this subject, it was suggested that experiments be made on this point at the Dairy School, and under factory conditions. The cheese made at the factory are here to be examined by those who wish to do so.

On July 29th, one vat, containing 7,338 lbs. of milk was taken for the experiment. This made 876 pounds of curd, which was evenly divided into four lots of 219 pounds each. These lots of curds were salted, respectively, 2, 2½, 2¾, and 3 pounds of salt per 1,000 pounds of milk. Each lot of curd was again divided at the time of going to press, making two cheese each—in all, eight cheese. Four of these cheese, representing different amounts of salt were taken direct from the press the following day to the cool-curing room and held at an average temperature of about 60 degrees. The other four were left in the factory curing-room for 15 days, at an average temperature of about 80 degrees, and then taken to the same cool-curing room, where both lots have since been kept. These cheese were weighed when taken from the press, and again in 15 days, and the shrinkage under both methods of curing calculated. They were scored by experts on August 18th and on October 4th, and the average of these scores taken. Samples for moisture and fat were taken at different times. The following were the conclusions arrived at:

The cheese salted 2 pounds per thousand pounds of milk, and held in the ordinary curing-room for 15 days, went decidedly off in flavor, while the duplicate cheese placed at once in the cool-curing room retained its flavor about as well as those salted higher.

The cheese salted 2½ pounds was in no case better in flavor, while the texture was crumbly and inferior to those salted 2½ and 3 pounds.

The score of the cheese indicates that 2½ pounds was about as effective as 2½ pounds, and superior to 2½ pounds.

The cheese salted 2 pounds scored slightly higher, but this was only true of those put in the cool-curing room at once.

There was a slightly greater loss in pressing, and it took slightly more pounds of milk to make a pound of cheese from the curd salted 2½ pounds.

There was a decidedly greater shrinkage in weight of cheese held in the factory curing-room for 15 days, compared with those placed in the cool-curing room for the same length of time.

The per cent. of moisture was slightly less in the high-salted cheese, while the per cent. of fat was slightly higher. There was a decided difference in the quality in favor of the cheese (especially flavor and texture) placed in the cool-curing room at once, compared with the duplicate cheese held in the factory curing-room for 15 days.

This work indicates that it is not advisable to oversalt curds during warm weather. It is well, however, to point out that it is possible to go too far the other way, and undersalt the curds, especially when the cheese have to be placed in curing-rooms the temperature of which goes far too high, and over which the maker has no control. Good judgment must be exercised at all times on this point.

Pasteurizing the whey is increasing, and sewage disposal by septic tanks is proving satisfactory. Milk deterioration by adulteration is on the decrease.

The creamery report shows that a steady improvement is being made in the quality of the butter. Some complaint is still heard that there

is a lack of uniformity of salt, and makers are urged to take greater precautions in the amount of salt used. In 1911, 11,310,000 pounds of butter were produced in the creameries, an increase of 1,758,000 pounds over 1910. The quality of cream delivered is slowly improving, and the increase of creamery patrons over 1910 was 4,328. Mr. Hens recommended some system of grading cream according to quality. Visits to creameries included 245 full-day and 66 call visits. Scales are used in 27 creameries for testing; 64 use the pipette, and 6 the oil test, while 11 pasteurize the cream. Ten creameries are using a culture, and 26 a cooler; 60 are kept in a first-class sanitary condition, and 26 in a fair condition. The total expenditure on creamery improvement was \$29,679.

CASEIN AND CHEESE MANUFACTURE.

Prof. H. H. Dean, of the Ontario Agricultural College, showed clearly that casein is of extreme importance in cheesemaking. Casein is the chief nitrogenous compound found in milk. It is composed of carbon, hydrogen, oxygen and nitrogen, and is distinguished from milk-fat, which, he pointed out, is not butter-fat until manufactured into butter, because it contains the element nitrogen, so important as a food and fertilizer. Casein is secreted by means of special activity of cells in the cow's udder. Foods rich in nitrogen are well known to be the most expensive, and, as casein contains a considerable amount of this material, it is necessary that the dairy cow, in order to produce milk economically, receive a liberal nitrogenous ration. Skim milk contains casein, and, because of prejudice and sentimental reasons, it has not in America received its proper value as a human food.

As compared with milk-fat, casein has not been believed to be quite equal in value with this milk content, and, by the old method of valuation, these two compounds, which were never intended to be disassociated, have been separated. Milk-fat for cheesemaking has been given the most prominent position, but it is safe to say, said Prof. Dean, that milk-fat for cheesemaking can be discounted from 25 to 50 per cent. of its present supposed value. Casein is one of the things which must receive attention, because, without it, cheddar-cheese making is impossible. It is the basis of all cheesemaking work. This being so, why should it not be considered as valuable, pound for pound, as milk-fat? The casein is the moisture and fat-carrying constituent of the cheese.

Another point is that the casein content of the milk of different cows varies, and, as the period of lactation advances, it increases in the milk of the individual cow, as much as one per cent. in crease being noted as the end of the period approaches. In 8,000 tests made at ten different factories, the percentage of casein varied in the milk from 1.6 to 2.9 per cent. One hundred vat tests at the O. A. C. Dairy showed a variation of from 1.8 to 2.9 per cent., and in the tests of a single patron from 1.8 to 3.2 per cent. Tests were also made with nine cows of three different breeds, when it was found, upon reducing the figures to a basis of 1,000 pounds of milk, that the Ayrshires produced 26 pounds of casein and 40.1 pounds of fat; the Holsteins 22.6 pounds of casein and 33.9 pounds of fat; and the Jerseys, 26.9 pounds of casein and 27.9 pounds of fat. There is not a constant relation between fat and casein in the milk and cheese.

Casein makes a reasonable and just basis for dividing proceeds. At the present time, the per cent. fat, plus two, seems to be a fair method of distributing cheese-factory returns.

About the only objection to the casein test is the difficulty of handling composite samples in the tester, which makes it impracticable at cheese factories. It is recommended that these samples to be kept in amber or brown-colored bottles. The other objections raised, viz., that duplicate tests do not agree, and that the acidity of milk gives error, and the difficulty of keeping the milk at proper temperature, are without foundation, as has been proven by experiments. As the best means, then, of dividing cheese-factory returns, casein is of great importance.

HOUSING AND FEEDING THE BACON HOG.

J. H. Grisdale, Director of Experimental Farms, and a man who has had wide experience in feeding, housing and the general care of swine, showed that there is a profit in the pig-feeding business if properly carried on. At the Ottawa Experimental Farm from 300 to 600 pigs are fed annually and a separate account kept. In 1910 \$5,000 worth of feed and labor was expended on hogs, and from the sale of the hogs \$7,550 was realized, showing a net gain of \$2,050. This is a good profit, and should encourage hog feeders to put forth greater efforts.

Mr. Grisdale's method of housing pigs was dealt with in an article in "The Farmer's Advocate," issue of January 4th, on page 8. The pig must have light, well ventilated, dry quarters, and the best housing for sows is to let them run

outside and give them small cabins to sleep in. These cabins are of single inch boards, with battens over the cracks, and a small ventilation in the roof.

Mr. Grisdale referred to the difficulty experienced in raising litters in winter. A good time to have the sows farrow is from August to September in the fall, and in March or April in the spring. In this way both the intense heat of summer and the severe cold of winter are avoided. In winter sows at the Experimental Farm are fed on roots, bran, a little oatmeal and clover or alfalfa hay, fed in sheep racks. Each sow gets 3 to 5 pounds of roots, 1 to 3 pounds of meal, and as farrowing time approaches this is increased to 4 or 5 pounds, and from 3 to 5 pounds of hay. It may seem strange to some of our readers to feed hay to pigs, but Mr. Grisdale recommended the practice strongly, and stated that it would surprise those not accustomed to feeding it to see the sows eating this material. The stems are not relished very well, but the leaves are eaten readily.

It was found by experiment that feeding fattening pigs outside in winter is not profitable. Comfortable quarters are necessary for best returns. It cost two cents per pound more to fatten pigs outside in winter than it did pigs housed in warm comfortable quarters.

Speed is necessary in fattening pigs if good profits are to be realized. "The long-fed pig is a loser every time," said Mr. Grisdale. The pig must have feed and conditions tending to easy production, and a mixture of meals, clover, roots, etc., is necessary. In summer pasture is good, but care must be taken that too much "run" is not given, and still the paddock must not be too limited in size. For best results it is absolutely necessary that the pig be fed three times daily, and even better returns might follow feeding four times. Two meals a day is not enough for the pig.

Experiments have shown that skim milk fed at the rate of 3½ to 4 pounds per day is worth about half as much as meal (shorts). Fed at 1 to 2 pounds it is more effective, and as the quantity increased from 4 pounds up to 17 pounds the value decreased until at the latter figure 100 pounds of the milk was only equal to 10 pounds of the shorts. As it takes from 4½ to 5 pounds of meal to produce a pound of pork, the meal ration was reduced about 2 pounds by the judicious use of skim milk.

One hundred pounds of the best whey was found to equal about 80 pounds of skim milk. Fed in moderation whey has a good effect, but fed too heavily it retards progress.

Roots are very valuable in pig feeding. Potatoes should be cooked and fed mixed with meal. Sugar beets and mangels are pulped and fed raw with dampened meal. Turnips should be cooked one-half hour, mixed with meal and fed warm. Fed in this way no roots give better results than turnips.

The meal ration should be composed of a mixture, of which a heavy meal should form the base or two-thirds of the ration. All meal should be finely ground.

In concluding, Mr. Grisdale said that there is room for an increase in pig-feeding in Canada, and that farmers were making a mistake in going out of it. By studying breeding and feeding problems they are at Ottawa able to produce pork at 5½ cents per pound with feed at its present high price, and this pork sells then at 7 cents at present, which isn't a bad margin.

PAYING FOR CREAM AND BUTTER BY TEST

C. Marker, of Calgary, Alta., brought the importance of paying according to grade before the convention. In 1906 the Alberta Government took over the dairy work previously carried on by the Federal Government, and inaugurated scoring contests to encourage patrons to put forth an extra effort in caring for their milk and cream. The grading proposition was placed in 1910 before some 1,500 patrons, and they readily took on the idea of payment according to quality. The system followed is simply this: The cream hauler gets a number of jacketed cream cans at the factory, also a weighing pail, scales, strainer, storer, thermometer, a carrying case and a number of four-ounce sample jars, besides a record book, in which he keeps account of the patrons' name and number, date, pounds of cream and temperature. He also takes a composite sample of the cream. The buttermaker grades the cream from the sample, after heating it to a temperature of from 98 to 100 degrees to insure uniform results. All composite samples are made up in definite proportions. Composite samples are necessary, because in Alberta cream can be gathered only twice a week on account of distance, but the samples have given nearly as good results as daily testing. The first grade cream is any cream preferably sweet which a competent buttermaker can make into first-class butter. A premium of two cents per pound of butter-fat is placed on such cream, and the grading is all done by testing according to score card. Since its inception it has had the effect of improving the output of butter of the Province, especially

by increasing the quantity of extra choice butter. No complaints are heard from the good patrons, and the quality basis of payment has proved a decided success, and has had a favorable influence on the cream supply.

MORE QUALITY NEEDED.

G. G. Publow, speaking of his trip to the Old Land last summer, dealt with the subject much as he did at the convention of the Eastern Dairywomen's Association last week. He urged that greater care be taken to produce the highest quality, and that the cheese be held longer before shipping. In the past too many cheese have been shipped too green. Our best type of cheese meets with favor on the British market. Some of our cheese are too heavy, about 80 lbs. being the weight most in demand. Cheesemakers in England and Scotland set the milk sweeter, salt more sparingly (about 1 lb. to 56 lbs. curd), cut curds coarser, cook more slowly and longer, stir well, and press three days, and thus get a close, mild flavored, smooth cheese. A sweeter, cleaner delivery of milk at the factory was also urged by Mr. Publow.

OFFICERS ELECTED.

The following officers were elected for the coming year: President, D. A. Dempsey, Stratford; First Vice-President, S. R. Wallace, Burgessville; Second Vice-President, S. E. Facey, Harrietsville; Third Vice-President, J. B. Smith, Alton. Directors—D. A. Dempsey, Stratford; S. R. Wallace, Burgessville; Thos. Ballantyne, Stratford; J. N. Paget, Cambro; Robert Myrick, Springford; J. H. Scott, Exeter; J. B. Smith, Alton; S. E. Facey, Harrietsville; J. B. Muir, Ingersoll; Jas. Bristow, St. Thomas. Auditors—J. A. Nelles, London; J. C. Hegler, Ingersoll. Representatives to the Western Fair—Frank Hens and John Brodie. Representatives to the Canadian National Exhibition—Frank Hens and Robert Johnson. Secretary-Treasurer, Frank Hens.

THE WINNERS IN THE DAIRY-HERD COMPETITION.

Cheese Factory Patrons, with herds of 8 to 14 cows—1, Peter Arbogast & Sons, Sebringville; Black Creek Cheese Factory; 196 acres in farm; 10 Holstein and Shorthorn grade cows; total pounds of milk, 79726, or 7,972 lbs. of milk per cow (407 lbs. of milk produced per acre). 2, Seymour Cuthbert; Sweaburg Factory; 75 acres in farm; 14 Holstein Grade cows; total pounds of milk, 106,727, or 7,622 lbs. of milk per cow (1,423 lbs. of milk produced per acre). 3, Fred Bodkin, London R. R. 9; White Oak Factory; 160 acres in farm; 12 Holstein and Shorthorn Grade cows; total pounds of milk, 77,337, or 6,111 lbs. of milk per cow (483 lbs. of milk produced per acre). 4, Wm. W. Bartley, Belmont; Belmont Factory; 50 acres in farm; 8 Holstein cows; total pounds of milk, 44,444, or 5,555 lbs. of milk per cow (888 lbs. of milk produced per acre).

Herds of 15 cows or over—1, W. G. Pearson, Holbrook; New Lawson Factory; 100 acres in farm; 17 Holstein and Holstein Grade cows; total pounds of milk, 123,695, or 7,276 lbs. of milk per cow (1,236 lbs. of milk produced per acre).

Creamery Patrons, with herds of 8 to 14 cows—1, R. M. Bowie, Beachville; Beachville Creamery; 50 acres in farm; 8 Holstein Grade cows; total pounds of butter-fat, 2,101, or 262 pounds of butter-fat per cow (42 lbs. of butter-fat produced per acre). 2, A. W. VanSickle, Onondaga; Brant Creamery; 230 acres in farm; 14 Grade Shorthorn cows; total pounds of butter-fat, 2,315, or 165 pounds of butter-fat per cow (10 lbs. of butter-fat produced per acre).

Sweepstakes Medals—Peter Arbogast & Sons, Sebringville; R. M. Bowie, Beachville.

PRIZEWINNERS IN THE DAIRY EXHIBITION.

One September White Cheese—1, R. A. Thompson, Atwood (won for flavor), score 97.65; 2, J. K. Brown, Ethel, 97.65; 3, D. Menzies, Molesworth, 97.49; 4, W. S. Stocks, Britton, 97.48.

One September Colored Cheese—1, John Francis, South Middleton, score 97.50; 2, J. T. Donnelly, Sparta, 97.20; 3, D. Menzies, 97.16; 4, H. W. Hamilton, Monkton, 96.99.

One October White Cheese—1, W. S. Stocks, score 97.65; 2, H. W. Hamilton, 97.49; 3, B. F. Howes, Atwood, 97.16; 4, Geo. Empey, Newry, 97.16.

One October Colored Cheese—1, D. Menzies, Molesworth (cup), score 97.82; 2, B. F. Howes, 97.33; 3, H. Young, Palmerston, 97.32; 4, H. Donnelly, Stratfordville, 96.98.

One 56 lb. box Creamery Butter—1, E. M. Johnson, Innerkip, score 95.82; 2, Wm. Waddell, Kerwood, 95.65; 3, H. W. Patrick, St. Thomas, 95.16; 4, R. A. Thompson, 94.99.

Twenty 1-lb. Prints—1, T. O. Flynn, Tavistock, score 96.49; 2, C. A. Barber, Woodstock, 96.32; 3, E. M. Johnson, Innerkip, 95.99; 4, J. H. Martin, St. Leon, Que., 95.98.

56 lb. box Creamery Butter, October make—1, J. H. Martin, score 96.33; 2, J. A. Logie, Paisley, 93.49; 3, P. L. Doig, London, 93.48; 4, H. W. Patrick, 93.15.

Three Canadian Stilton Cheese—1, H. W. Ham-

ilton, score 97.49; 2, C. J. Donnelly, Scottsville, 97.32; 3, R. A. Thompson, 97.15.

Special Prizes—J. H. Martin, C. A. Barber, W. S. Stocks, B. F. Howes, Jno. Francis, P. Callan (Woodstock), D. Menzies, R. A. Thompson, J. K. Brown, T. O. Flynn.

SALE OF PRIZE CHEESE AND BUTTER.

Fifteen boxes winter creamery butter, R. Stillman, Brantford, at 30c. to 31½c. per lb. Seventeen lots of 20-pound prints in each, R. B. Moore, Galt, at 31c. to 32½c. per lb. Thirteen boxes October butter, R. B. Moore, at 29c. to 31½c. per lb. Twenty-four boxes of September white cheese, Ingersoll Packing Co., at 14½c. to 15½c. per lb. Thirty September colored cheese, S. Thomas, at 14½c. to 14¾c. per lb. Twenty-five October white cheese, S. Thomas, at 14½c. per lb. Twenty-nine October colored cheese, S. Thomas, at 14½c. per lb. Ten lots of stilton, S. Thomas, at 14c. to 16c. per lb.

Annual Meeting of the Experimental Union.

For the thirty-third time, the annual meeting of the Ontario Agricultural and Experimental Union has been held at the Ontario Agricultural College. It was considered that the meeting which has just closed was, if anything, better than any which had been held previously. At the re-union of the ex-students at the home of Dr. and Mrs. Creelman, on the evening before the start of the Union proper, a very large attendance of ex-students was present, there being representatives from practically all the years of the College. About a dozen ex-students were present who attended the College more than twenty-five years ago. The more recent classes were, of course, the most fully represented. A most enjoyable social evening was spent. There were in all five sessions of the Experimental Union proper. Reports were given of the co-operative experiments conducted throughout the Province under the direction of the various committees.

SECRETARY'S REPORT.

C. A. Zavitz, Professor of Field Husbandry, O. A. C., and the energetic secretary of the Union, gave a distinct and clear outline of the work of the Union. He pointed out that the Ontario Agricultural and Experimental Union was organized in 1879, just five years after the Ontario Agricultural College started. The Experimental Union included as its membership the officers, ex-students and students of the College, who paid an annual fee of fifty cents. The following quotation is taken from the original constitution of the Association:

"The objects of the Association are to form a bond of union among the officers and students, past and present, of the Ontario Agricultural and Experimental Farm; to promote their intercourse with a view to mutual information; to discuss subjects bearing on the wide field of agriculture, with its allied sciences and arts; to hear papers and addresses delivered by competent parties; and to meet at least once annually for these purposes."

Although the experimental idea is suggested in the name of the Association, nothing whatever is mentioned about experimental work in the early constitution. It was not until 1886 that the co-operative experimental work was taken up in connection with the Union in real earnestness. Even in that year, only twelve experimenters throughout the Province took a part in the work. In the next year, however, there were 60, and in the following year 93 co-operative experimenters. From that time on, the number of experimenters has increased from year to year, until many phases of agriculture are now covered, and about 7,000 farmers are enrolled on the list of active workers from an experimental standpoint.

Of all the many agencies which are working in the interests of agriculture, few, if any, are more important than the Experimental Union. It helps the farmer as the others do, and, in addition, it aids him in applying the information to his own farming operations, by directing his movements in trying to find out for himself how certain crops or fertilizers will work out on his own farm when tested under definite and well-thought-out plans. In 1911 the co-operative work was conducted on farms throughout Ontario in agriculture, forestry, apiculture, agricultural chemistry, and, in connection with the public schools, in elementary agriculture, horticulture and forestry.

IMPORTANT RESULTS OF THE WORK IN 1911

In agriculture there were 4,490 experimenters in 1911, each of whom conducted one of the forty distinct experiments which were included in this work in the past year. The results of experiments with varieties of farm crops showed that the following kinds proved to be the most productive throughout Ontario: O. A. C. No. 72 oats, 39.8 bushels; American Banner winter wheat, 23.8 bushels; Mammoth White Winter Rye, 24.8 bushels; O. A. C. No. 61 rye, 17.9 bushels; Wild Goose spring wheat, 19.6 bushels; O. A. C. No. 21 barley, 27.7

bushels; Guy Mayle hulled barley, 23.4 bushels; Rye buckwheat, 15.3 bushels; New Canadian Beauty peas, 17.9 bushels; Marrowfat beans, 18.6 bushels; Early California Flint corn, 47.6 bushels; and Early Minnesota sugar cane, 36.1 bushels.

In each of the past seven years experiments were conducted with different mixtures of grain, and the results of these experiments show that the greatest yields per acre were obtained by a mixture of one bushel of Daubeney oats and one bushel of Mandscheuri barley, by weight, which would be 82 pounds per acre of the mixture.

In mangels, the Ontario seed gave the best results, and the Yellow Leviathan and Ideal were the two highest-yielding varieties.

In the average results of twenty-seven co-operative experiments, the Golden Bantam corn proved to be the most popular variety with the experimenters, being very tender, sweet and juicy, and surpassing the Mammoth White Cory and the Malakhoff for table use.

It was found, by inquiry, that the Rural New Yorker No. 2 and the Empire State varieties of potatoes were the most extensively grown throughout the Province in the past year. The two varieties of potatoes which took the lead in yield per acre in the co-operative experiments in 1911 were the Davies' Warrior of the late, and the Extra Early Eureka of the early varieties. It was stated that if the farmers of Ontario would confine themselves to a very few of the best varieties of potatoes for general cultivation, such as the Rural New Yorker No. 2, Davies' Warrior and Empire State, there would likely be a considerable increase in the yield per acre, the table quality, and the price per bushel.

The fertilizer experiments showed economical results from using about 100 pounds of nitrate of soda per acre with the mangel crop, and a complete fertilizer with the turnips and potatoes.

The Variegated Alfalfa of Ontario is proving to be considerably more hardy than the tender strains of common alfalfa obtained from the Southwestern States, such as Colorado, Utah, Nebraska, etc., from which States' seed has recently been imported into Ontario.

In the short addresses given at the two sessions of the meeting, profitable results from the growing of potatoes, and especially the early varieties, from the growing of alfalfa and alfalfa seed, as well as the seed of red clover and alsike clover, were emphasized. A discussion took place on the sources from which farmers could secure good seed grain in the spring of 1912. In connection with this subject the members of the Experimental Union, the members of the Canadian Seed-growers' Association, and the farmers who took prizes in the Field Crops Competition in 1911, were the three of the very best sources from which to obtain good pure seed of the best varieties.

CAPITAL NECESSARY AND EDUCATION PROFITABLE IN FARM MANAGEMENT.

Among the most interesting features of the programme were the addresses given by G. F. Warren, Professor of Farm Management, Cornell University. Professor Warren gave a summary of extensive inquiries made during the last five years of the individual farms in several of the counties of New York State. He stated that, on the average, unless a man had \$1,000 in cash, it was wise for him to hire out until he could obtain a larger capital. If a man had from \$1,000 to \$5,000 in cash, he could, as a rule, do better on a rented farm than to become an owner. If he had \$5,000 or over, however, with which to start farming, it would be better for him to own a farm than either hire out or work on rented land. One of the interesting features brought out in the farm survey in New York State was the fact that the farmers who had taken a High School course got practically double the income on their farms as compared with the men who had never gone beyond the public school. As the result of investigations, Professor Warren found that, on the average, the farms of from 150 to 200 acres were giving the most economical returns.

THE WORK OF THE SCHOOLS DIVISION.

This branch of the Experimental Union was organized in 1909, with the aim of adapting the work of the Union to the schools of the Province, and to induce teachers and trustee boards to take up some phase of it as a means of introducing a measure of agricultural teaching.

Prof. S. B. McCready, director in charge of the work, in his report, said that its importance was not recognized as it should be. There are many agencies in operation to help the grown-ups, while 250,000 school children, of whom 50,000 are in the higher classes, are old enough, and should be given the benefit of agricultural instruction, but are not getting it. He claimed that if the children were taught the latest discoveries of professional experimentalists, and stirred to doing simple experimenting for himself, there would soon be no trouble to get old orchards and old soils renewed, weeds killed, unprofitable varieties

replaced, new manures tested, new bulletins read, and new soils conserved.

The lack of greater progress in the work seems to be the need of public opinion in its favor. Demonstrations are needed to arouse this opinion, and the work in schools is a step in this direction.

In 1910 there were 14 school gardens in Ontario receiving special Government grants, and conducted by teachers certificated in elementary agriculture. In 1911 there were 34 such gardens. Many other schools not receiving grants carried on the work, and, in all, 166 were supplied with material. A disappointing feature is the failure of teachers to report on the work. The aim of the future is to bring all the schools together in some common work, so that they may be known to one another and their work made known to the people.

The material distributed included garden and agricultural seeds, weed-seed collections, vines, bulbs, shrubs, forest-tree seedlings, instruction sheets and booklets on gardening for children, and O. A. C. No. 21 barley, and arrangements were also made for placing the Government publications and agricultural texts in public-school libraries. Hopes are entertained that the work will advance rapidly in 1912.

The illustrated lecture given by Professor J. E. Howitt on "Weeds and Weed Seeds, and Methods of Eradication," was much appreciated. Special emphasis was given to methods of eradicating the perennial sow thistle, the wild mustard, the bladder campion, and in the identification of the different varieties of sow thistle, the pennycress and the different cockles.

As about half the lectures were illustrated with stereopticon views, they were made particularly interesting in this way. The different sessions of the Union were more largely attended this year than ever before, the seating capacity of the halls being taxed to their utmost.

THE OFFICERS FOR 1912.

The election of officers took place on the last day of the meetings, and resulted as follows: President, F. W. Goble, Woodstock, Ont.; Vice-President, Lewis Toole, Mt. Albert, Ont.; Secretary, C. A. Zavitz, O. A. College; Assistant Secretary, W. J. Squirrel, O. A. College; Treasurer, H. L. Hutt, O. A. College. Board of Control—Dr. G. C. Creelman, Hon. Nelson Monteith, F. C. Hart, Jas. I. Dennis, H. Groh, and J. Miller.

It appeared to be the unanimous opinion that a wise move was made when the dates of the Experimental Union meetings were changed from December to January, as the meetings were larger and more interesting than ever before.

Annual Meetings Breed Societies.

Thursday, February 1st, 10.30 a. m.—Canadian Standard-bred Association, Toronto.

Thursday, Feb. 1st, 8 p. m.—Canadian Hackney Society; Prince George Hotel, Toronto.

Friday, Feb. 2nd, 8 p. m.—Ontario Horse-breeders' Association; Walker House, Toronto.

Friday, Feb. 2nd, 10 a. m.—Canadian Shire Association; King Edward Hotel, Room F., Toronto.

Friday, Feb. 2nd, 10.30 a. m.—Canadian Thoroughbred Association; King Edward Hotel, Toronto.

Friday, Feb. 2nd, 2 p. m.—Canadian Clydesdale Association; Room G., King Edward Hotel, Toronto.

Friday, Feb. 2nd, 8 p. m.—Ontario Horse-breeders' Association; Walker House, Toronto.

Tuesday, Feb. 6th, 11 a. m.—Dominion Short-horn Breeders' Association, Toronto.

Wednesday, Feb. 7th, 9 a. m.—Ontario Yorkshire Breeders' Association, Walker House, Toronto.

Wednesday, Feb. 7th, 10 a. m.—Canadian Ayrshire Breeders' Association, Prince George, Hotel, Toronto.

Wednesday, Feb. 7th, 1.30 p. m.—Dominion Swine-breeders' Association; Temple Building, Toronto.

Wednesday, Feb. 7th, 7.30 p. m.—Dominion Cattle-breeders' Association, Walker House, Toronto.

Wednesday, Feb. 7th, 11 a. m.—Ontario Berkshire Breeders' Association; Walker House, Toronto.

Thursday, Feb. 8th.—Canadian Holstein-Friesian Association, Toronto.

Thursday, Feb. 8th, 1.30 p. m.—Canadian Jersey Cattle Club; Prince George Hotel, Toronto.

Friday, Feb. 9th, 9 a. m.—Dominion Sheep-breeders' Association, Temple Building, Toronto.

Friday, Feb. 9th.—Ontario Sheep-breeders' Association, Temple Building, Toronto.

RAILROAD RATES, LIVE STOCK CONVENTION.

Standard Convention Certificate Plan—Good going February 2nd to 8th, returning February 6th to 12th. Any person wishing to take advantage of rates should purchase a single ticket to Toronto, and obtain at the same time a Standard Convention Certificate from the ticket agent. This certificate must be signed by W. G. Pettit, Secretary of the Live-stock Convention, and vised by the representative of the railway companies; for the latter service, a charge of 25 cents will be made. If the certificate is then presented at the ticket office in Toronto, it will entitle the holder to a free ticket to the starting point. These arrangements take in the territory east of Port Arthur.

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One of the Family.

Herewith please find enclosed remittance for which kindly renew my subscription and send "The Farmer's Advocate" for one year to a new subscriber.

The new subscriber, though a city man, is greatly impressed by the broad, educative tone of "The Farmer's Advocate," and will probably be a permanent reader. For myself, the fact that I have now taken the paper for seven years or more is sufficient evidence of my appreciation. "The Farmer's Advocate" is always welcome, and is not a guest, but one of the family. Wishing you continued success and the compliments of the season.

York Co., Ont. GEO. W. WEAVER.

Seed Peas and Potatoes from Northern Ontario.

At the annual meeting of the Ontario Vegetable-growers' Association, held in the Parliament Buildings, Toronto, on January 9th, all the branches in the Province were represented. The following officers were elected for 1912: President, Thos. Delworth, Weston; First Vice-President, C. W. Baker, Tambling's Corners; Second Vice-President, W. J. Kerr, Ottawa; Secretary and Editor, J. Lockie Wilson, Toronto.

Arrangements were made largely to increase the quantity of seed potatoes grown for this Association in Northern Ontario. For the last two years, experiments have been conducted by the vegetable-growers, and the seed received from the Northern country proved very satisfactory, and will, in the near future, take the place of the seed potatoes purchased from New Brunswick and several States of the Union. A large quantity of Early Ohio seed potatoes have been distributed in the Northern country among the farmers there.

Seed peas have also been successfully grown in Northern Ontario. The price paid by the vegetable-growers is now \$16 per bushel. The pea weevil and moth are unknown in the Northern country, and peas grow very luxuriantly there. The Association has decided to purchase a quantity of seed peas in Germany. These will be forwarded to the farmers in Northern Ontario, to be grown under contract for the members of the Association. The price of these seed peas in Germany is \$14 per bushel. The variety is the Gradus.

The Hon. Mr. Duff, Minister of Agriculture, attended the meeting and spoke encouragingly of the work that is being done by the Association. The question of increased greenhouses at Guelph for vegetable-growing was urged upon the Minister, and also that fifty acres of the Monteith Demonstration Farm be planted with the different varieties of potatoes and peas, and other garden crops. All of which Mr. Duff agreed to give fullest consideration.

Dominion Agricultural Estimates.

The estimates for the fiscal year ending March 31, 1913, were submitted to Parliament last week by the Finance Minister, Hon. W. T. White. For Arts, Agriculture and Statistics, the amount asked is \$1,945,500, a net decrease of \$910,000, compared with 1911-12, the two items of decrease being \$760,000 for the census, taken last year, and \$150,000 for exhibitions. The increases are \$30,000 for experimental farms; the establishment and maintenance of additional branch experimental farm stations, \$100,000; printing and distributing reports and bulletins of farms, \$5,000; to encourage the production and use of superior seeds for farm crops, and enforcement of the Seed Control Act, \$20,000; Health of Animals, \$25,000; administration and enforcement of the Destructive Insect and Pest Act, \$10,000; grant to Canadian National Exhibition of Toronto, towards cost of Dominion Building, \$100,000.

Niagara Fruit Growers on Express Rates.

The regular annual meeting of the Niagara District Fruit-growers' Association was held at St. Catharines on January 11th. In the election of officers, directors were appointed to represent each township in the fruit belt, Robert Thompson, of St. Catharines, becoming President in succession to J. W. Smith, of Winona. F. G. Stewart, of Homer; J. W. McCalla, of St. Catharines; Major Roberts, Grimsby, and A. E. Kimmins, Winona, were appointed delegates of the Association to the Dominion Conference of Fruit-growers, to be held in Ottawa about the middle of February.

A proposal to tender a banquet to the Hon. Martin Burrell, Dominion Minister of Agriculture, at the time of the annual spring convention (as a rule, held early in March), met with unanimous approval, and a committee was appointed to make all necessary arrangements.

The main item of discussion related to the fruit express tariff. The belief is general among fruit-growers that in many cases the express charges are unreasonably high, and the Association has been laboring in past years to obtain certain reductions, but with little avail. It was the opinion, however, that the fight should be carried on, but that the complaints should become more specific. That is, instead of claiming exorbitant charges in general, the Association should press specific examples of such charges. The suggestion was also made that a permanent-salaried officer should be appointed to collect data and press these charges to a conclusion. No action was taken on this suggestion, but it certainly would be a marked step in advancement, and would be following on the lines of the Citrus Protective League, of California, which was described in the July 20th, 1911, issue of "The Farmer's Advocate." W. R. D.

A Profitable Mistake.

By Peter McArthur.

Talk about luck! When it comes to bad luck, I am certainly in a class by myself. This week I made my first profitable mistake, and "The Farmer's Advocate" competition is closed, and I have no chance of winning a prize. All my past mistakes have been of the profitless kind that a man thinks of in a tired sort of way, and tries to cheer himself with the thought that he is at least gaining experience. Besides making the mistake of planting things at the wrong time of the moon, I think I have planted them at the wrong time of the sun. Sometimes I consoled myself by remembering a favorite saying of J. B. Duke, President of the American Tobacco Company. He used to say: "When I make a mistake, I never worry about it. I go on and make new ones." By following this simple rule, and saving his coppers, he managed to pile up such a fortune that the United States Government had to go after him with a club to keep him from getting all the money that Morgan, Rockefeller and Carnegie had overlooked. But I couldn't make things work out that way. My new mistakes were always as bad as the old ones, or a little worse. Now, however, I think the tide has turned. I have made a mistake that I have figured out will save at least a year of my life, and maybe two. Let me tell you about it.

* * *

My mistake was the familiar one of getting into an argument. I don't think there is any way in which people waste more valuable time than in arguing. They will spend hours arguing whether a bushel of wet sand weighs more than a bushel of dry sand, and not once in a blue moon will one of them get up enough energy to weigh the pesky stuff and settle the matter once and for all. They just keep on arguing. Being of an amiable disposition, I have allowed myself to be drawn into arguments of this kind, as well as arguments on politics and other unprofitable subjects. Looking back, it seems to me that I have wasted at least a year or two in saying "It does!" "It doesn't!" and other stock expressions of popular debate. But never again! This week I got into an argument that fussed me up so much that it opened my eyes, and I made up my mind to keep out of arguments of all kinds in the future. If I can't find something better to do, I'll just sit and twiddle my thumbs.

* * *

This is how it happened. On the day of the blizzard, the thermometer was registering below zero, and

"Ze vind he blow a hurricane,
And den he blow some more."

A man came in out of the cold, and as he rubbed his hands in front of the mica in the heater, he chattered:

"Gee, but it's fierce outside! The cold fairly gripped me!"

"You know, of course," I said, assuming a learned manner, "that there is no such a thing as cold. Therefore, it could not have gripped you."

"What you giving us?" he asked, scornfully. "I am merely stating a fact. There is no such thing as cold. What you call cold is simply an absence of heat."

"Say that again, and say it slow," he said, disrespectfully.

With infinite patience I tried to make clear to him that heat is a form of energy. When an object has a great deal of this kind of energy, we say it is hot. After a sufficient amount of the energy has passed out of it, we say it is cold. But cold is not a form of energy. It is only a name we use for a certain low state of heat.

"Cold has no energy, hasn't it? Then, why is it that ice busts the rain-barrels?" he asked triumphantly.

This got me into trouble at once, for I had to explain that mysterious property of water which makes it disobey the law that governs practically all other substances. When the heat leaves other things, they contract, and, of course, get heavier in proportion to their bulk. If water obeyed the same law, and got heavier when it reached the freezing point, the cold water would sink to the bottom, and rivers and lakes would freeze from the bottom, instead of on the top, and before long all the water in the world would be frozen and we could not exist. As it is, the water, at freezing, expands, becomes lighter, floats on top, forms ice, and protects the great body of water from freezing. It is this strange expansion that bursts things.

"That's all very well, but doesn't ice bust rain-barrels?"

"Yes."

"Then cold must be a form of energy. If the heat is going out of the water when it is freezing, it can't be the heat that makes the water expand and bust things. Therefore, it must be the cold."

It was in vain that I took down the encyclopedia and showed him what Lord Kelvin and Clerk Maxwell have to say about heat, and about cold being merely the absence of heat.

"Freezing up busts rain-barrels, don't it?" That was his answer to everything. There was no getting around it, and I finally gave up in disgust. Every time I have met him since then, he has asked, sarcastically:

"Does frost bust rain-barrels, or doesn't it? Haw! haw!"

I certainly made a mistake in getting into an argument with him. I didn't convince him, and I merely confused myself, for when a layman tackles a subject like the scientific theory of heat, he is in danger of becoming "bewildered in the immensity of his profundity." And, moreover, he thinks he has the laugh on me.

Now that I have admitted my mistake, let us see where the profit comes in. On careful consideration, I came to the conclusion that I have been in the habit of wasting half an hour a day in arguments of one kind or another, all of which led to nothing. Now, if I save that time, and I fully intend to—I have made it a New Year resolution—I shall save three hours and a half a week. That will amount to a saving of about one hundred and eighty hours in a year, and, counting a day's work at ten hours, I should save a whole year in less than twenty years. You will notice that I haven't figured this out exactly. To do so would be to make a vulgar display of skill in arithmetic, and, besides, I might make a mistake and be tripped up. Also, I have not suggested how much this saving of time might mean in money. There might be too much difference of

opinion as to what my time is really worth, but past will in a large measure pass away with the wood lots, which are fast disappearing. I humbly submit that it is worth something.

