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THE FARMER'S ADVOCATE

AND HOME MAGAZINE

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

Dairy and Cold Storage Com-
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LV.

LONDON, ONTARIO, JUNE 3, 1920.

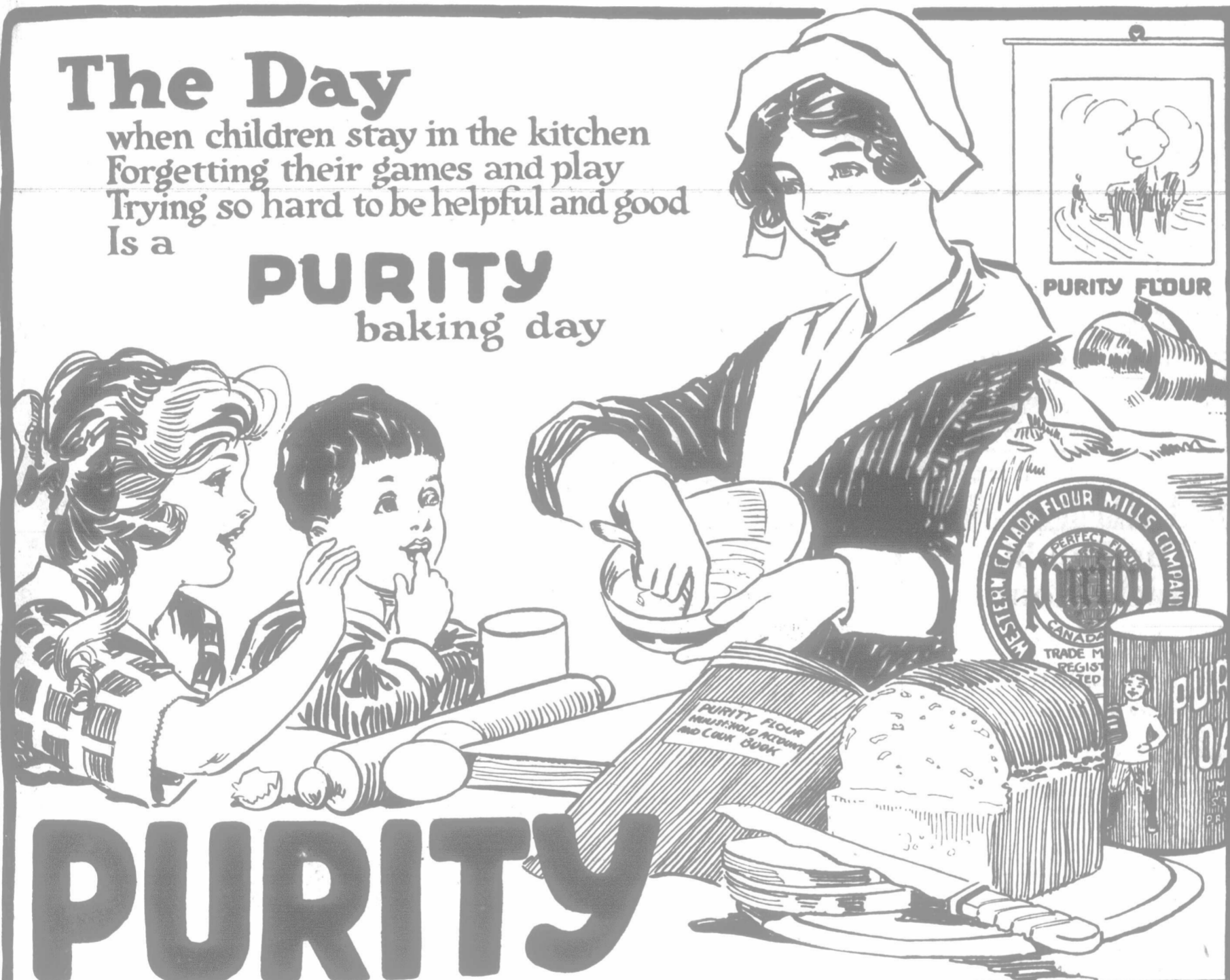
No. 1445

The Day

when children stay in the kitchen
forgetting their games and play
trying so hard to be helpful and good
Is a

PURITY

baking day



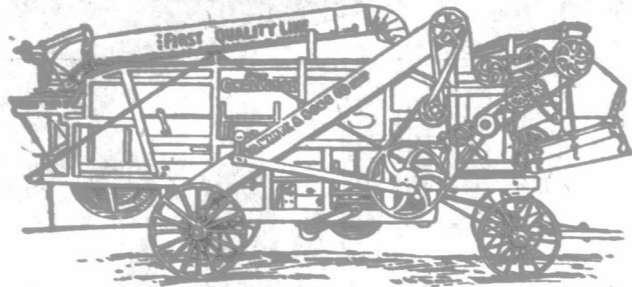
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Special Thresher for Gas Tractors

If you have a gas tractor you will certainly save money by owning a threshing machine, but you must have a thresher suitable for your gas tractor. The "Individual" Challenge No. 3 is made precisely for this purpose. An 8-16 or a 10-20 tractor will run it and it has a big capacity.

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Not only do we aim to produce the best machines, but we look after our machines after they are sold. Every man who deals with us gets "White" service.

Write for information and descriptive catalogue, showing our Special Thresher for Gas Tractors, the "Individual" Challenge No. 3

The George White & Sons Co., Limited
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"THE FIRST QUALITY LINE"

Makers of Steam, Gas and Kerosene Tractors, and Threshing Machines 10



Sixty-one Dollars Made \$560 Possible

Two acres of stumping land—\$54 for stumping powder, fuse and caps—\$7 for a helper, and J. V. Bradley blew out 78 stumps ranging from 16 to 35 inches in diameter. This is one of many things

C.X.L. Stumping Powder

will make possible on your farm. That \$54 worth of stumping powder gave Mr. Bradley \$40 worth of fuel, and the two acres produced a crop worth \$520. It will do the same for you. It will make your waste land profitable at the lowest cost.

There is money to be made in agricultural blasting. Ask about it to-day.

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THE GILSON SILO FILLER is the one blower which can be successfully operated with as little power as 4 h. p. There is a Gilson Silo Filler for every purpose—for the individual farmer, for the syndicate, and our large capacity machine for the custom miller.

We guarantee every Gilson Silo Filler to cut and elevate more ensilage with the same power than any other blower cutter.