* * *

These are the days to make a man appreciate a wind-break of any kind. With the thermometer at zero, or lower, and a gale blowing that drives the cold right through you—hold on! I mean a gale that makes you feel the absence of heat. Oh, well, let it go. I am not going to give up our ordinary way of speaking just because I had a fool argument with a man. As I was saying, this kind of weather makes a man appreciate a wind-break. When I am out walking I do not despise even a currant bush, and never fail to pass on the lee side of it. When out driving, I drive fast in the open, and let the horse walk when passing an orchard or clump of shade trees. most of the wood-lots that are left are on back corners of the farm, where they afford no shelter to man or beast. As it is beginning to look as if high winds are going to be very prevalent in Ontario from now on, it seems to me that a good wind-break, that will protect house and barns is just about as valuable an improvement as can be put on a farm. If some scientist would only take the trouble to figure it out, I think it would be found that a few trees rightly placed would do about as much to keep our houses warm as if they were chopped into wood and used for fuel.

Municipal Reform.

Editor "The Farmer's Advocate":

Now that the Provincial elections are over, and the Legislature will soon be in session again, it should be an opportune time to touch upon some of the changes that we think should be made by the Legislature in the interest of the agriculturist. It seems to me that one of the most important is along the line of municipal reform. Personally, I never could understand why our public-school trustees are elected for a three-year term and our M.P.P.'s for a four-year term, while our municipal officers are only elected for one year. There is no doubt if they were elected for a three-year term the people would be better served and the work would be done more systematically. While many good and capable men do sacrifice their personal interests to serve their municipality, yet in very many cases the people's choice cannot be persuaded to enter the contest; in too many cases simply because he has to face the possibility of an election every year. If a capable man or body of men has a three-year term their work should be done much more systematically than is the usual practice at present.

I am also of the opinion that the ward system of electing councillors has some decided advantages over the present system of voting over the entire township. The electors in each ward know better who should represent that ward than the whole township does. With the present system the whole council board may reside in one ward, while the other wards are practically unrepresented. As councillors are usually the commissioners to look after road and bridge building, it should scarcely be expected that a commissioner will do his work as well in a ward several miles from his home as he will in the ward where he resides.

Another matter is the assessment system. As it now applies to rural municipalities, is sufficient encouragement given to improving and beautifying farm property? I don't think so. At present a man is practically taxed for every tree he plants, every tile he puts in the ground, every building he erects, or even every-gallon of paint he uses, when instead he should receive a bonus for tree planting especially; and right in this connection the preservation of the wood lot should receive serious consideration, for, to my mind, the advantages that Ontario has enjoyed in the

farming, and municipal and political life. He was a man of sterling character and a cheerful disposition, widely known and much respected. He had patiently suffered a long and painful illness, and died on January 5th, in the 75th year of his age.

Another matter—assessment. Would not once in three or five years serve the purpose of assessing as well as annually, and thereby save considerable expense? Then, again, is February to April the proper season to do that work, when some farms are practically covered with snow banks, while others are covered with water? I think the work could be much better done in May and June. I also think the township collector could be dispensed with, allowing the treasurer a slight increase in salary, and have all taxes remitted direct to him. I would like to see a municipal campaign through the agricultural press along the lines of municipal reform. I have only touched the fringe as it were.

Middlesex Co., Ont. R. H. HARDING.

Prof. J. W. Crow Goes to Kentville, N. S.

J. W. Crow, B. S. A., Professor of Pomology in the Ontario Agricultural College, Guelph, has accepted a position as superintendent of the Dominion Experiment Station instituted last year at Kentville, Nova Scotia, where he will remove at an early date. The new institution is primarily and chiefly devoted to investigation and demonstration in the problems of fruit culture. The site was procured last year, and some initial work done under direction of the Dominion Horticulturist, Prof. W. T. Macoun, but plans will now be fully matured and pushed under the superintendence of Prof. Crow. After his valuable experience at Guelph, he embraces this opportunity to serve the fruit-growing industry under new conditions, and the Maritime Provinces, Nova Scotia in particular, are fortunate in his decision to undertake the work.

The annual convention of the Ontario Good Roads Association will be held at Toronto on the 26th, 27th and 28th days of February. In view of the added interest created by the question of Federal aid for road improvement, it is expected that the meeting will be the largest in the history of the association.

F. W. Thompson, of the Ogilvie Milling Co., intimates that from 25,000,000 to 30,000,000 bushels of the Northwest wheat crop is totally unfit for milling purposes, and he anticipates that an investigation may be needed to ascertain if there be sufficient good grain for next spring's seeding requirements. He also hints that an export duty on the high grades of wheat may be seriously considered.

To Our Subscribers.

Particular attention is called to our "Renewal Offer Extended," as announced on page 94 of this issue. This offer is good till January 31st, and if you have not already taken advantage of it, secure the required new name at once. The date will positively not be extended beyond the end of this month. Thousands have availed themselves of this offer, and a great many are still coming in daily. Let us credit your label in the same way.

Weight of the Christmas Number.

In the results of this contest, as given on page 55 of the January 11th issue, there was a mistake in the third-prize guess. It should have read "18 tons, 3 cwt., 35 pounds," instead of "18 tons, 15 cwt., 35 pounds."

GOSSIP.

STOCK SALE DATES CLAIMED.

- January 25th.—At Burford, Ont.; pure-bred registered sheep.
- January 25th.—J. B. Pearson, Meadowvale, Ont.; Berkshires, and other stock and implements.
- February 1st.—David Bell, Bright, Ont.; heavy draft horses and Shorthorns.
- February 7th and 8th.—At Union Stockyards, Toronto; consignment sale of Shorthorns.
- February 9th.—James Russell, Richmond Hill, Ont.; Shorthorns.
- February 9th.—At Eglinton, Ont., on Yonge street, north of Toronto; consignment sale of Holsteins.
- February 28th.—At Parkhill, Ont., R. & S. Nicholson and H. K. Fairbairn; Shorthorns.
- March 6th.—Provincial pure-bred cattle sale, in Winter Fair Building, Guelph, Ont.
- April 3rd.—Holstein-breeders' Club; second annual consignment sale, Belleville, Ont.

March 7th.—B. Hoskin, The Gully, Ont.; Holsteins and Tamworths.

On Thursday, January 25th, at Meadowvale, Ont., a station on the C.P.R., three miles from Streetsville Junction, will, as advertised, be held a clearing auction sale of pure-bred Berkshire swine and other stock and implements. J. B. Pearson, Meadowvale, Ont., agent.

The late Edward Jeffs, of Bond Head, Ont., a brief notice of whose death appeared in our last week's issue, had been a constant subscriber to "The Farmer's Advocate" from its commencement, and was a prominent breeder of Shorthorn cattle, Southdown sheep and Berkshire swine. He was for several years a member of the Advisory Board of the Ontario Agricultural College at Guelph, and had long been an enthusiastic Farmers' Institute worker, was a competent judge and identified with almost every forward movement in live stock, general

farming, and municipal and political life. He was a man of sterling character and a cheerful disposition, widely known and much respected. He had patiently suffered a long and painful illness, and died on January 5th, in the 75th year of his age.

FARM HELP AND DOMESTICS.—

Major J. M. McGillivray, of the Salvation Army Immigration Department, 396 Clarence Street, London, Ont., is sailing for England by the S.S. Grampian on February 2nd, to bring out a conducted party, chiefly of men and boys, for farm work, to be distributed in Western Ontario, especially in the counties surrounding London. About five hundred applications have been sent out to farmers, and they are being filled out and returned quite rapidly, but the Major is anxious that he should have a complete lot ready before leaving, as he desires to supply as many as possible from the first sailing, which leaves Liverpool by the S.S. Ascandia, and will arrive by

Portland, Maine. This is a new departure with the Army Immigration, whereby it is hoped to bring in several more conducted parties during the season. The first party of domestics sails on the 23rd of February; the demand is still great for this class of help, also for boys for farm work. Any person desiring farm help, or any other class of help, should apply to the Major at once.

"Lady," said Meandering Mike, "would you lend me a cake of soap?"
"Do you mean to tell me you want soap!"
"Yes'm. Me partner's got de hiccups an' I want to scare him."

Contractor—I wish to get a permit to dig up the pavement on Main street.
"Why, we can't give you that. There isn't any pavement on Main street."
"I know; but I want the permit so that we can dig up the pavement as soon as there is one."

THE CANADIAN BANK OF COMMERCE

ESTABLISHED 1867

Capital paid-up, \$11,000,000.
Rest, \$9,000,000.

The Canadian Bank of Commerce extends to farmers every facility for the transaction of their banking business, including the discount or collection of sales notes. Blank sales notes are supplied free of charge on application.

Accounts may be opened at any branch of The Canadian Bank of Commerce to be operated by mail, and will receive the same careful attention as is given to all other departments of the Bank's business. Money may be deposited or withdrawn in this way as satisfactorily as by a personal visit to the Bank.

MARKETS.

Toronto.

LIVE STOCK.

At West Toronto, on Monday, January 15th, the receipts of live stock numbered 82 cars, comprising 1,456 cattle, 712 hogs, 736 sheep, and 31 calves. Trade was brisk; prices 15c. to 25c. higher. Export steers, \$6.30 to \$6.60; bulls, \$5.25 to \$5.75; choice butchers', \$6.75 to \$7; good, \$6.50 to \$6.75; medium, \$6 to \$6.40; common, \$5.50 to \$6; cows, \$4 to \$5.50; veal calves, \$4 to \$8. Sheep—Ewes, \$3.50 to \$4.25; rams, \$3; lambs, \$6.75 to \$7.55; milk cows, \$4 to \$7.5. Hogs, \$6.50 fed and watered, and \$6.25 f. o. b. cars at country points. The best load of cattle 1,400 lbs. each, sold at \$7.25, to Harris Abattoir Company.

REVIEW OF LAST WEEK'S MARKETS
The total receipts of live stock at the City and Union Stock-yards last week were as follows:

	City.	Union.	Total.
Cars	122	196	318
Cattle	1,744	2,927	4,671
Hogs	2,312	3,006	5,318
Sheep	911	1,227	2,138
Calves	124	61	185
Horses	2	38	40

The receipts of live stock at the two yards for the corresponding week of 1911 were as follows:

	City.	Union.	Total.
Cars	280	186	466
Cattle	3,414	2,707	6,121
Hogs	8,151	2,741	10,892
Sheep	61,773	2,178	3,951
Calves	156	15	171
Horses	—	44	44

The combined receipts of live stock at the two markets show a decrease of 148 carloads, 1,450 cattle, 5,574 hogs, 1,813 sheep, and 4 horses; but an increase of 14 calves, compared with the same week of 1911.

DISCOUNT TO COVER INSPECTION LOSSES.

Receipts of live stock were not as large as they would have been had it not been for the stormy weather, which blocked railway traffic, and the trouble between the drovers and the four abattoirs of Toronto in reference to who should pay for cattle condemned by the Dominion Inspectors in said abattoirs. In the past, the drovers and commission salesmen have been assuming the responsibility, by trying to collect from the farmers who sold the condemned animals. This system proved unsatisfactory, and the four abattoirs issued an ultimatum to the drovers that all cattle bought at \$3.50 and under would be taxed 50c. per head, and all cattle purchased over \$3.50 per cwt. would be taxed 20c. per head. These taxes were to be collected from all cattle purchased by the abattoirs, for the purpose of covering all losses sustained by condemned cattle. These terms were rejected by the drovers and commission dealers, consequently war has been declared, and drovers are holding back all the cattle they possibly can. In hopes of encompassing the defeat of the abattoirs. Notwithstanding all these trou-

bles there has been a fair trade, but the bulk of the cattle have been taken by outside buyers and the local wholesale butchers, who bought them without any restrictions whatever. Prices have ruled strong, at last quotations.

Exporters.—Alexander McIntosh was the only buyer of export cattle, he having an order to fill for J. Shamberg & Son. Mr. McIntosh bought 100 steers and bulls, paying from \$6.30 to \$6.70 for steers, and \$5 to \$5.60 per cwt. for bulls.

Butchers'.—Choice butchers' sold at \$6.25 to \$6.50; loads of good, \$6 to \$6.25; medium to good, \$5.50 to \$6; common to medium, \$5 to \$5.50; cows, \$3 to \$5.25; bulls, \$4 to \$5.5.

Stockers and Feeders.—There was nothing doing in these classes, although we met several drovers and farmers that were looking for them.

Milkers and Springers.—Trade in milkers and springers has not been as active, and only a limited number were offered, the quality of which, generally, was only medium. Prices have ranged from \$40 to \$65, but we heard of as high as \$70 being paid for one or two extra quality.

Calves.—Prices have not changed much in many months for veal calves, which sold at \$4 to \$8.

Sheep and Lambs.—The market for sheep and lambs closed stronger on Thursday than at the commencement of the week. Ewes sold at \$3.75 to \$4.25; rams at \$3; lambs, \$6.50 to \$7 per cwt., and we heard of some select lots selling at \$7.25 per cwt.

Hogs.—Receipts of hogs have been light in comparison with many weeks past. Selects, fed and watered at the market, sold at \$6.45 to \$6.50, the bulk going at the latter figure, and \$6.25 was the general price paid, or at least reported as paid, to drovers for hogs.

BREADSTUFFS.

Wheat.—No. 2 red, white or mixed, 91c. to 92c., in car lots, outside. Manitoba No. 1 northern, \$1.10; No. 2 northern, \$1.07; No. 3 northern, \$1.03; track, lake ports. Oats—Canadian Western oats, No. 2, 48c.; No. 3, 46½c., lake ports; Ontario, No. 2, 43c. to 43½c.; No. 3, 42½c. to 43c., outside ports. Rye—No. 2, 94c. to 95c., outside. Buckwheat—62c. to 63c., outside. Barley—For malting, 85c. to 86c. (47 lbs. test); for feed, 65c. Corn—New, No. 3 yellow, all rail from Chicago, 68½c., track, Toronto. Peas—No. 2, \$1.10 to \$1.12, outside. Flour—Ontario ninety-per-cent. winter-wheat flour, \$3.50 to \$3.60, seaboard. Manitoba flour—Prices at Toronto: First patents, \$5.50; second patents, \$5; strong bakers', \$4.90.

HAY AND MILLFEED.

Hay.—Baled, in car lots, track, Toronto, No. 1, \$16.50 to \$17.50; No. 2, \$14.50 to \$15.
Straw.—Baled, car lots, per ton, track, Toronto, \$6.50 to \$7.
Bran.—Manitoba bran, \$23 per ton; shorts, \$25; Ontario bran, \$23 in bags; shorts, \$25, car lots, track, Toronto. Manitoba feedwheat, all rail, 72c. per bushel.

COUNTRY PRODUCE.

Butter.—Market was firmer. Creamery pound rolls, 32c. to 35c.; creamery solids, 32c.; separator dairy, 30c. to 32c.; store lots, 25c. to 26c.
Eggs.—Case lots, 32c.; new-laid, 40c. to 45c.
Cheese.—Twins, 15½c.; large, 16c.
Honey.—Extracted, 12c. for No. 1 clover honey; combs, per dozen sections, \$2.50 to \$3.
Beans.—Market about steady, but firm; hand-picked, at \$2.30 to \$2.35 for broken lots, and \$2.20 to \$2.25 for primes.

Potatoes.—Car lots of Ontario, track, Toronto, \$1.25 to \$1.30; New Brunswick Delawares, \$1.30 to \$1.35.
Poultry.—Receipts were light, with prices very firm. Dressed prices were: Turkeys, 18c. to 20c.; geese, 14c. to 15c.; ducks, 16c.; chickens, 11c. to 16c.; fowl, 11c. to 12c.

TORONTO SEED MARKET.

The William Rennie Seed Company report seed prices as follows: Alsike No. 1, per bushel, \$9.50 to \$10; alsike No. 2, per bushel, \$8.50 to \$9; red clover, No. 1, per bushel, \$11 to \$12; red clover, No. 2, bushel, \$9.75 to \$10.50; timothy, No. 1, per cwt., \$15 to \$16; timothy, No. 2, per cwt., \$13 to \$14.

HIDES AND SKINS.

E. T. Carter & Co., 85 East Front street, have been paying the following prices: No. 1 inspected steers and cows, 11½c.; No. 2 inspected steers and cows, 10½c.; No. 3 inspected steers, cows and bulls, 9½c.; country hides, cured, 11c.; green, 10c.; calf skins, 12c. to 15c.; sheep skins, 60c. to 85c. each; horse hides, No. 1, \$3.25; horse hair, per lb., 33c. to 35c.; tallow, No. 1, per lb., 5½c. to 6½c.

FRUITS AND VEGETABLES.

The Dawson-Elliott Company, wholesale fruit, produce and commission merchants, corner West Market and Colborne streets, Toronto, report Canadian vegetables and fruit as follows: Apples—Spies, \$2.50 to \$4; Baldwins, \$2.50 to \$3.25; Greenings, \$2.50 to \$3; Russetts, \$2.25 to \$3; Snows, choice, \$4.75 to \$5.25; Snows, No. 2, \$2 to \$2.25. Onions, Canadian, per bag, \$1.50 to \$2; parsnips, per bag, 75c. to 90c.; carrots, per bag, 45c.; celery, per dozen, 30c. to 50c.; tomatoes, 15c. to 25c.; lettuce, (Canadian), dozen, 40c. to 65c.; cranberries, (Canadian), case, \$1.50; turnips, per bag, 35c. to 45c.

Montreal.

Live Stock.—The supply of good to choice cattle coming forward is limited, with the result that the tone of the market is generally firm, particularly as the weather is now cold and butchers are again buying freely. The market was quoted fully ½c. and sometimes ¾c. higher than previously. Choice steers were selling at as high as 6½c. per lb. It was understood that this class of stock is being bought by Americans in Ontario, making the supplies for the local market light. Fine stock sold at 6½c. to 6½c., good at 6c. and 5½c., medium at 5½c. to 5½c., and common down to 4c., canners' bulls being as low as 3c. per pound. There was a better demand for sheep and lambs, and prices advanced slightly. Mixed lots of sheep and lambs sold as high as 6c. per pound. Calves were scarce, and in demand, and prices were undoubtedly firmer. Sales took place at \$10 each for some, but from this they ranged to \$15 each, while the best brought \$20. There was little change in the price of hogs, sales being still made at 7c. to a fraction over, an occasional very choice lot bringing possibly 7½c.

Horses.—The snow fall has had a good effect on the market, as has also the fact that the exceedingly cold weather assisted greatly, adding to the thickness of the ice and bringing nearer the time when it will be possible to begin hauling from the river to the ice houses. In this work a great many horses are used, and a large number of enquiries have been coming in, which will doubtless result in some business. Heavy draft horses, \$300 to \$350 for 1,500 to 1,700 lb. weights; light draft, 1,400 to 1,500 lbs., \$225 to \$300; light horses, 1,000 to 1,100 lbs., \$100 to \$200 each, and broken-down and old animals, \$50 to \$100. Choice saddle and carriage animals, \$350 to \$500 each.


Dressed Hogs and Provisions.—Abattoir-dressed, fresh-killed hogs, 9½c. to 10c. per lb.; country-dressed, 8½c. to 9½c. per lb.

Poultry.—There is a fair demand for poultry, the weather being now favorable. Prices hold steady, at 17c. to 19c. per lb. for choice turkeys; 10c. to 13c. for chickens; 8c. to 11c. for fowl, and 13c. to 15c. for geese and for ducks, both of which latter are scarce.

Potatoes.—The market for potatoes is not overly active. Prices are now very high for choice stock, and there is considerable which is not choice. Bag lots of best Green Mountains sold readily at \$1.60 each, and from that price purchases might be made as low possibly as \$1.25 per bag for inferior qualities.

Honey and Syrup.—White clover comb honey, 11c. to 11½c. per lb., and all other qualities of white extracted or dark extracted may be had at prices ranging from 7c. to 9c. per lb. Dark comb would bring 8c. to 10c. Maple syrup in wood sells at 7c. to 7½c., and in tins at 7c. to 7½c., while sugar is 8½c. to about 9½c. per lb.

Butter.—Market continues to stiffen, and choicest quality could not be had last week under 31c. to 32c. per pound any longer, although second grades might be had a cent less. Western dairy sold



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at 25c. to 26c. per pound, and rolls at about 1c. more. Manitoba dairy, 23c. to 24c. per pound. Supplies growing lighter, and make very light.

Grain.—Market for oats firmer, and prices for No. 2 Canadian Western, 47½c. per bushel for car lots, ex-store; extra No. 1 feed oats sold at 46c.; No. 3 Canadian Western, 45½c.; No. 2 local oats, 46c.; No. 3, 45c., and No. 4 local, 44c. per bushel.

Milled.—The market for bran showed no change, being \$23 per ton. Shorts, \$25, and middlings, \$27 to \$28. Pure grain moulie, \$32 to \$34 per ton, and mixed moulie, \$26 to \$29.

Flour.—The market is fairly active, and there is quite an export demand; Manitoba spring wheat patents, \$5.60 per bbl., in bags, for firsts, and \$5.10 for seconds, while strong bakers were \$4.90. Choice winter wheat patents were \$4.75 to \$5; straight rollers being \$4.25 to \$4.40.

Hay.—Market about steady. No. 1 hay, \$16 to \$16.50 per ton, for pressed, carloads, track; No. 2 extra, \$15 to \$15.50; No. 2 ordinary, \$14 to \$14.50; No. 3 hay, \$13 to \$13.50, and clover, mixed, \$10.50 to \$11 per ton.

Seeds.—Sales are now commencing, and prices are very high all round, being \$16.50 to \$20 per 100 lbs. for timothy, and \$21 to \$25 for red clover, and \$18 to \$21 for alsike, f.o.b. track, Montreal.

Hides.—Prices steady, at 11c., 12c. and 13c. per lb. for Nos. 3, 2 and 1 beef hides; 11c. and 13c. for Nos. 2 and 1 calf skins; 90c. each for lamb skins, and \$1.75 and \$2.50 each for horse-hides. Tallow, 1½c. to 3½c. per lb. for rough, and 5c. to 6½c. per lb. for rendered.

Buffalo.

Cattle.—Prime steers, \$7.25 to \$8; butcher grades, \$3.50 to \$6.90.

Calves.—Common to prime, \$5.75 to \$10.50.

Sheep and Lambs.—Choice lambs, \$7.35 to \$7.55; cull to fair, \$5 to \$7.25; yearlings, \$5.50 to \$6.25; sheep, \$2 to \$5.

Hogs.—Yorkers, \$6.30 to \$6.40; pigs, \$6.10 to \$6.15; mixed, \$6.35 to \$6.40; heavies, \$6.40; roughs, \$5.50 to \$5.70; stags, \$4.50 to \$5.

Chicago.

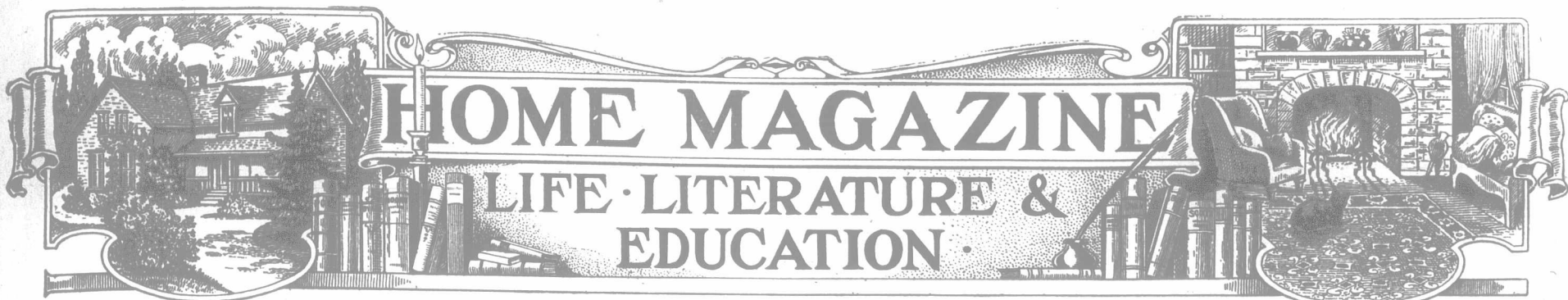
Cattle.—Beeves, \$4.75 to \$8.50; Texas steers, \$4.50 to \$7.25; stockers and feeders, \$3.50 to \$5.85; cows and heifers, \$2 to \$6.65; calves, \$6.50 to \$9.50.

Hogs.—Light, \$5.85 to \$6.25; mixed, \$6 to \$6.35; heavy, \$6.05 to \$6.15; good to choice hogs, \$6.15 to \$6.40; pigs, \$4.75 to \$5.65.

Sheep and Lambs.—Native, \$3.25 to \$4.95; Western, \$3.50 to \$5; yearlings, \$5.25 to \$6.20. Lambs—Native, \$4.75 to \$7.15; Western, \$5.25 to \$7.15.

British Cattle Markets.

John Rogers & Company, Liverpool, cable States and Canadian steers making from 13½c. to 14½c. per pound; lambs making 16c.; wethers, 12½c. to 13c., and ewes, 11½c. to 11½c. per pound.



Water Supply for Country and Village Homes.

(Address given by Dr. W. T. Connell, Queen's University, Kingston, at the Women's Institute Convention, Toronto.)

Mrs. Richards, in one of her series of books on Household Sanitation and Sanitary Chemistry, points out that air, water and food, are the three essentials of healthful human life, and in developing this root idea, lays special emphasis on the necessity of pure air, safe water, and proper food. In my talk to-day, I am to deal with the problem of the supply of safe water for our country and village homes. You will note that I speak of safe water, not pure water, as pure water is only found in chemical laboratories, for water being an excellent solvent, and finding, under natural conditions, many substances capable of solution or suspension, is never found chemically pure. Safe water I would define as water free from such impurities as would either impair health or actually cause disease, and as such is essential, not only for the human race, but for animals and plants as well. Apart from use by the individual for drinking and cooking purposes, water is requisite for cleanliness of personal clothing, dwellings and surroundings, but the water used for these purposes need not be of equal standard to that required for personal use, but should nevertheless approximate thereto.

The problems of water supplies in country and village are of a somewhat different order from those of supplies in towns and cities. In the latter, the various families are possessed of common water supplies, and provide common sewer system under municipal control, while in country and village homes each family has to face and solve the water problem for itself, and has to provide its own means of drainage. Thus the water supply question in the country largely hinges on the local conditions, but when these are carefully inquired into, it will nearly always be found that purity of country water supplies is largely a problem of local, domestic, and animal sanitation.

The ideal drinking water of most people is the cool, clear, sparkling water of a spring. I think the advertising columns of the Toronto dailies will bear out this statement by the advertisements of spring and mineral waters which are daily carried, and by which depend for their value on this basic idea. Such water may be, and often is, of an excellent quality as its physical character would indicate, but I want to emphasize the point that good appearance and palatability do not always mean safe drinking water, as some may be of such a character and yet be dangerously polluted, while waters not so good in appearance may prove better and safer waters. Still it holds true, as a general rule, that we can condemn a natural water that has a poor appearance or is unpalatable, as not one suitable for drinking purposes. Hence the basis for the idea that all cool, clear, palatable waters are good for drinking, and when we add the fact that our early settlers found all such waters so suitable, we have quite sufficient basis for this doctrine. The trouble is that with settlement of the country and poor domestic sanitation, many such waters of previous excellent quality, have gradually become polluted.

THE SURFACE WELL.

Let us look at the sources of water supply in our rural communities. We find that we depend very largely for our drinking water on the shallow or surface well, next in order comes the deep well,

and then the surface and deep spring; occasionally a lake or stream is the source of supply. Rain water is much employed for general cleansing purposes, but is seldom a source of drinking supply, though when collected properly and well stored, it is a good, safe water, though rather unpalatable to those accustomed to our harder waters.

Considering first the surface or shallow well as to its sources of supply, character of its water, and means by which matters of dangerous character may gain entry. By a surface well is meant one which depends for its supply on the rain and melted snow waters which are absorbed by the soil, and which seep down into the subsoil till held by the first impermeable stratum of rock or hardpan. Along this stratum the water oozes gradually, or may even flow in small streams, flowing usually in the direction of the general dip or fall of the country. While these wells are called surface or shallow wells, such wells may, so far as actual depth is concerned, vary from four to five up to several hundred feet, all depending on the depth of water-retaining stratum. If this impermeable stratum makes its way to surface by a fall in the ground (gradually or abruptly), then such water flows out on surface to form a surface spring, or form a marshy spot. The source of supply here, then, is the ground water which rises and falls with the amount of rain-fall, the porosity of the soil and the dip of the ground at the point at which water-bearing layer is tapped. Such a well practically constitutes a drainage basin for the ground or subsoil water of its neighborhood as distinct from the surface run-off water. The rain in soaking into the soil from the surface, naturally carries with it in solution and suspension, considerable soluble material from the aid and soil, and many minute particles. Most of the particles become gradually filtered out in its passage, and the dissolved matters much altered and purified as the soil has marked purifying properties, especially if not overworked when it becomes 'soured or choked,' and unable to effect purification. The general character of the water in a surface well depends on many factors, such as character of the soil, whether sand, clay, gravel, rock, etc.; the amount of protection of well openings; the amount of water used, etc., but from the health viewpoint much more depends upon the character of soil in the drainage area of such well as regards the presence of human or animal wastes, vegetable or plant decomposing material, or of deleterious mineral substances, these being stated in order of their importance. Practically the only effects produced by ordinary mineral or vegetable matter (undergoing decomposition) are to induce gastro-intestinal disturbances with diarrhea, but with the entry of animal waste, and especially human excretion, there is added the danger of production of special diseases like typhoid fever, acute dysentery, cholera, etc., because the germs of these diseases are given off in the excreta, hence, if gaining entry to water, can be carried to others. If the human or animal wastes carried thus into water do not contain these special germs, then nothing more serious will be produced by such material than by presence of equal amounts of decomposing vegetable matter. Thus, in my work, I have often been told, when condemning a well as containing human or animal wastes, that the well was in use before I was born, that no illness had ever been traced to the water, and hence there was no valid reason for condemning the well and stopping use of the water. I can only say that such people have been lucky, for, once there is human waste gaining entry, there is the possibility of

introduction of the special disease-producing germs.

Now, in all works on Sanitation, classifying sources of water supply as to disease-carrying possibilities, the surface well is classed as potentially dangerous. Why is this? Surface well water may be water as good and safe as any other natural water. When our country was younger, such waters were reasonably safe, but with longer settlement and a poor or indifferent idea of house sanitation, we have allowed the drainage area of many of our wells to become polluted from human or animal waste, or have been so indifferent in protection of the well opening as to allow such pollution to gain entry directly through the well mouth.

During the past few years I have had an opportunity of examination and analysis of nearly 1,000 farm, village, and cheese-factory water supplies, and I find that on an average two-thirds of these supplies show more or less pollution with animal or human waste material—surely a very poor record. Critics may say, and, to a certain extent, the criticism has weight, that I only have had the suspicious wells called to my attention. Still, in several systematic investigations of the well waters of certain villages, and of cheese-factory waters of certain districts, the two-third ratio of polluted samples holds good; in fact, in some cases, the pollution reaches a higher figure. Thus, in a very recent examination in one small village, with 14 well waters, but three were found not polluted, i. e., nearly 80 per cent. were infected with bacteria of human or animal excreta.

CAUSES OF POLLUTION.

Now, what are the sanitary faults one finds leading to such a percentage of polluted wells? These I will now point out, but not in order of frequency nor importance.

(a) Mouth of wells not elevated above surrounding soil; in fact, in some cases, actually lying lower. The result of this, that the surface run-off water makes its way directly into well, carrying with it any waste substance present on soil surface.

(b) Wells not properly curbed or protected for upper four or five feet. The result is practically the same as when mouth of well is not elevated, for if the upper four or five feet are not made water-tight, the well is an excellent drainage pit for surrounding surface water, and if soil happens to become contaminated such contaminated material must make its way into well, and with it worms, insects, and small animals.

(c) Well mouth not properly covered, so that surface dust, twigs, leaves, etc., can fall into the well; or water pumped up carelessly runs back in again, carrying such substances in. Through lack of covering or improper curbing, frogs, mice, and even large animals, gain entry and contaminate the water. The drip from pump should always be carried outside the well curbing.

(d) Lack of cleanliness of surface soil in neighborhood of well; such things as throwing slop water near the well, allowing accumulation of manure or house wastes near by. It is remarkable how careless many are in these points, and also such as watering animals right over or very near well mouth, and allowing their droppings to lie about.

(e) Wells may be situated too near to drains or privies that leak, owing to improper construction, or too near stables, manure piles, or pigpens, so that the soaking from these gradually seeping through soil, makes its way into well and thus contaminates the water. In villages, the most danger of pollu-

tion is usually from drains and privies, both of which are often improperly constructed, and frequently much neglected, so that seepage from them to neighboring wells is but a matter of time as the accumulating decomposing matter gradually sours or chokes the soil and checks its purifying action.

In cheese factories and creameries the drainage is most common source of trouble to the water supply.

Thus, taking the average surface well, the main sources of contamination that I have found have been, no elevation of mouth, lack of curbing, improper covering, and accumulation of waste material on surface soil within 20 or 30 feet of well opening, all tending towards the same end, viz.: the direct or indirect entrance either through the top or upper few feet of well pit of the surface-contaminated water, or contamination of drainage area of a well.

THE DEEP WELL.

I have spent considerable time on the surface well, because its troubles and their causes are practically those of the other sources of water supply, so that the details of these troubles need not be again gone into. Considering next the deep well as source of supply: A deep well is one which does not depend for its supply on the ground water of the immediate locality of the well, but gets its supply from the water which lies imprisoned beneath one or more of the surface-impermeable strata. The origin of these waters may be only several hundred feet or yards from the source at which tapped, or it may come from miles away, and always from higher ground than at the point at which tapped. If there be a heavy flow of water, and source be considerably above the ground level at site of well, then a flowing or artesian well may result. In Ontario, nearly all deep well waters are excellent waters. In some sections of country they are apt to be rather heavily mineralized, or too hard for use other than for drinking or cooking, as, owing to their hardness, they require the use of too much soap for general cleaning purposes. In most parts of the country, deep wells are drilled wells, because the ground water of the surface penetrates to the rock. Deep well waters, then, as a rule, are good waters, yet in my examination and analysis I find I have to condemn a fair number of samples from such wells. What is the trouble? Practically the same as in surface wells, i. e., lack of protection of the well itself so that contaminated ground water enters. What is the use of deepening or drilling a well if the drill hole is to be simply a drainage pit for the surface water? Such a well ought to be tightly curbed down to first impermeable stratum of rock or hardpan. This keeps out the deeper water. On the vast majority of the cases which I have investigated where contamination has occurred, the trouble has been due to entrance of surface run-off water, or the surface well water, and by taking such steps as were necessary to keep this out, the trouble has ceased. Occasionally a case is met with, especially in fissured rocks, such as found particularly in lime-stone regions, where contamination gains entry to well through some fissure which receives the contaminating drainage matter. Similar trouble, at times, occurs in deep wells driven in certain gravels, but it is not all common in my experience, though perhaps more common in wells passing into the deeper gravels of parts of Western Ontario.

SPRINGS.

Springs are but the cropping out of the surface ground water or of the deep imprisoned water constituting either sur-

face or deep springs. Their waters are the same as those of the surface or deep wells, and are subject to same troubles.

Improper protection of the spring, so that surface waters gain free access, is decidedly the most common source of contamination. Springs, whose waters are employed for domestic use, should be protected from surface washings by curbing and proper drainage of any higher neighboring ground, and should be fenced off or enclosed so as to keep out animals. As I have said before, the water from a deep spring, cold, clear, and sparkling as it usually is, is the ideal drinking water of the average man—and an ideal water it may be, and usually would be, if we took those simple precautions of protecting the immediate surroundings and the drainage area from pollution. That is, we must insist upon cleanliness of all soils from which seepage may occur into our wells and springs. The problem of clean rural water supplies can only be solved by attention to general cleanliness about the dwelling and about the well area. Proper elevation of well mouth, proper curbing and covering, cleanliness of soil about well, are important factors. As important from the disease-carrying possibilities are the proper care of slop water of houses, the provision of sanitary privies, proper disposal of house wastes, prevention of contamination of drainage area of well from manure piles and stables.

As I have already pointed out, pollution of well water may be present without seeming injury to health, especially of those accustomed to use such water, but trouble, especially diarrheal outbreaks, are very apt to occur if such water is used by those not accustomed to same. Actual disease, like typhoid, dysentery, and cholera, only occurs if the germs of these diseases gain entry. These diseases do not develop de novo, for if they did, our rural and village populations would, with conditions which exist, have been swept away.

Surely, then, it is time we, in the Province of Ontario, awakened to the fact that so many of us in the villages and farm districts, are drinking water containing bacteria derived from intestinal canals of man or animals, a diluted excreta. It is time, then, we took those necessary and not expensive steps which will ensure a cleaner supply—an absence of such bacteria. The good results will soon repay all expenditure in the conservation of health and the prevention of water-carried disease.

On Some Feeble Folk.