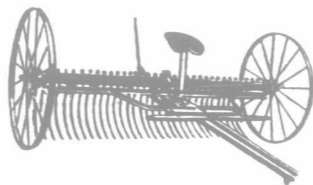
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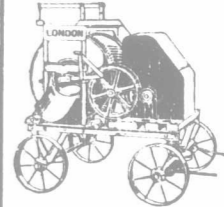
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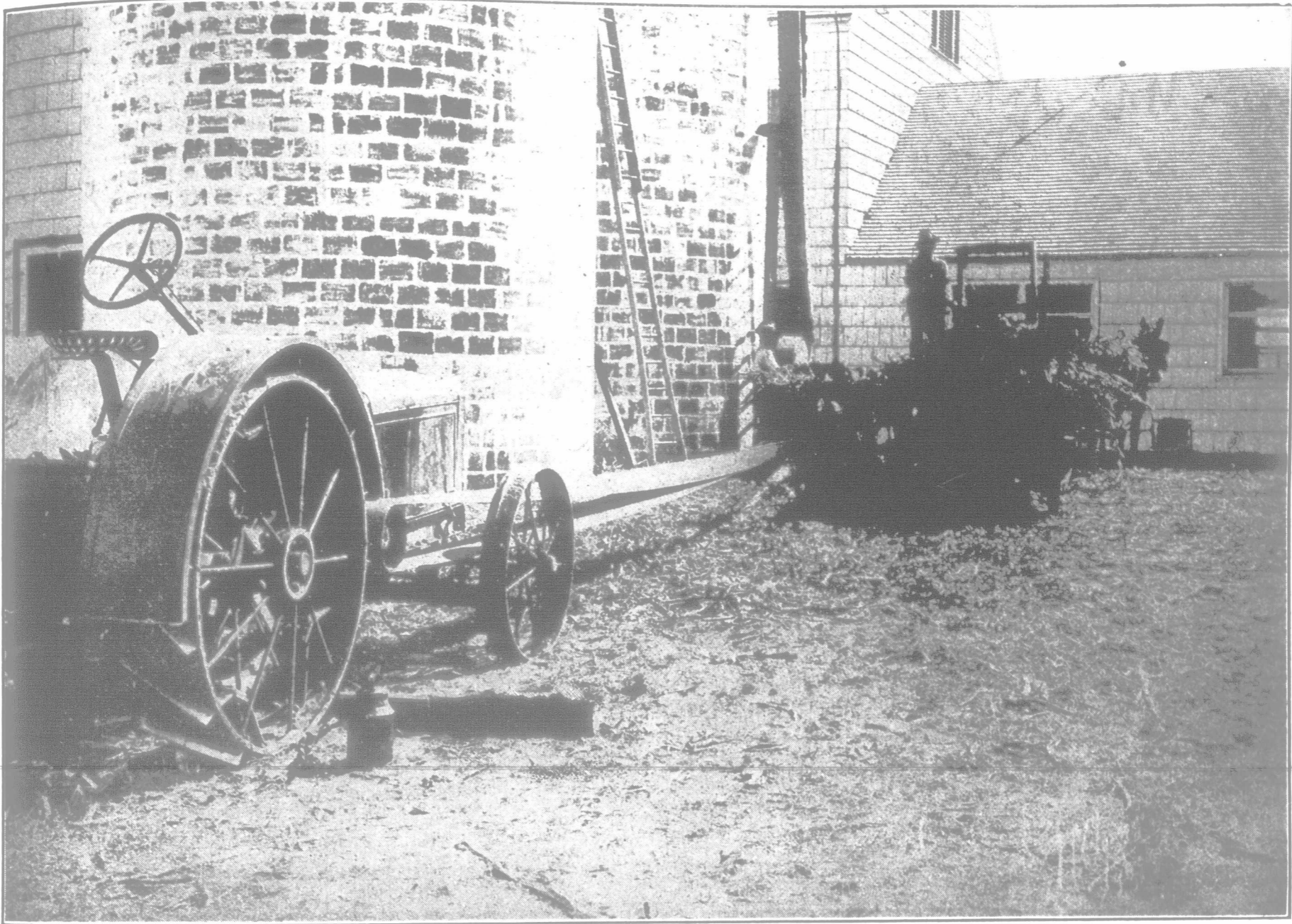
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Capacity 40 cu. yds. per day

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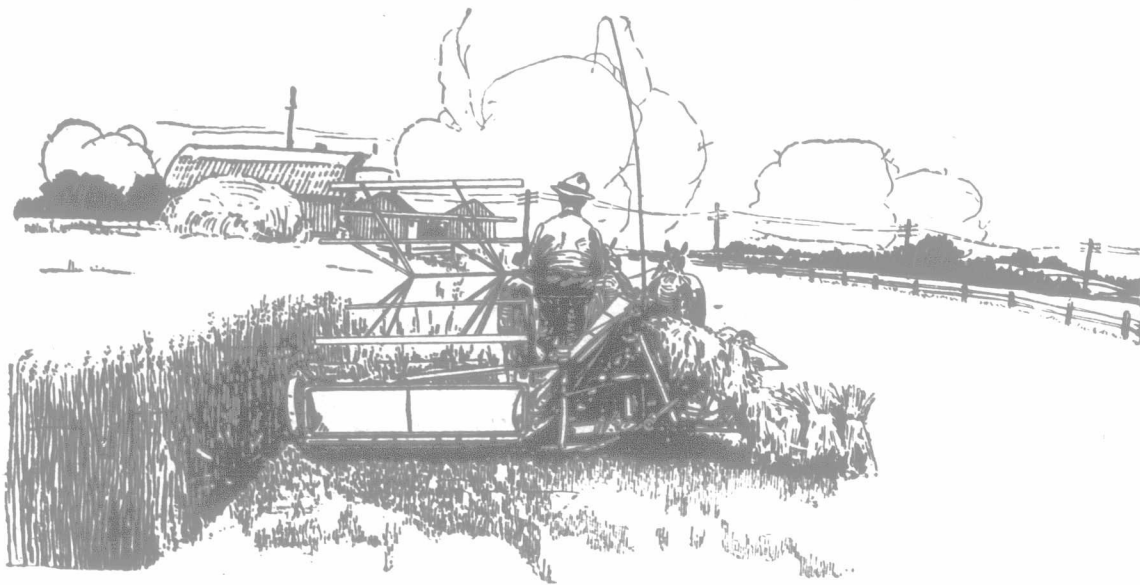
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Make Short Work of Short or Long Grain



WHEN some of your grain comes up short and stunted especially on dry, gravelly knolls, and some of it grows tall and heavy, so that it lodges and tangles—then you have a harvesting problem—unless you own a **McCormick or Deering Grain Binder**.

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Corn Planting.

(Experimental Farms Note)

Indian corn, the peerless crop of the mixed farm, has a gradually enlarging sphere of usefulness in the Dominion of Canada. It is grown most extensively in the Province of Ontario; the corn growing line in the Province of Quebec is gradually being pushed northward, and in several districts in the Provinces of Manitoba, Saskatchewan, Alberta and British Columbia the corn crop is gaining in favor.

This reliable crop will grow on a wide range of soil provided always there is good drainage and a plentiful supply of suitable plant food. It is specially adapted to warm, deep loam soils rich in decaying vegetable matter (humus) underlaid with a porous clay.

In the rotation, corn should follow clover hay or pasture. It may also be grown after grain or even follow a hoed crop, provided the soil is rich or a heavy application of manure has been made.

Fresh or green barnyard manure is the best plant food material, 12 to 15 tons per acre may be expected to give good returns. The application may be made in the fall, winter or spring. It may be worked in on top of the plowing or plowed under. The latter method is usually the most practicable and gives uniformly satisfactory results when properly carried out. The manure should not be buried too deeply in order that there will be the least possible chance for the leaching of valuable plant food constituents to depths in the soil beyond the reach of the immediate and future crops.

The aim in the preparation of the seed-bed should be to have it deep, moist, clean and fine. Clay land to be used for corn should ordinarily be fall plowed, turning a fairly deep furrow but no deeper than the productive soil will allow. Sands and loams, shallow spring-plowed, provide most favorable conditions for corn. Plowed under immediately before planting, the sod, the growth of grass and the dressing of manure decompose rapidly, create a "hot-bed or warm condition" in the soil—necessary for the quick germination of the seed and the rapid growth of the plant, the secret to successful corn growing.

Moisture is a factor which must be duly considered in all seed-beds. No seed-bed is complete until the surface and sub-surface soil are connected, with the manure well incorporated so that there is no hindrance to the rise of soil moisture from the depths of the soil to where it may be available as required by the growing plant.

Hill and row are the two methods of planting. Hill planting 3 feet each way is recommended for weed infested fields since horse labor can be used to a maximum in the control of weed growth. It is also an advisable method where seed production is the aim or in short season districts, since hill planting is conducive to a quicker maturity of the crop than row planting.

Row planting 36 to 42 inches apart, is preferred on land in a good state of cultivation. No special machinery is required since the ordinary seed-drill answers the purpose and in harvesting there is less wear and tear on the corn harvester than is observed in harvesting hill-planted corn.

The rate of seeding is an important consideration. For each hill from 3 to 5 seeds of strong vitality are sufficient. For rows, 15 to 20 pounds per acre of high-quality seed will usually give a stand thick enough to permit of harrowing.