It is now some years since interest has been aroused, chiefly through the instrumentality of an awakened Canadian womanhood, in a subject of the very deepest importance to Canada—the care of the feeble-minded in our midst. Already several other countries had faced the problem of "What shall we do with them?" and the first step towards the solution of our own difficulties was, naturally, to obtain accurate information as to the methods employed elsewhere. It was learned that in 1867, Germany had provided special classes in the schools for the education and training of mentally deficient children, other leading countries following suit, developing the work in various ways, the principle seemingly being recognized that every child, whether normal or otherwise, is entitled to all the education he or she is capable of receiving, and that the State is in duty bound to provide for their intellectual development, training them, as far as possible, to become right-minded, self-respecting, and, in many cases, even self-supporting citizens. For these classes, special teachers would naturally be provided, and thus are their qualifications described by Dr. Helen Macmurchy in her 1909 report to the Government, which had appointed her officially to make a full investigation of the subject:

"In the selection of teachers for defective children, special care is needed. Among the chief requisites are the following: An even, sunny temperament; infinite patience; unbounded tact; firmness that leads one to hold steadily to a course in spite of all obstacles; great resourcefulness in providing ways and means for carrying on the work to the best advantage, even when ready re-

sources are limited; an intense human sympathy with and love for these children so much in need of a helping hand; unbounded faith in the work; and an appreciation of effort that gives to the children constant hope and encouragement. The management of these children must be kind and sympathetic. In most cases they are unusually affectionate, and will respond quickly to any reasonable demands of the teacher. Praise and encouragement at every effort are the indispensable means of arousing dormant energies. These teachers should have the spirit of a student; they should be familiar with the best literature on the subject; they should visit schools and institutions for the training of exceptional children in order to become familiar with the best work of the kind."

The Act of 1899 defines feeble-minded children as those who, "not being imbecile, and not being merely dull and backward, are defective," and we can only make the best of the sad natural condition of the afflicted ones in spite of narrow limitations. We can discover possibilities in them. We can believe in them, and make them believe in themselves, and desire to improve.

In an address given by her in Toronto, Dr. Helen Macmurchy explained that by the term "feeble-minded," she did not mean those who had delusions or were weak-minded, which was entirely due to nervous diseases. While idiots are not able to maintain themselves, the feeble-minded are, but are not able to control themselves. At the same time, they can work and can earn their living, and the time to recognize this class is when they are children in the schools. About one-third of the criminals are those who are feeble-minded. The feeble-minded are taken advantage of by many people, but if they were cared for, there would be less crime. One great encouragement was to know that it was very probable the Government would in the near future supply a school for the feeble-minded.

"Nature puts the defective child in a class by himself, and education should take nature's hint."

The difficulties to be faced are these: "That the feeble-minded have dull perceptions, feeble power of attention, weak will-power, uncertain memory, and defective judgment. The teaching must be direct, simple, and practical. The child must be made to do, to see, to touch, to observe, to remember, to think. Every effort must tend to the development of his personality, to make him realize that well-doing brings its reward, and that wrong-doing means an ultimate curtailment of some cherished pleasure or privilege. A busy boy is generally a good boy. So employment is a potent factor in his education."

It has been almost invariably found, that, mechanically, feeble-minded children are as clever, if not more so, than normal ones. They can be taught to draw, to write, and to do anything in the "cutting line." One report from an Ontario public-school teacher says: "I remember one child who could not speak so that a stranger could understand him, and could not read a line or spell a word, although he was twelve years old, yet could copy a head-line splendidly, and do the drawing better than any other children."

When the State of Maryland, in 1888, granted a charter authorizing the expenditure of \$16,000 for the site of a school, and \$5,000 per annum for its maintenance, the President of Trustees well indicated the modern and progressive ideas by which the promoters were actuated. He said:

"Every consideration of humanity, of wise statesmanship, of good public policy, combine to sanction and enforce the cause of the feeble-minded. Even upon the lowest and most practical consideration there is nothing, which, done rightly, will help so much to diminish the drain on the pockets of the taxpayers, as the wise and prudent care of these unfortunates."

"It is calculated that eighty per cent. of the children of feeble-minded parents are feeble-minded, and the reproduction of these alarmingly increase, and whole families, generation after generation, are found in our Alms Houses. Many scarcely able to distinguish right from wrong, are incarcerated in our prisons, where, I am informed, that over one-third of those undergoing punishment,

show in their manner and physical deformities, unmistakable weakness of mind. Many go on developing more and greater mental deficiencies, until an Insane Asylum becomes their home. Many are in eleemosynary institutions, which receive aid from the State. Lastly, many are born to worthy, but poor, devoted parents, who fondly watch over and care for their imbecile offspring, day after day, unable to go forth to earn a precarious livelihood. This unhappy home, through no fault of the inmates, gradually becomes a burden upon the public unless relief is offered. Let us take these children from our Alms Houses, where the expense of keeping them is great, and send them to the feeble-minded institution, where they will be properly trained and cared for, nurse the ray of intellect that may be in them, and the State will not have so many insane to care for. Let us gather the incipient criminal who is not able to fully understand what he should, and what he should not do, into a home where he might be educated to do what is right, and the expenses of your criminal courts will decrease and your prison houses will not have to be enlarged. Let us free our public schools from imbeciles who are a stumbling-block to both teachers and scholars, and most of all relieve poor, struggling families, by giving to their feeble-minded children a happy home, prepared by the intelligent taxpayers, who will willingly contribute the cost."

Does not every sentiment of humanity and pity, and of national self-preservation, call for measures to be taken for the care, the custodial care, if possible, of these unfortunates? A people cannot choose whether or not it will support the feeble-minded. That problem solves itself always, in the same way. In one form or another, either in jails or reformatories, in asylums or charitable institutions, the taxpayer has to meet the cost, the accumulated cost, with the compound interest entailed by the unchecked growth of criminal tendencies through which are brought into the world by helpless and irresponsible mothers (the victims of scoundrels who have preyed upon their helplessness), children who never should have been born.

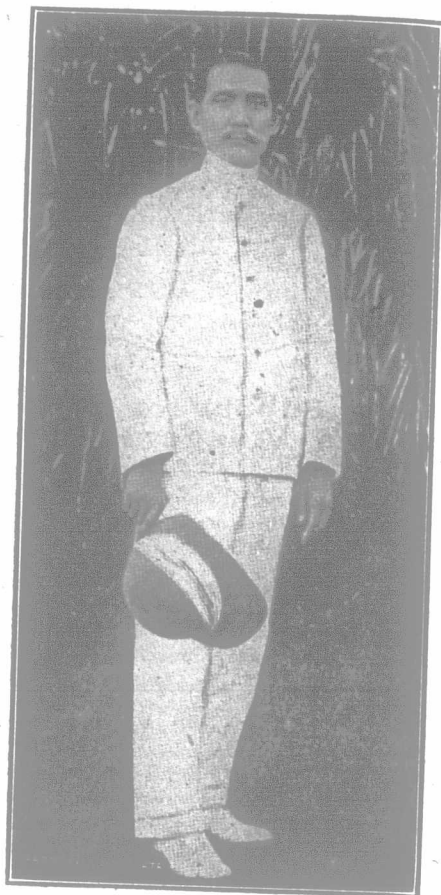
The statistics in Canada alone are something appalling of the growth of this evil. "It is," we are told, "impossible to compute what even one feeble-minded woman may cost the community, through an endless line of descendants." If the State, then, can exclude such unfortunates, utilizing towards their self-support such powers as they have, they will indeed be performing a parental duty to them, and at the same time be giving practical and economical illustration of the wisdom of the old adage, "Prevention is better than cure."

Time and again, deputations upon which have been representatives from several of the Ontario branches of the National Council of Women, have waited upon the Ontario Government, pleading for the custodial care of the feeble-minded women of the Province.

They have always been courteously received, patiently listened to, and their point of view apparently acquiesced in, but definite action always deferred. The convener of the committee of the N. C. W., reporting upon the subject at its annual meeting held in June last, asks, "If there be not something wrong in our fair Dominion, when, year by year, these helpless feeble-minded creatures are being left to drift into maternity, and only the voices of women, out of sheer sympathy, agitates for a reformation?"

Before long, another deputation from our National Council of Women will again ask for a hearing, not only on behalf of our irresponsible sisters themselves, but on behalf of our country, to which, if they are left unprotected and unsaved, they must inevitably become an increased burden, and a positive danger. May we not venture to hope for the support and co-operation of the men of Canada, for whom this plea of ours should have an equal significance, so that upon the Government programme of works of progress and beneficent wisdom for the coming year may be found, at last, definite plans for the custodial care of the feeble-minded women of the Dominion?

H. A. B.



Dr. Sun Yat Sen.

Dr. Sun Yat Sen, proclaimed President by the Republicans of China, was born 46 years ago, in Canton, but was educated at Iolani College, Hawaii, and at the College of Medicine, Hong Kong. He also studied medicine under Dr. Ken, of the American Presbyterian Mission. Owing to his connection with the "Young China" movement, he was obliged to fly the country in 1896, but in San Francisco, and in London, Eng., he still continued to stir up revolutionary principles among his fellow-countrymen. In the latter city, he was suddenly seized one day and thrust into the Chinese Legation, where he was a prisoner for thirteen days, the intention of his captors being, no doubt, to send him back to China. He managed, however, to give word of his whereabouts, and on the order of Lord Salisbury, he was released. Subsequently, he went to Japan and established there another revolutionary center, but was compelled once more to fly to the United States, a price of \$50,000 being finally placed on his head. Dr. Sun has certainly shown his ability as an agitator; whether he will be equally successful in the work of reconstruction which China so sadly needs, remains for the future to tell.

The Roundabout Club

Subjects for Study III.

The subjects for Study III. are:

- (1) What kind of education tends most to make a farmer happy and useful? To be definite, what should he know, how much should he see, how much should he feel, in order that he may achieve the highest degree of happiness, and that he may be best equipped to fill his position as a useful unit in the great family of mankind?
- (2) Write a sketch on any one of the following: (a) The Village Post Office. (b) The Old Schoolmaster. (c) The Little School Teacher. (d) A Village Store.

Write on one only of the above subjects, and send all essays so that they may arrive at this office not later than three weeks after the date upon which this paper is issued.

The papers for Study II. have been examined, and results will appear, if possible, next week.

Hope's Quiet Hour.

The Measure of Christ's Stature.

Till we all come . . . unto a perfect man, unto the measure of the stature of the fullness of Christ.—Eph. iv.: 13.

"Onward, ever onward,
Journey o'er the road
Worn by saints before us,
Journeying on to God;
Leaving all behind us,
May we hasten on,
Backward never looking
Till the prize is won."

When may we rest on our oars? When may we give up climbing the mountain of holiness? Our Master answers that we can be satisfied to stand still only when we are "perfect as our Father in heaven is perfect."

Have we come nearly up to that ideal yet?

There are two ways of judging ourselves. One is to look at the faults of our neighbors, and then at the virtues which we most enjoy admiring in ourselves. This is the way the Pharisee chose when he complacently thanked God that he was not like other men, counted up his own good points, and then picked out the man who seemed to him to be most degraded to measure himself by—a publican. St. Paul says he dare not act like the people who "commend themselves," because they are constantly "measuring themselves by themselves, and comparing themselves among themselves." That would be as foolish as the children in a writing class who should be satisfied with their own progress because they could do better than the poorest writer in the class, instead of comparing their work with that of their master. We can never be satisfied until we come "unto a perfect man, unto the measure of the stature of the fullness of Christ."

I think we often form the habit of measuring ourselves by other people, without knowing we are doing it. This state of mind is proved by our usual custom of fault-finding. We say that one of our acquaintances is selfish, another is bad-tempered, another is stingy—forgetting that our attitude of looking down upon them for these qualities implies that we consider ourselves free from such faults. It also implies that we are comparing ourselves with them, instead of holding up always before us the perfect Example of a holy life which God has given us to copy.

We are apt to grow very careless about climbing higher, when we spend our time counting up the faults of our neighbors, and our own virtues. Where is the need of effort if we are already satisfied with ourselves? But when we look at the King of Love pouring out His tender intercession for the torturers who are treating Him so unjustly, forgetting His own agony in thoughtful consideration for His mother and friend, and for the penitent thief whom He has the chance of helping, our own small attempts at self-forgotten kindness look very trivial. We study the ideal He has set before us in the Sermon on the Mount, and our self-satisfaction shrinks and dies. He holds up before us the beauty of true meekness, of absolute purity of heart, of a life of shining goodness with no desire to win the approval of men, but seeking only God's glory and honor. He warns us that the Commandments are not kept unless every thought is obedient to God's control, and that our eagerness after holiness must be such a tremendous force that we shall be ready to sacrifice anything as dear as an eye or a hand, if it is any clog on our upward progress. We are under orders to repay insults and ill-treatment with love and kindness, to leave all worries—large and small—absolutely in our Father's hands, walking joyously through life as care-free as a little child whose hand is in his father's. We are told to care most of all for the things of God, instead of eagerly seeking for gain or admiration in our everyday life. We are forbidden

to judge other people, and are warned that only good fruit can prove the soundness of our own hearts.

I have only passed lightly over that marvellous sermon of our Lord's, a sermon which shows His knowledge of God's perfect holiness and His certainty that we can never be satisfied to stop short of any height that we can see.

If a man is an enthusiastic naturalist, he can never sit down contentedly, saying: "I know all there is to know about the ways of animals and birds." When he has learned a great deal, he is always eager to find out more. If a man has learned a great deal about the wonders of electricity, he can never say—unless he is very foolish—"There is nothing more for me to learn about electricity." If he compares his knowledge of the subject with that of the people around, of course, he may say: "I know far more than they do, so I will not try to learn more." It is the same in every other science; and, if earthly knowledge is infinite in its heights, always calling men up higher, how can anyone fancy that the pursuit of holiness—which is the soul's aspiration after God—can reach its limit? "Onward, ever onward," must always be our watchword. We must be eager to climb higher, to learn more and more of God. Each step gained makes a higher one possible. Moses was given a glorious privilege when God spake face to face with him as a man speaketh to his friend. God showed him the glory of His Goodness and Love so plainly that Moses came down from the Mount with shining face, reflecting the glory of the Sun of Righteousness so dazzlingly that

he also was eager for closer fellowship with God. "I beseech Thee, show me Thy glory," he pleaded. Are our prayers earnest and intense when we are asking for clearer knowledge of God, or only when we want some earthly blessing for ourselves?

And then there is one quality very necessary if we wish to be able to realize the Presence of God in our everyday work. Our Lord has told us that the "pure in heart" shall see God. No thought of evil can be allowed to remain in the heart of one who has invited the Most Holy to be his Guest. There can be no compromise with some favorite sin, no pretence of righteousness for the sake of earthly advantage. Our religion is as tremendous in its demands as it was in the days when, to be known as a Christian, meant torture and death. To be a true Christian does not mean to declare one's self on the Lord's side; it means earnestly trying to obey His orders, it means climbing day after day a little nearer to the measure of the stature of the fullness of Christ, it means doing many little acts of unselfish kindness for His sake.

Do you want romance in your humdrum existence? There it is waiting for you. You may have to do the same kind of work every day for years; but every day you may—if you set your heart on it—be a little more Christlike. Every morning you can wake up joyfully, knowing that the day is another opportunity given you in which to bear witness for Him by kindness, gentleness, forbearance, faithfulness, truthfulness, honesty, forgiveness, love. The com-



Winter in Northern Ontario.

his people could not endure the brightness.

Do you think that God was showing favoritism when He revealed Himself so openly to this one man?

God never shows favoritism. Moses had climbed, slowly but surely, to such a height that he was able to be admitted into intimate friendship with Him who is always trying to reveal Himself to each of us. He had carried the children of Israel on his heart, had forgiven their ingratitude and murmuring against him—they always seemed to forget that he had given up his life utterly to their service, without hope of reward—he had pleaded with God for their forgiveness, even asking that if they could not be forgiven for their idolatry, he himself might be blotted out of God's book. Having climbed so high, it was possible for God to manifest Himself very fully to him. If God's glory is hidden from us, it is because we are not yet ready for the revelation. As our bodies do not jump suddenly from childhood to maturity, as the mind of a baby cannot possibly understand the thoughts of a wise man, so our spirits must be gradually developed until we are able to understand more and more of God's beauty of holiness. And there must be earnest desire after God before that desire can be satisfied. Moses was not only able to love the people who were ungrateful and unjust towards him, but

monplace work is only the material out of which character is to be made. What does it matter whether your work be grand or humble? Our Master worked nearly all His life in a carpenter's shop—and His life has drawn countless souls from darkness into light. We are not like Him yet but let us prayerfully set our hearts on being more like Him today than we were yesterday—then each day will be worth while. And let us never grow despairing because our lives look so poor beside His. The farmer does not despair of a harvest when he plants fall wheat, though the plants take a long time to reach perfection. He would be astonished if the harvest followed close on the heels of the sowing. When God sows seed in a heart, He is very patient "while it springs and grows up, first the blade, then the ear, after that the full corn in the ear." He is ready to forgive our many failures, if only we don't grow discouraged and give up growing. Let us bring our poor copy of our Master's work to Him, asking Him to show us our mistakes and give us a new day—like a fresh sheet—so that we may do better next time.

"Was Christ a man like us?—Ah, let us try
If we then, too, can be such men as He!"

DORA FARNCOMB

The Beaver Circle.

Our Senior Beavers.

Dear Beavers,—Do not forget that now is the time for you to vote in regard to our "Home-work" competition. Read over the letters in to-day's and last week's Beaver Circle, then send us, preferably on a post card, your decision as to who should have first, second, and third prizes. Get your parents' and teacher to help you in deciding, if you like, and be sure to send your vote so that it may reach us not later than February 1st. Address, The Beaver Circle, "The Farmer's Advocate, and Home Magazine," London, Ont.

Should Homework Be Abolished?

Series II.

Home-work is, I thoroughly believe, a good practice, for when you go over your lessons beforehand, you are prepared to answer quickly and correctly anything the teacher asks, thereby saving much confusion and laughter over thoughtless answers. I also say that the pupils who do not do their home-work faithfully are the ones who are—shall I say it, or can you guess?—foot of the class. They think that as soon as they are through with their lessons, they are done with them for all time—a very mistaken idea. They are very different from the ones who do their home-work well, and, in consequence, are always head of the class. If you think differently, watch the examinations, and see if I am not correct in saying what I do.

Home-work keeps the pupil in touch with his lessons as nothing else would, while the one who does none forgets he goes to school. He has no thought for his lessons from four o'clock in the evening till nine the next day.

Some pupils, like the above, go to school, not for what they learn, but for the fun they have, and the mischief they get into while there.

I must admit that home-work sometimes represents more than it should. Sometimes teachers tell their pupils to do all their lessons at home; then in school they are only correcting, instead of explaining mistakes and showing them new methods to solve their difficulties.

It is not right to give too much home-work, as it keeps the pupil too long poring over his books, ruining his eyesight, as well as keeping him awake so long that he is sleepy and dull, instead of smart and wide awake for the next day's lessons.

If you abolish it altogether, you will have tired and cross teachers and stupid scholars, instead of bright teachers and clever pupils. The teachers jumble the lessons to make time for them all, and give the pupil but a faint idea of what is contained in each one, and if you ask him a question, he gives such a confused answer you do not know whether he is aware of the true meaning or not.

Now, consider which course will be more helpful to the pupil when he tries his examination to enter High School. Which boy or girl is plucked, and which passes with honors?

Considering all these things, I would say that, by giving a normal amount of home-work, and by seeing that it is done well and thoroughly understood, you are advancing the pupil in an easy, and to him, an interesting manner. Do not think, though, that as long as you give the pupil a pile of books to carry home every night that is all that is required, for it all depends on what is inside the two covers of the books.

INA OSWALD (age 15, left school).
Chesley, Ont., Box 431.

There is much talk and argument at the present time as to the advisability of giving school children home-work. It is certainly a very important question, as it deals with school matters, which ought to be second only to religious matters.

Some people say, "Oh, yes, give them plenty of home-work to do; it keeps them busy at night. I don't think it hurts them a mite, and they learn a great deal more by being obliged to do it. Also, the parents can explain matters to them better, and give them more help

when they are doing home-work, than at any other time."

But other thoughtful folk think that if a child studies for five hours in the day, he has surely done enough, without spending all evening at his books. Then, too, he will have time to take music-lessons, or do something else.

For my part, I believe that no child under twelve years ought to be constrained to do home-work at night. If he wishes to obtain his parents' aid, he can do so, at any rate, without having to do home-work. Again, a little bit of home-work may not hurt a strong, healthy child, but for one who is delicate, it should never be allowed.

Let me illustrate: Here is a delicate girl of ten who is in the Junior Third grade at school. She studies hard all day at school, and comes home in the evening fatigued with her day's labor. But she is too conscientious to neglect her home-work; instead, she spends from one to three hours poring over her books. Her teacher praises and pushes her, and gives her parents' glowing descriptions of how quickly she is advancing, but all the time she is getting weaker and paler, until, finally, she gets so ill that the doctor has to be called. He says, "Too much study; she must not be allowed to look at a book for a couple of months." Of course, she loses more in that time than she has learned for the past year, and fails in her examinations.

Now, why all this trouble and expense? Why have the child put back a year? Simply because her parents were blind to the fact that she was studying too hard for her strength. She ought not to have been allowed to touch a book at night.

"But every pupil isn't sickly like this one," someone suggests. Certainly not. Let us think about the very reverse. Here is a wild, strong, careless, fun-loving boy. He cares not for books, doesn't want to study, is always doing mischief, and, worst of all, does his home-work carelessly. Someone suggests that plenty of home-work be given him as it won't hurt him, and will surely keep him out of mischief.

But there is a better way than that. Perhaps he is just aching to join a baseball club, but his mother objects, saying, "I'm afraid that if you belonged to it, your lessons would be neglected, and that would never do." And so he has to be content without his baseball. If such be the case, the teacher ought to make him understand that, if he does his work faithfully in school, he will not be obliged to do any home-work. This will win his love and confidence, he will be a much better boy in school, and, best of all, he will learn much more.

But do the majority of the intelligent people of this country believe that children should not have any home-work to do? Have teachers, parents and pupils, talked it over earnestly? And, in places where the "no-home-work" method has been tried, how has it worked?

I really believe that people (where earnest attention has been given the subject) are beginning to think their children do enough when they study hard all day in school, without any home-work following. One often hears remarks like this, "Why do they give children so much home-work?" or, "I believe that home-work does very little good."

One day I heard a woman say, "I wish the children hadn't quite so much home-work to do. It is so tiresome to watch them working away for more than an hour, and then going to bed discouraged and tired out, only to waken up unrefreshed and cross. Sometimes I think that home-work does no good, and I heartily wish that there was a school law forbidding the teachers to give so much as some of them are doing."

But I don't believe that this very important subject has been sufficiently discussed yet. People are just beginning to think about it now; parents are taking more interest in their children's school-life, and soon will come the "Golden Age," when parents, teacher and pupils, will be working together with a perfect understanding amongst them.

Well, you say, that logic sounds good, but how did it actually work? It has been proved again and again, by several teachers, that a child will get along just as well, if not much better, without

home-work. He studies hard in school, has a jolly time at night, and therefore goes to bed tired, wakening up quite fresh in the morning, ready in the best way to begin lessons again—without any feeling of monotony or tiredness.

But why do the children still continue to have home-work, if they are really better without it? Simply because teachers and parents have not thought enough about it. They have not interested enough in school affairs to think seriously of such a thing. Then, let us all try to get in touch with the parents, so as to find out their opinions on this question. We will hope for the best for the children, as future citizens of this great country of ours. Away with home-work and hardship! We want health and happiness!

MYRTLE LINDSAY

(Age 13, Continuation Class).
Lochwinnoch, Renfrew Co., Ont.

Dear Puck and Beavers,—I read "The Farmer's Advocate." This is my first letter. I thought I would like to write on "Home-work." Where I go to school we have too much home-work. In the First Book, twenty-five words must be written on lines. If one word is wrong—you have to "stop in." Second and Third, five questions of multiplication, then divide the product. It is supposed to be right, or—stay in. Fourth, three questions in fractions, and most likely some grammar, then study some spellings—spellings on a condition—three words wrong out of fifteen, you have to stay in. When a scholar has to walk

have home-work the same as ever, and we are expected to have it done as usual. Will any person tell me how we can get out to have a little fun at half-past eight? By the time you get to the village it is nine o'clock—time to be coming home.

We work in school five and a half hours, and I think everyone is ready to quit at four o'clock. But if you have home-work your day is not finished, because you have still an hour's work to do, and you are working at night when your brain should be resting. Naturally, you go to bed tired and drowsy, unfit for the following day's work of 5½ hours, simply to gain a little time at night. This thing goes on day after day till we begin to hate school. I know that I would like school much better if I thought I was free to do as I liked after four o'clock.

Home-work is a thing that must stop, and will be stopped in the course of a few years. I come home; I would like to read the newspaper, "The Farmer's Advocate," and others, but I must start at my home-work. As a result, I do not know what is doing outside of my own village. Puck has been giving us essays to write, but I cannot find time to do this because of the home-work. The only time I have to myself is on Saturday evenings. If home-work was abolished, I think there would be fewer headaches, and the pupils would come to school fresh and happy, ready for the day's work.

FRANK CHAPMAN

(Age 13, Continuation Class).
Nobleton, Ont.



Raising the Puck.

three miles to school, he doesn't feel much like doing home-work. It is likely he will have some chores to do when he gets home. He cannot get home much before five, anyway; takes him from five to six to do his chores; from six to seven to get his supper, etc. His home-work comes next. He hasn't much time to himself after he gets it done. It may be that all teachers don't give so much home-work. I think it is all right if not too much is given. My letter is getting pretty long. I guess the editor thinks so, too. Hoping to see this in print.

FRED WILSON

(Age 14, Class Sr. IV.).
Guelph, Ont., R. R. No. 4.

Dear Puck,—I think you have given us a very difficult subject to write upon. Do I think home-work should be abolished? I do; that is, any extra work, although I think it is very right to fix up the work we are behind in.

I have to walk two and a half miles from school. The roads in winter are very bad, and I have to struggle through the snow and slush, and it takes a good solid hour to walk home.

When I get home it is about a quarter past five. When I get my supper, it is after seven before I can start at the home-work. I am usually finished about half-past eight, and after that have half an hour to enjoy myself as I please. Then I feel so tired and drowsy I could not enjoy reading.

The next thing against home-work, perhaps there is a concert or something of that sort on at the village, and still we

Dear Puck and Beavers,—I was interested in the garden competition, and thought of trying also, but as I was in the Entrance Class, I thought I might not make both a success.

I do not think home-work should be abolished, although I have sometimes thought I would like more time to play and less home-work.

If home-work were abolished, it would take longer to get an education. Work which must be accomplished would have to be done at school, thus taking longer than if part were done at home. One often tries to solve a problem while a class is taking up a different subject. In many cases, it would be easier to accomplish the work at home where it is quiet.

Often we take more time to think over a subject in our home than we could possibly take during school hours, as we have such a variety of subjects given.

Any point that is worth a thought is worth working for. If we wish to make education a success, we must not be afraid to work. The greatest students that we know about have gained their knowledge by steady plodding.

I think if we are asked to do home-work, it should be done, if possible. I always felt more satisfied to go to school when I had my home-work done than when I neglected to do it.

OLIVER G. CELLEN

(Age 14, have left school).
Peterborough, Ont., R. R. No. 1.

Dear Puck,—I am certain that there is not one schoolboy or girl out of ten, but

will immediately decide upon taking the affirmative side of this extremely interesting debate, and you may be sure that I am in the majority. I can assure you most sincerely that I certainly do think that home-work should be abolished.

There are innumerable reasons why school-work, to be done at home, should be marked off the timetable. For example, school hours should be sufficient time for study. I am sure that from nine to twelve, and from one-fifteen to four o'clock, is long enough period of learning to keep any boy or girl busy. If a child cannot learn enough in the appointed school hours, there certainly must be something seriously lacking in that child's mental capacity. Continual application of the young mind is not good for the welfare of the body, and if there is a whole lot of home-work to do at night, it makes it nearly continual. But it is not very often that we see a pupil studying too hard, is it? I know I never have done so. You will perhaps remark that we should not judge others by ourselves, and this is perfectly true. But wait a bit—did you, yourself, speaking from your heart, ever spend one whole schoolday in constant study (not including recesses, of course)? I feel confident of perfect safety in stating that there is not more than one person out of ten will answer, "Can't say that I did, at least not right through," or something to that effect.

Then, there is always the evening amusements. For instance, skating. If the home-work is not prepared, you stand a pretty good chance (or would you rather say "a pretty bad one") of losing both recreation periods next day. Who likes to do their home-work, and then have an hour, or maybe only half that time, for the enjoyment of perfect ice? No one likes to go and then come home only to face an hour or more of study. Then, if the work is not done, half of the fun is lost in the unpleasant sensation of having neglected your duty. Abolish the home-work, and so overcome these difficulties!

I suppose that the deluded persons on the negative side of the question (if there are any!) will say that we, on the affirmative, are sufferers of that terrible disease, "tired feeling," otherwise, laziness, but I think they are mistaken, because maybe we work harder in school to make up for lost home-work.

Now, I will come to a close, and leave room for others better able to cope with this question than yours, very respectfully.

EDITH E. WALKER

(Form II., Continuation Class).
Port Burwell, Ont.

Dear Puck,—The question of "Should Home-work be Abolished" which looms up in many of our minds at present is a question of importance. Many people say, without looking very deeply into the subject, that home-work should be abolished, but those who make a less hasty conclusion will, I believe, think different.

Home-work, if not too much of it is given, is just light exercise for the mind, and, if interest is taken in doing it, will soon become more or less a pleasure. It helps to while away the long winter evenings, when without it the children would hardly know what to do. Home-work keeps children off the street at night, where they generally learn more harm than good.

It is very useful to teachers who, if home-work were abolished, would have to spend a good deal of precious time teaching their pupils a few points that could be learned in half or three-quarters of an hour at home. Pupils, if they do not understand some of the work, are sure to get help from their parents or from some other member of the family, but on the whole I think that all the work to be done at home is made plain by the teacher in the day.

At Entrance time, home-work is especially good, because it gives pupils a fine chance to get a few points which they did not know thoroughly. Some people say that when children have to do home-work they do not get enough play, but I think that they have plenty of time to play in the ample recreation hours they get. Therefore, I think home-work should not be abolished.

LESLIE HOUSTON

(Age 14, Class V.).
Holiday, Ont., R. M. D. No. 2.

Dear Puck and Beavers,—I am a little girl nine years old, and am in the Junior Third Class at school. I think I'll try to write on the competition, "Should Home-work be Abolished."

Well, boys and girls, I think home-work helps me greatly. When we study our lessons at home, we look at them as a review at school. It makes the work easier for the pupil and more pleasant for our teacher. We pupils should give our lessons just as large a share of our time after school as we give snowballing and skating. I am sure if I didn't study my lessons at home I wouldn't know them so well at school. This is why I think home-work shouldn't be abolished.

Please, Mr. Printer, toss this into the w.-p. b. if it isn't fit to print, and don't crowd others.

Wishing the Beavers success in their compositions, I'll say good-bye.

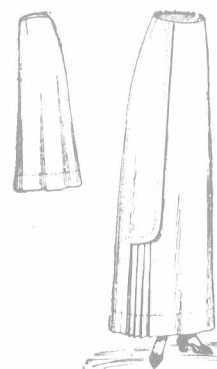
NELLIE WYATT (age 9).
Ballymote, Ont.

"The Farmer's Advocate" fashions.



7265 Long Coat for Women and Misses, 34 or 36, 38 or 40 bust.

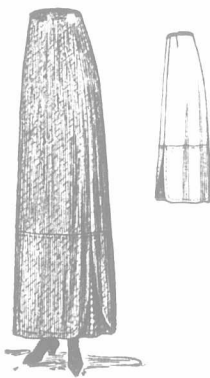
This coat is made from a reversible rug finished with fringe on the edges, but any cloaking material can be used.



7224 Two-Piece Skirt for Misses and Small Women, 14, 16 and 18 years.



7223 Blouse with Peasant Sleeves Set In, 36 to 46 bust.



7232 Skirt for Misses and Small Women, 14, 16 and 18 years of age.

Please order by number, giving age or measurement, as required, and allowing at least ten days to receive pattern. Price, ten cents per pattern. Address, Fashion Dept., "The Farmer's Advocate," London, Ont.

The Ingle Nook.

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

Dear Ingle Nook Friends,—Did you ever hear the following story? Wee Willie missed school one day, after a storm. When he went back on the following day the teacher sent him home for his "excuse." The mother wrote, "Dear Teacher,—The snow was two feet deep. Wee Willie's legs are fourteen inches long. Yours truly."

Now, in regard to the fancy-work. About a hundred requests for directions for making various things have come in. I have but one pair of hands. There are only six evenings in the week.—Fit the moral.

You see, it is simply impossible for me to reply to all the requests—at least, soon. I had expected a few, but I have been inundated. I cannot make all of the things, because I have not the time, I cannot use many of the articles, and we cannot spare so much space in the paper. We have to put in a bit for everybody, and all people are not interested in fancy-work. Besides, I simply cannot find patterns for all of the things asked for, in this city, except perhaps, in the regular fancy-work magazines, where everything is "copyrighted," and cannot, therefore, be used by us.

So I must just do the best I can, give you the benefit of my lessons as I take them, and try to make those lessons conform, so far as I can make use of the articles myself, with the requests of our subscribers. If an answer to your questions does not appear, you will know the reason why. And if you are in a hurry, I advise you, by all means, to write to some company which makes a specialty of fancy-work, asking them the price of their book containing directions for the article you want.

By the way, I heard the other day of a very pretty centerpiece for the dining-table that anyone can have. Simply take a shallow delft or glass dish, put a piece of cotton-batting in the bottom, sprinkle wheat thickly over it, then pour on some warm water. Keep the dish in a rather warm place. In about six weeks the wheat will be sprouting nicely, and a week or so later your care will be rewarded by a mass of lovely green, which will soon wave high above the edge of the dish. Of course, you must add more warm water (soft water is best) whenever it is needed.

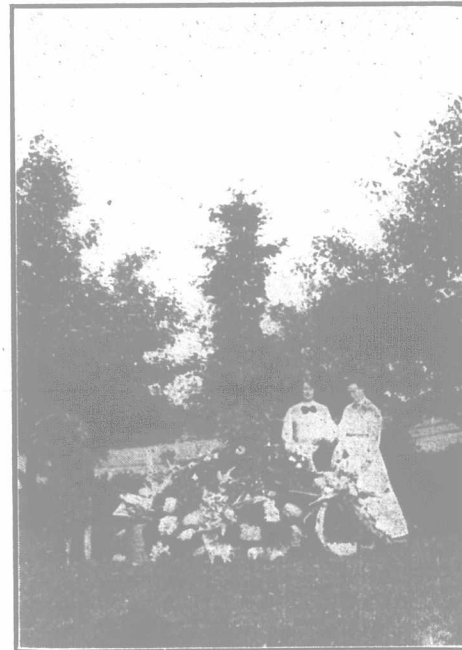
Next time there is a meeting of the W. I. Convention in Convocation Hall, Toronto, I think I shall take an ear-trumpet. I missed the most of what was said about the Parkhill vacuum-cleaner plan, but a member of the Institute there has been kind enough to send details. Three vacuum cleaners are owned by the "Cleaner Club" in Parkhill. "Each woman pays \$1 to join, and she gets the use of the cleaner once

each month as long as it lasts. Twenty-two, or at most twenty-four names, are sufficient on a cleaner. The woman who has charge of each cleaner, has laid out a regular route for each week, and the cleaner starts out on Monday morning, and is passed on from neighbor to neighbor during the week, coming back to the woman in charge on Saturday night. A few hours' work with the cleaner, say two or three, is all that is found necessary, when the cleaner comes regularly each month." This may be suggestive to other neighborhoods. The vacuum-cleaner is certainly a great labor-saver. It cleans so thoroughly, too, walls, curtains, and upholstery, as well as carpets and rugs.

I verily believe the garden spirit is beginning to tickle the fancy of some of our garden-lovers already. Just think of it—two garden letters to-day! And although not to be published until the 18th, I am "making up" this Ingle Nook on the 2nd of January. Here are the letters, and welcome indeed are they:

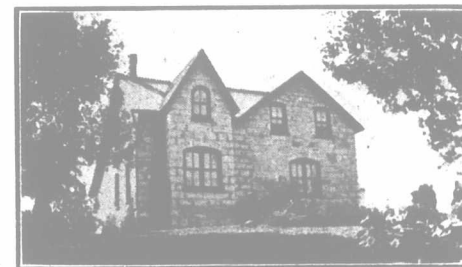
A Letter from Grey County.

Dear Dame Durden and Chatterers All,—The harvest is past and the winter has come, and those who take pleasure in your page ought soon to be returning and reporting themselves again. I have noticed how few the letters were all summer, hardly anybody writing but those who had questions to ask. But then you can hardly blame us, Dame, for you know how busy farmers' wives are. Now, I have noticed often when you have been writing about lawns and grounds, that you have no particular use for rockeries or ferneries or "sich," so I



A Successful Rockery.

am sending you a picture of mine to let you see it, and ask if you do not think it is an exception, or do you really think it is very horrid? I had ferns on it, and mountain moss, geraniums, periwinkle, pansies, etc., and I had also morning-glories that climbed right up to the top of the tree in the center. The rockery itself is composed of roots, rocks, soil, and cement receptacles for flowers.



"Busy Bee's" Comfortable Farm Home.

Now, if you have any readers who are subject to billiousness, I want to tell them what to take. We have always been told that lemons are good, and so they are, and so are oranges, but people in the country don't always have them in the house, but most of us have some tart fruit. Cherries, I think, are best, then rhubarb, and plums. I think raw, ripe cherries, have great medicinal prop-

erties, and are great for cleaning out the system, but as we cannot always have them raw, the next best thing is to have them canned. Canned rhubarb is also good, and canned plums. Indeed, canned fruit of any kind is good, and we cannot have too much of it, either raw or canned. Perhaps some of your readers will think this is useless advice, seeing that the fruit season is over, and fruit of all kinds scarce, but most of us have something, and there's another year coming. How is poor "Lankshire Lass" keeping? We have not heard of her welfare for a long time. I'll conclude by wishing you and all in your cozy corner, many happy days, and much success in all your undertakings.

Grey Co., Ont. "BUSY BEE."

I think your rockery very pretty. It is really luxuriant—a contrast to the usual order. You have it, too, at the side of your lawn, not as a centerpiece. The open, unbroken lawn, is a rule in good garden-arrangement, and this you have not violated.

A Letter from "Helponabit."

Dear Dame Durden,—Many times this year I have wanted to run in and have a chat, but have been prevented. All the summer I was so busy with my garden and my little grandsons, so busy all day, and so weary, that when night came I lay down and slept like a tired child. Many changes have taken place in our home this year. My teacher-daughter came home, but only to get ready to be married. She was married early in the year, and went out to the coast, and not content with leaving me herself, has coaxed her sister away to visit her. She thought I could manage with father and the chore-boy, and it was the dream of her life to see the Rockies, the prairies, and Vancouver, so she went.

After she left, the two new teachers who were coming to our school, wrote and asked me to board them, and a friend came and asked us to let him make his home with us for a time. I had the room, and could not say no, so I have six to do for instead of three. I write a long letter to the girls every week. My husband has a way of coming in, lying down on the lounge, and saying, "I'm so tired; I wish you would write for me." So I write two or three letters for him, and that is the way many of my evenings are spent.

What a trying year it was for the garden, so hot and dry in the growing season. I indulged in some new perennials—four rambler roses, lilies, and some others we had not got. They came in May, when it was hottest, and we were so short of water. With all my care, only two roses showed signs of life. I am afraid all are dead. Then the weeds, how they grew, drought and all! First came the chickweed, that had to be attended to three or four times; then came the redweed and lambs-quarters, and then that weed, that one of our celebrated men disliked so that he would not spell it only as "P—y." I had the misfortune to sprain my foot; that laid me up two weeks. My husband said one day, "I'm surprised that you let such weeds grow in your garden," and my son said kindly, but rather patronizingly, "Mother, if you kept the spent blossoms picked off, the flowers would bloom much better," and I had only been laid up for two weeks. I asked my son one day how much ground if it was all together I took care of. "A quarter of an acre." "Are you sure?" I said. "Quite sure," he said; so that is no city lot.

There is this about a garden—you never have two seasons alike—always a change. This year our sweet peas and dahlias were a failure; our asters very fine, and the salvia and stocks bloomed till the frost killed them. We had a hedge of tomatoes that was a great success. They were planted beside a driveway, against a wire fence. We planted peach and yellow plum tomatoes. They covered the fence, and grew six and seven feet high. They were profitable, too, for we picked many baskets of tomatoes that sold for forty cents a basket. This hedge was green and beautiful, and full of fruit when the frost killed it October 28th. If any of your Nookers have a place to screen, or an unsightly place to shut off, have a tomato hedge.

Judge

Quaker Oats by the flavor. Taste tells you the difference when you get the cream of the oats.

Choice oats are sifted 62 times to pick out the rich, plump grains. We get but 10 pounds of Quaker Oats from a bushel. These choice grains, when prepared by our process, supply the utmost in oatmeal.

This richness and flavor, round in no other brand, has made Quaker Oats the world's breakfast.

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Family size, with a piece of china beautifully decorated, 25c. } Except in Extreme West
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(236)

Try the flour that holds the confidence of thousands of home-cooks

THE present huge demand for PURITY FLOUR shows the confidence in which it is held by thousands of home-cooks.

Those who have used PURITY FLOUR have come to believe in it. They look on PURITY as a friend. They feel they can trust it implicitly, because each and every lot of PURITY FLOUR has always been uniform—always up to the high standard of quality that has made it famous.

Wouldn't you, too, like to use a flour you could always rely on? Wouldn't you like to feel certain that your bread, cakes, and pies were going to turn out exactly right? That's just how you'll feel when you become a user of PURITY FLOUR—the confidence-creating flour.

PURITY FLOUR gives high-class results, because it consists exclusively of the high-grade portions of the best Western hard wheat.

On account of the extra strength of PURITY FLOUR please remember, when making pastry, to add more shortening than an ordinary flour requires.

PURITY FLOUR

"More bread and better bread"

Make your next flour order spell P-U-R-I-T-Y F-L-O-U-R. It costs slightly more, but it's worth the difference. Add PURITY FLOUR to grocery list right now.



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There are other failures besides gardening. Two young gentlemen from the city came in the spring to get a piece of ground to raise chickens. I have never raised chickens, but I have watched the care and attention given them, and told them they lived too far away. They assured me they knew all about chickens; one had just come from college, where he had taken a course in forestry. At last they decided on a site, and persuaded my husband to let them have it. Artichokes had grown on it the year before. They asked us not to plow up, as it would make a shade for the chicks to run under. Of the piece they chose, "I suppose it is an acre?" they said. It was not an eighth of an acre. I thought of the course in forestry.

To help them, as the spring was advancing, we let them start the incubator in the cellar while they built the house. They set 50 choice eggs, and 45 came out, which was thought very good. The young men came out every morning, donned old clothes, and were so happy building the house. Then came the time to take the chicks there. One morning a fine auto stopped at the gate, a gentleman stepped out and inquired for Mr. Blank's place. We did not know. "He has a chicken farm somewhere about here." So we directed him to the farm. Soon word came that only eight chicks were alive, then three, then none. And there stands the little house—all that is left of the chicken farm.

I was telling a friend about it one day, and he told me he had a friend who wanted to go into the chicken business. He tried to persuade him not to, saying to him, "If you lose what money you have, you are too old to make any more." But he would go, and started north of Toronto. He spent four thousand dollars, then gave up and left, packed all he had in his collar-box, and his wife followed with the umbrella.

I was sent as a delegate to the Women's Institute Convention held this fall in Toronto. It was a great treat. A report of the convention has been given in "The Farmer's Advocate."

Our three-year-old grandson is a great pleasure to us. He is here every day; he is a busy, happy little fellow. We gave him a wagon and spade for his birthday. How he has enjoyed working with it—wanted to dig where we did not want him to. He jumped into a hole one day, and said, "Plant me, grandpa. I want to grow an apple tree." One day he and another boy about the same age were busy at the pony cart. "What are you doing, boys?" "Oiling the cart, grandpa." They had the oiler, but the oil did not come out of the spout fast enough, so they had unscrewed the cap and poured it over the wheels, their coats and boots. But this was not disobedience; he had never been told not to do it.

I watched him draw his wagonful of ashes to the low side of a workshop, climb up, and pour the ashes down the chimney, and when the draft drew the dust up, he cried, "Look! look! The smoke is coming up." But this was not disobedience; no one had said don't do it. One evening we were out driving and watching a glorious sunset, when he said, "Grandpa, where does the day go to?" The dear little fellow sets us thinking with the questions he asks. We do not fear the night when our homes are warm and the lights bright. The evening shadows are falling, the night of old age is drawing near, but when the day of life has flown, "Heaven Be Our Home."

Dear Dame and Ingle Nookers, I wish you all a prosperous and happy New Year. HELPONABIT.

Ontario.
Many thanks, both "Busy Bee" and "Helponabit." We, too, wish you and all Ingle Friends the happiest of New Years.

To Dissolve Ammonia.

Dear Ingle Nook,—I have been a reader of this part of your paper for some time, and as I saw that one of your other readers was inquiring as how to dissolve and pulverize baking ammonia, and as I have used it a great deal, thought I would answer it. Baking ammonia should always be bought in hard lumps, as it loses strength very quickly. It should be pulverized with a

hammer in such quantities as you intend to use at a time, and should be dissolved by putting the pulverized ammonia into a small dish of water or sweet milk on the back of your stove, where it will keep warm until dissolved.

Lambton Co., Ont. MRS. R. D.

Good Form and the Reverse in Speech.

"When men and women begin to frame their thoughts in language," says a critic, "they depend not at all upon recorded rule and precept, not upon anything that can be taught or learned, but upon their manner of expression out of that finer taste, which may, indeed, be cultivated and still more refined, yet which is itself the fairy birth-gift that ensures enlightenment to the possessor."

This "fairy birth-gift" consists in fine tact, and discerning of delicate distinctions and shades of meaning in words and expressions. It is far removed from vanity, affectation or pedantry. It permits the truly initiated person to use language with a certain sort of "masterly carelessness," that always keeps within the bounds of good taste. The initiated person does not fear to be colloquial, but is never vulgar.

In social life there is ever a search for novelty, and this results in a special vocabulary which is always subject to change in fashion. Words which are used for a time are quickly dropped as soon as they are adopted by the multitude. The word "swell" has long ago passed away, and "smart" has taken its place, no doubt to be discarded in the course of time. Words or expressions which are supposed to be a sort of society jargon, often have a very short life. An example is in the famous social classification of a noted leader, who originated the phrase "The Four Hundred." The expression is so absolutely ruled out now that anyone who uses it would show ignorance.

Slang has been aptly defined as a sort of "vagabond language," which forces its way into the most respectable company. Often it is descriptive, but it needs discrimination in its use. It is not wit, and the avoidance of it is advisable. It gives one a shock to hear it from the lips of a pretty girl, who speaks of having a "cinch." Even worse is it to hear anyone assent to a statement by saying "That's right," or "Sure." These are vulgarisms.

Very small things in talk reveal refinement of personality or the reverse. Words which are bad form are "wealthy," "elegant," "homely." Instead of these, the form would be "rich," "beautiful," "plain." No one who knows the distinctions in refined words would say "folks" for "family," or "relatives," or "fellows" for "young men." The expressions "lady friend" and "gentleman friend" are never heard in social life, and would stamp a person immediately as being ignorant of good form.

Provincialisms are peculiarities of speech which should be resolutely corrected. Such expressions as "quit," "poorly," "rest," "dress suit," "spell of bad weather," "reckon," "depot" and "store," may be classed among these.

No person of education would use the expression "Say, Mary," when wishing to call one's attention, nor would say, "Is that so?" "You don't say!" in conversation.

Grammatical errors are inexcusable. Confusion in the use of pronouns is a fatal mistake. An educated person would not say, "It is me," or "Mary and me are going," or "Sarah is coming to see my sister and I," or "between you and I," but would say, "It is I," "Mary and I are going," "Sarah is coming to see my sister and me," "Between you and me."

Other unpardonable errors are to use "learn" for "teach," or "have got" for "have," or "those kind of things" for "things of that kind," or to say "he don't" for "he does not," or "you was" for "you were," or "we are at home evenings" instead of "in the evening."

A fault to which some persons are prone is to use French words and mispronounce them.

The fear of using simple words troubles the uninitiated person, who is likely to adopt those which he fancies will sound

This Wife and Mother Wishes to tell you FREE How She Stopped Her Husband's Drinking

By all Means Write to Her and Learn how She did it.

For over 20 years James Anderson of 105 Elm Ave., Hillburn, N. Y., was a very hard drinker. His case seemed a hopeless one, but 10 years ago his wife in their own little home, gave him a simple remedy which much to her delight stopped his drinking entirely.



To make sure that the remedy was responsible for this happy result she also tried it on her brother and several of her neighbors. It was successful in every case. None of them has touched a drop of intoxicating liquor since. She now wishes everyone who has drunkenness in their homes to try this simple remedy for she feels sure that it will do as much for others as it has for her. It can be given secretly if desired, and without cost she will gladly and willingly tell you what it is. All you have to do is write her a letter asking her how she cured her husband of drinking and she will reply by return mail in a sealed envelope. As she has nothing to sell do not send her money. Simply send a letter with all confidence to Mrs. Margaret Anderson at the address given above, taking care to write your name and full address plainly. (We earnestly advise every one of our readers who wishes to cure a dear one of drunkenness to write to this lady today. Her offer is a sincere one.)

Did you Invest in Saskatoon Ten Years ago and clean up a Fortune?

Right now you have the same opportunity in

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which is the distributing point for thousands of square miles of new territory. EDSON is already the wholesale center for the Peace River district into which settlers are pouring. It is a

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on the main line of two transcontinental railroads, and has tributary to it, coal, iron, lumber and magnificent farm land. The population has grown in one year from nothing to about twelve hundred. We offer lots inside the town limits for a short time longer at \$30 00 each, on easy terms. Full particulars from

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

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Stallion, Trotting Bred—Prize winner at Toronto, 16½ hands, weight 1,320 lbs., handsome dark bay; no better stock horse in Canada; for sale.

H. C. Farmer's Advocate, London, Ont.

well, but which are not in use. For instance, no one peruses a letter, one reads it; one does not retire, but goes to bed; one writes, but does not correspond; one helps at a fair, one does not assist; one goes to the opera, one does not attend the opera.

Excessive precision in speech may be as faulty as extreme slovenliness. The avoidance of things that have been condemned will help in the correct use of our mother tongue.—Delineator.

News of the Week.

The Government has decided to appoint a Royal Commission to investigate Farmers' Bank affairs.

At a meeting in Berlin, Ont., January 11th, at which seventy representatives from various districts were present, an organization was formed to enter on a plan to develop an ocean shipway to the head of the Great Lakes via the St. Lawrence and Welland canal. The meeting did not favor the carrying out of the Georgian Bay canal scheme.

Fierce blizzards and extremely cold weather made Canada a veritable Lady of the Snows last week. In the districts to the north of Edmonton, the thermometer registered as low as from 60 to 65 degrees below zero.

The Ontario Hydro-electric Commission will not, at least for the present, be made a Department of the Government, with a Cabinet Minister at its head.

The house at Ecclefechan, Scotland, where Thomas Carlyle was born, is to be purchased for the nation.

King George and Queen Mary sailed from India for home on January 10th.

Dr. Sun Yat Sen, the President of the Chinese Republic, is the son of a farmer, and worked on his father's farm until thirteen years of age.

The immense Equitable Life Building in New York was destroyed by fire last week. Six persons perished in the flames, and numbers of valuable papers were burned.

The Socialists made a gain of thirteen seats in the elections in Germany, January 12th.

Seven Turkish gunboats were sunk in the Red Sea by Italians last week.

A Man's True Measure.

It is not his loud professions from the pulpit or the pew, And not his seeming kindly acts when in the public view.

'Tis by his evening fireside he stands before the screen, And there the imp or angel, the churl or king, is seen.

The world may smile and call him great and greet him with a cheer, But if, when day has ended and eventide draws near,

His wife grows heavy hearted, and his children pale with fright, His soul is ugly, black and mean—an inch or so in height.

He may be known to very few, but those who know him best Await his coming footsteps as the sun sinks down to rest.

There are faces at the window, looking up the lonely street, Then a scramble for the doorway and a rush of eager feet,

The eldest takes his dinner-box, the next one takes his hand, And the youngest, on his shoulder, rides along in triumph grand.

The good wife leaves the kitchen to see the merry throng, With a smile upon her features and within her heart a song.

In the world of men and letters he may be of pigmy height, But he towers to the heavens when we measure him aright.

—John L. Shroy.

Did You Ever Listen, Brother?

Did you ever listen, brother, to the music of the rill, As it sang in happy cadence, dancing gaily down the hill? Did you never stop a moment just to catch its little song? If you haven't, you have missed it; stop when next you go along.

Have you ever heard the tender little ballads of the rain, As it sang them, playing softly on the shingle and the pane?

Did you never hear the chorus as they joined in mighty shower? If you haven't, listen for it when again the rain doth pour.

Have you never heard the music as you strolled beneath the trees?

Grander far than mighty Handel with his glorious harmonies; Did you never hear the love song of the forest to his bride?

If you haven't, stop and listen when again you chance to ride.

Have you never heard the soft diminuendo in the grain?

When the breezes played upon it Autumn's light and happy strain? Have you never thrilled with pleasure as you stood amidst the corn, And heard its sweet bravuras on a clear September morn'?

Did you ever think to listen to the diapason grand,

When the Storm King sang in thunder, as he swept across the land?

Have you never caught the throbbing of his mighty, angry soul, As he struck his harp electric? Have you never heard its roll?

Have you never paused to listen to the music of the spheres?

Such soul-stirring strains of melody ne'er greeted mortal ears; When Orion, with Arcturus, and sweet Luna and old Sol, Head the choruses of Heaven, and the angels prostrate fall?

Have you never listened, brother, for the music deep and grand,

That is swelling all around you on the water and the land?

Have you never caught the music that the little zephyrs play?

As they make of you their spinnet, when they meet you day by day.

Our Lady of the Loaves.

By Arthur Stringer, in Canadian Century.

'Twas one who for a careless day Came from his realm of palm and rose, And as he went his careless way Called her "Our Lady of the Snows."

What knew he of that bosom deep, Whereof the hungry have been fed, Where warm the waiting harvests breed, Where all the world may turn for bread?

What knew he of those tender Springs When through her budding maple-groves The life-sap mounts and runs and sings, And wakes Our Lady of the Loaves?

What knew he of that sun-bathed land Where soft the golden noon-days bask?

What knew he of that lavish hand With which she gives to them who ask?

Knew he those summers long and sweet When on her hills the feeding droves And on her plains the ripened wheat Crowned her Our Lady of The Loaves?

Knew he the lordly rivers where The shuttling ships sped back and forth That hungry empires grey with care Might drain the largesse of the North?

Nay, if in white she deigns to sleep, Green floats her girdle in the Spring, And warm her bosom is and deep, And doubly dear her wakening!

But that great heart is never shown To him that for his moment roves Across the leagues we've loved and known And made Our Lady of The Loaves!

A FROZEN NOSE



Or a cold face is impossible if you wear a **Dythe Face Protector**. Thousands of men who are compelled to face the severe winters are now comfortable and as warm as toast through wearing the **Dythe Face Protector**. Perfectly sanitary, recommended by all medical men, invaluable for the man outdoors. You can look straight into any snowstorm or blizzard with comort: Write for one now.

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Send name and address for my catalogue. Agents wanted.

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"POULTRY SERMONS"
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PERFECTION COCOA (MAPLE LEAF LABEL)

is all Cocoa—and has all the food properties— all the delicious flavor of the best cocoa beans.

DO YOU USE COWAN'S?

SLEIGHS

PERFECTION ONTARIO BOB SLEIGHS are the best two-bench sleigh made in Canada to-day. Can be had in sizes to suit any work in 1½, 2, 2½, 3, 3½ and 4-inch. These sleighs are made of the very best material, and guaranteed the best sleigh on the market to stay on the road. Send to-day for our free circular, and ask for prices before placing your order. We can at present fill orders same day as received. We also make

PERFECTION SEED AND GRAIN SEPARATORS
The TEMPLIN MFG. CO.
C. P. R. Fergus, Ont. G. T. R.

EXTENSIVE AUCTION SALE

ON
Thursday, Feb. 1, 1912
The property of **DAVID BELL**, near **Bright, Ont.** (Oxford Co.), on G.T.R.
Consisting of: **15 Horses**
8 Heavy Clyde Mares
(In foal to imp. Clyde stallion)
54 Head of Cattle
10 Shorthorn Cows **20 Fat Cattle**
P. IRVING, Auctioneer
Woodstock, Ontario

A Fortune in Chicks

One Man and His Son Made \$12,000 In One Year With Poultry

You will want to read his letter telling how it was done. And best of all any one who will follow the same simple practical rules will be sure to make big money with poultry. Every one who keeps poultry or who is thinking of starting in this business should have a copy of this big

112 Page Book—Free
Nothing like it has ever been published before. It is filled from cover to cover with splendid illustrations and bristles with money making—money saving facts. You will be interested in the articles by Prof. W. E. Graham of Guelph, Ontario, "Hatching and Rearing" and "The Automatic Henhouse." Other subjects discussed are "How to Select Layers," "Which Breed is Best," "How to Treat Diseases." Just think of 112—75 of the 112 pages contain no advertisements—just helpful information from the greatest authorities on poultry raising. This book will save you a thousand mistakes and make poultry raising profitable if you will follow the advice it gives.

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and mail it to us at once. We will send the complete book free and postpaid. You will want to know about the new PRAIRIE STATE INCUBATOR with Seed Tray—same the PRAIRIE STATE UNIVERSAL HOVER BROTHERS which you can make at home and save money. All leading agricultural colleges and experiment stations endorse Prairie State incubators because they hatch chicks that live. Write for free book **Send your name to us and get highest market prices.**
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For reservations and information, apply: M. J. MURPHY, D. P. A., Toronto.

Mrs. Gramercy—It's awful to have a jealous husband!
Mrs. Park—But it's worse, dear, to have one who isn't jealous.
Wife (complainingly)—You're not like Mr. Knagg. They've been married twenty years, and Mrs. Knagg says her husband is so tender.
Husband—Tender! Well, he ought to be, after being in hot water that long.
"Am I required to exchange wedding gifts in the department from which they were purchased?"
"Not at all," said the floor-walker.
"Thank you. I would like to exchange a rose-jar for a frying-pan."

HOW TO STIMULATE PRODUCTION OF NITROGEN IN THE SOIL.—Extract from "Artificial Fertilizers: Their Nature and Use." By B. Leslie Emslie, C.D.A., P.A.S.I., F.C.S. "If the farmer grows a crop of clover or other leguminous crop, having in view the enrichment of the soil in nitrogen, he will naturally wish to have as big a crop as possible, and the way to insure the proper development of a nitrogen-gathering crop, so as to enable it to rob the atmosphere of the quantity of valuable nitrogen, is to see that the crop is provided with a sufficient supply of the other plant foods, viz., phosphoric acid and potash. No factory can be kept going unless regularly supplied with the motive power necessary for the evolution of the finished product; no more can this nitrogen factory in the soil maintain its productive capacity unless a regular supply of power, in the form of phosphoric acid and potash, be available. Legumes, although independent of an artificial source of nitrogen, are nevertheless very dependent on an easily assimilable supply of the other plant foods." Farmers can obtain copies of this and other bulletins treating of this important subject, by applying to German Potash Syndicate, Temple Building, Toronto, Ont. Advt.

The Scarlet Pimpernel.

A STORY OF ADVENTURE.

By Baroness Orczy.
(Serial rights secured by "The Farmer's Advocate.")
By permission of G. P. Putnam's Sons.
(Continued from last week.)

CHAPTER IV.
The League of The Scarlet Pimpernel.
They all looked a merry, even a happy party, as they sat round the table; Sir Andrew Ffoulkes and Lord Antony Dewhurst, two typical, good-looking, well-born and well-bred Englishmen of that year of grace 1792, and the aristocratic French comtesse with her two children, who had just escaped from such dire perils, and found a safe retreat at last on the shores of protecting England.

In the corner the two strangers had apparently finished their game; one of them arose, and standing with his back to the merry company at the table, he adjusted with much deliberation his large triple-caped coat. As he did so, he gave one quick glance all around him. Everyone was busy laughing and chatting, and he murmured the words "All safe!"; his companion then, with the alertness born of long practice, slipped on to his knees in a moment, and the next had crept noiselessly under the oak bench. The stranger then with a loud "Good-night," quietly walked out of the coffee-room.

Not one of those at the supper table had noticed this curious and silent manoeuvre, but when the stranger finally closed the door of the coffee-room behind him, they all instinctively sighed a sigh of relief.

"Alone, at last!" said Lord Antony, jovially.
Then the young Vicomte de Tournay rose, glass in hand, and with the graceful affectation peculiar to the times, he raised it aloft, and said in broken English,—

"To His Majesty George Three of England, God bless him for his hospitality to us all, poor exiles from France."

"His Majesty the King!" echoed Lord Antony and Sir Andrew as they drank loyally to the toast.

"To His Majesty King Louis of France," added Sir Andrew, with solemnity. "May God protect him, and give him victory over his enemies."

Everyone rose and drank this toast in silence. The fate of the unfortunate King of France, then a prisoner of his own people, seemed to cast a gloom even over Mr. Jellyband's pleasant countenance.

"And to M. le Comte de Tournay de Basseville," said Lord Antony, merrily. "May we welcome him in England before many days are over."

"Ah, Monsieur," said the Comtesse, as with a slightly trembling hand she conveyed her glass to her lips, "I scarcely dare to hope."

But already Lord Antony had served out the soup, and for the next few moments all conversation ceased, while Jellyband and Sally handed round the plates, and everyone began to eat.

"Faith, Madame!" said Lord Antony, after a while, "mine was no idle toast; seeing yourself, Mademoiselle Suzanne and my friend the Viscount safely in England now, surely you must feel reassured as to the fate of Monsieur le Comte."

"Ah, Monsieur," replied the Comtesse, with a heavy sigh, "I trust in God—I can but pray—and hope."

"Aye, Madame!" here interposed Sir Andrew Ffoulkes, "trust in God by all means, but believe also a little in your English friends, who have sworn to bring the Count safely across the Channel, even as they have brought you to-day."

"Indeed, indeed, Monsieur," she replied, "I have the fullest confidence in you and your friends. Your fame, I as-

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Every person can recall some disastrous family squabble where the owner of an estate died without a will. In each case the deceased person is blamed, and rightly so, for having neglected this most important matter.
A strange part of it is that the people who criticize do not take the lesson to heart, but go on from day to day without doing anything to prevent a similar state of affairs in their own family. Of course, it is somewhat of a trouble to go to a lawyer, and it costs from \$5 to \$10. That difficulty, however, has disappeared. With Bax Legal Will Forms, which cost only thirty-five cents, you can make your own will at home. Full instructions and a sample will, made out, accompany each form. All you do is to fill in the blanks, have it witnessed by two friends, and the will is perfect from a legal standpoint. Ask your druggist for one. If he has no BAX forms, order by mail from
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Auction Sale OF BERKSHIRES, Etc.

On Thursday, January 25th, 1912
Commencing at 10 a.m. a clearing sale of Stock Implements, Feed etc. will be held by J. B. Pearson, agent at the Valley Home Farm, near Meadowdale Str. (C.P.R.). Includes fine lot of registered Berkshire sows, bred and nearly ready; two young Holstein bulls, one Inka Velstra, No. 9672, Clyde filly, 2-yr-old, and Clyde mare (imp.), and a lot of fine milkers.

W. A. RUSSELL, Auctioneer.

Government STANDARD SEEDS

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Alfalfa, \$11.00 Alsike, \$11.00
Red Clover, \$14.00
Ask for samples. Also all kinds of seed grain by the bushel or carload.
CALEDONIA MILLING COMPANY, LTD.
Caledonia, Ontario

POULTRY AND EGGS

Condensed advertisements will be inserted under this heading at two cents per word each insertion. Each initial counts for one word, and figures for two words. Names and addresses are counted. Cash must always accompany the order for any advertisement under this heading. Parties having good pure-bred poultry and eggs for sale will find plenty of customers by using our advertising columns. No advertisement inserted for less than 30 cents.

A FEW pure-bred Columbian Wyandottes for sale for breeding purposes. Cockerels, \$1.50; pullets, \$1.00 to \$1.50. Hugh McKellar, Tavistock, Ontario.

BRONZE TURKEYS—Choice young birds for sale. My strain have won "champion" ship" at Guelph Winter Fair the past nine years. W. J. Bell, Angus, Ontario.

CHOICE S. C. Brown Leghorns, R. I. Reds; the busy kinds. Wm. Bunn, Birt, Ont.

CHOICE WHITE WYANDOTTES and Rose-comb Rhode Island Reds from prize-winning strains. Satisfaction guaranteed. Alex. McIntosh, Chesley, Ont.

FOR SALE—Pure-bred White Leghorns, cockerels and pullets. Eggs for hatching in season. Robt. Hughes, Ideal Poultry-yards, Collingwood, Ontario.

FOR SALE—Cocks and cockerels, Single-comb White Leghorns, Rose-comb Brown Leghorns, White Wyandottes, Silver-laced Wyandottes, Banded Plymouth Rocks. All from heavy-laying strains. Prices \$1.50 to \$3.00 for any. W. H. Furber, Dungannon Poultry Farm, Cobourg, Ontario.

FOR SALE—Pekin Ducks, bred from Winter Fair winners. Young drakes and ducks, including our fall fair winners; also a yearling Bronze tom. Write to J. A. McLuens, Mitchell Square, Ontario.

AMMOTH BRONZE TURKEYS from prize-winning stock. Satisfaction guaranteed or money refunded. G. E. Nixon, Arva.

S. C. WHITE LEGHORNS—Big vigorous cockerels cheap from heavy winter layers. B. W. Linscott, Brantford.

218 AND 220 EGGS PER HEN in one year. 50 B. P. Rock and White Wyandotte Cockerels, bred direct from these hens. 25 S.-C. White Leghorn Cockerels; grand breeders. Write to-day for illustrated catalogue and prices. It's free. L. R. Guild, Box 16, phone 24, Rockwood, Ontario.



Advertisements will be inserted under this heading, such as Farm Properties, Help and Situations Wanted, and Pet Stock.
TERMS—Three cents per word each insertion. Each initial counts for one word and figures for two words. Names and addresses are counted. Cash must always accompany the order. No advertisement inserted for less than 50 cents.

AGENTS WANTED—We have an unusual premium proposition; every person will be interested. No outlay necessary. Apply: B. O. I. Co., Ltd., 228 Albert St., Ottawa, Ont.

BELTING FOR SALE—Over 1,000,000 feet in rubber, canvas, etc.; all sizes and lengths, at 25 to 50% less than regular prices; also large quantities of iron pipe, fencing, etc. Catalogue sent on request. The Imperial Waste & Metal Co., 20 Queen St., Montreal.

CREAM WANTED—At the Guelph Creamery. Business run on the co-operative plan. Write for prices and particulars. It will pay you well. Stratton & Taylor, Guelph.

CREAMERY FOR SALE—New buildings, established and capable of large expansion. Box H. C., "Farmer's Advocate," London, Ontario.

FARMS FOR SALE—30 farms for sale, all sizes, Halton, Peel and Wellington Counties. Write for catalogue. J. A. Willoughby, Real Estate, Georgetown.

FOR SALE—100 acres, North Dorchester Township, 1 mile from Hamilton Gravel Road, 2 1/2 miles from Dorchester Station, and 9 miles from London. Good dwelling house, bank barn 132x44, milk house and implement shed. Also 125 acres opposite on side line, with two dwelling houses, bank barn 60x40, driving barn and hogpen; good sugar bush on farm; soil on both farms clay loam, and both have been fully stocked for many years. For further information apply on the premises to David Gilmour, Nilestown.

FOR SALE—Riverdale Stock Farm, 175 acres, including fifty acres permanent pasture, never-failing spring. For further particulars apply: Box 101, Drumbo.

ONE HUNDRED ACRES in Orford Township, Kent County. Near post office, railways, school and churches. Seventy acres under cultivation, balance pasture. Frame house; 2 barns and stable; good water. Soil, gravel and sandy loam; good bean and tobacco land. Will be sold cheap to close estate. Apply to F. W. Scott, Highgate, Ontario.

SITUATION AS HERDSMAN—Good milker and steady. H. Burbridge, 210 Richmond St., Toronto.

WANTED—Small farm to rent, or on shares; mixed farm preferred. John Goring, Steadman P.O., Quebec.

WANTED—Cash paid for Military Land Grants in Northern Ontario. Please state price and location. Box 88, Brantford.

WANTED—Farmer's daughter, to assist with housework in family of four. Good home and salary. References required. Box P., "Farmer's Advocate," London.

WANTED—Girl for general housework. Good home; good wages; every convenience; 10 minutes from post office. Railway fare paid. Apply: Mrs. Lester Weaver, Hespeler, Ontario.

WANTED—Farmer experimenter—A thoroughly practical man, instructed in dairy farming, used to modern methods and machinery, willing to take a whole-hearted interest in imparting his knowledge to the boys. Applicants should clearly state age, if married size of family, where experience was obtained, name of references, former employers, and so on. Applications addressed to G. W. O. Mathews, Superintendent, Boys' Farm, Shawbridge, Que.

WANTED—First-class man to work on shares 150-acre farm in good dairy section. Flavell-Silverwood, Ltd., London, Ontario.

800 ACRE FARM—For sale or rent, at Swan River, Manitoba; 400 acres cultivated. No one but a first-class man with means need apply. Mrs. N. Gable, 181 Canora St., Winnipeg.

200 ACRE FARM FOR SALE—First-class property. For particulars apply to Joseph Robson, Vanneck, Ontario.

WANTED—At the De'h Tannery, Custom Robe and Fur Tanning. Horse and cattle hides make best Robes and Coats when properly tanned and made up right. Send them to me and have them dressed right, and you will be well satisfied.
B. F. BELL, Delhi, Ont.

The Air-Cooled PREMIER

is not an experiment nor a toy, but a strong, reliable GASOLINE ENGINE

that is steadily winning a reputation for its convenience, durability and wonderful economy. When writing for particulars, please state the use for which an engine is desired. Manufactured by

CONNOR MACHINE CO., LTD
Exeter, Ontario

sure you, has spread throughout the whole of France. The way some of my own friends have escaped from the clutches of that awful revolutionary tribunal was nothing short of a miracle—and all done by you and your friends—"

"We were but the hands, Madame la Comtesse. . . ."

"But my husband, Monsieur," said the Comtesse, whilst unshed tears seemed to veil her voice, "he is in such deadly peril—I would never have left him, only . . . there were my children. . . . I was torn between my duty to him, and to them. They refused to go without me . . . and you and your friends assured me so solemnly that my husband would be safe. But, oh! now that I am here—amongst you all—in this beautiful, free England—I think of him, flying for his life, hunted like a poor beast. . . . in such peril. . . . Ah! I should not have left him. . . . I should not have left him!"

The poor woman had completely broken down; fatigue, sorrow and emotion had overmastered her rigid, aristocratic bearing. She was crying gently to herself, whilst Suzanne ran up to her and tried to kiss away her tears.

Lord Andrew and Sir Andrew had said nothing to interrupt the Comtesse whilst she was speaking. There was no doubt that they felt deeply for her; their very silence testified to that—but in every century, and ever since England has been what it is, an Englishman has always felt somewhat ashamed of his own emotion and of his own sympathy. And so the two young men said nothing, and busied themselves in trying to hide their feelings, only succeeding in looking immeasurably sheepish.

"As for me, Monsieur," said Suzanne, suddenly, as she looked through a wealth of brown curls across at Sir Andrew, "I trust you absolutely, and I know that you will bring my dear father safely to England, just as you brought us to-day.

This was said with so much confidence, such unuttered hope and belief, that it seemed as if by magic to dry the mother's eyes, and to bring a smile upon everybody's lips.

"Nay! you shame me, Mademoiselle," replied Sir Andrew; "though my life is at your service, I have been but a humble tool in the hands of our great leader, who organized and effected your escape."

He had spoken with such a warmth and vehemence that Suzanne's eyes fastened upon him in undisguised wonder.

"Your leader, Monsieur?" said the Comtesse, eagerly. "Ah! of course, you must have a leader. And I did not think of that before! But tell me where is he? I must go to him at once, and I and my children must throw ourselves at his feet, and thank him for all that he has done for us."

"Alas, Madame!" said Lord Antony, "that is impossible."

"Impossible?—Why?"

"Because the Scarlet Pimpernel works in the dark, and his identity is only known under a solemn oath of secrecy to his immediate followers."

"The Scarlet Pimpernel?" said Suzanne, with a merry laugh. "Why! what a droll name? What is the Scarlet Pimpernel, Monsieur?"

She looked at Sir Andrew with eager curiosity. The young man's face had become almost transfigured. His eyes shone with enthusiasm; hero-worship, love, admiration for his leader seemed literally to glow upon his face.

"The Scarlet Pimpernel, Mademoiselle," he said at last, "is the name of a humble English wayside flower; but it is also the name chosen to hide the identity of the best and bravest man in all the world, so that he may better succeed in accomplishing the noble task he has set himself to do."

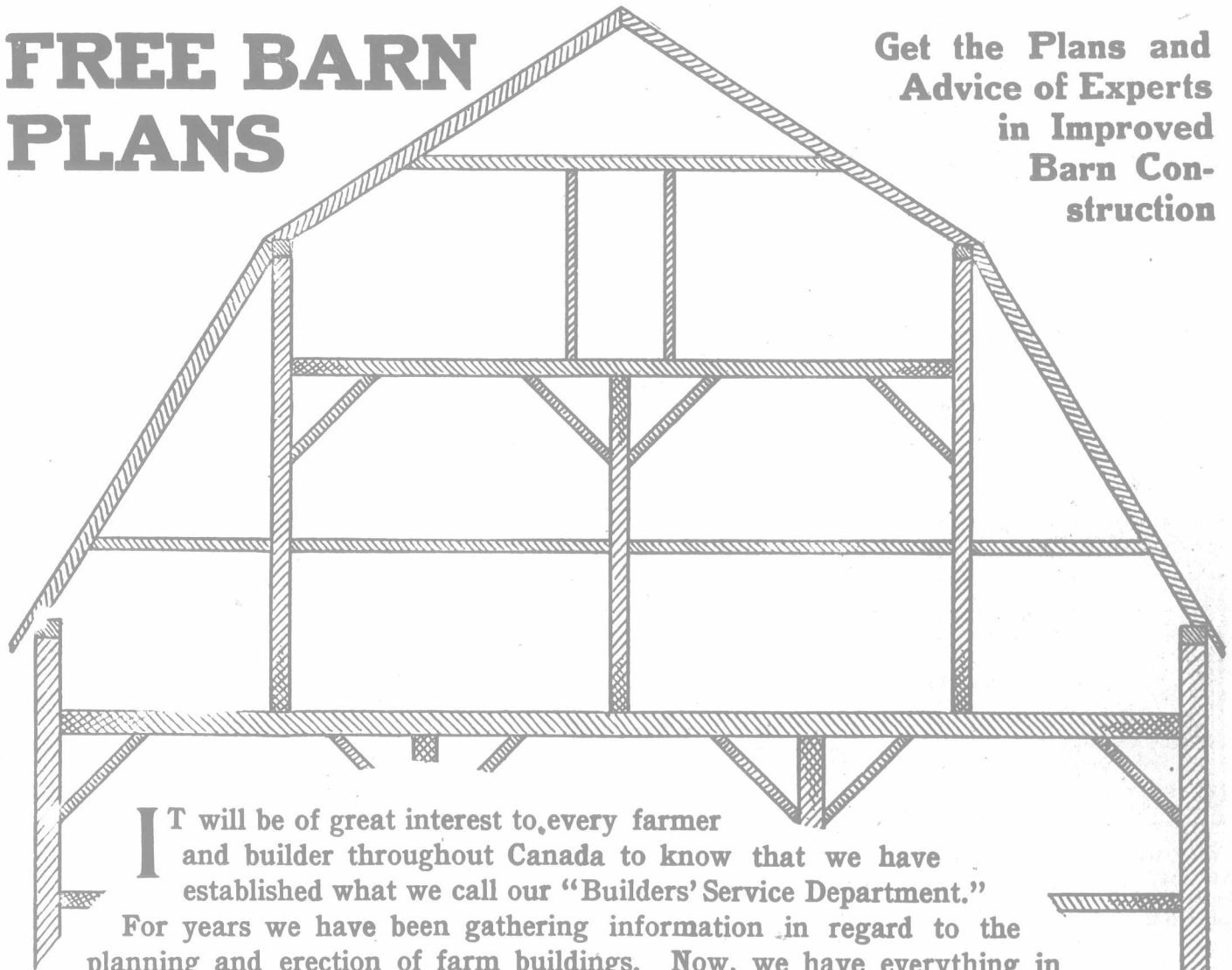
"Ah, yes," here interposed the young Vicomte, "I have heard speak of this Scarlet Pimpernel. A little flower—red?—yes! They say in Paris that every time a Royalist escapes to England that devil, Fouquier-Tinville, the Public Prosecutor, receives a paper with that little flower desinated upon it. . . . Yes?"