The right time for planting corn depends upon soil and weather conditions. It should not be planted until every indication of cold weather is thought to be past. Neither should corn planting be left so late that there is danger of an insufficient moisture supply and a too short season for growth. The right time for planting can hardly be explained. The experienced planter feels "in his bones" that suitable conditions exist. The beginner can acquire this knowledge only by observation and the exercise of judgment. The range of dates is between May 15th and June 10th.

The varieties of corn for silage to sow depend upon the district where seeding is to be done. The flint varieties including Longfellow, Compton's Early and Salzer's North Dakota, among the earliest maturing varieties, are therefore, suitable for the short season corn growing districts. In the longer season districts

Planting.

(Farms Note)

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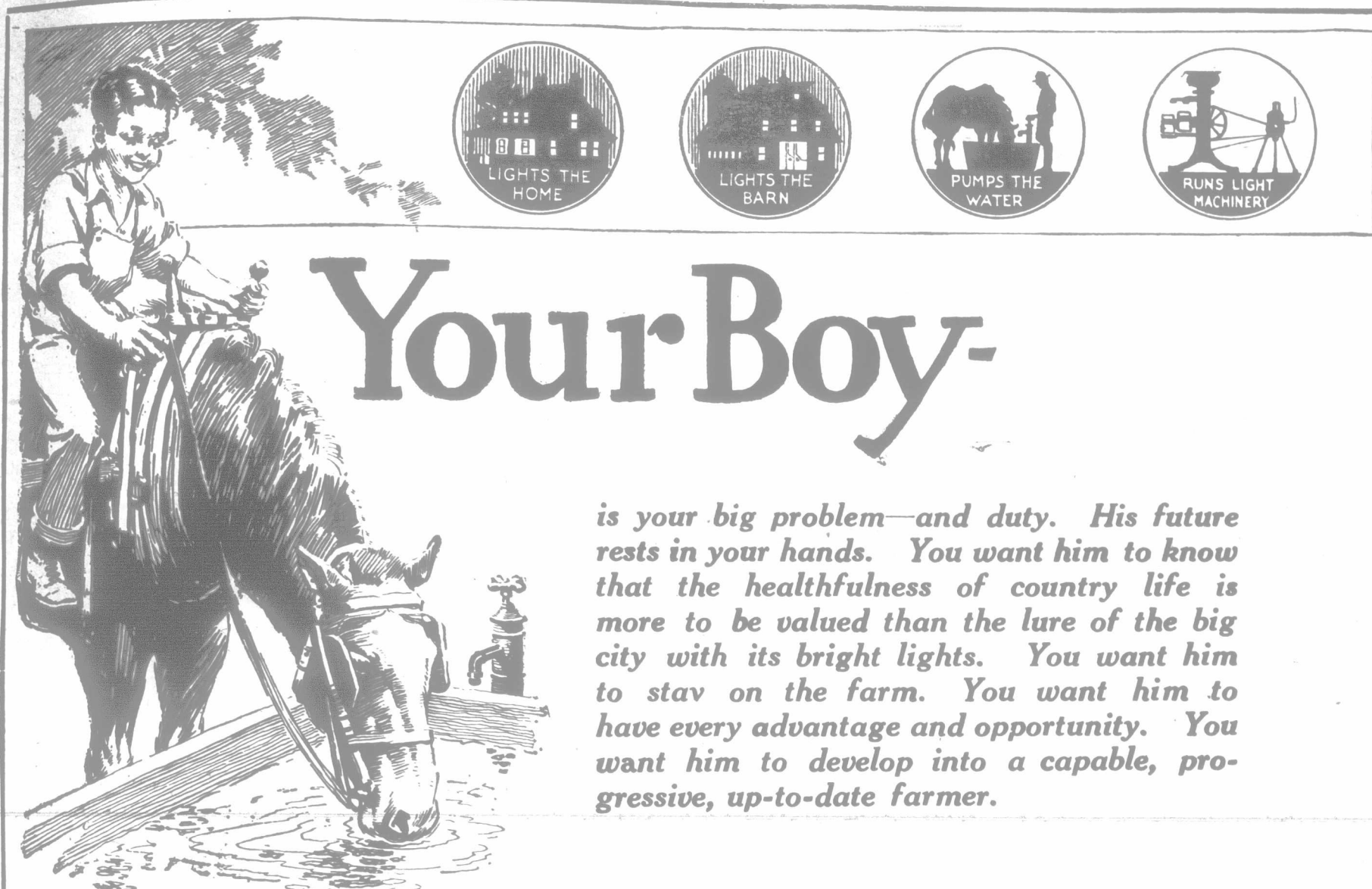
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Your Boy-

is your big problem—and duty. His future rests in your hands. You want him to know that the healthfulness of country life is more to be valued than the lure of the big city with its bright lights. You want him to stay on the farm. You want him to have every advantage and opportunity. You want him to develop into a capable, progressive, up-to-date farmer.

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Delco-Light Helps Him do a Man's Work

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Delco-Light Keeps Him on the Farm

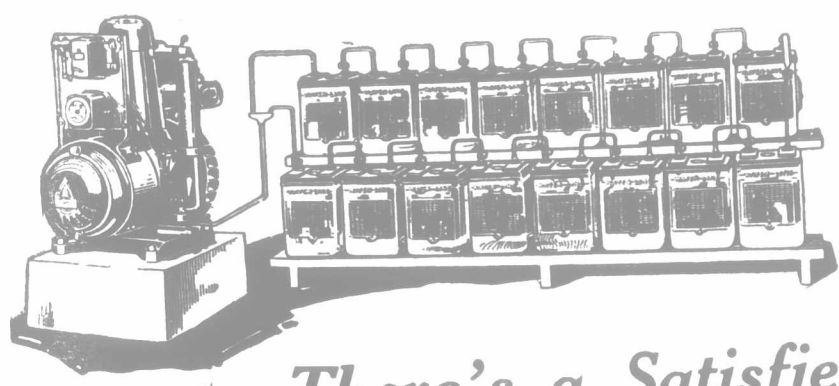
Delco-Light is the greatest improvement you can place on your farm. For it brings the joy and happiness of bright, convenient light. It brings cheer to long, dark winter evenings. You have made costly investments that do not bring anything like the economical usefulness and comfort of Delco-Light.

And it keeps children on the farm. It gives them the bright lights of the city. It does away with all those tiring tasks of drudgery that drive children away from the farm.

It makes them proud of the place, gives them a renewed interest in the farm's success. Makes them eager to help. Makes your home a social centre.

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The Delco-Light plant is so simple that wherever there is a boy on the farm he runs it. And he takes keen interest in it. The farmer of the future will be a mechanical farmer. Delco-Light will give your boy this training. Delco-Light is direct-connected. There are no belts to slip, break or be replaced. It is self-kranking. Pulling a lever starts the engine. It is air-cooled. There is no water to carry, to freeze or to boil away. There is only one place to put oil. A simple mixing valve takes the place of a complicated carburetor. Ball and roller bearing cut down friction to a minimum. Long-life batteries mean economy. You need to know more about Delco-Light. We have fully illustrated literature showing Delco-Light in operation. Write for catalog, prices and further information




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100,000 Plants in Daily Operation

There's a Satisfied User Near You



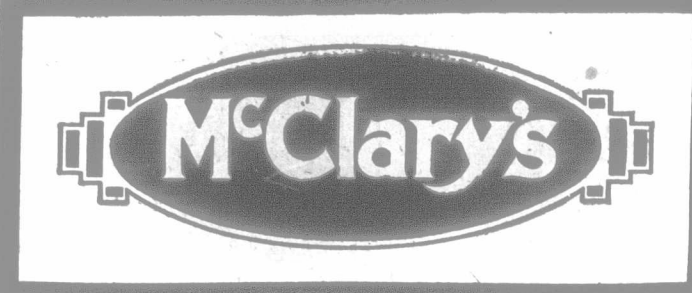
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Keeps Motors Fit

The motor properly lubricated with Imperial Polarine is rarely laid up for repairs. Every moving part is kept smooth-running and friction-free—no grinding wear to cause frequent break-downs and repairs.

The film of lubrication that Imperial Polarine places between piston rings and cylinder walls seals in all the power. It doesn't break down, separate or gum as the engine heat rises.

Every drop of Imperial Polarine lubricates. It insures minimum friction load and gives your motor more power and longer life. In three grades—Imperial Polarine, Imperial Polarine Heavy, Imperial Polarine A. For transmission and differential lubrication use Imperial Polarine Oils and Greases.

Sold by Reliable dealers everywhere in one and four gallon sealed cans, half-barrels and barrels, also 12½ gallon steel drums.

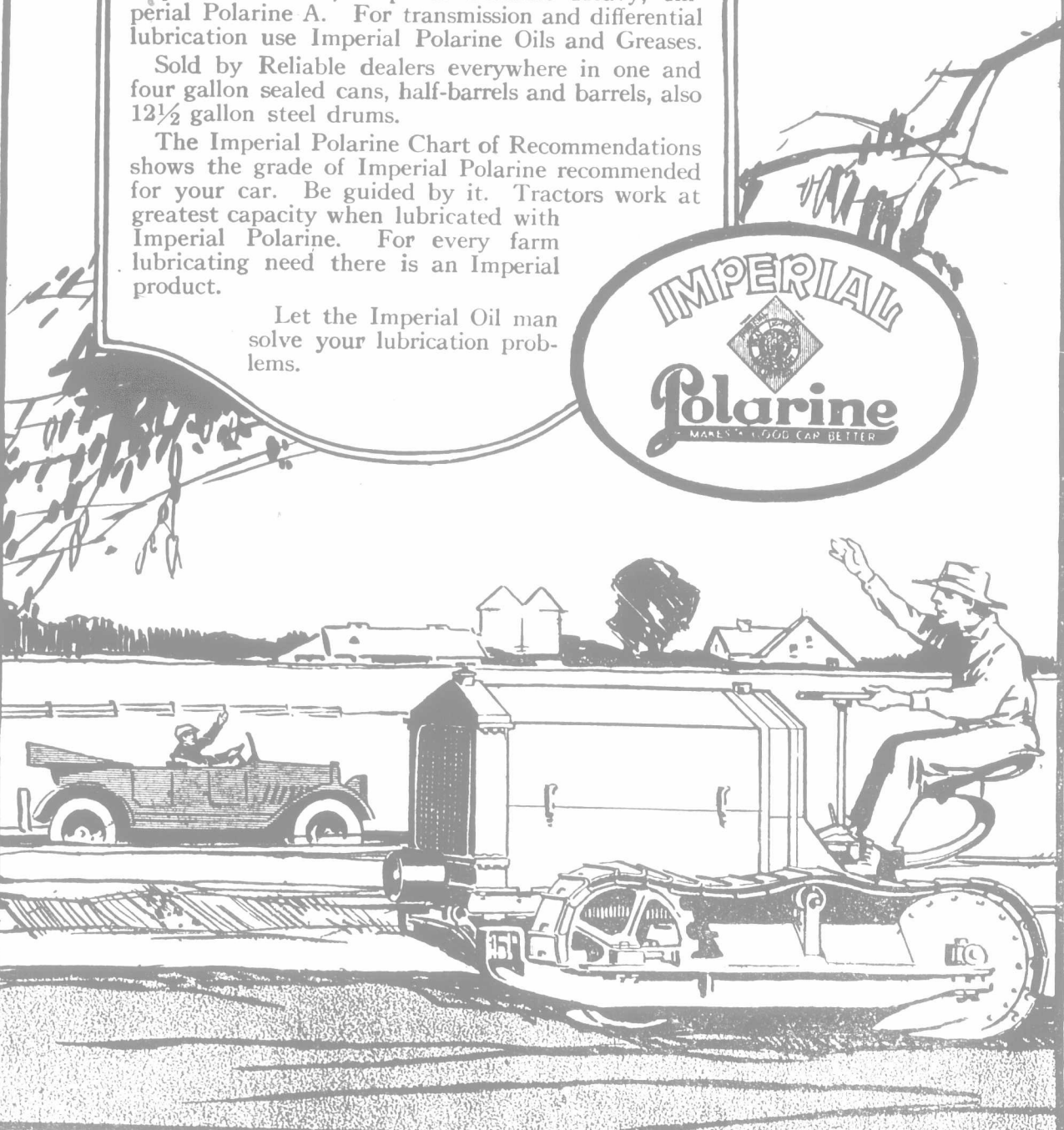
The Imperial Polarine Chart of Recommendations shows the grade of Imperial Polarine recommended for your car. Be guided by it. Tractors work at greatest capacity when lubricated with Imperial Polarine. For every farm lubricating need there is an Imperial product.

Let the Imperial Oil man
solve your lubrication prob-
lems.

**IMPERIAL
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POLARINE A**



besides the flints already mentioned, the dent varieties, Wisconsin No. 7, Golden Glow, Bailey and White Cap Yellow dent prove satisfactory. In the Prairie Provinces; Northwestern dent is popular.

Choice seed only should be used, this can be most easily procured by selecting from seed purchased on the cob. Test all seed for germination before planting in order that there will be no chance of too thin planting. Place the seed deep enough to be in moist soil. Following planting stir the soil frequently to mulch the surface, stimulate the germination of weed seeds and to destroy weeds. After the shoots are through the ground begin inter-row cultivation. When the plants are 3 to 4 inches high, and if too thick in the row, use a light drag harrow cross-wise of the drills.

Keep the plants growing by maintaining a loose, mellow surface soil. Cultivate deeply at first and as the secondary root systems develop and spread just under the first three or four inches of surface soil between the rows, cultivate shallower in order that the root systems will not suffer injury through pruning and thus prematurely check the growth of the crop.—W. L. Graham, Assistant, Dominion Field Husbandman.

Method of Orchard Cultivation.

The method or system of cultivation to be adopted may be varied to some extent to meet local conditions. In reality, however, all systems should be, and in most cases are, a slight modification of the "clean cultivation and cover crop system."

The clean-cultivation method, calls for all the ground under and around the trees to be ploughed and frequently harrowed until around July first.

This system has much to recommend it, viz., (1) maximum conservation of soil moisture; (2) excellent conditions for liberation of plant food, especially nitrogen; (3) sightliness and cleanliness of the orchard, and (4) control of insect pests.

In connection with this, either fall or spring ploughing may be practiced, the former however, only in those localities with a favorable enough winter to so permit. The great secret of success with any system of cultivation designed to conserve moisture and liberate plant food is to get on the land as early in spring as possible, otherwise, if the orchard is not ploughed until late, most of the advantages of cultivation are lost.

Modifications of the above consist of leaving a strip of sod about four feet in width next to the trees. In old orchards where it is difficult to get close to the trees this may be practiced successfully, in which case the grass is cut once or twice during the season and allowed to remain as a mulch.

In both these instances, on the cultivated portion a mulch is maintained until about July first, when a cover crop of some sort should be sowed. If the seed is not too expensive, some leguminous crop like red clover or crimson clover at the rate of about 12 pounds per acre for the former and 10 pounds for the latter, or summer vetch at the rate of 50 pounds per acre is advisable, as these will add a considerable quantity of plant food to the soil.

If too costly, rape may be used as a cover crop, at the rate of 30 pounds per acre.

The sod mulch system, if properly handled may be advisable on moist soils where there is abundance of plant food. This system must not be confused with the sod system, which is not to be recommended. In the former, for the first few years grass or old straw is hauled on to the orchard and placed around the trees to form a mulch. This practice is continued until the cuttings from the sod beneath the trees is sufficient in themselves to form a heavy mulch.—Experimental Farms Note.