"Yes, that is so," assented Lord Antony.

"Then he will have received one such paper to-day?"

FREE BARN PLANS

Get the Plans and Advice of Experts in Improved Barn Construction



IT will be of great interest to every farmer and builder throughout Canada to know that we have established what we call our "Builders' Service Department." For years we have been gathering information in regard to the planning and erection of farm buildings. Now, we have everything in readiness to give all this information FREE to every farmer who intends building or remodelling, and will give us detailed information as to his wants. Almost every barn builder follows the type of construction usual in his territory. Here is where our "Builders' Service Department" will help by providing suggestions and information obtained from all parts of Canada. "The Builders' Service Department" will co-operate with the barn builder to give you the ideal building.

Our Board of Advisers Builders' Service Dept.

We have a Board of Advisers, consisting of ten of the best barn builders and contractors in the country. These men have given years and years to the planning and erection of farm buildings. You can have all the information from these men FREE of all cost if you will make known your wants. You wonder why we do all this FREE? It is for this reason: We feel that with this

Address envelope to

Edolph
MANAGER

we can help the farmer and builder to erect Ideal Farm Buildings. As the farmer builds he will want to build better and safer, so that his stock and grain and implements, etc., are absolutely safe from lightning, wind, rain and fire. Mail the coupon. Get the help of our "Builders' Service Dept." Remember this: Whether you buy from us or not we will give you the co-operation of our "Builders' Service Dept." free.

Metal Shingle & Siding Co., Limited, Preston, Ont.

CUT ALONG HERE Branch Office and Factory, Montreal, Que. MAIL IT TO-DAY

Send me Portfolio of Barn Plans, showing framework construction and plans of interior. I intend building a barn.....ft. by.....ft.

Are you interested in all steel buildings? (Yes or No).....

Do you want roofing or siding for an old building? (Yes or No).....

Name..... P.O. Address.....

County..... Province..... Publication Farmer's Advocate

"Undoubtedly."

"Oh! I wonder what he will say!" said Suzanne, merrily. "I have heard that the picture of that little red flower is the only thing that frightens him."

"Faith, then," said Sir Andrew, "he will have many more opportunities of studying the shape of that small scarlet flower."

"Ah! Monsieur," sighed the Comtesse, "it all sounds like a romance, and I cannot understand it all."

"Why should you try, Madame?"

"But tell me, why should your leader—why should you all—spend your money and risk your lives—for it is your lives you risk, Messieurs, when you set foot in France—and all for us French men and women, who are nothing to you?"

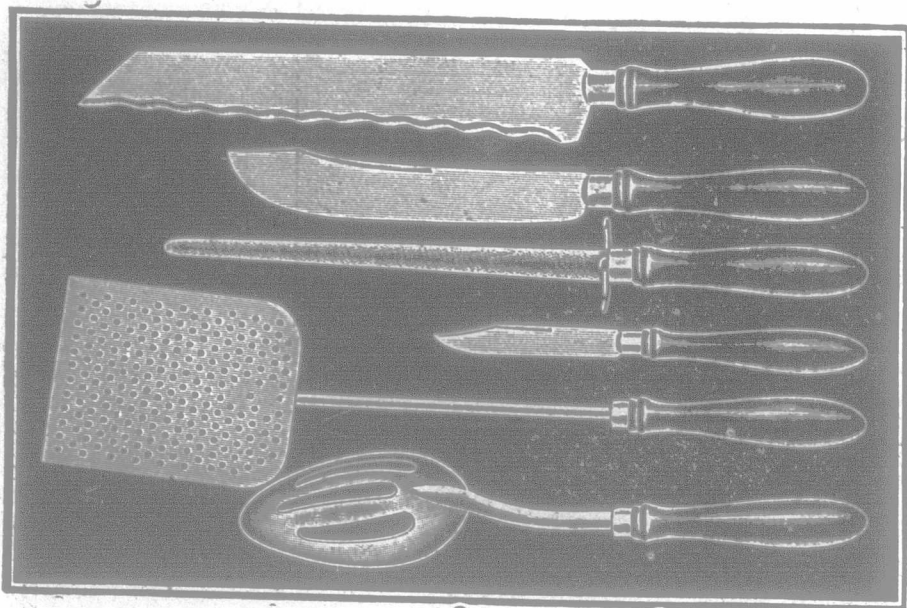
"Sport, Madame la Comtesse, sport," asserted Lord Antony, with his jovial, loud and pleasant voice; "we are a nation of sportsmen, you know, and just now it is the fashion to pull the hare from between the teeth of the hound."

"Ah, no, no, not sport only, Monsieur. . . . you have a more noble motive, I am sure, for the good work you do."

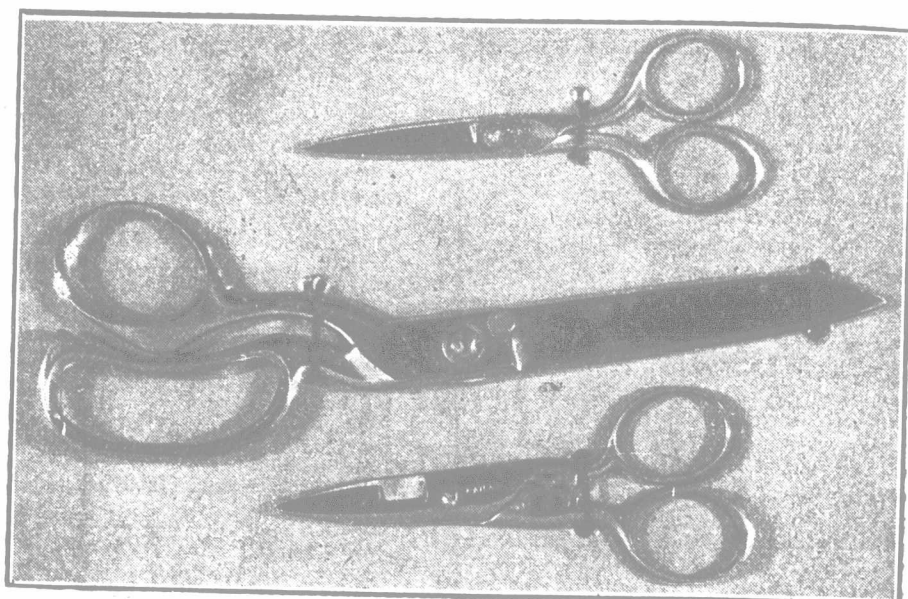
"Faith, Madame, I would like you to find it, then. As for me, I vow, I love the game, for this is the finest sport I have yet encountered—hair-breadth es-

HOUSEHOLD NECESSITIES

Below are described some of the premiums which we are offering this season. You will be highly pleased with any of them you secure. The required number of new yearly subscriptions to "The Farmer's Advocate and Home Magazine" is marked after each.



COMPLETE KITCHEN EQUIPMENT.—A utensil for every purpose. All made of the highest grade of crucible steel. Rubberoid finished, hardwood handles, mounted with nickel-plated ferrules. All six articles for **ONE NEW SUBSCRIBER.**



SET SCISSORS.—One self-sharpening scissors, one embroidery scissors, one buttonhole scissors. All good quality steel. **ONE NEW SUBSCRIBER.**

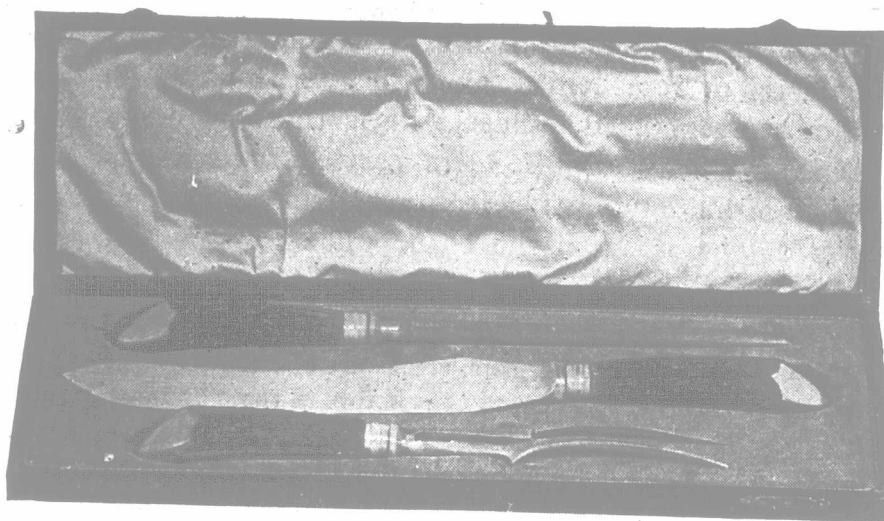
FARMER'S ADVOCATE KNIVES.—Manufactured by Joseph Rodgers, Sheffield, England. Jackknife and Penknife, both nickel-handled and having two blades. Manufactured especially for "The Farmer's Advocate." worth, retail, \$1.00 each. **ONE NEW SUBSCRIBER FOR EACH KNIFE.**

40-PIECE AUSTRIAN CHINA TEA-SET.—Handsome and dainty in shape, coloring and design, ordinarily retailing from \$4.00 to \$6.00, depending on locality. We have only a few sets left, so send your names as soon as possible. **FOUR NEW SUBSCRIBERS.**

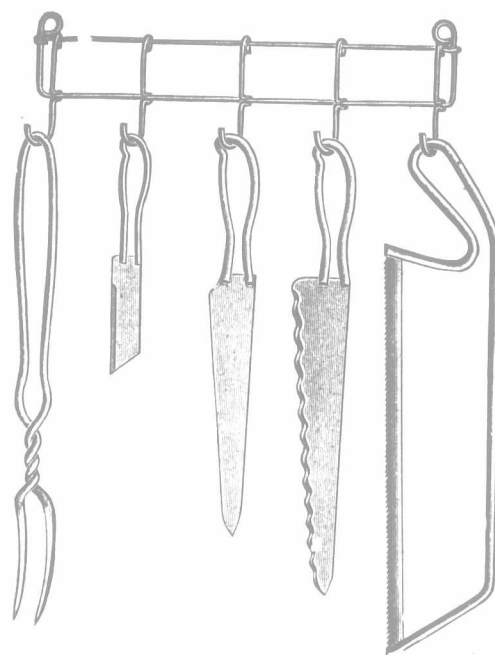
BIBLE.—Old and New Testaments in beautifully clear, legible type; references, concordance to both old and new testaments. Index to names of persons, places and subjects occurring in the Scriptures. Twelve full-page maps; all excellent in type and outline. This book is of most convenient size, being 7 x 10 inches when open; weight, 23 ounces; and would sell at regular retail price from \$1 to \$1.50. **ONLY ONE NEW SUBSCRIBER.**

"THE VISION OF HIS FACE," by Dora Farncomb, writer of Hope's Quiet Hour in "The Farmer's Advocate," contains 18 chapters, 224 pages, in cloth with gilt lettering. One of the many expressions received regarding it is: "I am pleased, edified and comforted in reading it. It is better, fuller and richer than I expected." Cash price, cloth binding with gilt lettering, 75 cents; handsomer binding, richly decorated with gold, \$1.00. **ONLY ONE NEW SUBSCRIBER.**

"CARMICHAEL," by Anison North—A Canadian farm story, bound in cloth, illustrated. Buffalo Courier says: "It is far above the ordinary run of fiction." Toronto World says: "Should be in all the homes of the people." Cash, \$1.25, or **TWO NEW SUBSCRIBERS.**



SET STAGHORN CARVERS.—First quality steel, with staghorn handles and handsome nickel mounting. These carvers will retail from \$3.50 to \$5.00 per set. **THREE NEW SUBSCRIBERS.**



SANITARY KITCHEN SET.—Best quality steel; five pieces and rack which can be hung on the wall. **ONE NEW SUBSCRIBER.**

TWENTY-ONE-PIECE AUSTRIAN CHINA TEA SETS.—These would retail at from \$2.50 to \$3.50 per set, depending on locality. **FOR ONLY TWO NEW SUBSCRIBERS.**

BARON'S PRIDE.—Handsome picture of the champion Clydesdale. Size, 17 x 13 in., including margin. Suitable for framing. **ONE NEW SUBSCRIBER.**

DICTIONARY.—An indispensable volume in every home. The Chambers' Twentieth Century Dictionary, cloth bound, contains 1,200 pages, profusely illustrated, printed on superior quality of paper. **TWO NEW SUBSCRIBERS.**

THESE PREMIUMS ARE GIVEN ONLY TO OUR PRESENT SUBSCRIBERS FOR SENDING IN BONA-FIDE NEW YEARLY SUBSCRIPTIONS ACCOMPANIED BY \$1.50 EACH.

EIGHT MONTHS CREDIT.—Any subscriber may have the date on his own label advanced 8 months by sending us the name of one new subscriber and \$1.50.

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Send for sample copies and agents outfit to-day.

The William Weld Co., Limited
LONDON, ONTARIO

capas. . . . the devil's own risks! — Tally ho!—and away we go!"

But the Comtesse shook her head, still incredulously. To her it seemed preposterous that these young men and their great leader, all of them rich, probably well-born, and young, should for no other motive than sport, run the terrible risks which she knew they were constantly doing. Their nationality, once they had set foot in France, would be no safeguard to them. Anyone found harbouring or assisting suspected royalists would be ruthlessly condemned and summarily executed, whatever his nationality might be. And this band of young Englishmen had, to her own knowledge, bearded the implacable and bloodthirsty tribunal of the Revolution, within the very walls of Paris itself, and had snatched away condemned victims, almost from the very foot of the guillotine. With a shudder, she recalled the events of the last few days, her escape from Paris with her two children, all three of them hidden beneath the hood of a rickety cart, and lying amidst a heap of turnips and cabbages, not daring to breathe, while the mob howled "A la lanterne les aristos!" at that awful West Barricade.

It had all occurred in such a miraculous way; she and her husband had understood that they had been placed on the list of "suspected persons," which meant that their trial and death was but a matter of days—of hours, perhaps.

Then came the hope of salvation; the mysterious epistle, signed with the enigmatical scarlet device; the clear, peremptory directions; the parting from the Comte de Tournay, which had torn the poor wife's heart in two; the hope of reunion; the flight with her two children; the covered cart; that awful hag driving it, who looked like some horrible evil demon, with the ghastly trophy on her whip handle!

The Comtesse looked round at the quaint, old-fashioned English inn, the peace of this land of civil and religious liberty, and she closed her eyes to shut out the haunting vision of that West Barricade, and of the mob retreating panic-stricken when the old hag spoke of the plague.

Every moment under that cart she expected recognition, arrest, herself and her children tried and condemned, and these young Englishmen, under the guidance of their brave and mysterious leader, had risked their lives to save them all, as they had already saved scores of other innocent people.

And all only for sport? Impossible! Suzanne's eyes, as she sought those of Sir Andrew, plainly told him that she thought that he at any rate rescued his fellowmen from terrible and unmerited death through a higher and nobler motive than his friend would have her believe.

"How many are there in your brave league, Monsieur?" she asked, timidly.

"Twenty all told, Mademoiselle," he replied, "one to command, and nineteen to obey. All of us Englishmen, and all pledged to the same cause—to obey our leader and to rescue the innocent."

"May God protect you all, Messieurs," said the Comtesse, fervently.

"He has done that so far, Madame."

"It is wonderful to me, wonderful!—That you should all be so brave, so devoted to your fellowmen—yet you are English!—and in France treachery is rife—all in the name of liberty and fraternity."

"The women even, in France, have been more bitter against us aristocrats than the men," said the Vicomte, with a sigh.

"Ah, yes," added the Comtesse, whilst a look of haughty disdain and intense bitterness shot through her melancholy eyes. "There was that woman, Marguerite St. Just, for instance. She denounced the Marquis de St. Cyr and all his family to the awful tribunal of the Terror."

"Marguerite St. Just?" said Lord Antony, as he shot a quick and apprehensive glance across at Sir Andrew.

"Marguerite St. Just?—Surely."

"Yes!" replied the Comtesse, "surely you know her. She was a leading actress at the Comedie Francaise, and she married an Englishman lately. You must know her—"

"Know her?" said Lord Antony.

"Know Lady Blakeney—the most fashionable woman in London—the wife of

the richest man in England? Of course, we all know Lady Blakeney."

"She was a school-fellow of mine at the convent in Paris," interposed Suzanne. "and we came over to England together to learn your language. I was very fond of Marguerite, and I cannot believe that she ever did anything so wicked."

"It certainly seems incredible," said Sir Andrew. "You say that she actually denounced the Marquis de St. Cyr? Why should she have done such a thing? Surely there must be some mistake—"

"No mistake is possible, Monsieur," rejoined the Comtesse, coldly. "Marguerite St. Just's brother is a noted republican. There was some talk of a family feud between him and my cousin, the Marquis de St. Cyr. The St. Justs are quite plebeian, and the republican government employs many spies. I assure you that there is no mistake. . . . You had not heard this story?"

"Faith, Madame, I did hear some vague rumors of it, but in England no one would credit it. . . . Sir Percy Blakeney, her husband, is a very wealthy man, of high social position, the intimate friend of the Prince of Wales, and Lady Blakeney leads both fashion and society in London."

"That may be, Monsieur, and we shall, of course, lead a very quiet life in England, but I pray God that while I remain in this beautiful country I may never meet Marguerite St. Just."

The proverbial wet blanket seemed to have fallen over the merry little company gathered round the table. Suzanne looked sad and silent; Sir Andrew fidgeted uneasily with his fork, whilst the Comtesse, encased in the plate-armour of her aristocratic prejudice, sat, rigid and unbending, in her straight-backed chair. As for Lord Antony, he looked extremely uncomfortable, and glanced once or twice apprehensively towards Jellyband, who

looked just as uncomfortable as himself.

"At what time do you expect Sir Percy and Lady Blakeney?" he contrived to whisper, unobserved, to mine host.

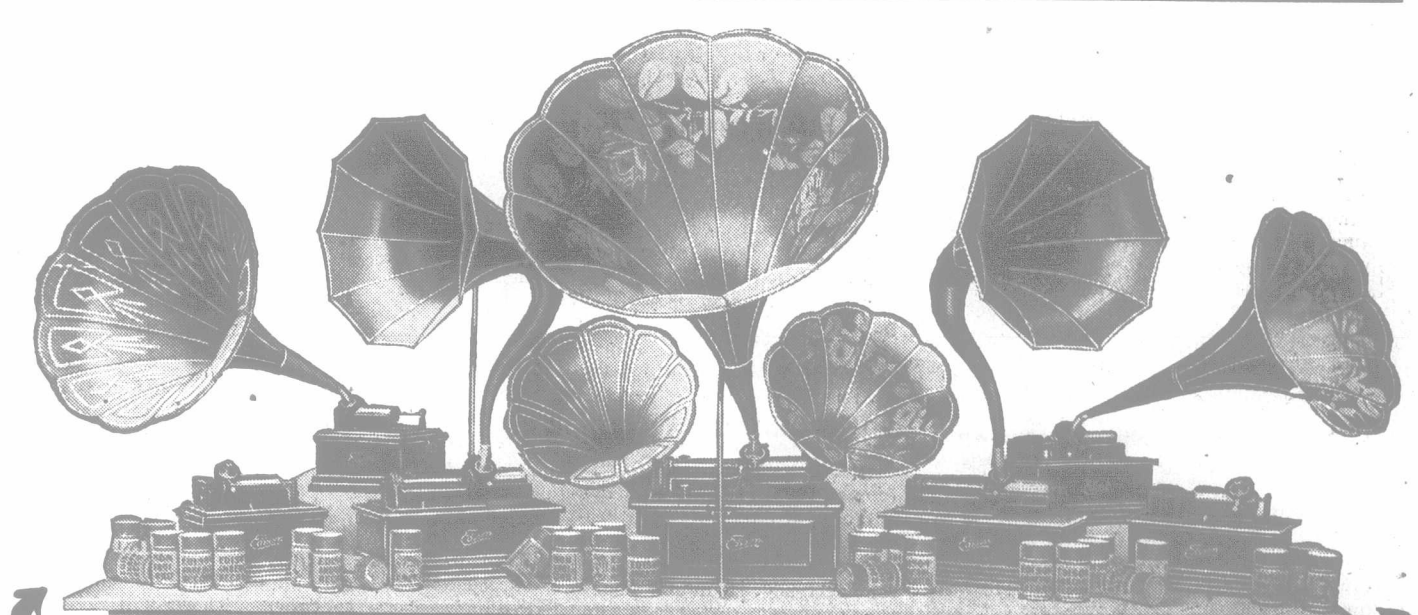
"At any moment, my lord," whispered Jellyband, in reply.

Even as he spoke, a distant clatter was heard of an approaching coach; louder and louder it grew, one or two shouts became distinguishable, then the rattle of horses' hoofs on the uneven cobble-stones, and the next moment a stable boy had thrown open the coffee-room door, and rushed in excitedly.

"Sir Percy Blakeney and my lady," he shouted at the top of his voice, "they're just arriving."

And with more shouting, jingling of harness, and iron hoofs upon the stones, a magnificent coach, drawn by four superb bays, had halted outside the porch of "The Fisherman's Rest."

(To be continued.)



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Yes, FREE. Shipped positively and absolutely free as per offer below. You do not have to pay us a single penny either now or later. We do not even ask you for any deposit or any guarantee, not even any C. O. D. payment to us. All we ask is that you tell us *which* of the magnificent Edison outfits you prefer so that we can send that one to you on this free loan offer.

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D2E

Business Conditions in Canada During 1911.

Addresses of the President and General Manager
of the

Canadian Bank of Commerce

At the Shareholders' Meeting.

GENERAL MANAGER'S ADDRESS.

The General Manager then said:
In presenting you with our report for the year just closed, it is gratifying to know that our predictions regarding the probable course of our business, when last we had the honor of addressing you, have been fully confirmed, and we have great pleasure in submitting a statement which we feel sure will be regarded as more than usually satisfactory.

The record of the year is remarkable for the evidence it affords of a steady and continued prosperity, and notwithstanding the large increase of our resources, we have been able to make a profitable use of the funds committed to our care with a reasonable assurance of safety.

The average paid-up capital during the year was \$10,591,405, and the net profits were \$2,305,409.42, the latter item showing an increase of \$467,344.38, as compared with our last report, and amounting to 21.76 per cent. on the capital employed. It is proper to remark that this satisfactory showing was the result of our operations after the usual very careful revaluation of our entire assets, ample provision having been made for bad and doubtful debts.

In our report for the year ending 30th November, 1909, it was recorded that we had recovered \$300,000 from the realization of assets in connection with which appropriations had previously been made. We direct your attention to the announcement in this year's report that \$500,000 has been similarly recovered. We believe you have always given us credit for being conservative and careful in the administration of your affairs, and the policy of making ample provision for doubtful assets might well, over a series of years, result in important recoveries. The recoveries now referred to, however, come mainly from two sources. During the entire administration of our business in the Yukon Territory carried on at the Dawson branch and begun in 1898, because of the dangers and difficulties surrounding the venture in this new field, we held in reserve the whole of the profits made at this branch, awaiting the outcome of the business in that district. Secondly, in purchasing the assets of the Bank of British Columbia in 1900, we found a considerable quantity of real estate, in valuing which we made large appropriations as compared with the figures at which such assets stood in the books of the selling bank. There has been, as you know, a very large increase in the value of real estate in British Columbia, owing to the extraordinary development of that Province, and through sales of such real estate and through the liquidation of most of the important assets in the Yukon Territory, we are warranted in transferring to the ordinary profits so much of these reserves as are represented by the two amounts referred to.

We recommend the payment of dividends at the rate of ten per cent. per annum, and in this connection \$1,057,218.59 has been disbursed. Our programme for the erection of suitable bank premises, particularly in the West, and the necessity for increasing our equipment of this character throughout the country, make it imperative to continue the appropriation of large sums for this purpose. We are hopeful that with the completion of the Winnipeg office extraordinary expenditures may be curtailed, but we must keep pace with the requirements of a growing business, and our commitments, while relatively moderate, are considerable in the aggregate. We have written off Bank Premises \$400,000, and have added \$866,-

092.61 to the account, which now stands at \$3,142,487.82, representing about 45 per cent. of the value of our properties. The resolution passed at the last annual meeting authorized the contribution of a sum not exceeding \$100 per annum per member of the Pension Fund, and we have appropriated \$55,000 for this purpose. We are pleased to report that after making these appropriations \$1,400,000 has been transferred to Rest Account, in addition to \$1,357,920 received as premium on new stock.

It is interesting to note the course of the Bank's circulation during the period under review. Our last report showed \$10,222,953 outstanding; during the succeeding months there were important fluctuations, the highest and lowest points touched in July being \$10,016,000 and \$8,289,418, respectively. The early crop movement gave an impetus to business, and our available margin of circulation was quickly absorbed. The total amount outstanding in September was \$10,842,000, and but for the issue of new stock we should have had difficulty in keeping within the limits of the law, and, as it was, we had unusual difficulty in meeting the demands on us for currency. In October we exceeded the amount authorized under ordinary conditions, and had recourse to the provisions of the Bank Act amendment of 1908. At the close of November we reported notes in circulation amounting to \$12,004,649, this being \$307,374 more than we were allowed to issue except under the emergency provisions. There is a real necessity for a large increase of the amount of circulation, and it does not seem unreasonable that the period for emergency issues should be extended to include the months of September and February. In connection with the suggestion, it should be noted that because of the great development of business, it is altogether likely that we shall in the near future experience a currency stringency in the spring and summer months. This matter should have very serious consideration, and immediate action should be taken to guard against the possibility of such an occurrence. The augmentation of capital by the banks is, of course, the first remedy to be applied, but this is of necessity a slow process, and would scarcely keep pace with requirements. We venture to hope that during the discussion of the Bank Act means will be found to enable any Canadian bank possessed of sufficient resources to be able always to pay out its own notes across the counter without resorting to other forms of currency.

During the year our deposits were increased by \$19,131,480, showing a handsome growth, although we received under this head large amounts which are held temporarily, and will be withdrawn in the near future. Our branches in the West contributed a handsome addition to our deposit account. On the other side of the balance sheet, current loans and discounts show an increase of \$19,757,171, as compared with last year's report, and our investments in Government bonds, municipal and other securities were increased by \$2,616,826. Cash resources increased \$8,390,979.

In view of the wide franchise we enjoy, we recognize the duty and responsibility upon us to aid in the development of the country, and we have endeavored to keep abreast of its rapidly-growing needs. We are confident that the work of establishing branches has been undertaken with great care and a conscientious regard for every interest involved. It is gratifying to know that our labors have not been in vain. The distribution of the branches at the close of the year was as follows:

Ontario.....	66
Quebec.....	3
New Scotia.....	13
New Brunswick.....	1
Prince Edward Island.....	5
Manitoba.....	21
Saskatchewan.....	52
Alberta.....	40
British Columbia.....	33
North-West Territories and Yukon.....	3
Total branches in Canada.....	237
England.....	1
Mexico.....	1
United States.....	4
Total number of branches.....	243

The management of so large a number of branch banks brings up the question of our staff, which now numbers over two thousand, and you will readily understand that this is a difficult problem. We have not overlooked the importance of a strict supervision of our branches, and have endeavored to devise a system which will ensure a freedom of action and quick response to the demands of customers, and at the same time keep in control managers who lack experience and judgment. We sometimes fear lest we should fail in our appreciation of the claims of our large staff, particularly in these latter days of profitable employment in other occupations when promotion in banking appears slow. In our service, we often ask officers to perform onerous duties under trying circumstances, but our experience almost invariably is that they meet the emergency with commendable efficiency and loyalty.

We look into the future from the vantage ground of a successful year's business, and we have reason to hope for a continuance of prosperity so far as Canada is concerned, and as a bank we shall expect to share in the general good. The steady and persistent demand for money for legitimate purposes should keep our funds fully employed for some time to come. There will doubtless, as usual, be adverse influences at work, but at the moment there is no apparent cause for a feeling of apprehension. The noticeable improvement in trade conditions in the United States encourages us to think that our neighbors will emerge from a period of depression not unusual on the eve of a Presidential election. We shall probably see easier conditions in Great Britain after the year's accounts have been settled. This is important and desirable when we consider the large amounts of Canadian securities awaiting a favorable market.

We look forward confidently to the duties and responsibilities of the coming year, and trust you will not be disappointed with our efforts to render you good service.

PRESIDENT'S MESSAGE, IN PART.

The President then spoke as follows:
The progress of the Bank during the past year has been so gratifying, and the subjects to which the General Manager has been asking your attention are so important, that I feel less confidence than usual in taking up your time merely to review some of those features of the prosperity of the country, with most of which you are already familiar. As you all know, the year has been a momentous one for Canada, in directions which cannot be discussed here, but on the purely business side, it has demonstrated in an unusual degree the fact that the general progress of such a large area as Canada is likely to be accompanied by untoward as well as fortunate events.

The totals of our imports and exports for the fiscal year of the Dominion, ending March, 1911, are again record figures. Our imports were \$472,194,000, and our exports \$297,196,000, the balance against us being the large sum of \$174,998,000, not far from the balances of any two previous years put together. The total trade was \$769,390,000, against \$693,161,000 a year ago. The significant fact, however, is that while our imports increased \$80,380,000, our exports declined \$4,162,000. This is, of course, principally due to the free imports in anticipation of the present large cereal crop; to the increase in railroad construction, and public and private building; and to larger immigration, the value of such settlers' effects as are declared appearing as imports. It is also

partly due to somewhat larger imports of gold bullion and silver. For the first six months, ending September, 1911, of the current fiscal year, the figures are even more striking, the imports being \$266,187,000, and the exports \$141,865,000, the balance against us for the six months being \$124,322,000, as against \$94,404,000 for the corresponding period in 1910. The imports for the half-year in 1911 include, however, an increase of about \$7,500,000 in gold coin. An examination of the items of imports and exports in the trade returns will suggest many explanations for the respective increases and decreases, but the fact remains that we must enlarge the volume of products we have to export, and either lessen our imports by curtailment of expenditure, or by manufacturing at home many of the articles we buy abroad, especially from the United States. Our trade with that country, always one-sided, is growing more so. During the fiscal year ending March, 1911, we bought from them \$293,403,000, and sold them \$119,203,000, leaving a balance in their favor to be paid in cash of \$174,200,000, over \$50,000,000 more than in any previous year. In 1901, our total trade with them was \$191,689,000, and in ten years it has grown to \$412,606,000, or an increase of 115 per cent. The part we have to pay in cash has, however, grown from \$46,924,000 to \$174,200,000, an increase of 271 per cent. Our trade with Great Britain makes the worst showing for many years. The imports have grown to \$110,390,000, while the exports have fallen to \$137,158,000, leaving a balance in our favor of only \$26,768,000, a much smaller sum than in any of the last ten years. In spite of the decrease, our exports are still the largest for any year except the previous one, but the volume of imports is much greater than ever before. It is useless to repeat arguments often advanced in other years. Few nations have such an alluring future, and few can afford to mortgage their future to such an extent, but our power to do so depends upon our credit, and there are those in England who are asking whether we are not borrowing too much. There is, of course, one great reason why we must go more and more largely into debt for many years to come. At present we are preparing for the settlement of about 400,000 immigrants in one year. This is an addition of five per cent. to our population, or the same as if 4,500,000 new people entered the United States in one year. To provide everything for these people, from transportation to housing, is a huge task, quite large enough to account for more than the difference between our imports and exports. Not only must the improvements necessary to create many new farming districts be made, but new towns, and great additions and improvements to older ones are required, indeed, betterments of all kinds throughout the community. More important than all, two new transcontinental railway systems must be completed, and many branch lines, added to our three great systems. There is, therefore, little cause for wonder that we need so much new money every year. The import returns show settlers' effects at only \$14,000,000, doubtless far below the actual value, but the main part of the settlers' property consists of money. The estimated wealth of the new settlers for 1911, based on the lowest experience of several years, is about \$160,000,000.

The revenue and expenditures of the Federal Government show plainly the growth of the country as a whole. Apparently the ordinary revenue for the year ending 31st March, 1912, will be between \$130,000,000 and \$140,000,000, as compared with \$117,780,000 in 1911, and with \$86,000,000 in 1896, only 15 years ago. Thus far the new capital expenditure, estimated at about \$46,000,000 for the year, has been met out of revenue.

The clearing house returns of twenty cities for 1911 were \$7,336,866,000, against \$6,153,701,000 for seventeen cities in 1910, a gain of 19 per cent.; the gain between 1909 and 1910 being 18 per cent.

The building permits of the chief cities again illustrate the rate of growth in Canada.

	1910.	1911.
Montreal	\$15,718,000	\$14,580,000
Toronto	21,127,000	24,874,000
Winnipeg	15,106,000	17,550,000
Vancouver	13,150,000	17,652,000

Proposals for municipal expenditures are on a scale never attempted before.

ONTARIO AND QUEBEC.

The farmers in Ontario and Quebec have made progress during the past year, but while in many parts the year would be described as an average, in others it was hardly so, and in few respects was it better than the average. Hay and grain crops, except fall wheat in some parts, after an early spring and a good start, suffered in varying degrees, but often badly, by the prolonged drought so general in Eastern Canada and in Europe. The acreage of Indian corn is increasing, and the ownership of plenty of cattle, with proper silo accommodation, has made the result quite satisfactory to farmers who otherwise would have suffered from drought. For this reason there are some districts where dairying results have been as good as usual and farming profits quite satisfactory. The revival in fruit farming, accompanied by care in the treatment of orchards, is producing a most marked effect in many parts of Ontario, and doubtless fruit growing will be extended to several areas hitherto devoted solely to agriculture and pasture. Horses and hogs have done well for the farmer, but those who bought cattle in the autumn to feed through the winter found the spring prices little higher. Cattle to be fed this winter were bought on a lower basis, and as roots, fodder, corn, and alfalfa crops were satisfactory, the outlook for the cattle feeder who grew these crops is good. While we cannot follow the increased consumption at home, or the shipments to the United States, the shipments of cattle from Montreal, to some extent, show the conditions of the trade. The number shipped was the smallest in twenty-nine years, being only 45,966, against 72,555 last year, and 99,830 in 1908, and of this small total about 15,000 head were from the United States. The falling off is, however, due somewhat to the fact that United States exporters who had contracted for ocean space were obliged to draw their supplies largely from Canada. We evidently cannot learn much from our export figures at the moment. The very high prices in 1910 certainly caused a great increase in the raising of live stock in Canada and the United States. This is at present more evident in the case of hogs, sheep, and lambs, than in cattle, as the former come to maturity and to marketing condition so much more quickly. The home demand, both in Canada and the United States, has been greater than ever before, and prices therefore often better on this side than in Europe. Notwithstanding that large quantities of Western cattle have been brought East and slaughtered, there has not been the usual quantity for export. On the other hand, hogs are not raised in any important way yet in the West, and the bacon curers of Ontario and Quebec are sending large quantities of cured meats there instead of abroad. Apart from the growing requirements of the meat trade, more cattle are being kept for dairy purposes, but the number of cattle on the land has been too small for several years.

In view of the drought, much smaller figures for dairy exports might have been expected, but the impulse given by high prices has prevented this. Cheese exports from Montreal amounted to 1,810,000 boxes, slightly less than for 1909 and 1910, while the exports of butter were five fold those of 1910, and were higher than for five years past. Prices of both articles were at the highest point, and the results for 1911 in money were \$22,705,000, against \$17,872,000 in 1910. The total is the largest since 1906.

That there has been much planting of new fruit trees, and spraying and pruning of old ones neglected hitherto, and a great revival in fruit farming generally, there can be no doubt. The year in Ontario and Quebec was not very favorable, however, and the home market being large, the exports of apples from Montreal were only 274,887 barrels, much better than the low year of 1910, but far below the average of ten years, which is 555,618 barrels. There has been a hand-

some increase in the exports of grain, and a very large increase in exported flour and hay as compared with recent years. Notwithstanding the short season, the quantity of traffic, both in passengers and in freight, exceeded that of any previous year in the history of the port of Montreal.

In manufacturing, we have again to record general additions to plant, a much increased output, and in many cases inability to cope with the demand for goods.

The cut of lumber in the Ottawa Valley and in most districts in Ontario and Quebec will, because of low water, be slightly smaller than for the previous year, and the cost of production will again be higher. Deals are all sold at higher prices, the market for high-grade white pine is good, while the common grades of lumber, which have been so difficult to sell since the depression of 1907 in the United States, are in better demand, although the cheap Southern pine is still a menace to our product. In the United States and Canada the use of fire-proof building material and of cement and iron generally, in place of wood, is growing rapidly. Already it is suggested that the United States has passed the highest point per capita consumption of lumber. As yet, however, we use only a fractional amount of fire-proof material as compared with an old-world country such as Germany. So that an important readjustment of our lumber requirements relatively to other things will gradually come about. This will certainly not lessen the necessity for conservation, but it may cause the punishment for our wastefulness to fall a trifle less heavily than we deserve.