Surgeon.—"The operation must be performed immediately."

Sandy (Kirk Elder).—"Weel, send for the minister at juist, then."

Surgeon.—"Oh the operation is not serious enough for such anxiety."

Sandy.—"I'm no partek'larly anxious; but if I'm to be opened I'll be opened wi' prayer."

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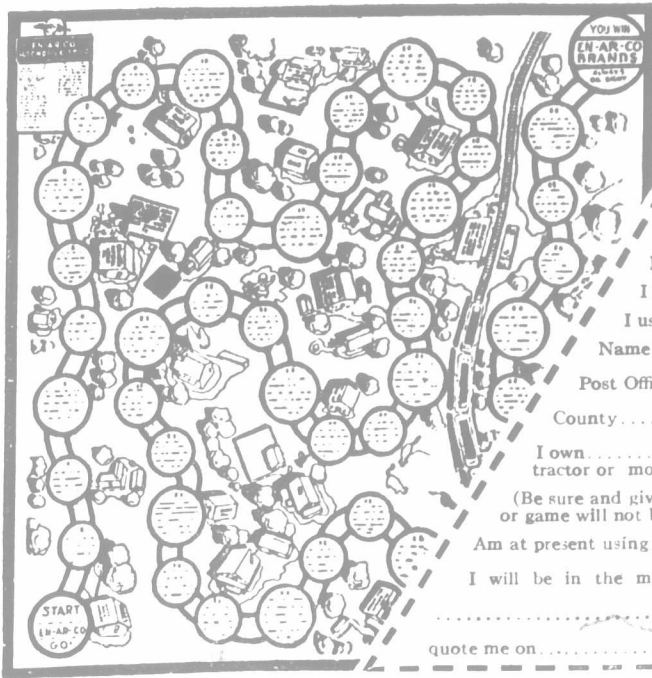
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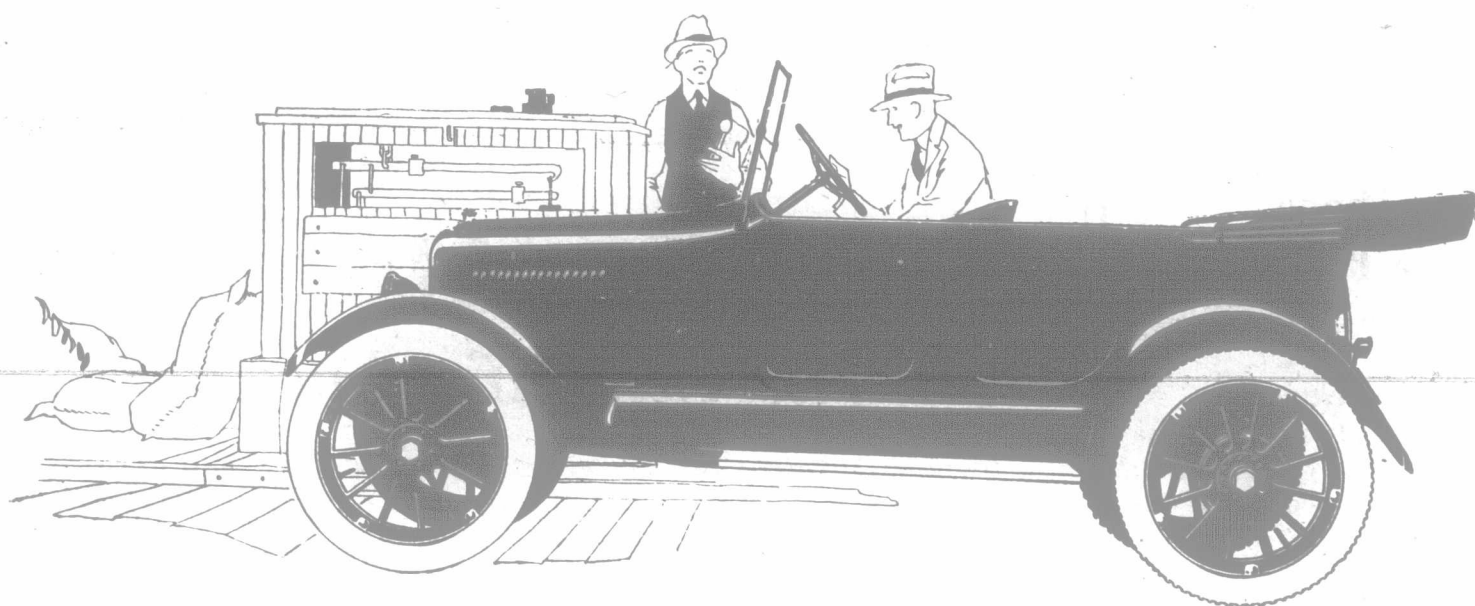
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The Farmer's Advocate and Home Magazine

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LV.

LONDON, ONTARIO, JUNE 3, 1920.

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EDITORIAL.

Work the turnip land frequently; it will lighten the work later on.

This is the month for weddings, sowing alternative crops and to begin haying.

Season the grass with plenty of salt—don't forget the live stock in this regard.

Eternal vigilance is the price of a corn crop—start the harrows and the cultivator.

When passing the hog pens, throw some green feed to the pigs, and if not passing often make a special trip—it will pay.

The dairy industry in Ontario would be in a stronger position to-day if many of those cheese factories now abandoned had been preserved by the producers.

They should have a hot summer in the United States. Party conventions and an impending Presidential election will keep things warm. There is still much heat in U. S. A. politics.

It is a good plan, where possible, to have a second pasture and change the stock from one to another. This gives the fields a chance to recuperate before being cropped too closely and beyond repair.

If there is a clean field of clover on the farm it will pay to harvest it early and bring the second crop along for seed. Many farmers purchase their seed annually when they might as well produce it at home.

The in-foal mare is the better for regular, moderate work, but she should not be forced to over-exert herself. Grass is a good conditioner but do not oblige the pregnant mare to subsist on grass, especially if she is doing any work.

There is no evidence now that would lead one to expect cheaper eggs next winter than they were last. It would not be bad policy on the farm to put down some eggs now in water glass and then sell the fresh eggs next winter at market prices.

Some settlers from the Corn-belt district in the United States still cling to their old practices, and even go so far as to burn their straw or give it away to some more provident neighbor. In Western Canada this might not appear so extravagant, but in Ontario the burning of straw is almost criminal.

The Government might profitably use some of the money collected from the sales and luxury taxes in hunting down combines and prosecuting profiteers. There has been and is yet too much money grabbing—that is why prices are high, and the consumer should not be chastised for the sins of others. Much of these excess profits is "blood money," and the system is wrong that permits them.

Agriculture provides a busy life but farmers would find it profitable to keep a record of accounts, such as sales, receipts, expenditures, etc. It is absolutely essential to success in breeding pure-bred live stock to keep records, and breeders will find the system explained by Prof. G. E. Day, in this issue, both simple and efficient. It can be adapted to suit individual cases or enlarged upon to meet the requirements where the operations are extensive. The whole pure-bred breeding industry is based on accuracy and the printed record, and every breeder should have his information written down in some systematic form.

The Demand is for Clean Milk.