Ontario's mineral production grows rapidly. For 1910 the total was \$39,313,000 (at the mines, or \$43,017,000 when marketed), against \$17,854,000 in 1905, the largest items being silver and nickel. Out of a total production of minerals for all Canada of \$105,000,000 as marketed, Ontario contributes about 40 per cent., although it possesses no coal, and that mineral makes 28 per cent. of the total for all Canada. The estimated silver production at Cobalt for 1911 is about 31,500,000 ounces, worth about \$16,300,000. The value for 1910 was \$15,478,000, and the total product of the Cobalt camp to date is a little under \$65,000,000. This means, with freight and smelter charges added, a value in the silver markets of about \$69,000,000. A few years ago we moved into third place among the silver-producers of the world, but our production was still very small as compared with Mexico and the United States. Now, however, we contribute 15.1 per cent., against 25.9 from the United States, and 33.3 from Mexico. Adding 8.6 per cent. from Central and South America, we find that 82.9 per cent. of the world's production of silver comes from America. We are watching with keen interest the developments in the Porcupine district, where the question of the importance of Ontario as a gold producer is being tested. Very important sums, running altogether into millions, are being spent in development by men of experience, and there is certainly a large value of gold in sight. It seems probable that the production for 1912 will be enough to attract still further attention to this district. The whole north country of Ontario has great possibilities in agriculture, mining, and other industries, but much more must be done in affording transportation before even a moderate scale of development is possible. It is nearly impossible, for instance, to demonstrate the merits of a camp such as Gowganda, so long as supplies have to be hauled about fifty miles after leaving the railway.

Notwithstanding the general effect of the drought, the Provinces of Ontario and Quebec had a very successful year. Farm and town real estate values continue to rise, and the real estate transactions have exceeded all previous experience in scale and price. Building was perhaps never on so large a scale, whether for municipal, manufacturing, business, or residential purposes. There has been an unusual amount of investment in securities, and in this respect the public has had some experience of the folly of creating so-called mergers, not so much to improve the conditions of the particular business as to create bonds and shares on an imaginary basis



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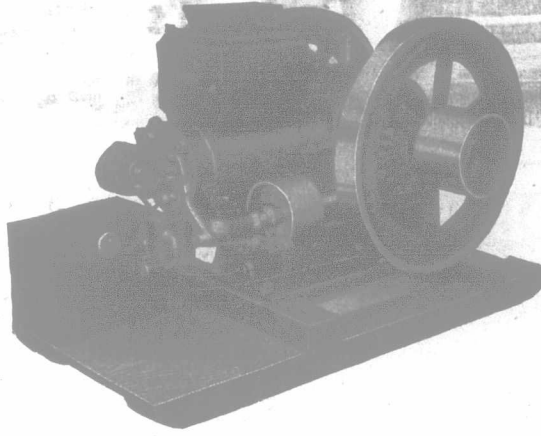
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of profits for stock-jobbing purposes. A very large amount of savings in these Provinces is also being risked in real estate speculation in the outlying sections of rapidly-growing cities in other parts of Canada. These properties on which such rash speculation is based, often lie many miles from any settled part of the particular city, and it is to be regretted that the individual who is induced to invest the savings of years in such ventures, very often possesses slight idea of the risk he is running. In addition, the President gave a resume of the conditions of the past year in the other Provinces of Canada. A copy of the complete address may be obtained upon application to the Bank.

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The long winter evenings give a woman a splendid chance for sewing or embroidery; but her eyes suffer from the strain unless she has a good light.

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It gives a strong, diffused light that is remarkably easy to the eyes. There is no glare to it; no flicker. It lights up a whole room.

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The Rayo Lamp is easily lighted without removing shade or chimney; easy to clean and rewick. Made of solid brass, nickel-plated; also in numerous other styles and finishes.

Ask your dealer to show you his line of Rayo lamps; or write for descriptive circular to any agency of

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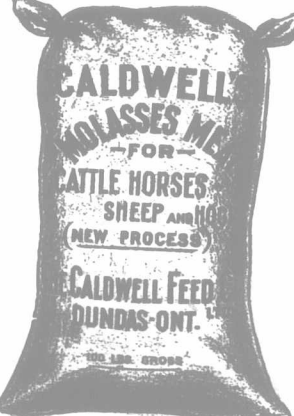
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Oldest Cedar Pole Firm in Business
Producers for 31 Years

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GOSSIP.

O. Sorby, of Guelph, has just sold the recently-imported two-year-old Clydesdale stallion, Queen's Regent, to Edward Hoy, of Orchard, Ont. Mr. Sorby considers that Queen's Regent is one of the best two-year-olds he has ever imported. He is a very large colt, and should mature to be a ton horse. He is all quality, has the best of feet and pasterns,

and his action is the best. His pedigree is gilt-edge, and includes the most famous sires of the Clydesdale race. Queen's Regent should not stand at less than a fee of \$20.

TRADE TOPIC.

Choice dairy farm, with well-equipped house, offered for sale in this issue by Drimby & Clapp, Woodstock, Ont.

GOSSIP.

An important auction sale of heavy draft horses and Clydesdale mares in foal, also 54 head of cattle, including 10 Shorthorn cows, is advertised in this issue by David Bell, near Bright, Ont., a station on the Stratford-to-Paris branch of the G. T. R. The date of sale is Thursday, February 1st.

An interesting feature of the big Holstein sale, to be held at North Toronto, on Friday, February 9th, is the fact that twenty of the females to be sold will be in calf to that intensely-bred bull, Sir Lyons Hengerveld Segis, a son of the great cow, Blanche Lyons De Kol, with a seven-day butter record of 33.31 lbs., and thirty-day record of 134.78 lbs. She is the dam of Nudine's Lyons De Kol, with a seven-day record of 30.72, and a thirty-day record of 118.75, and a full sister to Blanche De Kol Hengerveld, whose seven-day record is 33.19 lbs., and a half-sister to the two great cows, Frenesta Hengerveld De Kol, seven-day record 32.22 lbs., and Beauty Ramverf De Kol, seven-day record 30.54 lbs., and she is also a sister to Konig Blanche Lyons, who is the sire of two 34-lb. daughters. The sire of Sir Lyons Hengerveld Segis, is the renowned King Segis, with over 70 A.-R.-O. daughters with records ranging from 22 to 26 lbs. for junior two-year-olds, up to 31 lbs. for four-year-olds, six of them averaging over 30 lbs. each. His dam, A. & G. Inka McKinley, has a seven-day record of 29.62 lbs., and has four A.-R.-O. daughters whose records average 20 lbs., the eldest being but four years of age. Again, her dam, Segis Inka, has a record of 28.04 lbs., and she, too, has four daughters in the Records. In short, the records of eight of his nearest female relatives average 31.64 lbs. Cows bred to a bull with such breeding, coupled with high official backing in their own breeding, should make mighty interesting buying.

ANOTHER BIG EVENT IN HOLSTEINS

Another of those sensational events that cause a ripple of excitement and arouse the interest of breeders of the world—renowned Dutch Holstein-Friesian dairy cattle, and all others interested in dairying, will be the big auction sale of 90 head of high-class representatives of the breed, backed up by high official Record of Merit and Record of Performance records. The sale will be held in the large brick arena on the farm of Joseph Kilgour, one and a quarter miles east of Bedford Park, Yonge street, North Toronto, on Friday, February 9th, the day following the annual meeting of the Holstein-Friesian Association of Canada. The animals to be sold will be consigned by, and the sale held under the auspices of, the North Toronto Holstein-Friesian Sales Company, composed of the following well-known and reliable breeders: Gordon Gooderham, Bedford Park; R. F. Hicks, Newtonbrook; C. R. James, Langstaff; G. H. McKenzie, Thornhill; John McKenzie, Willowdale; Jos. Bales, Lansing; O. Bales, Lansing, and Joseph Kilgour, Toronto. There will be 74 females and 16 bulls, the latter ranging in age from calfhood up to four years, sired by bulls with high official backing, and out of cows with R.-O.-M. official records up to 26 lbs. of butter in seven days, and R.-O.-P. official records up to 11,142 lbs. milk in one year for two-year-old heifers. Many of the females are in the official records, with seven-day butter R.-O.-M. records up to 19.33 lbs. for three-year-olds, and 22.40 lbs. for four-year-olds, and R.-O.-P. records for two-year-olds of 7,700 lbs. in eight months, up to 10,586 lbs. in one year, and for adult cows up to 17,600 lbs. in one year. In following issues, a resume will be given, dealing more particularly with the breeding and producing performance of the consignment. For full particulars, write for a catalogue to Gordon Gooderham, Bedford Park P. O., Ont. Parties attending the sale will take an electric car at C. P. R. crossing, North Yonge street, Toronto, and get off at Blythwood Road, where conveyances will meet the cars every half hour on the day of sale to convey visitors to the farm. All interested will make a note of this, as it will not appear again.

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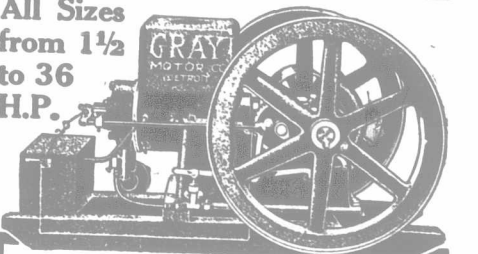
also heads, fish, and to tan hides, make rugs, robes, etc. Yes, you can learn easily—quickly—perfectly in your own home by mail. Success guaranteed. Fascinating work. We have 35,000 sportsmen students, and every one is an enthusiastic taxidermist. Big profits to all who know taxidermy. Write today.

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NOW IF YOU HAVE A PIECE OF LAND THAT WONT GROW ANYTHING BUT WEEDS, TALK WITH US ABOUT IT AND LET US SUGGEST THE RIGHT FERTILIZER

WE FEEL VERY SURE THAT WE CAN SHOW YOU HOW TO USE FERTILIZERS WITHOUT GREAT EXPENSE SO YOUR LAND WILL PAY

CONSULT US FREELY IT IS OUR BUSINESS TO KNOW ENQUIRIES FREELY ANSWERED AGENTS WANTED FOR TERRITORY NOT TAKEN UP

THE W.A. FREEMAN CO. LIMITED
HAMILTON ONTARIO

FARMS FOR SALE

Choice stock, grain and fruit farms for sale. We specialize in high-class properties, and aim at offering good value only. We have a special department devoted to listing and selling Ontario farms. Write for list.

UNION TRUST CO., LTD.
Real-estate Department,
201 Temple Building, Toronto.

QUESTIONS AND ANSWERS.
Miscellaneous.

ROOFING—CEMENT FLOORS.

I am undecided as to the best roofing material to use on a dairy barn which I intend to build next summer, and would be pleased if you would answer the following queries in your valuable paper:

1. Which would be the best investment, as regards durability, galvanized steel shingles at \$5 per square; galvanized corrugated iron at \$4 per square, or No. 1 cedar shingles at \$3 per square? Have you any conclusive information regarding the durability of galvanized corrugated iron roofing? Do you think that the warm air ascending from the stable would tend to make it rust? Do you think that a roof of this material would last as long as two good shingle roofs, and would it be lightning-proof if well grounded at the four corners? Would copper grounding wires be necessary, or would ordinary galvanized wire do just as well? Would a shingle roof be as lightning-proof as a galvanized roof, if six or seven galvanized wires were twisted together and run from the peak of roof to moist ground in two or three places? Last week I was in a new barn roofed with corrugated iron, and the ribs and plates were dripping so from condensed moisture that the barn floor was all wet. It was a warm day, and the feed chutes were all open. Was this condition necessary? Could it be prevented if large ventilators went up from the stable to the roof, and the feed chutes were kept closed? Would liming cedar shingles add to their durability? If it would, which would be the better way to apply it? To mix the lime and water and apply with a broom after roof is finished, or to soak the shingles in lime water in a large tank before laying them? If lime water is good for this, what proportions of lime and water should be mixed to make it most effective?

2. Which would make the better stable floor, fine gravel and sand mixed six parts gravel to one of cement, without putty coat, or to use coarse gravel ten parts to one of cement, and put on half-inch putty coat of sand and cement on top? Which would require more cement?

E. G. M.

Ans.—1. There are points in favor of each. The metal roofing material has the advantage of being lightning-proof if provided with ground connection. It is also not liable to be fired by sparks from chimneys or threshing engines. As to the durability of the metal roofs, we have no conclusive information as to how long they will last. Some have been on a considerable number of years and are still good. Much depends upon the laying of the roof, especially with the metal roofing. There might be some moisture collect on the roof, but with a thorough system of ventilation there would be little danger of this being harmful. It is very improbable that a metal roof would last as long as first-class cedar-shingle roofs. It is, however, difficult to get first-class cedar now, and roofs made from most shingles of the present day cut, will probably not last as long as the roofs formerly made of this material, even when sawn. First-class cedar makes a very suitable barn roof. Galvanized wire would do just as well as copper for lightning rods, provided it were looked after from time to time, and replaced when it became rusty. We are not familiar with the practice of liming shingles. It is doubtful whether it would have any appreciable effect on the durability of roof. If done, the better method would be to dip them before laying. Dipping in paint or white lead is sometimes done with good results.

2. The coarse gravel ten to one of cement, with a putty coat on top, would be the better. One-half inch is hardly enough for putty coat. An inch is better. This would also require a little less cement than the other method.

Get more potatoes off your land

The land must be made rich if you want to raise a big crop. It will pay you. There is nothing so expensive to the farmer as a poor crop.

The Homestead Fertilizers

contain the right kind of plant food and plenty of it. We have spent fifty years and a great deal of money finding out how to do this, and you get the benefit of our knowledge free with every purchase of our Fertilizer. We stand for everything we claim for our Fertilizers. Our guarantee means that our Fertilizers are the best that skill, experience, capital and conscientious effort can produce.

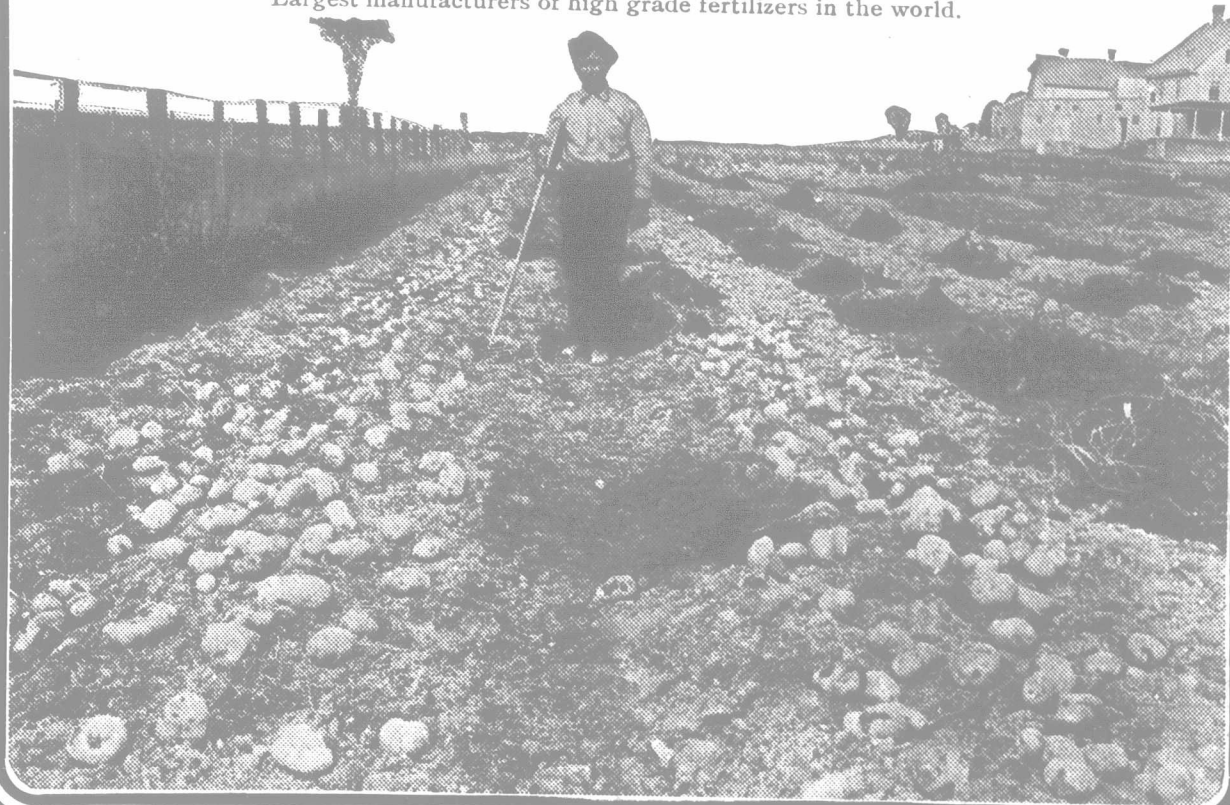
It is a simple matter to apply our Fertilizer, because it is finely ground. You can sow it with a grain drill before planting. But, if you have no drill, scatter the fertilizer by hand from the wagon and go over the field with a harrow.

We want every farmer to write us. We will send free to everyone who answers this advertisement a 52-page book on Fertilizers and a pamphlet by John A. Widtsoe, Ph. D., "Why the Richness of Soil makes up for Lack of Moisture and How to Fight Drought with Fertility."

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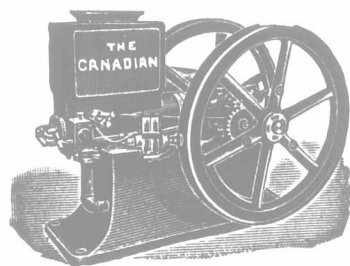


THE CANADIAN ENGINE

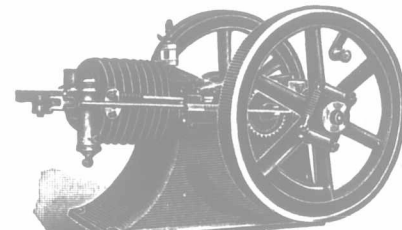
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Air or water cooled.
Stationary or portable.
Absolutely guaranteed.

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AIR COOLED ENGINE

CANADIAN - AMERICAN GAS & GASOLINE ENGINE CO., LIMITED,
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Frost & Wood Co., Ltd., Smith's Falls, Ont., exclusive selling agents for Eastern Ontario, Quebec and Maritime Provinces

BAD BLOOD CAUSES BOILS and PIMPLES.

Get pure blood and keep it pure by removing every trace of impure morbid matter from the system.

Burdock Blood Bitters has been on the market about thirty-five years, and is one of the very best medicines procurable for the cure of boils and pimples.

PIMPLES CURED.

Miss J. M. Wallace, Black's Harbor, N.B., writes:—"About five years ago my face was entirely covered with pimples. I tried everything people told me about, but found no relief. At last I thought of B.B.B. and decided to try a bottle. After finishing two bottles I was entirely cured, and would advise any lady who wants a beautiful complexion to use B.B.B."

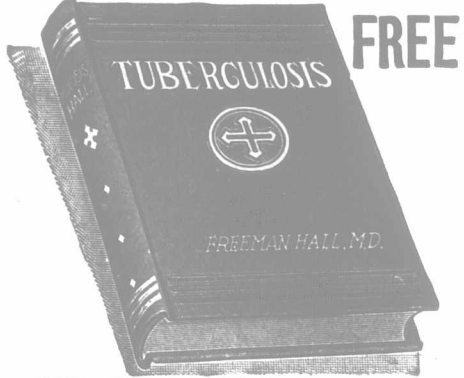
BOILS CURED.

Mrs. Ellsworth Mayne, Springfield, P.E.I., writes:—"My face and neck were covered with boils, and I tried all kinds of remedies, but they did me no good. I went to many doctors, but they could not cure me. I then tried Burdock Blood Bitters, and I must say it is a wonderful remedy for the cure of boils."

Burdock Blood Bitters is manufactured only by The T. Milburn Co., Limited, Toronto, Ont.

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Its Diagnosis, Treatment and Cure



FREE

NEW TREATISE ON TUBERCULOSIS

By FREEMAN HALL, M.D.

This valuable medical book tells in plain, simple language how Consumption can be cured in your own home. If you know of anyone suffering from Consumption, Catarrh, Bronchitis, Asthma or any throat or lung trouble, or are yourself afflicted, this book will help you. Even if you are in the advanced stage of the disease and feel there is no hope, it will instruct you how others, with its aid, cured themselves after all remedies tried had failed, and they believed their case hopeless.

Write at once to The Yonkerman Co., 1690 Rose St., Kalamazoo, Mich., and they will gladly send you the book by return mail free and also a generous supply of the New Treatment absolutely free, for they want you to have this wonderful remedy before it is too late. Don't wait—write to-day. It may mean the saving of your life.

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Close to Woodstock, being 150 acres of choice land in good state of cultivation. Buildings splendid. Dwelling has hot water heating and lighted with gas. A large milk route in connection if desired. Proprietor going west. We have also a large list of farms of all sizes. Send for pamphlet. Apply to ORMSBY & CLAPP, Woodstock, Ontario

BARLEY in most sections is not fit for seed this year. My 20 acres of O.A.C. No. 21 Barley is first-class. It averaged 47 bushels to the acre. If good seed and the best in barley appeals to you. Write me at once for prices. Satisfaction or your money back. —W. R. NIXON, St. George, Ont.

SHOEMAKER'S BOOK on POULTRY

and Almanac for 1912 has 224 pages with many colored plates of fowls true to life. It tells all about chickens, their prices, their care, diseases and remedies. All about incubators, their prices and their operation. All about poultry houses and how to build them. It's an encyclopedia of chickendom. You need it. Only 15c. G. C. SHOEMAKER, Box 920, Freeport, Ill.

125 Egg Incubator \$10 and Brooder BOTH FOR
If ordered together.
Freight paid east of Rockies. Hot water, copper tanks, double walls, doors, glass doors. Free catalog. Write for it today.
Wisconsin Incubator Co., Box 173, Racine, Wis.

QUESTIONS AND ANSWERS. Miscellaneous.

SOIL PREPARATION FOR MILLET.

1. What preparation of the soil is required for Japanese millet?
2. When to sow, and what quantity per acre?

R. T.

Ans.—1. The millets do best on soils rich in humus, such as drained swamp or other low-lying land; but experience shows that they succeed well on a great variety of soils. The preparation should be thorough, such as the tillage one would give a field intended for corn or wheat.

2. Investigations by Prof. C. A. Zavitz, at the Ontario Agricultural College Farm, go to show that millet will stand comparatively late seeding, but it is difficult to make hay if sown very late. The greatest yields of green fodder per acre of the Japanese Panicle and Japanese Barnyard varieties were secured from seedings on June 1st and June 16th, in each case. The yields for earlier and later seedings were very much less. The Japanese Panicle is the variety recommended for most of the settled portions of Ontario. When grown for hay or soiling, from two to three pecks of seed per acre is advised, but if intended for pasture, from three to four pecks.

BAG OF POTATOES—SULPHUR FOR FATTENING STEERS.

1. I understand that during the early part of last year a bill was introduced into Parliament, at Ottawa, to regulate the weight of different kinds of vegetables, and one of its effects would be to make eighty pounds a legal bag of potatoes all over the Dominion. Was this bill ever passed, and did it become law? Some say it did, and some say not, and the result is that there is considerable confusion on the subject.

2. Is it advisable to feed sulphur to fattening cattle? If so, how much should be fed, and how often?

W. H. R.

Ans.—1. This bill has not become law.
2. It is not clear to our mind that the feeding of sulphur to fattening cattle is to be recommended, though we do not go so far as to say that it is inadvisable. Some stockmen think it improves the health of the cattle, and helps to keep them free from ticks, although there are better insecticides for this purpose. If sulphur is fed, it might be mixed with salt in the proportion of one part sulphur to three or four parts salt, and keep before the stock. If given freely with food, the effect would probably be to open the pores of the skin unduly, rendering the cattle liable to colds, especially if subjected to rain or low temperature.

GOSSIP.

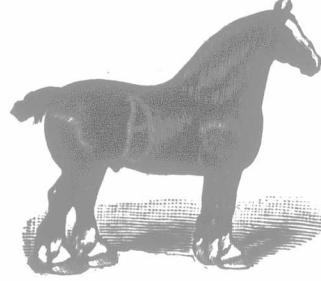
The 29th annual meeting of the Holstein-Friesian Association of Canada will be held in Room No. 1, fourth floor of the Temple Building, corner Richmond and Bay streets, Toronto, on Thursday, February 8th, 1912, at 9:30 a. m. The Executive Committee will meet on Tuesday, February 6th, at 7:30 p. m., in the Iroquois Hotel. F. E. Came gives notice that he will move an amendment to Article 6, Sec. 5, to provide for the registration of a prefix name for the exclusive use of the applicant. M. L. Haley gives notice of an amendment to Article 6, Sec. 5, that the fees for registration of males for members be \$2.00 for under one year, and \$1.00 for over one year; and for non-members \$4.00 for under one year, and \$8.00 for over one year. Purchase a single ticket, and secure a Standard Convention Certificate from the railway agent.—G. W. Clemons, Secretary.

COMING EVENTS.

Eastern Ontario Live-stock, Dairy, and Poultry Show, Ottawa, Jan. 16-19, 1912.
Nova Scotia Farmers' Convention, Yarmouth, N. S., January 23-25.
Dominion Shorthorn Breeders' Association annual meeting, Toronto, Feb. 6th 1912.

IMPORTED

Clydesdales of Quality



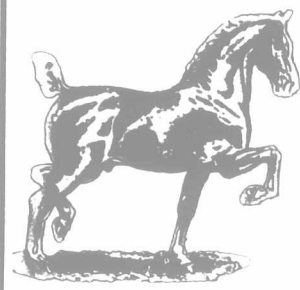
I have now on hand a stock of

Clydesdale Stallions and Fillies, Percheron Stallions, Shire Stallions, Standard-bred Stallions, etc.

Totalling over 90 head. I have more size, more quality, more style and better breeding than was ever seen in any one barn in Canada before. If you want a big, ton stallion, or a high-class show stallion, or a big, well-bred quality filly, let me hear from you.

TERMS TO SUIT

T. H. HASSARD, Markham P.O. and G. T. R. Station
Locust Hill, C. P. R. Station. Long-distance 'phone.



Union Horse Exchange

Union Stock Yards, TORONTO, ONT.

The Great Annual Auction Sales will be held this year as follows:

Registered Clydesdales, Feb. 27, 1912
Registered Percherons, Feb. 28, 1912

Send your entries in at once for the above sales.

J. HERBERT SMITH

Ormsby Grange Stock Farm

ORMSTOWN, P. QUE.

A full stock of CLYDESDALES, imported and home-bred, always on hand, at prices and terms to suit breeders. Correspondence solicited.

DUNCAN McEACHRAN, Proprietor.

For Sale ONE EXTRA FINE Clydesdale Stallion

Four years old, by Benedict. He is a beauty and sure foal getter. AND TWO TWO-YEAR-OLD STALLIONS. VERY CHEAP.

Willowdale Stock Farm, Lennoxville, Quebec

Clydesdale and Shire Stallions and Fillies



If you want a Clydesdale or Shire stallion or filly, or a Welsh pony, let me hear from you. I have the best blood of the breed. Horses over a ton in weight. Colts that will grow to the ton and over, with faultless characters, style and quality. I will not be undersold, and your terms are my terms.

I. L. MERCER, Markdale P.O. and Sta.

L.-D. 'phone.

ROSEDALE STOCK FARM HAS FOR SALE first-prize three-year-old, two-year-old and yearling imported Shire stallions, 18 Clyde fillies, 6 Percheron stallions. I have many winners at Old Country shows. Big, choice, quality stallions and mares, bred from the champions, and the best Percherons in Canada. Prices right.

Eight miles from Toronto by G. T. R., C. P. R., and electric railway. Long-distance telephone.

J. M. GARDHOUSE WESTON, ONTARIO

OFF FOR MORE CLYDESDALES!

We wish to announce to all interested in the best Clydesdales that about Oct. 1st we sail for Scotland for our 1911 importation. If you want a show stallion or filly, watch for our returns.

BARBER BROS, Gatineau Pt., Quebec.

Clydesdales, Stallions and Fillies, Percheron Stallions

My 1911 importation have arrived—20 Clyde stallions, 18 Clyde fillies, 6 Percheron stallions. I have many winners at Old Country shows. Big, choice, quality stallions and mares, bred from the champions, and the best Percherons in Canada. Prices right.



Long-distance 'phone. **T. B. ELLIOTT, Belton, Ont.**

Shire Stallions and Mares, Shorthorn Cattle (both sexes); also Hampshire Swine. Prices reasonable.

Porter Bros., Appleby, Ont., Burlington Sta. 'Phone.

Bay View Imp. Clydesdales We have got them home, 11 fillies and 7 stallions, show horses bred in the purple, big in size, and quality all over. If you want something above the average come and see us. Prices and terms the best in Canada. On the Toronto-Sutton Radial Line.

John A. Boag & Son, Queensville, Ont.

HIGH-CLASS IMPORTED CLYDESDALES

I have Clydesdale stallions and fillies for sale, every one of them strictly high-class in type, quality and breeding; stallions over a ton and very fleshy; fillies of superb form and quality. If you want the best in Canada, come and see me.

JAMES TORRANCE, Markham, Ont.

CLYDESDALES (Imported) CLYDESDALES

SPRING HILL Top Notchers. Stallions, mares and fillies. 65 per cent. guarantee with stallions. Every mare guaranteed in foal. Ages, 3 years old and upwards.

J. & J. SEMPLE Milverton, Ontario, and La Verne, Minnesota

Mount Victoria Stock Farm, Hudson Heights, P.Q.

We have for service the best of the Clydesdale Imp. Clydesdale stallions Netherlea, by Pride of Beacon, dam by Sir Everett; also Lord Aberdeen, by Netherlea, and the Champion Harker, a stallion bred by J. A. Boag, by a super King. For terms and rates apply to the manager.

I. B. MAGUIRE Prop. ED. WATSON, Manager.



"Hello! Mary?"

Unchain the dog; there's a tough-looking tramp headed your way."

This is one of the many examples of the safety-insurance there is in an Independent Telephone. It saves anxiety about your "women-folks"; even though they be left alone in the house; help is always at hand with a word over the wire—a word that in sickness, storm—any emergency, is beyond price.

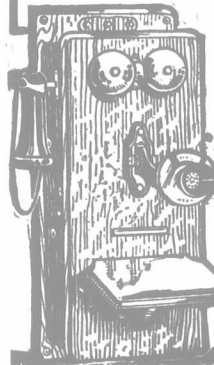
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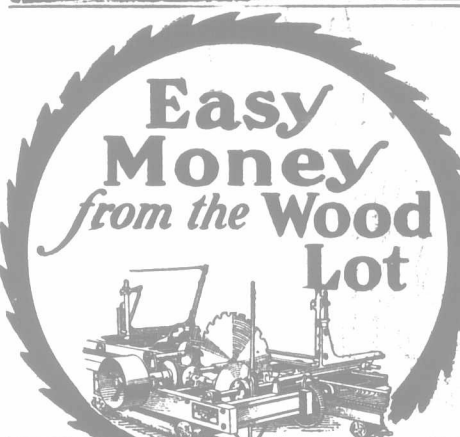
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It is certain to convince you that you need an independent telephone, and it will fully explain how you and, say nine others—can organize your own Independent System. Simple, economical; an established, practical success. Write today for the book, free. Ask for edition No. 44.



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There is good money in those trees on the wood lot. Do you know how to get it? All you need is an "American" Saw Mill which you can run with the farm engine to cut that standing timber into first class lumber. It is easy money with an "American" Mill, which cuts more lumber with less power and at less cost than any other. Your neighbor has timber, too. Cut it for him with your "American" Mill. You will both make money that way. "Making Money Off the Wood Lot" is a book which tells you all about lumber cutting. We want you to have a copy. Ask us for it. Write to our nearest office.

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TRADE TOPIC.

Our truest conservationists are those gardeners and farmers who catch the sunshine and husband the rain, and strive intelligently to keep pace in production with the increase of the non-agricultural population. The need of conservation of food-supplying resources is obvious. There are more people in America every year, and every year the soil, if unreplenished, is impoverished. The area of rich land decreases, and the cost of living rises. Conservation of the potential power of sun and soil is the only reasonable solution of the problem of nation-feeding, and just here is our opportunity. What is for the nation's good is also for our individual profit. The wise use of the soil means money in our pockets. One of the greatest products of land is derived from "intensive gardening." Through generations of intelligent selection and breeding, pure-bred seeds have been developed whose yield far surpasses in quality and quantity that of the ordinary strains. You can be a true conservationist if you have a successful garden. Be sure, however, to start right by planting pure-bred seeds. These can be bought of seedsmen having sufficient capital and experience to know what they are about, and a reputation to maintain.

GOSSIP.

Malcolm T. Gardner, in his last report of Official Record Holstein cows, states that the estimated crop of hay in the United States this year is 47,000,000 tons, as against 61,000,000 tons last year, and the great shortage is affecting prices of all feeding stuffs everywhere. In many parts of Southern Wisconsin and Northern Illinois the spring and early summer were so dry that the hay crop was the worst failure ever known; while the late summer and fall were so wet that many who husked and shredded their corn crop in November have suffered a partial or total loss through the spoiling of the damp fodder. Hay is very high in price, and much alfalfa is being shipped in. Here and there alfalfa was raised, and two or three crops cut in spite of the dry season, and these fortunate ones with barns full of hay and silos of silage are happy; for though they must feed the hay instead of selling it, they can look for a fair price from their milk, and they do not have to buy. Also, the feeding of alfalfa, of which the best, if properly cured, is almost equal to wheat bran, is largely reducing their grain bills; for good alfalfa hay, fed with matured corn silage and a little grain feed, makes a balanced and satisfying ration.

QUESTIONS AND ANSWERS. Miscellaneous.

BAG OF POTATOES.

Q.—What is the weight of a bag of potatoes? J. C. Ans.—Whatever it weighs. There is no legal, uniform standard, though effort is being made to secure one of eighty pounds. In the absence of such standard, we consider that a bag, unless otherwise specified, ought to contain ninety pounds, which is a bushel and a half. Where smaller sacks are used, the purchaser should be advised.

NAVICULAR DISEASE.

Q.—A driving mare that has been driven a great deal, seems very stiff on front legs, and sore on front feet. She is all right behind. Can anything be done for her? A. L. C.

Ans.—The symptoms indicate navicular disease, and the best treatment is to give rest and blister the coronet repeatedly with a mixture of two drams each of biniodide of mercury and cantharides, and two ounces vaseline. It is doubtful if a recovery can be effected; in fact, in such cases, there is little hope of a complete cure. Before applying the blister, clip the hair off for two inches high all around the hoof. Tie so she cannot bite the parts. Rub the blister well in daily for two days. On the third day wash off and apply sweet oil. Let her loose now in a box stall and oil every day. Repeat this treatment monthly for a few months.

Livingston's Cake and Meal

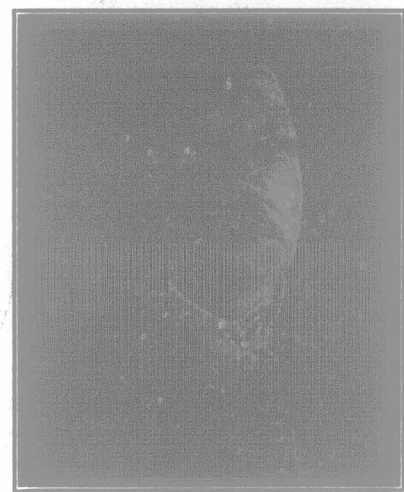
have from 1/5 to 1/4 more real flesh-forming food value than other feeds. This has been proved by actual tests on the Livingston Farm. From the very first they fatten the cattle and better the milk.

Made by skilled experts, with every up-to-date manufacturing aid to help them—by the Old Patent Process, which cooks the food, insuring its keeping for any length of time and making it more easy to digest.

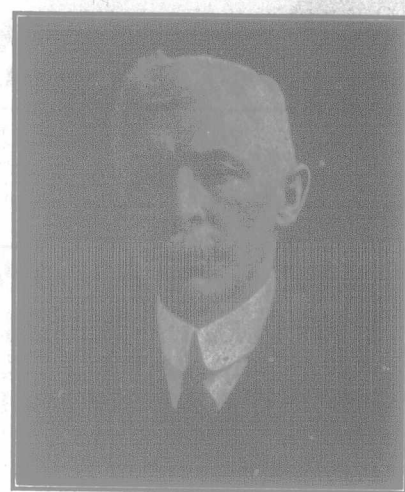
Neither too soft (which means waste), nor too hard (which hinders digestion)—the animal gets the full strength of each particle. Suppose you try them at once—they both

Save and Make Money

Talk to your dealer to-day about Livingston's Cake and Meal—or write us direct. Address: The Dominion Linseed Oil Co., Limited, Baden, Ontario.



WM. SMITH



FRED. RICHARDSON

Now we are taking 20 head of our CLYDESDALES to Ottawa Winter Fair. They are worth looking at. Intending purchasers should price them before buying elsewhere. Myrtle, C.P.R.: Brooklin, G.T.R.; Oshawa, C.N.R. SMITH & RICHARDSON, Columbus, Ont.

To Buyers Looking for a GOOD STALLION



I HAVE imported Percheron Stallions for years, always bought them from the best breeders in France, and beg to call the attention of prospect buyers to the fact that I have at the present time a better lot of Percheron Stallions in my barn than any barn in Canada. I have the big kind, the right kind, the kind that good judges are looking for. I won, as usual, more prizes at the leading fairs than all the Percheron importers put together. My horses are beautiful dappled-greys and blacks. Two to eight years old, weighing 1,700 to 2,200 lbs., with feet and legs that cannot be beat. Beautiful heads and necks. The kind that good buyers are looking for. I do not intend, and will not allow,

if I can help it, anyone to give more quality and breeding for fixed price than I will. Come to the home of the Champion Prizewinners and judge for yourself.

JOHN HAWTHORNE, Simcoe, Ontario

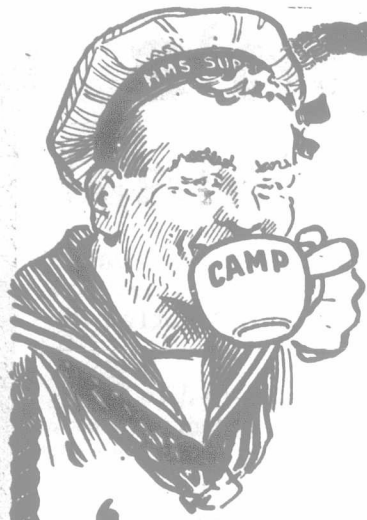


Nineteen Imported Clydesdale Stallions For Sale

My importation of November, 1911, are nearly all two or three-year-olds. They are ideal in draft character, with faultless quality of underpinning. They represent the best blood of the breed, being descendants of such horses as Baron's Pride, Hiawatha, Marcellus, Hiawatha Godolphin, etc. They will be priced right and on terms to suit. Farm two miles from end of street car line. Long-distance 'phone. Call me up and I will meet you in Guelph.

O. SORBY,

GUELPH, ONT.



**JACK'S the boy
for 'CAMP'!**

Cold raw mornings—all sorts of weather—ashore or afloat, 'Camp' always cheers, stimulates and 'warms the cockles of the heart.'

'CAMP' keeps anywhere—any time.

**'CAMP'
COFFEE**

Of all grocers. Sole Makers—R. Paterson & Sons, Ltd. Coffee Specialists, Glasgow.

CLYDESDALES - Stallions and Fillies - Imported

All ages and sizes up to a ton, good colors and best of breeding. Address correspondence to Glencoe.

DALGETY
FRASER HOUSE LONDON, ONT.

CHAMPION CLYDESDALES FOR SALE
I am now offering for sale the renowned champion stallions, Baron Gartley Imp. (4789), a bay, 11 years old, and President Roosevelt Imp. (7759), a bay, 9 years old. They are both champions and sires of prizewinners. They will be priced right.
ALEX. GRAHAM, Oro Station P.O.

PERCHERONS AND CLYDESDALES
Full line of prizewinning stallions and mares always on hand.
HODGKINSON & TISDALE, Simcoe Lodge, BEAVERTON, ONTARIO
Long-distance 'phone.

16 Clydesdale Stallions and Fillies
5 years and under. Some winning in Scotland and Canada. Bred from such noted sires as Hiawatha, Everlasting, Prince of Carruchan and Baden Powell—horses that will make a ton, with quality. Prices right. W. B. ANNETT, ALVINSTON, ONTARIO.
Watford station, G. T. R., 30 miles west of London.

Imp. Clydesdale Stallions of Size and Quality
Our latest importation of Clyde stallions include several that were 1st prizewinners in Scotland. We have them from one year old up to choicest breeding, big, shifty quality fellows, full of draft character. Our prices are the lowest, and our terms the best.
L.-D. 'phone. CRAWFORD & McLACHLAN, Thedford P.O. and Sta.

CLYDESDALES OF SIZE AND QUALITY
I have for sale Clydesdales, imported and Canadian-bred, toppers and prizewinners, including champion sires; big flat-by stallions from 1 year up to 4; mare and fillies up to 1,900 lbs. in weight; all of them with size, quality and breeding, some with six registered dams.
W. H. MANCELL, Fletcher P.O., Kent Co. M. C. R.

Peachblow Clydesdales and Ayrshires
I am offering some choice young heifers and cows due to freshen in January in calf to the stock bull Sir Favorite of Hemmingford, 2732. In Clydesdales, I am offering for sale the imported horse Harrier, 6123, and the yearling stallion Nessmore, 11032. They are both good animals and will be sold worth the money. For prices write:
R. T. BROWLEE, Peach Bloss Farm, Hemmingford, Que.

IMPORTED CLYDESDALES
I have for sale mares and fillies, from foals up to 5 years of age; richly bred and big in size; a number of them in foal; matched pairs, the kind to make you money. They will be sold at prices that defy competition.
L.-D. 'phone. ALEX. F. McNIVEN, St. Thomas, Ont.

ORCHARD GROVE HEREFORDS
Champions of 1911 shows, winning both senior and junior herds at Winnipeg, Brandon, Regina, Edmonton, Toronto and London; also fifteen championships. Young stock, both sexes, for sale at reasonable prices.
Long-distance 'Phone L. O. CLIFFORD Oshawa, Ont.

THE MAPLES' PRIZEWINNING HEREFORDS
Herd headed by Newton Lad (Imp.) and Improver, five times champion at Toronto, London and Ottawa. On hand is one yearling bull; also some grand bull calves, herd headers, and a few show heifers. Prices reasonable.
MRS. W. H. HUNTER & SON, The Maples Ont., Orangeville Station, C. P. R.

Big Money in a Potato Crop
WHEN HANDLED ECONOMICALLY

Accurate Simple

You can handle your crop economically—and properly—by using the Aspinwall planter, the first and best self-operating Potato Planter in the world—without an equal anywhere.

The Aspinwall Potato Planter No. 3 makes potato culture profitable. One man can run it. Built on honor, of highest grade materials. Works perfectly under all circumstances. Will handle whole large or small. We also make efficient Spraying Outfits for every purpose. Ask for our sprayer catalog including valuable formulas. Send name and address now.

ASPINWALL MANUFACTURING COMPANY
501 Sabin Street, Jackson, Mich., U.S.A.—Canadian Factory, Guelph, Ont.
World's Oldest and Largest Makers of Potato Machinery, Cutters, Planters, Sprayers, Diggers, Sorters

Write for descriptive circular of the entire Aspinwall Line, and FREE BOOK "The Potato"

GOSSIP.
STOCK SALE DATES CLAIMED.
January 19th.—At Ottawa Live-stock Show; pure-bred beef and dairy cattle.
January 25th.—At Burford, Ont.; pure-bred registered sheep.
February 7th and 8th.—At Union Stock-yards, Toronto; consignment sale of Shorthorns.
February 9th.—James Russell, Richmond Hill, Ont.; Shorthorns, dispersion.
February 9th.—North Toronto Sales Co., Bedford Park; Holsteins.
February 28th.—R. & S. Nicholson, Parkhill, and H. K. Fairbairn, Thedford; Shorthorn bulls, to be sold at Parkhill.
March 6th.—Provincial pure-bred cattle sale, in Winter Fair Building, Guelph, Ont.
March 7th.—B. Hoskin, The Gully, Ont.; Holsteins and Tamworths.
April 3rd.—Holstein-breeders' Club; second annual consignment sale, Belleville, Ont.

O. A. C. SHORT COURSE IN FRUIT-GROWING.
Commencing Tuesday, January 23rd, and continuing morning, afternoon and evening, until Friday, February 2nd, the annual short course in horticulture, at the Ontario Agricultural College, promises to be the best ever held. In connection with this course, two consecutive courses of one week each, with each class limited to twenty students, will be held. The special courses are confined—one to box apple-packing, from January 29th to February 3rd, and the other to barrel apple-packing, from February 5th to February 10th. These courses are entirely separate from the short course in fruit-growing, and persons desiring instruction in them must make special application. No fees are charged, and applications are filed in order of receipt. Among the speakers and instructors in the fruit-growing short course are: Dr. G. C. Cushman, Prof. J. W. Crow, Prof. J. E. Howitt, Prof. R. Harcourt, Prof. W. H. Day, Prof. H. L. Hutt, Prof. J. Evans, P. C. Dempsey, B.S.A., A. H. MacLennan, B.S.A., L. Caesar, B.S.A., D. H. Jones, B.S.A., and H. L. Fulmer, B.S.A., all belonging to the staff of the O. A. C., and a number of well-known practical fruit-growers, among whom are Jas. E. Johnson, manager of the Norfolk Fruit-growers' Association, Simcoe; R. Thompson, manager of St. Catharines Cold-storage and Forwarding Company; D. Johnson, Forest; S. E. Todd, B.S.A., Department of Agriculture, Petrolia; P. J. Carey, Dominion Fruit Inspector; P. E. Angle, B.S.A., manager of Lynndale Farms, Simcoe, and F. M. Clement, B.S.A., of the Department of Agriculture, Dutton. Everything pertaining to fruit-growing will be discussed, sites for orchards, soil preparation, planting, wind-breaks, fertilizers, cultivation, moisture, spraying problems, varieties, diseases, insects, pruning, co-operation in fruit-growing, barrel- and box-packing, and many other subjects, will be threshed out by experts. Demonstrations in box and barrel packing will be given, and implements for orchard cultivation will be on exhibition. This event comes at a good time, and those interested in fruit-growing should not fail to avail themselves of this opportunity.

The Shorthorn sale held each year in Toronto has marked progress in the Shorthorn world, and this year promises to be no exception, for we are promised better bulls and better females as well, in the offering. The herds represented have been in the front for many years, the owners have not hesitated to give their time, their money, and their best efforts, to produce cattle that will make for improvement in the cattle kind—that they have succeeded is acknowledged throughout the world. The opportunity offered to get sires from such herds, gathered together so that an intelligent selection can be made at moderate cost to Canadian breeders, cannot be over-estimated. The catalogue shows good breeding in every animal, the portraits of many show that they are of the form that we want and the men offering them are a guarantee that the best judgment has been used in their production. Bulls bred in this way must have a wonderful influence for good wherever they go, and a female of this kind is the best foundation in the world on which to build a herd. Ask for the beautifully illustrated catalogue, mentioning "The Farmer's Advocate." See advertisement.

Warranted to Give Satisfaction.

**Gombault's
Caustic Balsam**

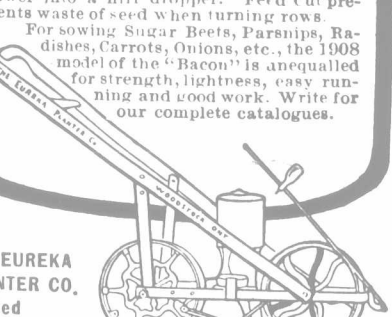


Has Imitators But No Competitors.
A Safe, Speedy and Positive Cure for
Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or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

As a Human Remedy for Rheumatism, Sprains, Bore 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 express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address
The Lawrence-Williams Co., Toronto, Ont.

'The "BACON" Seed Drills and Cultivators

The only Rear-Wheel Driven seed Drill on the market. The feed in the "Bacon" handles seed without bruising or breaking, and seeds evenly to the last seed. Machine instantly converted from a regular seed sower into a hill dropper. Feed cut prevents waste of seed when turning rows. For sowing Sugar Beets, Parsnips, Radishes, Carrots, Onions, etc., the 1908 model of the "Bacon" is unequalled for strength, lightness, easy running and good work. Write for our complete catalogues.



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Woodstock, Ont. 2

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DEAFNESS
INSTANTLY RELIEVED BY THE OLD
DR. MARSHALL'S
CATARRH SNUFF**
25¢ AT ALL DRUG STORES OR SENT PRE-PAID BY C. M. KEITH, CLEVELAND OHIO

ABSORBINE

Cures Strained, Puffy Ankles, Lymphangitis, Poll Evil, Fistula, Boils, Boreds, Wire Cuts, Bruises, Swellings, Lameness, and all ails. Pain quickly relieved. Blistering, removing the hair, or laying the horse up. Pleasant to use. \$2.00 per bottle, delivered. Describe your case for special instructions and Book 5 E Tree.

ABSORBINE, J.K., Liniment for manking. For Strains, Painful, Knotted, Swollen Veins, Milk Leg, Gout. Price \$1.00 per bottle at dealers or delivered. W. F. YOUNG, P.D.F., 258 Lyman's Bldg., Montreal, Ca.

Messrs. Hickman & Scruby
COURT LODGE, EGERTON KENT, ENGLAND
EXPORTERS OF PEDIGREE
Live Stock of all Descriptions.
During the spring months we shall be shipping large numbers of Percherons, Shires, Belgians, Clydesdales, Suffolks, etc., and all those who wish to buy imported stock should write us for full particulars.

**NOTICE TO HORSE IMPORTERS
GERALD POWELL**
Commission Agent and Interpreter
Nogent Le Rotrou, France
will meet importers at any port in France or Belgium, and assist them to buy Percherons, Belgians, French Coach horses. All information about shipping, banking and pedigrees. Many years' experience; best references. Correspondence solicited.

**Percheron, Belgian, Shire,
Hackney Stallions and Mares**
Two to four years old. Imported and American bred. 1,800 to 2,200 lbs. Three importations last few months, others to n. Prices on most of my stallions, \$700 to \$1,200 at my barns. Special inducements to Canadian buyers.
LEW. W. COCHRAN, Crawfordsville, Ind.

Clydesdales For Sale
Imported and Canadian bred, from one to seven years old. For description and particulars apply to
JAMES PATON, winton Park P.O., Ontario
1st Ont. Station, C.P.R.

THE CONSIGNORS TO THE GREAT CANADIAN SALE OF 100 Scotch Shorthorns

TO BE HELD AT UNION STOCK YARDS, TORONTO, ONTARIO, ON THE
7th AND 8th FEBRUARY, 1912

Are at the top in breeding cattle in Canada, and they give the credit for their success to the practice of refusing on every occasion to use anything but the best bulls; both individually and in breeding, that could be procured, no matter how far they had to go in miles or in money.

The herd of W. C. Edwards has been headed by Marquis of Zenda, a full brother to the Missie cow that sold for W. S. Marr in Chicago for \$6,000.00. Missie Champion, one of her sons, was another bull used. Village Champion helped them wonderfully, and now they have Royal Favorite, Bapton Mandolin, and Gold Sultan—the best from Great Britain, the United States and Canada. Such sires, with a herd of the best cows to be bought in Scotland, should produce something. You get the best of it at Toronto.

Miller Bros., the third generation of breeders, started right when they took control of the herd, by placing at its head the great Uppermill Omega. No male animal of any kind has forced himself into prominence more determinedly than has this bull. He was the last calf bred at Uppermill. Before the dispersion of the herd he had one of the best cows in the herd for his mother, and his sire, with the immediate grand sires, were of the richest Cruickshank blood that could be found. His bulls have sold for big prices by private treaty, and his heifers have been retained for this sale in every case, and have in the past sold for an average over \$1,000.00. All the heifers in the herd, old enough, will be sold this year as in the past; they are phenomenal and worth seeing sold. There will for the first time be several calves at foot, and several cows and heifers in calf, by Uppermill Omega.

J. A. Watt, one of the second generation of breeders by choice, goes to prove that the short road to success is through laying a good foundation of matrons, and then, disregarding all else, get the sires. Bampton Hero would make a herd. Young Abbots-



Choice Gloster and Pride of Gloster 6th. Will be included in sale.

burn, Royal Sailor, Jilt's Victor helped to put on the finishing touches. Now the great Gainsford Marquis, just purchased at a very big price, will do his part to keep it in the front rank. The keystone of success in the Watt herd has been a sire of outstanding merit in both form and breeding.

The Thistle Ha' Herd has been known for seventy-five years as the home of the best bulls in the land; nearly every bull used to any extent in that time having been a champion. Primrose Day, the latest sire, was bred almost the same as Pride of Avon, used by Mr. Duthie, his calves making record prices in his October sales.

John Miller, Jr., the fourth generation, has it headed by the imported bull, Choice Archer; a good one and a proven sire; his calves will show for themselves.

Robert Miller's herd has been headed for two years with one of the best sons of Whitehall Sultan, "Superb Sultan," a straight-bred Cruickshank Secret, from a dam by Baron Lavender, which bull, as well as Whitehall Sultan, was imported by Robert Miller. Superb Sultan is fast coming to the front as a sire; his bull calf last year made a record at these sales. This year there will be three bulls and one heifer by him, and they may be noticed. There will also be about ten cows and heifers in calf to him.

Write for the Catalogue, showing the pedigrees of the most select lot of Shorthorns ever offered by auction in Canada.

COL. GEO. P. BELLOWS, MARYVILLE, MO.
COL. CAREY M. JONES, CHICAGO, ILL.
CAPT. T. E. ROBSON, LONDON, ONT.

AUCTIONEERS.

Robert Miller, Stouffville, Ont., Manager of Sale

Bone Spavin

No matter how old the blemish, how lame the horse, or how many doctors have tried and failed, use

Fleming's Spavin and Ringbone Paste
Use it under our guarantee—your money refunded if it doesn't make the horse go sound. Most cases cured by a single 45-minute application—occasionally two required. Cures Bone Spavin, Ringbone and Sidebone, new and old cases alike. Write for detailed information and a free copy of

Fleming's Vest-Pocket Veterinary Adviser
Ninety-six pages, durably bound, indexed and illustrated. Covers over one-hundred veterinary subjects. Read this book before you treat any kind of lameness in horses.
FLEMING BROS., Chemists
75 Church St., Toronto, Ontario

Bickmore's Gall Cure For Galls, Sore Shou-
lders, Cuts, Cures while
horse works. Horse book free. **Wingate Chemical**
Co., 8 Notre Dame St. W., Montreal, Can.

Aberdeen - Angus

Now is the time to buy a bull; eleven for sale; also
females any age or price. **WALTER HALL,**
Drumbo station. **Washington, Ont.**

Glengow Bulls

At a Sacrifice

Seven fine and well-bred yearling
bulls that must be sold. Satisfaction guaranteed.
Worth your while to price them before buying
elsewhere.

WM. SMITH, COLUMBUS, ONTARIO

MAPLE LODGE STOCK FARM

1854 - 1911

An offering of a splendid lot of young Shorthorn bulls
for sale now; good colors and choice individuals;
several of them from high-class milkers. A few
select Leicesters for sale vet.

A. W. SMITH, Maple Lodge, Ontario
Lucan Crossing, G. T. Ry., one mile.

Shorthorns of Show Calibre

Only one bull for sale now, but 13 grand
heifers by Mildred's Royal must be sold, as
we have no bull to breed them to. Come
and see them, or write.

GEO. GIER & SON, Grand Valley, Ont.

QUESTIONS AND ANSWERS. Miscellaneous.

APPORTIONMENT OF TAXES.

A bought a piece of land from B, get-
ting possession of it the end of May,
nothing being said about taxes at time
of buying. What portion of taxes would
A be liable for? Kindly answer in
"The Farmer's Advocate."

A SUBSCRIBER.

Ans.—The taxes ought to be ap-
portioned between A and B, according to
their respective periods of tenure.

METAL SILOS.

Could you give me some information
about metal silos, as the wooden silos
are usually short-lived, and I would have
to draw gravel about ten miles for
cement silo? I am expecting to erect
one of some kind next summer. Kindly
give me the name of some manufacturer
of them. **G. W. S.**

Ans.—Metal silos have been advertised
in this journal by the Waterous Engine
Works Co., Ltd., of Brantford, Ont. As
yet, they have not been sufficiently test-
ed to enable us to pass a final opinion on
them. Fairly satisfactory results have
been obtained, but the chief difficulty
has been to get a substance with which
to coat the inner surface to prevent
rusting.

DUTY RATES.

1. I intend to get a magneto from the
United States. How much duty would
there be on it if it cost \$15?

2. Could I get a booklet or pamphlet
on duty rates? If so, please state
where I could obtain it, and at what
price. **J. B.**

Ans.—1. The duty on a magneto com-
ing to Canada from the United States
is 27½ per cent, which would make
\$1.13 on one of \$15 value.

2. The Canadian Almanac, price 50c.,
gives these rates, and much other valu-
able information. This is sold at many
book stores, or may be purchased from
the publishers, The Copp Clark Co.,
Ltd., Toronto.

Shorthorn Bulls—Special offering: Scotch breeding, full of flesh and
quality, with plenty of scale and from good milking dams.
H. SMITH, Hay P.O., Huron County, Ontario.
Exeter Station, G. T. R., ½ mile.

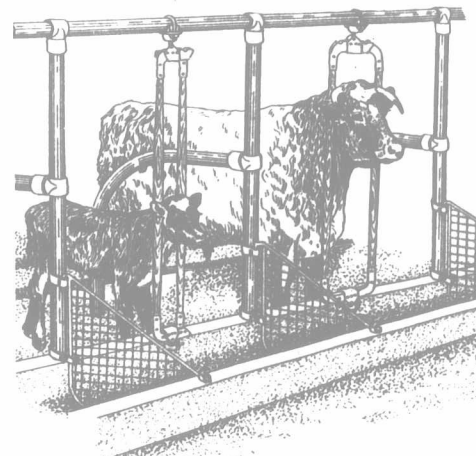
Shorthorn Bulls—12 to 16 months, reds and roans, Strath-
allans. A very choice lot of five, consider-
ing breeding and extra quality. We offer them at a bargain. The best bunch ever bred at Fairview.
J. & D. J. CAMPBELL, Fairview Farm, WOODVILLE, ONT.

Shorthorns and Clydesdales—We are offering 10 choice young bulls, serviceable age,
sired by His Grace (imp.) = 69740 =; also for sale or ex-
change, two stallions rising 3 and 4 years old; big quality horses, from imported sires and dams; also
cows and heifers, mares and fillies. Write us, or come and see them.
A. B. & T. W. DOUGLAS, Strathroy, Ont. Farm one mile north of town

1861 - IRVINE SIDE SHORTHORNS - 1911
Three bulls on hand, all from an Imp. bull, one out of an Imp. cow, two whose grand
dames are Imp.; also some nice young cows and heifers. Our prices are reasonable, and
would be pleased to have you write us for particulars.
Elora, G. T. or C. P. R. J. WATT & SON, Salem, P. O., Ontario

Scotch Shorthorns FOR SALE—One of our imported herd bulls and
eight heavy-boned, deep-bodied, low-down bull calves,
12 to 16 months old. Also twenty-five heifers and
young cows bred to imported bulls.
Farm ¼ mile from Burlington Jct. Station. **MITCHELL BROS., Burlington, Ont.**

Stable Your Cattle the Superior Way



The SUPERIOR is the only adjustable stanchion
that you can adjust to tie from your smallest
calf to your largest export steer.

We want every stockman and dairy-
man who is thinking of building a new
barn, or remodeling his present one, to
write for our free book on stable equip-
ment.

It Will Be Dollars In His Pocket

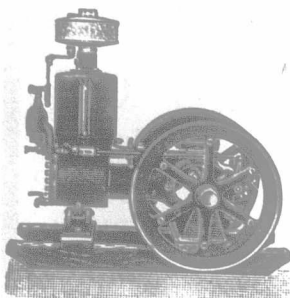
Now is the time to lay your plans and
get all the information you can, and not
be saying when your barn is completed,

I Wish That I Had Done So and So

Drop us a card to-day and your book
will go forward to you by return mail.
Please mention this paper.

**THE SUPERIOR BARN
EQUIPMENT CO.**
FERGUS - ONTARIO

BEST RESULTS ARE OBTAINED FROM ADVOCATE ADVERTISEMENTS.



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Engine
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YOU!

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book—read what hundreds
of others like yourself
say about the

STICKNEY GASOLINE ENGINE

and you'll have no doubt about
which engine YOU should buy. The
STICKNEY does the best work,
and gives the least trouble, because
of its SIMPLICITY. Write for
our book to-day.

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Limited
Winnipeg TORONTO Calgary

SHORTHORNS, COTSWOLDS, BERKSHIRES.

11 bull calves, 10 heifer calves, and 40
head cows and heifers. Ram and ewe
lambs and breeding ewes. Young
boars, April and September litters.

Chas. E. Bonnycastle,
P. O. AND STA., CAMPBELLFORD, ONT.

OAKLAND SHORTHORNS
We have another lot of
young bulls ready for fall
and winter trade, out of
good breeding dual pur-
pose dams and sired by our herd header, Scotch
Grey, 72692, one of the best bulls in Ontario; good
cattle and no big prices. Will also sell a few cows
and heifers; about 50 to select from.

JOHN ELDER & SON, HENSALL, ONTARIO

Fletcher's Shorthorns and Yorkshires
Stock bull "Spectator" (imp.) = 50094 =
for sale or exchange; also choice heifers.
I also offer my (imp.) Yorkshire boar for
sale or exchange.

GEO. D. FLETCHER, Binkham, Ont.
Erin station, C. P. R.

GEDARDALE SHORTHORNS
Shorthorns of all ages, pure Scotch
and Scotch topped, imp. and Canadian-
bred, choice heifers, choice young bulls,
also the stock bull Lord Fyvie (imp.);
anything for sale.

Dr. T. S. Sproule, M. P., Markdale, Ontario
Shorthorns and Oxford Down Sheep
Trout Creek Wonder at head of herd. Young bulls and
heifers of richest Scotch breeding. Phone connection.

Duncan Brown & Sons, Iona, Ontario.

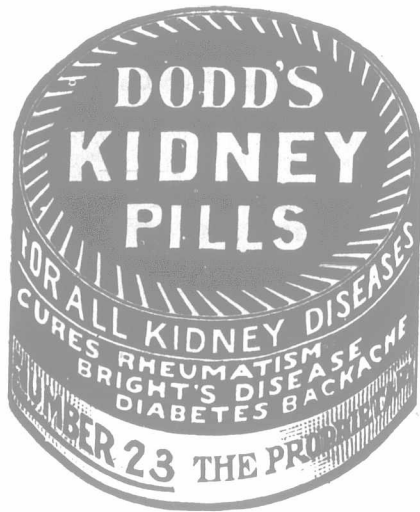
Clover Dell Shorthorns—Choice young ani-
mals of both sexes; milking
strain, red and roan. Prices right. Write, or
better come and see.

I. A. WAKELY, Bolton, Ont.
Bolton Sta., C. P. R., 1/2 mile from barns. Phone.

Spruce Lodge Shorthorns and Leicesters

Will price cheap young bull from 6 to 14 months;
also 1 and 2-year-old heifers, same from imp. sires
and dams. Leicesters at all times of both sexes for
sale. Phone. W. A. Douglas, Tuscarora, Ont.

Thousands of years ago a leaf fell on
the soft clay, and seemed to be lost.
But last summer a geologist in his ram-
blings broke off a piece of rock with his
hammer, and there lay the image of the
leaf, with every line and every vein and
all the delicate tracery preserved in the
stone through those centuries. So the
words we speak and the things we do
to-day may seem to be lost, but in the
great final revealing the smallest of them
will appear.—James Russell Lowell.



QUESTIONS AND ANSWERS. Miscellaneous.

RATION FOR STEERS.

What would make a balanced ration
of the following for a bunch of 1,100-lb.
steers? Timothy hay slightly mixed
with clover; any amount of roots; fairly
good silage; oat chop; cotton-seed meal,
and oil-cake meal. Would a ration of
the above be equally as good for milk
cows? If not, in what proportion
should it be fed to milk cows? If any-
thing else added, what is it, and how
much of it? J. Z. I.

Ans.—A fairly good ration could be
made from 8 to 10 lbs. of hay, 30 to 40
lbs. silage, 30 lbs. of roots, 6 lbs. oats,
1 1/2 lbs. oil cake, and 1 1/2 lbs. cotton-seed
meal. For the steers, the ration could
be improved from an economic stand-
point by adding a little corn to the
ration in place of some of the oats or
a little of the cotton-seed or oil meal.
For dairy cows of the same weight, the
above ration would prove quite satis-
factory. They might eat a little more
roughage, and if large cows, should be
fed accordingly.

COLT KNUCKLING.

Would you let me know what to do
for a spring colt that is cock-jointed in
both hind legs at the ankle? They
seem to slip over every step he takes.
He got fast in a fence about five weeks
ago, with smooth wire. I think he must
have sprained his pasterns some way.
We have had a boot fastened on the one
fetlock, but now the other ankle is like
the one that has the boot on.

W. W. B.

Ans.—1. Colts that show this weak-
ness before having done any hard work
are very liable to get worse when put
to work. It is sometimes caused by
too much standing in the stable, but
this case is no doubt due to some ex-
tent to the injury from being caught in
the fence. Blister all around the fetlock
joint once every month, with two drams
each of biniodide of mercury and can-
tharides, mixed with two ounces of vase-
line. Cut the hair off and rub the
blister well in. Tie so that he cannot
bite the parts. In twenty-four hours
rub well again, and in twenty-four hours
longer, wash off and apply sweet oil.
Let his head loose now, and oil every
day. Give him a large box stall, and
extra exercise, except during the time he
is tied up to blister.

BARNYARD DRAINAGE—SILOS.

1. How would you advise draining a
barnyard? Pools of water stand around
the barn after a rain or thaw, and cat-
tle tramping in this make it very deep.
I have thought of tiling it, but some
say tile will not work in a barnyard
where so much tramping is done. Would
it be better to gravel it, or tile it, and
then gravel it? About 35 rods from
barn an outlet could be had. If tiling
is best, what size tile should be used?

2. Am thinking of building a silo.
Which would you advise, cement or
stave? A great many say corn does
not keep well in cement silos, and also
that silage freezes to sides badly in
winter. Can this freezing be prevented
in any way? Kindly give your experi-
ence. How much gravel and cement
would be required for a silo 13 feet by
40 feet? A. N. M.

Ans.—1. It is generally believed that
it is a mistake to drain a barnyard.
There is a danger of tile drains clog-
ging. It is better to make the barn-
yard small, and have a slight basin or
depression where the large pile of ma-
nure is to be, and keep the manure con-
fined to this pile, then the drainage will
be held here, and more or less soaked
up by the manure.

2. Cement stave silo is to be
preferred to a stave silo. In taking
out the silage, keep the edges slightly
lower than the center. This will, to
some extent, prevent freezing, but a lit-
tle trouble may still be found from this
cause. Provide 11 or 12 cords of gravel
and about 48 barrels of cement.

\$ **15** ⁹⁵
AND UPWARD
SENT ON TRIAL
FULLY
GUARANTEED.

AMERICAN SEPARATOR

A brand new, well made, easy running, easily
cleaned, perfect skimming separator for \$15.95.
Skims one quart of milk a minute, warm or cold.
Makes thick or thin cream. Thousands in use
giving splendid satisfaction. Different from this
picture, which illustrates our large capacity
machines. The bowl is a sanitary marvel and
embodies all our latest improvements. Our
richly illustrated catalog tells all about it. Our
wonderfully low prices on all sizes and generous
terms of trial will astonish you. Our twenty-year
guarantee protects you on every American Sepa-
rator. Shipments made promptly from ST. JOHN,
N. B., and TORONTO, ONT. Whether your dairy
is large or small, get our great offer and hand-
some free catalog. ADDRESS,



AMERICAN SEPARATOR CO., BOX 1200,
BAINBRIDGE, N. Y.

ARTHUR J. HOWDEN & CO.
ARE OFFERING

15 High-class Scotch Shorthorn Heifers

At moderate prices, including Cruickshank Non-
pareils, Cruickshank Villages, Marr Emmaes, Cruick-
shank Duchesses of Glosters, Bridesmaids, Brass
Fames, Kinlars, Clarots, Crimson Flowers, and
other equally desirable Scotch families, together
with a member of the grand old milking Aikens tribe,
which have also been famous in the showing.

Arthur J. Howden & Co., Columbus, Ont.



SHORTHORNS

Have now a choice lot of young bulls to offer; also with
something nice in heifers. Catalogue of herd and
list of young animals on application.

H. CARGILL & SON, Proprietors, Cargill, Ont., Bruce Co.
JOHN CLANCY, Manager



Shorthorn Bulls and Clydesdale Mares

If you are in the market for a young bull, write us for particulars, or, better
still, come and see them. We have 13 young bulls, from 8 to 14 months old, of good
breeding and quality. We also have four imported Clydesdale mares, safe in foal.

W. G. PETTIT & SONS, Freeman, Ontario

Bell phone.

Burlington Jct. Sta., G. T. R., 1/2 mile from farm

THIS IS A GOOD TIME, AND I HAVE A GOOD PLACE, TO GET A HIGH-CLASS
SCOTCH SHORTHORN BULL CALF
by my great Whitehall Sultan sire, or a young cow in calf to him, to start a herd that will be gilt-edged.
SHROPSHIRE RAMS AND EWES, too, at low prices. CHILDREN'S PONIES. A CLYDES-
DALE FILLY, such as I can send you, is one of the best things any man can buy. Just write me and
say as nearly as possible what you want, and I will surprise you with prices on goods that are genuine.

ROBERT MILLER, STOUFFVILLE, ONTARIO

SALEM SHORTHORNS Headed by (Imp.) Gainford Marquis, undefeated
junior championship honors at Toronto, 1911. Have on hand two yearlings and a number of bulls
under a year for sale at reasonable prices.

J. A. WATT, Salem, Ont. Flora Sta., G. T. R. and C. P. R.

Scotch Shorthorn Females for Sale I am offering at very rea-
sonable prices, females
from one year to five years of age. The youngsters are by my grand old stock bull,
Scottish Hero (imp.) = 55042 = (90065), and the older ones have calves at foot by him, or
are well gone in calf to him. Their breeding is unexcelled, and there are show animals
amongst them. A EDWARD MEYER, Box 378, GUELPH, ONT.

ELMHURST SHORTHORNS & BERKSHIRES
I have now a particularly choice lot of young Berkshires; over 50 to select
from; bred from imported stock. Strictly high class, from breeding age down.
Also choice young Scotch Shorthorns. H. M. VANDERLIP, Cainsville P.O.,
Langford Sta., on Electric Road, between Hamilton and Brantford.

Pleasant Valley Farms Shorthorns—For Sale: 7 good young Scotch bulls
high-class bulls; also cows and heifers. Correspondence solicited. Inspection invited.
Farm 11 miles east of Guelph on C. P. R., 1/2 mile from station.

GEO. AMOS & SONS, Moffat, Ont.

SPRING VALLEY SHORTHORNS

Herd headed by the two imported bulls, Newton
Ringleader, = 73783 =, and Scottish Pride, = 36106 =.
The females are of the best Scotch families. Young
stock of both sexes for sale at reasonable prices.
Telephone connection.

KYLE BROS. - - - - - Avon, Ontario

Shorthorns Choice selections of
bulls and heifers at
all times for sale at
very reasonable prices. Robert Nichol & Sons,
Hagersville, Ont.

Woodholme Shorthorns

I have for sale a number of choicely-bred Scotch
Shorthorn heifers and several young bulls, all of
high-class quality and sired by Imp. Dorothy's King
= 5809 =, a Lady Dorothy. I am also offering
this bull for sale.

G. M. FORSYTH, North Claremont P.O. & Sta

High Grove Jerseys & Yorkshires

No better blood in Canada. Present offerings:
Choice young sows due to farrow in March.
Jerseys, all ages, both sexes.

Arthur H. Telford, P. O. Box 111, Tweed, Ont.

Brampton Jerseys

Bulls for service are getting scarce. Just a
few left. Yearling heifers in calf are in great
demand; 5 for sale; 6 now being bred.
Brampton Stockwell the sire. A few good
cows and some calves for sale.
Production and quality.

B. H. BULL & SON, BRAMPTON ONT.

JOIN THE WORLD'S BIGGEST ARMY of Satisfied Users. Own a SHARPLES Tubular Cream Separator



Careful buyers choose the Dairy Tubular because it contains no disks, has twice the skimming force of others, skims faster and twice as clean, wears all the time, is guaranteed forever by the oldest separator concern on this continent. No other has these advantages.

Those using others are rapidly discarding them for Tubulars because Tubulars repeatedly pay for themselves by saving what others lose. You will finally have a Tubular. Then why bother with others? Write for catalog 193.

THE SHARPLES SEPARATOR CO.
Toronto, Ont. Winnipeg, Man.

Look! For Only \$60!

Ida's Blachbird Aaggie, 24 months old; mostly black; sure, big, quiet; his calves are nicely marked. His dam, Ida's Bessie (359) A.R.O. 7 days, 19.25 lbs. butter, 525 lbs. milk, 89.1 lbs. in 1 day, 14,252 lbs. in 9 months and 7 days. First check gets him. F.O.B. Hagersville.

W. H. CHERRY Garnet, Ontario
MAPLE SOIL STOCK FARM

Holstein yearling heifers with A. R. O. testing over 20 lbs., got by Idalin's Paul Veeman, his dam testing 24,798 lbs., served by King Segis Pietertje, his dam 30.51; also a few bull calves from 3 to 6 months old.
Belmont Stn., C. P. R.

H. C. Holtby, Belmont, P.O., Ont.

WELCOME STOCK FARM HOLSTEINS—We have direct descendants of these unequalled performers, Peitertje Hengerveld Count De Kol, sire of three daughters above 32 lbs.; Pontiac Korn-dyke, two daughters above 37 lbs.; Hengerveld De Kol, with the longest list of A. R. O. sons and daughters; Blanch Lyons, dam of two daughters above 33 lbs.; Colantha 4th Johanna, whose yearly production of butter and milk stands unequalled. Our main stock bull, King Lyons Netherland, is a fine individual, whose two grand-dams and dam's sister average 34.22. Both sexes for sale. **C. BOLLERT & J. LEUSZLER, Tavistock, R. R. No. 6.**

A GREAT COMBINATION

Bulls eight months old for sale, combining the blood of Pontiac Korndyke and Hengerveld De Kol, with five 30-lb. cows in their pedigree, whose milk contains over 4 per cent. fat. These are the two greatest Holstein-Friesian bulls in America.

A. A. Farewell, Oshawa, Ontario

Purebred Registered HOLSTEIN CATTLE
The most profitable dairy breed, greatest in size, milk, butterfat and in vitality. Send for FREE illustrated descriptive booklets. **Holstein-Friesian Assn., F. L. Houghton, Sec'y, Box 127, Brattleboro, Vt.**

Riverside Holsteins

Herd headed by Prince De Kol Posch; dam was champion 10 years in succession at Guelph dairy test. King Johanna Pontica Korndyke; the record of dam and two nearest dams on sire's side average 32.12. Young bulls and females for sale.

J. W. Richardson, Caledonia, Ont.

HOMESTEAD HOLSTEINS

Headed by Canary Rachel Clothilde, whose dam, sire's dam and two grand-dams average over 27 lbs. butter in 7 days. Yearling bulls and bull calves, also one bull ring two for sale.

G. & F. GRIFFIN, Box, 43, Burgessville, Ont.

Evergreen Stock Farm offers a choice lot of bulls ready for service, from high-testing, deep-milking Record of Merit ancestors. Also a few females for sale. Herd headed by Francy Sir Admiral; dam's record 26.71, sire Sir Admiral Ormsby. Write for prices.
F. E. PETTIT, Burgessville, Ont.

Holsteins At Ridgedale—A few choice bull calves up to eleven months old for sale; sired by Imperial Pauline De Kol, whose 15 nearest dams average over 26 lbs. butter in 7 days; Sumping stations, Port Perry, G.T.R., and Myrtle, C. P. R., Ontario County.
R. W. WALKER, Utica, Ont.