The secret of success in business has always been to give the public what they want. The buying public can often be educated, and has been many times, to desire something new or different. However, it is not profitable to oppose the wishes of buyers too strenuously. The demand for clean milk and dairy products is rapidly increasing, and dairymen can well put forth an extra effort in order to supply the consuming class with such a product. When the agitation first started for improved dairy products, consumers did not seem inclined to reward producers for the extra work involved. Dairymen's associations are now educating town and city users of milk; showing them how the extra care of milk entails a great deal of labor, and gaining recognition of this fact. Producers can no longer afford to handle milk in a careless manner, or deliver it to the purchaser, be he householder or factory man, in an unclean or over-heated condition. This necessitates a liberal use of cold water, and in some cases ice and other cooling equipment. The secret of success in cooling milk and keeping it at a low temperature seems to lie more in having necessary and suitable equipment than in extra work. A good tank built amid clean environments, an ample supply of cold water, and cleanliness in connection with the cans and milking utensils go a long way in helping to produce clean milk and keeping it cool. Market milk and milk from which dairy products are to be made cannot be handled too carefully. It is the producer's duty to deliver a clean product and then demand a price that will reward him for his work. In order to obtain the latest and best information regarding that one important point of cooling milk and keeping it at a low temperature, a "Farmer's Advocate" editor spent considerable time in the milk-producing districts of both Eastern and Western Ontario. His findings are summarized and presented in the Dairy Department of this issue, and we commend the article to all dairymen who should be interested in this phase of production.

Superannuation.

Considerable objection is being taken in some quarters to the Superannuation Bill introduced in the Legislature of Ontario. It is claimed by some that the Bill is class legislation, and that one class in the community should not be obliged to pay for the keep of another group. There are two or three points in connection with the civil service that should be borne in mind. No Government seems inclined to step out and compete with industry, commerce and the various professions for the services of good men. Government salaries are always lower; more than that, civil servants are paid according to a sliding schedule, promotion usually comes slow, and initiative or energy on the part of a civil servant is seldom adequately rewarded. There are men, however, who would gladly give their service to the Province if they were to get some recognition for it, and a superannuation might afford some link to bind civil servants to their jobs and give them some confidence in the future. Men are leaving both Dominion and Provincial employ for the simple reason that they can get vastly more remuneration outside the service. While they like the work, they claim that for the sake of their families they cannot afford to remain in Government employ. A very little more would hold them, and superannuation, which principle is endorsed by the church, and in other services, might strengthen the morale of the civil service and do it good. The alternative is to go out into the open market and pay men what they are worth in competition with industry, trade and the professions. With superannuation or without it, there should be no one in Government employ who is not doing his work and doing it well. We should have honest, efficient and energetic civil servants, and we ought to pay them well for their services to the country.

Provincial Road Programs.

Road programs have been drawn up and approved in several provinces, and highway construction and repair much in excess of anything that has been attempted in the past, will be got under way. Much of this enthusiasm has been created by the Dominion Government's grant of \$20,000,000 to the provinces. We need good roads in Canada; we need far better roads than we have, and we need them right now. However, under the present abnormal conditions, we believe it would be better for the various provincial Governments to go carefully in their road-building programs and not keep construction and material costs up in the skies for another five or ten years. When the Dominion Government grant passed the House it was thought necessary in order to give employment to a great many men during the reconstruction era. It may still be needed for such a purpose at a later date, but at the present time it is absolutely unnecessary to boost construction work unduly in order to give work to an army of unemployed. The enthusiasm regarding good roads and the desire for them should not be allowed to wane. Every effort should be made to improve our market roads, make it possible for farmers to deliver their product to the shipping points, and for ordinary business to be easily and comfortably transacted. The through highways, however, can well wait for more favorable times when construction costs are less and labor more plentiful. An orgy of road building at this time would rob agriculture and other industries of much needed help, and even induce farmers themselves to grass their farms and work on the roads.

A Debatable Budget.

All budgets are debatable, especially in a House of several groups, but the Government's fiscal policy which is under fire as this is being written is of such a character as to require full and free discussion. The majority of people in Canada to-day favor a tariff; some desire a high one, others a low one, and there is in addition to these a small group of out-and-out free traders. Present circumstances, however, demand a policy that will bring revenue for the fiscal year ahead—that is primarily the purpose of a budget. On this occasion the Government has undertaken to influence the whole trend of trade, curtail extravagance, and reduce transactions to a basis of essentials. In this they are to be commended, but it is debatable whether the sales tax and the luxury tax do not bear too heavily on the ultimate consumer. All are consumers, but there is a great majority on the bread line, and that these should be grouped with the more prosperous classes in contributing revenue seems hardly fair. The present taxes are difficult enough to collect, and further grouping or classifying might present still further obstacles. A more direct form of taxation seems to be the best solution, and it is unfortunate that the Government did not adopt a more direct method of taxing wealth where it might be found to exist.

It is generally understood that the sales tax, or tax on turn-over, will ultimately be paid by the consumers and this tax of one per cent., which looks modest enough at first, may, before it reaches the purchaser, grow to considerable proportions. In purchasing raw material, a manufacturer may be buying the finished article of another plant. On this he will naturally pay the tax of one per cent., and add it to his cost of production. Then when his commodity follows the customary channels of trade in reaching the consumer, it may pass through both jobbers' and wholesalers' hands. In such a case the manufacturer, jobber and wholesaler each add their one per cent. Thus it becomes three per cent. between manufacturer and consumer, and it is just possible, as mentioned before, that a one per cent. may be added to the raw materials before the manu-

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THE LEADING AGRICULTURAL JOURNAL IN THE
DOMINION.

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JOHN WELD, Manager.

Agents for "The Farmer's Advocate and Home Journal,"
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factor receives them. The sales tax, or tax on turnover, seems to be an unfair levy on the buying public.

The luxury tax is also open to criticism, in that certain goods which cannot be termed luxuries are considered as such. Everyone who pays attention to their buying will agree that a good, substantial commodity is a more economical purchase at a fairly high price than is shoddy or cheap material at a considerably smaller figure.

The object of the Government in framing this legislation was, no doubt, to reduce prices to a normal level; the tax may, perhaps, have this effect and thus justify to a certain extent the rather drastic levy. However, the aim should be to get away from these indirect methods of taxation which confront one at every turn, and by the direct method reveal to all and sundry what part they and others are playing in the financing of the country.

Follow the Course.

By ALLAN McDIARMID.

I have noticed an inclination among humanity as a whole, and with farmers in particular, to go through life with the idea in the back of their heads that, sooner or later, they would leave the work they were then engaged in, to go at something else that was either more profitable or pleasant. It seems like a life-imprisonment sentence to them to think of staying on the job till the end.

I have noticed this same tendency in myself. When the thought of undertaking anything in the way of permanent improvements on the farm came up, the question first in my mind would be: "is it worth while, considering the time you are likely to be in the business?"

Distant fields are always green, and we are like the cattle which, when shut in a certain pasture, will do their best to break into the next field, whether the grass there is as good or not.

The idea of improving our condition by changing our location and occupation may be all right in a way and up to a certain degree, but it has some pretty serious drawbacks. One of these is the fact that it kills our interest in the work we are doing at the moment. Some-

thing permanent and settled has more weight in inducing a man to get down to business than any other one thing. If a man's job is mending old shoes let him do it in a way that will be likely to bring him customers for the next forty years, or if he is farming let him cultivate his fields and improve his live-stock to such an extent that the ideal he has in mind will be reached when the end of life has come.

Comparatively speaking, this life is pretty short, and about the only way of learning anything thoroughly is to spend the whole of it on the job. No doubt there will be plenty time elsewhere and later on to complete our education and to find out the advantages of the other occupations that humanity engages in. Making a success of one particular thing is the best guarantee for the future, whatever line of work that future may have in store for us.

Concentration is the thing that has been back of the achievements of practically all the successful men who have lived on this earth. Their efforts all went towards the accomplishment of a certain object, and, in the nature of things, they could hardly fail. There was no dividing of their forces by reaching out in different directions. It was one aim at the one object.

Some of us have heard of the advertisement that was put in the papers offering to tell how to prevent a shotgun from scattering. Those who sent their money for the information got this reply: "To keep a gun from scattering put in only a single shot." The principle probably brings better results in men's lives than it does in shot-guns. Certainly there is a lot of wasted energy in the case of the person who tries to do several things at once.

The old saying was that "he that follows two hares is sure to catch neither." And someone else has said that "digression is as dangerous as stagnation in the career of a young man." Another way of putting it is to say that "three moves are as bad as a fire." This last seems to indicate that to make three changes is to put one's self in the down-and-out class. It may not always be that, but it is going in that direction.