Springbank Holsteins and Yorkshires Choice bull calves for sale, both from good milking strains. Also a few young cows.
Barnet & Sons, Living Springs P.O., Ont. Fergus station, C. P. R. and G.T.R.

MENTION "FARMER'S ADVOCATE."

QUESTIONS AND ANSWERS. Miscellaneous.

HOLE IN TEAT—ROLLER MILLS

1. I have a heifer giving milk with two pores on one teat, one half way up on teat. What can be done to close it?
2. Are there any other firms in Canada who manufacture roller mills besides _____, and the Fairbanks Company, Montreal? C. R.

Ans.—1. This will be difficult to close. It may close without trouble during her dry period.

2. The attention of advertisers is directed to this inquiry.

WEEDS IN STRAW.

A farmer has a stack of straw which he will not feed or tramp down for manure on his own place, as it contains a very noxious weed—the sow thistle. Is there any law to prohibit him from selling the straw, or to make him destroy it on his own property? J. M. C.

Ans.—We think the man can sell the straw if he wishes. If the purchaser knows what the straw contains, it is his fault if he purchases it.

CORN—CONTINUOUS OESTRUM.

1. Which is the best variety of corn to sow for grain purposes? Would you advise sowing the old Indian corn? The land is a light, sandy loam, and in York County.

2. Did any of your experimental men advise sowing by the sign indicated in the Almanac, or by the different phases of the moon? I sow all crops that mature above the ground, such as grains, when the sign is in the head, and when the moon is in the last quarter. And such crops as potatoes, that mature below the ground, when the sign is in the feet, and when the moon is in the first quarter, and I have experienced some excellent results. Please give your opinion as to such.

3. I have two cows; one had first calf, other one second calf, about 10th September, 1911. They both came in season October 22nd. They were both bred, but did not conceive. They were bred in three weeks again, with the same results. Now they come in heat every week. Cows are in good condition and health, and milking well, and appear to be clean from any unnatural discharges. What would you advise? Would you term it contagious abortion? R. P.

Ans.—1. There are several excellent varieties of corn. You might get some very good hints from the experience of your neighbors, as it is difficult to say just which variety will do best in your particular district. For grain purposes, the flint varieties would doubtless do best in your district. Longfellow, Compton's Early, Genesee Valley, King Philip, and many others, would likely give good results. If the Dents will mature, they generally give high yields. Just what is meant by "Indian corn" we are not sure. If it is the old eight-rowed yellow, it gives very good returns.

2. Experimentalists and progressive farmers generally do not wait for "signs," but do their seeding as soon as the land is ready, regardless of the size of the moon or zodiacal indications.

3. There are many causes of sterility, or of cows failing to breed. If due to disease of the ovaries, nothing can be done. The most common removable cause is closure of the opening through the neck of the womb. It is also claimed that "the yeast treatment" will have the desired effect. This consists in pouring a little warm water on an ordinary yeast cake, allowing it to stand about 24 hours, and then adding water to make a quart, allowing this to stand another 24 hours, and injecting this into the vagina about an hour before service. When the cows show oestrus, have the neck of the womb examined. Oil the hand and arm and insert into the vagina. If the neck of the womb is closed, open it and inject the treatment, and breed in about an hour. The continuous oestrus indicates disease of the ovaries. It would probably be better to feed them for the butchers than to attempt treatment. In some cases oestrus ceases after the animal has been bred. This is not contagious abortion.

CALVES WITHOUT MILK
Write for Free Booklet
"How to Raise Calves Cheaply and Successfully Without Milk"
Contains full information and complete feeding directions for using

Blatchford's Calf Meal—The Perfect Milk Substitute

Three or four calves can be raised on it at the cost of one where milk is fed. No mill feed. The only calf meal manufactured in an exclusive Calf Meal Factory. Established at Leicester, England, in 1899.

STEELE, BRIGGS SEED CO., LTD.
WINNIPEG, MAN. HAMILTON, ONT.

Fairview Farms Herd

Is there you can secure a son of Pontiac Korndyke, admitted by all breeders to be the greatest Holstein sire that ever lived. Look what his daughters are doing. Two of them with records over 37 lbs. each. Then, look at the work his sons are doing. HE IS THE GREATEST PRODUCING SIRE OF THE BREED, THROUGH HIS SONS. Every son of Pontiac Korndyke that has daughters old enough to milk is a sire of good ones. We can offer you several young ones that will give you great daughters.

E. H. DOLLAR, HUEVELTON, N. Y.

Summer Hill Holsteins

The only herd in Canada where there are 7 cows averaging almost 25 lbs. butter each in 7 days. Every record made on the farm. Present offering: 15 yearling heifers in calf; 10 imported heifers, some bred; 1 bull calf from a 31½-lb. dam, 1 bull calf from a 29½-lb. Junior, 4 years old; 1 bull, 8 months old, from a 25½-lb. Junior, 4 years old. Come and make your selections now. Prices are right. Trains met when advised.

D. C. FLATT & SON, R. F. D. No. 2, Hamilton, Ont. Telephone 2471.

LAKEVIEW HOLSTEINS

An offering twelve young bulls, some nearly ready for service, at bargain prices, to make room. All sired by Count Hengerveld Payne De Kol, and out of 20- to 24-lb. cows. They are a straight smooth lot, and anyone looking for a bull can find one out of these to suit him. Come and see them if possible, if not, write for catalogue.

E. F. OSLER, Bronte, Ontario

IMPERIAL HOLSTEINS

I can supply bulls ready for service and younger ones, also heifers out of R. O. M. cows, and sired by Tidy Abbekerk Mercena, whose seven nearest female relatives have records averaging 27.19 pounds.

W. H. Simmons, New Durham P.O., Oxford Co.

Evergreen Stock Farm—High-class Registered Holsteins. Herd headed by Prince Abbekerk Mercena, whose ten nearest dams average over 25 lbs. butter in seven days. For sale: One extra good bull, ready for service, and one bull calf, whose dam won second prize in milk test at Guelph Winter Fair, testing 4.2% BUTTERFAT. Could also spare a few yearling heifers in calf.
A. E. HULET, Norwich, Ont.

MAPLE HILL HOLSTEIN-FRIESIANS

Bull calves, eight to eleven months, by great sires and from official record dams. A few first-class cows and heifers.

G. W. CLEMONS, St. George, Ontario

Woodbine Holsteins—Herd headed by King Segis Pontiac Lad, whose sire's dam is the champion cow of the world. Sire's sire is the only bull that has sired five four-year-olds that average 30 lbs. each. Dam's sire is the bull that has sired two 30-lb. three-year-olds. His two great grand sires are the only bulls in the world that have sired two 37-lb. cows. Bulls and bull calves for sale.
A. KENNEDY, Ayr, Ontario.

Centre and Hillview Holsteins—We are offering young bulls from Sir Ladie Cornucopia Clothilde, the average of his dam sire dam and grand dams is 662.8 lbs. milk and 30.58 butter, 7 days, and 2,750.00 milk and 114.5 butter in 30 days; also Brookbank Butter Baron, who is a proven sire. He is sire of champion 3-year-old 30-day, 2-year-old 7-day and 2-year-old 30-day. Long-distance phone.
P. D. EDE, Oxford Centre P.O., Woodstock Sta.

The Maples Record of Merit Holstein Herd

A few choice bulls ready for service, sired by King Posch De Kol; also a few young bull calves, sired by Prince Aaggie Mechthilde, whose dam won first at Toronto, 1911, and sire's dam first in dairy test at Guelph, 1908 and 1909; his three nearest dams average over 25 lbs. butter in 7 days.
WALBURN RIVERS, FORDEN'S, ONTARIO

Maple Line Holsteins and Yorkshires—Herd headed by Homestead Colantha Sir Abbekerk 2nd, whose dam, sire's dam, g. dam average 29.61 lbs. butter 7 days. For sale at bargain prices, choice bull calves from R.O.P. cows.
W. A. BRYANT, Middlesex Co., Cairngorm, Ont.

Burnside Ayrshires

Champions in the show ring and dairy tests. Animals all ages and both sexes for sale. Long-distance phone in house.

R. R. NESS, Howick, Quebec

Ayrshires and Yorkshires—We have still some good young bulls. Now is the time to buy for the coming season, before the best go. We have females any age, and can fill orders for cartlots of Ayrshires. Pigs of either sex on hand.
ALEX. HUME & CO., Menie, Ont.

GLENWOOD STOCK FARM Have two yearling Holsteins and Yorkshires—Bulls fit for service, both of the milking strains. Will sell cheap to make room. **Thos. E. Carlaw & Son, Warkworth P.O., Ont.** Campbellford Station.

STONEHOUSE AYRSHIRES

Good teats, heavy producers and high yielders. Prices low considering quality. White Wyandottes, \$2 each. **WILLIAM THORN, Trout Run Stock Farm, Lynedoch, Ont.** Long-distance phone in house.


Are coming to the front wherever shown. Look out for this at the leading exhibitions. Some choice young bulls for sale, as well as cows and heifers.
HECTOR GORDON, Howick, Quebec.

City View Ayrshires—Several R. O. P. sows and others just as good, 2-year-old heifers, one yearling bull and six 1911 bull calves, with one to three crosses of R. O. P. blood. Prices reasonable. Write or phone. **JAMES BEG & R. R. No. 1, St. Thomas.**

MILCREST AYRSHIRES—Bred for production and large teats. Record of Performance work a specialty. Pigs head to select from. Prices right.
FRANK HARRIS, Mount Eliza, Ont.

SPRINGBANK AYRSHIRES The world's leading herd of Record of Performance Ayrshires. Contains more champion milk- and butter-producers than any other herd. Also big cattle, big udders and big teats a specialty. A few bull calves, true to color and type, from R. O. P. dams, for sale at reasonable prices. **A. S. TURNER & SON, Ryckman's Corners, Ont.** Three miles south of Hamilton. Visitors welcome. Trains met by appointment.

Lump Jaw



The first remedy to cure Lump Jaw was

Fleming's Lump Jaw Cure

and it remains today the standard treatment with years of success back of it, known to be a cure and guaranteed to cure. Don't experiment with substitutes or imitations. Use it, no matter how old or bad the case or what if Fleming's Lump Jaw Cure ever fails. Our fair plan of selling together with exhaustive information on Lump Jaw and its treatment, is given in Fleming's Vest-Pocket Veterinary Adviser. Most complete veterinary book ever printed to be given away. Durable bound, indexed and illustrated. Write us for a free copy.

FLEMING BROS., Chemists,
7 Church St., Toronto, Ontario

AGENTS \$3 a Day.

NEW PATENTED LOCKSTITCH AWL



Sows Shoes, Harness, Suggy Tops, Canvas, Grain Bags, Anything. Sells at sight. Astonishing low price to agents. Big profits. To show it means a sale. We want a few good live hustlers in each county. Splendid opportunity to make big money. No experience needed. Write quick—now—for terms. A postal will do. Send no money.

A. MATHEWS, 5944 Wayne Street, DAYTON, OHIO

Shropshire and Cotswold Ewes

At bargain prices, shearing ewes and a few aged imported ewes, bred to a first-class ram. In Cotswolds, shearing and two shear ewes, bred to the best rams of the breed; also ewe lambs, both breeds.

JOHN MILLER, Brougham, Ont.
Clarendon St., C. P. R.

Cattle and Sheep Labels

Metal ear labels with owner's name, address and any numbers required. They are inexpensive, simple and practical. The greatest thing for stock. Do not neglect to send for free circular and sample. Send your name and address to-day.

F. G. JAMES, Bowmanville, Ont.

FARNHAM FARM OXFORDS AND HAMPSHIRE DOWNS

Special offering for sixty days of 40 superior yearling Oxford Down ewes, bred to our champion ram. Long-distance phone in the house; ask Guelph for 152, two rings.

Henry Arkell & Son, Arkell, Ontario

Shropshire Sheep, Shire Horses and Poultry

Very many winners in Shropshires, and never had a better lot of both sexes for sale. Order early. Also a big quality shire filly and White Wyandotte poultry.

W. D. MONKMAN Bond Head, Ont.
Phone connection.

Oxford Down Sheep, Shorthorn Cattle, Yorkshire Hogs

Present offering: Lambs of either sex. For prices, etc., write to

John Cousins & Sons, Harrisston, Ont.

Poplar Lodge southdowns and Berkshire shires

I can supply South Berkshires, from youngsters up to breeding age, of both sexes; the highest types of the breeds in proper fit.

SIMEON LEMON, Kettleby P.O. Schomberg or Aurora Stns. Phone.

Bobby—"Pa, did you ever see an arm of the sea?"
 Father—"Yes."
 Bobby—"Where was it?"
 Father—"It was hugging the shore the last I saw of it."

A stranger, in talking to the oldest inhabitant of a certain village, asked:
 "How old are you, uncle?"
 "I am just 100 years old, my friend."
 "So old? Well, you will hardly live to see another century roll by, will you?"
 "Well, I'm not so sure about that," replied the old man. "I am a lot stronger now than when I began on the first hundred."

Your hands won't get chapped this winter if you use SNAP.

Milking, scouring the separator and cleaning up the stables, get the dirt and grime ground right into the skin. Coarse soap and hard rubbing only chaps the skin. SNAP cleans and purifies because anti-septic—gets out the dirt without hard rubbing, and is soothing and healing to the skin.



15c. a can.

GOSSIP.

During the period from November 21st to December 11th, records for 246 cows were received and accepted for entry in the American Holstein-Friesian Advanced Registry, two of which were extended to fourteen days, one to twenty-six days, and eleven to thirty days. Nearly one-half this herd were heifers with first or second calves, and the herd produced in seven consecutive days, 97,566.2 lbs. milk, containing 3,437,238 lbs. of butter-fat, thus showing an average of 3.52 per cent. fat. The average production of each animal was 396.6 lbs. of milk, containing 13.973 lbs. of butter-fat; equivalent to over 56.6 lbs. or almost 27 quarts of milk per day, and 16.3 lbs. of the best commercial butter per week.

Note the change of advertisement of Mitchell Bros., Burlington, Ont., in this issue. breeders of Scotch Shorthorns of the most approved type. The imported bull offered for sale is a red-roan three-year-old. He is sired by Villager, a winner of eighteen first and special prizes in Scotland, and the bull which sold for the long price of \$3,100. This bull is gentle, active, and a sure getter. The young bulls offered are all of the low-set, heavy-boned, growthy, thick-fleshed kind that will make herd-headers, the kind which produce easy feeders. The firm reports the following sales: One good bull, from imported sire and dam, to Wm. Mackintosh, Burgoyne, to John Scott, Dunblane, Ont., a promising Roan Lady bull, by Bandsman; to R. J. Farley, Dunchurch, Ont., one bull calf; to Henry Hossfield, Walkerton, Ont., a very thick, fleshy calf, by Bandsman; to F. Ryckman, Merid, Saskatchewan, a stylish roan bull, by Imp. Village Duke, and-out of a Jilt cow; to Lorne Forrest, Simcoe, Ont., one extra good bull, by Village Duke, and two yearling show heifers, Bandsman's Lily and Ury Band Lassie, that were fourth and sixth in senior yearling class at Toronto the past season. Mr. Forrest has the right idea that by buying good ones to start with, he will avoid several years of lost time that so many beginners have by buying a cheap foundation.

SHORTHORNS AT SPRING VALLEY.

The big, fashionably-bred herd of Scotch Shorthorns belonging to Kyle Bros., of Spring Valley Farm, Ayr, Ont., are coming along nicely in their comfortable winter quarters. High-class individuality along modern-type lines is the rule in this well-known herd, particularly in the younger ones, the get of that remarkably successful sire, Imp. Newton Ring-leader, the Lady Fragrance-bred son of the noted show bull, Cam Ringleader. Since he has been at the head of the herd, he has sired many Toronto and other winners, and is one of the best breeding bulls in Canada to-day. At the present time there are about 32 females in breeding, imported, and the get of imported stock, representing such tribes as the Missies, Cruickshank Lovelys, Cruickshank Village, Cruickshank Jealousy, Cruickshank Duchess of Gloster, Broadhocks, Roan Lady, etc., sired by such great bulls as Imp. Bapton Proud Gift, Imp. Philosopher of Dalmeny, Imp. Prince George, Imp. Clipper Chief, Imp. Scottish Pride, etc., a line of Shorthorn breeding excelled in no other herd or country in the world, and certainly there are few herds in this country, the surplus representatives of which find a more ready sale. Just now, there is only one bull left. He is a Roan Lady-bred son of Imp. Newton Ringleader, a roan, 11 months old, thick, soggy young bull; a herd-header that should breed well. The Messrs. Kyle report 1911 as the best year, by far, for sales, they have ever experienced in their many years of breeding.

TRADE TOPIC.

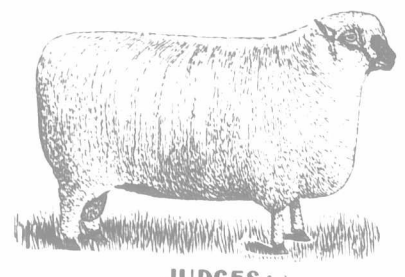
The 32-year-old nursery firm of A. G. Hull & Sons, St. Catharines, Ont., in their new advertisement in this issue, call attention to the stock in their old reliable Centralia Nurseries, which they ship direct to customers with satisfaction. Their stock includes, fruit and ornamental trees, shrubs, berries, and asparagus plants. See the advertisement and send for catalogue.

BURFORD ANNUAL FAIR AND SALE

Of Purebred Registered Sheep

SHROPSHIRE, SOUTHDOWN, OXFORDS & COTSWOLDS

Will be held in the Agricultural Hall in the Agricultural Park, BURFORD, ONT., on Thursday, January 25th, 1912, at 2 o'clock p.m.



JUDGES: J. C. DUNCAN, Lewiston, N. Y. W. H. BEATTIE, Wilton Grove, Ont.

200 sheep of the different breeds will be sold by public auction, without reserve; contributed by the following breeders: Shropshires, H. N. Gibson, Delaware; Oak Park Stock Farm Co., Brantford; J. D. Lloyd Jones, Brantford; T. A. Cox, Brantford; J. Wilson & Son, Thomas; Milne Bros., Green River; S. Libbeck, Mt. Vernon; F. M. Lewis, Brantford; Geo. Libbeck, Mt. Vernon; Robert Marshall, Elora; J. P. Bosworth, Elora; Messrs. Schuyler & Son, Brantford; C. Hodgson, Brantford, and J. G. Hamner, Brantford. Southdowns, Geo. Baker, Simcoe; C. Hodgson, Brantford; E. B. Martin, Canning. Cotswolds, E. Parks, Brantford; Geo. Allen, Brantford; T. A. Cox, Brantford. Oxfords, A. Jull, Brantford. At 10 o'clock a.m. on day of sale the 200 sheep will be judged by expert judges, in the following classification:

1. Pen of six ewes over one year, five premiums.
2. Pen of six ewes under one year, five premiums.
3. Pen of six rams under one year, five premiums.
4. Champion ram, any age.
5. Champion ewe, any age.

The above sheep are strictly of the highest quality and breeding, having been selected especially for this sale. An excellent opportunity to secure foundation stock or prizewinners. Write for catalogue containing pedigrees, terms and full particulars.

Clerks: W. F. MILES, C. F. SUNDERS
 Auctioneer: WELBY ALMAS
 Mgr. and Secretary: J. G. HANMER, Burford, Ont.

Oxford Downs and Yorkshires

Are ideal in quality and type. Present offering is a grand lot of ram lambs for flock headers, also a number of shearing ewes and ewe lambs, sired by imp. Hamptonian 2nd, who is also for sale. Yorkshires of both sexes and all ages. Right good ones. Satisfaction assured.

J. A. CERSWELL, Bond Head P. O., Ont.
Bradford or Beeton Station.

Southdown Ewes

A few good shearings, and two-shear ewes in lamb to my Toronto champion ram.

Angus Cattle

Buy an Angus bull to produce steers that feed easily and top the market Colles that win at the shows and make excellent workers.

ROBT. McEWEN, Byron, Ont.

BLAIRGOWRIE STILL TO THE FRONT

Present offering: Shropshire and Cotswold ewes bred to high-class rams; also ewe lambs. In Clydesdales I have choice young mares and filly foals. In Shorthorns are several young bulls of serviceable age. Herd headers of quality.

Myrtle, C. P. R. Stn. L.-D. Phone. **JOHN MILLER, JR., Ashburn, P. O.**

Suffolk Down Sheep

Shearing rams and ewes; also lambs.

James Bowman, Elm Park, ONTARIO

Aberdeen-Angus Cattle

Extra good young bulls, the best in Canada.

GUELPH, ONTARIO

LARGE WHITE YORKSHIRES

Have a choice lot of sows in pig. Boars ready for service, and young pigs of both sexes supplied not akin, at reasonable prices. All breeding stock imported, or from imported stock, from the best British herds. Write or call on:

H. J. Davis, Woodstock, Ont.
P. R. and G. T. R. Long-distance phone

SUNNYSIDE CHESTER WHITE HOGS

I am now offering some very choice young things of both sexes, of breeding age. A few Shropshire sheep of both sexes. Also Mammoth Bronze turkeys.

W. E. WRIGHT, Gleanworth P. O., Ont.

Woodburn Berkshires

We are offering for sale 100 head of young Berkshires of both sexes and any sizes required. We can supply pairs or trios not akin; our Berks are noted for strength of bone, length, depth and quality, conforming to bacon type. Show and breeding stock a specialty.

E. BRIEN & SON, Ridgetown, Ont.

SWINE OF ALL BREEDS FOR SALE.

Yorkshires, Tamworths, Berkshires, Hampshires, Chester Whites, Poland-Chinas, and Duroc-Jerseys. I have constantly on hand both sexes of all ages. Show stock a specialty.

John Harvey, Freilighsburg, Que.

For Sale—Ohio Improved Chester Hogs.

Sired by first-prize hog at Toronto and London. Also reg'd Jersey Buls from 8 to 10 months, from high-testing stock. Write:

CHAS. E. ROGERS, Ingersoll Ont.

Monkland Yorkshires

7 months or age. An exceptionally choice lot, full of type and quality; also a limited number of boars.

MATTHEW WILSON, FERGUS, ONTARIO

Duroc Jersey Swine

Thirty sows ready to breed; an exceptionally choice lot. A few boars fit for service. Also a lot of Emb'd'n geese. Phone in house.

Mac Campb II & Sons, Northwood, Ont.

Improved Large Yorkshires FOR SALE

A lot of or fine young boars and sows of different ages. Full strength. Correspondence solicited.

SENATOR F. L. BEIQUE, Lachine Locks, Que.
P. O. Box 106

Pine Grove Yorkshires

For sale: A choice lot of young boars fit for service; also sows already bred. Are booking Descendants of imported stock.

Property of Joseph Featherston & Son, Streetsville, Ont.

Elmwood

Ohio Improved, Chester White pigs, largest strain, oldest established registered herd in Canada. Choice lot of young sows, bred; young pigs, 6 weeks to 6 months; pairs not akin. Express prepaid. Safe delivery guaranteed.

E. D. GEORGE & SONS, Putnam, Ontario.

Hampshire Hogs

We have the highest-scoring and greatest prizewinning herd of Hampshire swine in Canada, bred from the best strains of the breed. Stock of both sexes and all ages.

HASTINGS BROS., Crosshill P. O. Linwood Sta., C. P. R.; Newton Sta., G. T. R.

Hampshire Pigs

Get acquainted with the best bacon hog in existence. Both sexes for sale from imported stock. Write for prices. Long-distance phone.

J. H. RUTHERFORD, Box 62, Caledon East, Ont.

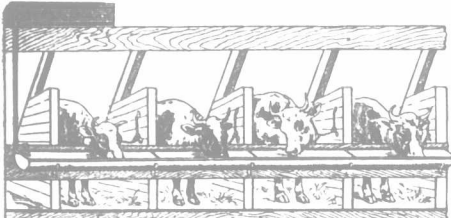
SUFFERED TERRIBLE PAINS OF INDIGESTION.

MILBURN'S LAXA-LIVER PILLS CURED HER.

Mrs. Wm. H. MacEwen, Mount Tryon, P.E.I., writes:—"For more than a year I suffered with all the terrible pains of indigestion, and my life was one of the greatest misery. It did not seem to make any difference whether I ate or not, the pains were always there, accompanied by a severe bloating and belching of wind. I did not even get relief at night, and sometimes hardly got a bit of sleep. In my misery I tried many remedies said to cure indigestion, but they did me not one particle of good, and I fully expected I would always be afflicted in this way. At this time my brother came home on a visit and urged me to try Milburn's Laxa-Liver Pills, and took me a few vials. By the time I had taken one vial I began to improve, and could eat with some relish. I was greatly cheered, and continued taking the pills until all traces of the trouble had disappeared, and I could once more eat all kinds of food without the slightest inconvenience. I am so fully convinced of their virtue as a family medicine, I have no hesitation in recommending them."

Price, 25 cents per vial or 5 vials for \$1.00 at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

Steel Stable Troughs



While you're fixing up your stables this summer be sure to install our steel, everlasting, stable troughs. Every Farmer and Dairy man knows the great advantages of properly watering their stock—especially cows—in the stable during cold weather. Our steel stable troughs are EASY TO ERECT.

MADE IN SECTIONS, they can be extended to fit any size stable—simple in construction. Nothing to get out of order, always ready for use. We guarantee the quality of the material and take all responsibility—money back if not as represented. Used in the new stables at the Guelph Experimental Farm, etc. Write for catalogue 22. Troughs and Tanks for all purposes.

STEEL TROUGH CO., Tweed, Ont.

FOR BREAKING OUT.

"Why do you have those glass cases with the ax, hammer, crowbar, and so forth, on these cars?" asked a traveller on the railroad going to New York.

"Oh, those are put there in case anyone wants a window open," replied the facetious man.

NEW BRUNSWICK HEARD FROM AGAIN

Another splendid cure by Dodd's Kidney Pills.

Mr. Ben, Gauvanc had Backache so bad he had to quit work—Dodd's Kidney Pills fixed him up.

Puelling Settlement, Kent Co., N. B., January 15.—(Special.)—Every corner of New Brunswick tells of cures made by Dodd's Kidney Pills, and this settlement can contribute its share. Mr. Ben. Gauvanc is one man who without hesitation states that he owes his good health to the great Canadian Kidney remedy.

"Yes, Dodd's Kidney Pills certainly did me good," Mr. Gauvanc says in an interview. "Before I started taking them my back ached so that I had to give up I walked and moved about. I took nine boxes, and I also had to be careful how I walked, and they fixed me up. They are the best medicine for all diseases of the kidneys."

Dodd's Kidney Pills are no cure-all. They cure the kidneys. But they also cure the kidneys, and with cured kidneys you can't have backache, rheumatism, Bright's disease, diabetes or

GOSSIP.

Henry Arkell & Son, Arkell, Ont., write: We have had a very good ram trade this season, and have sold, retail, seventy yearling and ram lambs, of both Hampshires and Oxfords. We find a great scarcity of feed this winter, and prices are high. Notice our special advertisement of forty yearling ewes. If not sold in sixty days, will be sold by auction, as feed is scarce, and we are overstocked. Thanks to "The Farmer's Advocate," we have made a great many sales through our advertisement.

R.-O.-P. AYRSHIRES.

The City View herd of R.-O.-P. Ayrshires, the property of James Begg, of St. Thomas, has again produced a great heifer in the two-year-old Lady Betty 2nd, which, in an official R.-O.-P. test, qualified in six months, which is the time she has been in the test, with the phenomenal yield of 5,997 lbs., which stamps her as one of the great Ayrshire heifers of the day. Practically all the females of this splendid herd are in the official R. O. P., with records for two-year-olds up to 7,288 lbs. in the year, and not one of the entire lot has shown a test lower than 4 per cent., and as high as 4.50 per cent. Last year, the average for the whole herd during the milking season between freshening, several of them being two-year-old heifers, and one of them a farrow, was 7,850 lbs., an average that shows them to be a business herd, having a large credit on the right side of the ledger. The sire of many of the younger ones, and for some time at the head of the herd, was the good breeding bull, Prospector, whose dam, in ten months, gave 8,820 lbs. This bull's daughters are showing up remarkably well, and will certainly score well in an official test. The bull now in service is Bonnie's Messenger, whose dam, as a two-year-old, gave 6,663½ lbs., and her dam, 9,867 lbs. of milk, and 400.36 lbs. butter-fat. From this kind of breeding, for sale, are six young bulls, five of them under one year of age, the other twenty months, all sired by Prospector, and three of them out of R.-O.-P. dams, one of them with both his dams and grandams in the Records. Also, for sale, are a limited number of females, one of them, Madeline B., has a record of 7,135 lbs., at two years; another, Nellie Jewell, 9,093 lbs., in 270 days.

WOODHOLME SCOTCH SHORTHORNS.

The Woodholme Farm, property of G. M. Forsyth, of North Claremont, Ont., is again to the front with a big and remarkably well selected herd of Scotch Shorthorns. Few herds in this country have been brought to the high standard of breeding and individual merit in the short time since the foundation of this herd. His principal selections in tribal lines are the Duchess of Glosters, Minas, Clementina, Beautys, Belonas, and Matildas, imported and Canadian-bred, a number of them the get of such well-bred and good breeding bulls as Imp. Nonpareil Archer, Imp. Royal Champion, Imp. Spicy Count, Imp. Scotland's Fame, and the present stock bull, Imp. Dorothy's King =60833=, a Roan Lady Dorothy, sired by White Knight, dam Rosy Dorothy, by Justice, grandam by Scottish Victor. He is a low-down, thick bull, of nice, level lines, has proven a sire of sterling worth, is just in his prime, and is safe and sure. He is for sale, as very many of his daughters are of breeding age. Breeders should make a note of it, as his kind are scarce these days. Besides him, for sale, are several young bulls, sons of his, and out of big, well-bred cows, several of which are most profitable milkers. These are a splendid lot of young bulls, all in nice condition, and they, together with a number of one- and two-year-old heifers, will be priced very easy. Parties wanting a young bull, or a choice heifer, or two, should get in touch with Mr. Forsyth. The farm lies within a stone's throw of the C. P. R. station at Claremont, and is connected with London by a daily

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No better stock or value offered than at the old reliable CENTRAL NURSERIES. We ship direct to customer with satisfaction. See our Priced Catalogue before placing your orders. It will pay. If you have not had good results from others, TRY OURS—32ND YEAR.



Apple, Pear, Plum, Cherry, Trees Peach and Ornamental

Roses, Shrubs, California Privet, Asparagus Plants, Small Fruits, etc.

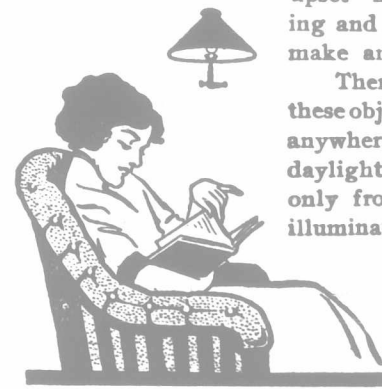
A. G. HULL & SONS ST. CATHARINES, ONTARIO, CANADA



ACETYLENE

Lightens Housework

I guess you sometimes get pretty sick of those old oil lamps, don't you? Unevenly trimmed wicks—dirty chimneys—the oily smell that clings to your hands every time you touch a lamp—the constant danger that one will be upset—not to mention the dirty job of cleaning, trimming and filling every day—these things are enough to make any woman long for a better lighting system.



There is a light which is free from every one of these objections—a light which may be had in any home, anywhere—a light which is whiter, softer, nearer to daylight than any other—a light which actually costs only from 1/2 to 3/4 as much as coal oil for the same illumination.

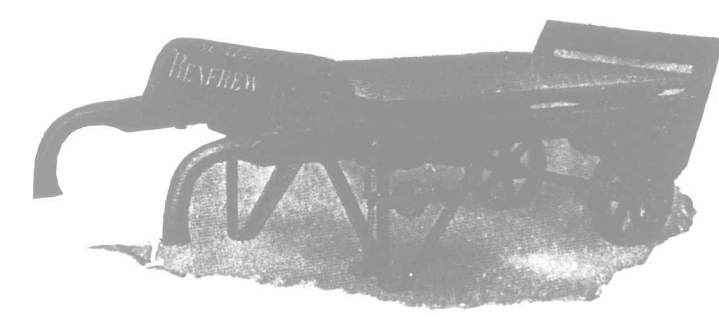
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Would you like to know how to install Acetylene, how to use it, and how much it costs? Then write us,—we'll be glad to tell you.

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This Free Book Opens the Way to Modern Farming

That is, why we are offering a free book on Portland Cement. We want to see you use hard, clean concrete fittings on your farm instead of wood that decays, burns and destroys itself and the things it shelters. We want you to see how cheap and easy it is to use concrete. This book shows how you can make these fittings and fixtures and buildings one at a time easily in your spare time. Concrete fixtures pay better than anything you can use on your farm.

Follow Big Experimental Farm Methods at Home

But we don't want you to take our word about concrete. We refer you to the Guelph Experimental Farm. Perhaps you went there 20 years ago. If you did, you will remember the buildings they had. If you compare those buildings with the buildings they have to-day, you will see that nearly all the new buildings are concrete. They have a reason for using concrete. It is just the same reason why you should use it. It is because concrete pays on the farm.

Wood is a Costly Drawback to Economy. But Concrete Supplants Wood

Wood fixtures are costly this way. You have to pay about \$100 to buy timber, boards and carpenter services to make a \$100 improvement on your farm. You pay out this \$100 in cash. Whatever this improvement happens to be it is liable to burn, and may burn by accident. Just by having it, your whole set of farm buildings may burn up—say \$2,000 worth of equipment.

Now, you will see how unwise that is—to put wood on your farm, especially when you have to pay its full cost in hard-earned dollars to get it built. For years and years, you have to keep tinkering at this wood to keep it in repair. Here is a constant drain on your time to keep up your place. This doesn't pay you a penny in profit. It is unwise. It is just waste—not money-making.

But concrete fixtures are quite different. They work for you in just the other direction. You can take the same \$100 wood improvement and plan it for concrete, and the concrete building is still as solid and strong in 20 years as it is to-day.

This Big Book Saves \$8 on Every \$10 Investment

To use concrete instead of wood you only pay out about \$20 for Portland Cement, instead of \$100 cash for a \$100 wooden building. You keep \$80.00 in your bank. This is worth while keeping. It is worth while knowing how to keep it. You build your improvement at a cash outlay of \$20, and you finish a building, say, that has the same size and capacity as the \$100 wooden structure you planned. But this new building won't burn. It is a lot warmer. It is very clean. It is very strong. It has no framework to sag and no underpinning to rot. Once you have built that structure, your work is *absolutely done*. That building is like a rock—it is a rock, one big, solid piece of rock, smooth and warm and perfect. You haven't a better building on your farm.

Your Work is Easier and Lighter Every Day. Losses and Repairs Saved You

This concrete building cuts down the work you have to do in it. No repairing is needed at all. The structure is as good as new after 20 years as when built. Its smooth concrete floor is cleaned or swept in half the time. It cannot harbor rats or lice or disease, such as anthrax or hog cholera.

That shows you plainly how concrete can save your daily work, and prevent money loss from fire and cattle disease and vermin.

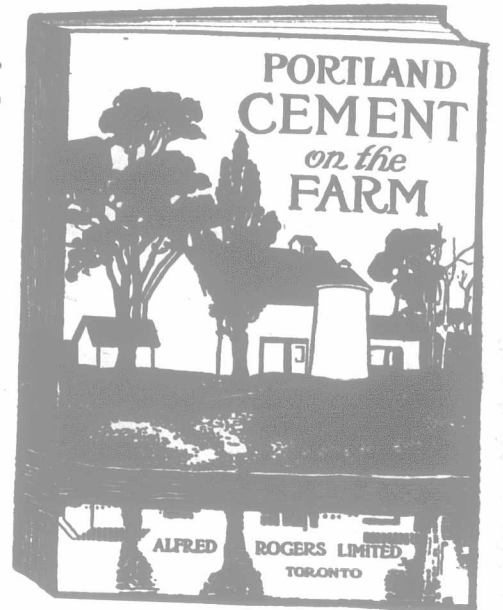
What a Dollar Will Do. It Makes These

A dollar's worth of Rogers Portland Cement (given with every copy of our book) will make one of these things for you:—

- 6 10-foot Posts for 100 feet of fence.
- 10 feet of 6x6-inch Drain Tile (frost-proof).
- 6 Clothes Poles, 10 ft. long (clean, strong).
- 1 Partition, 80 square feet (fire-proof, vermin-proof).
- 3 Chimney Caps (permanent fire protection).
- 1 Hog Trough (sanitary, clean, everlasting).
- 4 Door Sills (water-proof and clean).
- 1 Door Step (permanent, cleanly).
- 2 Hitching Posts (graceful, unbreakable).
- 1 Horse Block (your name on block).
- 12 Hen Nests (clean, vermin-proof).
- 1 Pantry Floor, 40 sq. feet (clean).

You Can Get Free of Charge Rogers Book on Cement

Regular Price \$1.00



We Now Put Concrete at Your Command in This Plain, Easy, Helpful Book

This book of ours shows how. It shows the way simply, with many pictures. It is written for you, Canadian farmers, so you can make concrete and build in it without buying a single extra tool. By it, you pay out about one-fifth of the value of an improvement in actual cash, and then do the work yourself in just the right way for permanent service without repairing. You get the benefit for many, many years to come.

Send for Rogers Book To-day. You Can Learn How to Use Concrete

The question is, can we send you the book? We want to *start* you with the book, and ask you to send \$1.00 for it. This \$1.00 is not kept by us, but used to buy you Rogers Portland Cement, which is given you free through one of our local dealers. You can make several practical, useful things with the dollar's worth of free Portland Cement. See the list we give you at the left.

Some of these things are worth as high as \$5.00. That shows you how much money Portland Cement can save you, even if it did not have a single benefit. But it has benefits that come back to you every day you run your farm. You prevent fire loss. You save work. You get more money into your bank account.

Send us \$1 and we send you the book and an order on one of our dealer's for a full dollar's worth of Rogers Portland Cement—you get two big full dollars in value for one.

This Big Rogers Cement Book opens the way to making more money in farming. Send \$1.00 for your copy to-day.

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