One reason that change of occupation brings about this result is the fact that experience gained in one line of business may be practically useless to the possessor when he takes up the new trade or profession. If a man has been a blacksmith for a number of years and suddenly makes up his mind to go to bricklaying, of what use to him is the experience gained in his old trade? Pretty nearly every line of work that we know of has been a good one for some man. Results depend on the individual a good deal more than on the job. But the Jack-of-all trades never seems very much concerned about results, anyway. Making a bare living and putting in the time is about as high as he aims, generally. The man who fits into the present times is the one who knows his business as well as it can be known, and who takes up any other line only as a pastime or recreation.

This doctrine of "one man, one job" applies to the farmer as much as to any person in the country. Of course he has to be a sort of "two in one" individual now-a-days and know how to run machinery and keep a set of account books as well as to manage some of the simpler operations of the ordinary farm. But the business of making a living out of the soil calls for "concentration" if anything does. And it gives about as good an all-round training as any profession that has yet been invented. We don't need to say that "to be a successful farmer one must be well educated," but rather "to be well educated become a successful farmer." The education comes in as a sort of side-line and can't be separated from what is generally looked on as the main consideration, which is making a living--and something over.

Now it seems a pity that a lot of the young men living on farms in this country are getting the idea that they would get more out of life if they lived in the city where they would have less responsibility and bigger pay. They're making a mistake, and time will prove it. Things have a way of changing in this world and the city of ten years from now will not be the paradise for the laboring-man and tradesman that it is to-day. The growth of the cities at the expense of the country districts can't continue. Starvation must be the result, as anyone can see. And men will even return to the land before they will starve.

From about half-a-dozen different stand-points a man is well-advised to-day when he gets the warning not to quit the farm for the town job and the other attractions that are thrown in.

Fate, or circumstances, have placed a lot of us in positions that we may not find very congenial at times. But it should be a mighty clear call that induces us to quit the task that has been given us and at which we have worked for years, perhaps, with a fair share of success and encouragement.

"This day we sailed westward, which was our course," were the words Columbus wrote in his journal every night, as he crossed the ocean towards our then unknown continent. There were plenty of inducements for him to turn back or go in another direction but "westward" was his "course" and he stuck to it till his object had been gained.

If our "course" should happen to be the one that lies in the furrow made by the plow, so much the better. No better guide for the journey of life was ever invented than that same plow.

Nature's Diary.

BY A. BROOKER KLUGH, M.A.

THE SENSE OF DIRECTION IN ANTS.

The sense of direction in animals is a subject which has for many years attracted much attention. A great deal of misinformation, and many fanciful theories, have been handed down concerning the manner in which animals find their way, and many false conclusions on this subject are still current. In the popular mind there is a general belief that animals find their way by "instinct," that is that they possess some inherent quality, which is absent in man, which enables them to orient themselves correctly under all circumstances, that they go in the direction they ought to go just as the needle of the compass swings to the north. This is just one of those "explanations" which do not "explain," one of those pseudo-explanations which while perhaps they may satisfy the uncritical really lead to the formation of vicious circles in our habits of thought.

It is only during comparatively recent years that really scientific work has been done on the sense of direction, and particularly within the past fifteen years. All the evidence which has been collected by scientific observers is diametrically opposed to the old "compass theory," since it all tends to show that animals find their way by the use of one of their ordinary senses, such as touch, smell or sight, or by a combination of these senses, and not by any mythical "sense of direction." As is the case with all work in animal psychology these investigations are far more difficult than they would at first sight appear to be. The first and one of the greatest difficulties is the tremendous difference in the sensory equipment of different animals, and the great difference between the senses of most animals and our own senses. The second difficulty is that of determining which sense is really brought into play in initiating a response, that is, of making sure that a response which seems to be due, say, to optic stimuli is not really due to olfactory stimuli, and in order to eliminate this source of error observations and experiments have to be very carefully checked and re-checked.

The ants have for some time been favorites with experimenters on the "guiding senses" of insects, primarily because, like the other social Hymenoptera, the wasps and bees, they have a "home" to which they return and which is thus a definite goal, while, unlike the wasps and bees, they do not travel rapidly and through the air. Dr. Rudolf Brun, of the University of Zurich, has recently published in the *Biologische Centralblatt* a very interesting account of his experiments on the guiding senses of ants. He finds that the topo-chemical sense, (that is, the "sense of smell on contact" which resides in the antennae) is important but is not, as has often been claimed, the only sense employed in orientation. He found that ants on returning to the nest did not follow their out-going trail, but if they were made to take a journey which involved a turn at right angles they invariably went along the diagonal in returning to the nest. Since it has been proved that ants cannot perceive odors at any great distance this behavior pointed to the sense of sight as the guiding sense, and Dr. Brun proceeded to test this by experiment. In one of his experiments he placed a cover over an ant which was out at some distance from the nest at three o'clock on a bright sunny afternoon, and when he lifted the cover at five o'clock the ant set off in an almost straight line at an angle of 30 degrees with a line drawn from the place where it had been covered, to the nest. This angle of 30 degrees was exactly the angle through which the sun had moved during the two hours the ant had been covered, and this experiment and many others on this species of ant showed conclusively that they were in the habit of orienting themselves by the direction of the rays of the sun, and that sight was the guiding sense.

With ants of the genus *Formica*, that is with those species of ants which possess the most highly-developed eyes and which are at the same time the highest in mental development, Dr. Brun found that the direction of the rays of the sun played no part in guiding them, but by means of many experiments he was able to prove that they possessed a memory for location based on visual stimuli. He found that ants with their eyes covered were completely lost, while those with uncovered eyes took an almost direct course to the nest even when removed to a distance of 33 yards, which thus again completely disposes of any inherent "sense of direction," and of the theory that they find their way by the sense of smell.

It is interesting to notice that Dr. Brun found that these ants were able to carry their memory of locality for several weeks, since many writers, and among them some who have been writing semi-popular natural history during the past few years, have denied that any insects possess such a thing as memory.

It has for a long time been disputed as to whether insects are capable of feeling the force of gravity, and this has generally been denied in view of the extremely small weight of their bodies and the comparatively enormous muscular power which they are able to exert. Dr. Brun, however, by very ingenious experiments has proved conclusively that ants do respond to gravity.

Since gasoline is now used to such a large extent in actual production of necessary commodities, it seems too bad that so much of it should be burned to no purpose in joy riding and other useless ways. Farmers, business men and others make good use of gasoline but there is more consumed in pleasure-seeking than in the endeavor to produce something and serve the people. This keeps the product scarce and the price high.

Preventive

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THE HORSE.

Preventive and Curative Treatment of Joint-ill.

Joint-ill annually exacts a heavy toll from the foal crop in this Dominion. It is more severe some seasons than others, and is often quite prevalent in some districts and absent from others. The theory upon which the veterinary profession base treatment is that the germ gains entrance through some raw surface, particularly the navel, at time of birth or shortly after. It locates in the joints, multiplies rapidly and gives rise to characteristic symptoms. It was once thought that the disease could be contracted before birth, and was therefore congenital, but modern science does not recognize this as a fact. However, the horsemen at several famous British studs still cling to the belief that preventive measures against pre-birth contraction of the disease are worth while, as the following excerpt from the *Live-Stock Journal* will indicate:

"A simple treatment adopted at the Carlton Stud of Messrs. James Forshaw and Sons, as a safeguard against joint-ill will save breeders many troubles with their foals. The treatment was adopted by the late James Forshaw, and has been consistently carried out ever since. When the foal is twelve hours old an injection is given of about a pint of warm water (about the temperature of milk when freshly drawn from the cow), to which a little soap has been added. The quantity of soap required is so small that it is sufficient to rub a little on the hands and wash it off into the water to be injected by an enema or rubber ball syringe, the latter being preferred. The whole of the liquid is slowly injected into the rectum. Even if there are signs of looseness or purging after this treatment the dose must be repeated in twenty-four hours.

"The reasons for the process are thus explained. Examinations of the young foal often revealed the presence of hard dung, which in many cases could not be discharged until dissolved by the soap solution. This obstruction retarded the cleansing process, and the system became poisoned. A second injection is given because even though the foal may have shown signs of looseness small, hard balls of dung have been found in the passage, and great importance is attached to thorough cleansing of the bowels. Without venturing any opinions as to the cause and cures of joint-ill, which are matters for the scientists who are engaged on research work, the fact remains that at Carlton there has not been a case of joint-ill for twenty years, and it is also important to know that the farmers in the districts surrounding the stud who have adopted the practice, have also had a remarkable immunity from this trouble.

"Another simple form of preventive treatment is adopted in Messrs. H. and R. Ainscough's old-established Burscough Shire Stud, in which there are at present fifteen out of sixteen mares in foal. A few days before foaling time iodide of potassium (five grams to each meal) is mixed night and morning with the mare's feed, and this quantity is given every second or third day. For three or four days after foaling the same dose is supplied daily, and then every alternate day until the foal is eight or ten days old, after which time outbreaks of joint-ill are rare. In numerous cases on farms in the district a timely dose of iodide of potassium given to the dam—the foal gets the benefit through the mother's milk—has had the desired result."

PREVENTIVE TREATMENT.

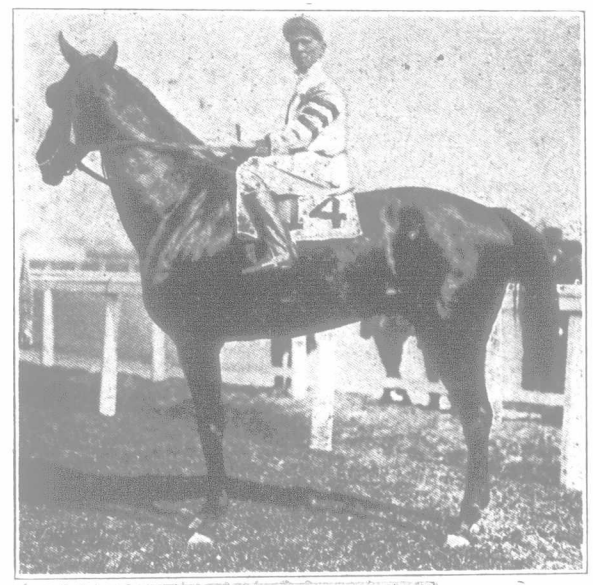
If we accept the theory that infection occurs at or subsequent to birth, then it is obvious that measures should be taken to prevent the entrance of the germ into the system.

All dust, cobwebs, etc., should be swept out of the stable, and the stall in which the prospective foal is to be born, should be thoroughly and regularly cleaned, and it is good practice to scatter slaked lime on the floor each morning before providing fresh bedding. It is good practice to give the stall a thorough coat of hot lime wash with about 5 per cent. carbolic acid, or, if whitewash be objectionable give it a thorough scrubbing with hot water containing 5 per cent. of the acid. It is also good practice to wash the external genital organs, tail and hind quarters of the mare occasionally with an antiseptic and germicide, as a 5-per-cent. solution of one of the coal-tar antiseptics or carbolic acid. When the mare is to foal on grass, of course, all these precautions cannot be taken, but there is little danger of the germ existing on grass, but it may be found in sand or clay devoid of grass. The most essential preventive measures that can be observed in all cases is local attention to the navel as soon as possible after birth, and several times daily afterwards until it dries up and is thoroughly healed. The breeder should have on hand a supply of a strong antiseptic and germicide when his mare is about to foal. This may be a 10-per cent. solution of carbolic acid or one of the coal-tar antiseptics, tincture of iodine, or a solution of corrosive sublimate 30 to 40 grains to a pint of water. Whatever is used should be applied as soon as possible after birth and every few hours until the navel opening has healed.

SYMPTOMS OF JOINT-ILL.

The symptoms may become apparent soon after the infection enters the system. From a few hours to a few days, and in rare cases a few weeks after birth, the foal is noticed to be dull, lies a great deal, and manifests lameness or stiffness in one or more limbs. An examination usually reveals a swelling, heat and tenderness of one or more joints, often in the hocks or knees, but it may be the stifle, hip, elbow, shoulder, fetlock

or pastern. Any joint or joints may be affected. The trouble is often thought to have been caused by the dam treading upon the foal, or by injury in other ways. The symptoms increase in intensity, sometimes quickly, in others more slowly. The swellings increase in size and soreness, the patient becomes weaker, less able to move, and lies most of the time. If helped to his feet he goes lame and sore, but in some cases will nurse fairly well, but soon lies down again. As the symptoms increase in intensity the general debility also increases, and the desire for or the ability to take nourishment diminishes. The joint or joints involved become puffy, and if they burst or are lanced a muddy-colored liquid escapes. In many cases the articular cartilages of the joint become destroyed. In these cases manipulation of the joint reveals a grating sound, caused by the ends of the bones rubbing against each other. When this stage has been reached it is a humane act to destroy the patient, as, though it is possible in some cases to preserve life by careful nursing and attention, the animal will always be a cripple.

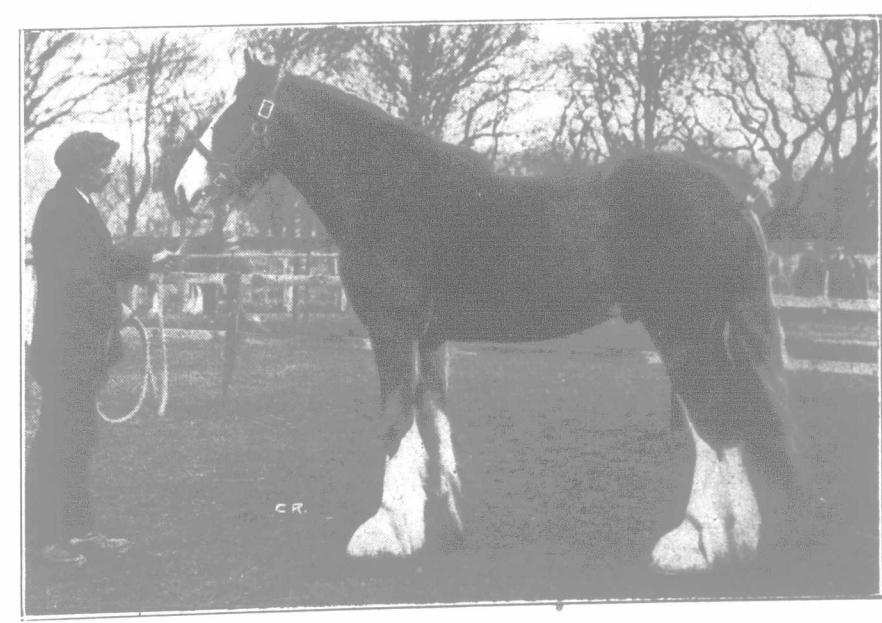


St. Paul.
Winner of the King's Plate at the Woodbine, 1920.

CURATIVE TREATMENT.

When a foal once contracts joint-ill its chances for complete recovery are not good, but success sometimes crowns one's efforts when treatment is persevered in. We cannot do better under this head than to reproduce the treatment recommended previously in these columns by *Whip*, which is as follows:

Curative Treatment is often effective when given early. The use of serums and anti-toxins especially prepared for the purpose, and which can be administered only by a veterinarian, has been reasonably successful both as a preventive and cure, hence it is wise for a breeder to employ a veterinarian as soon as possible after the first symptoms are noticed. Even amateur treatment may occasionally be successful. It consists in bathing the joints long and often with hot water, and after bathing rubbing well with a camphorated



Fyvie Sensation.
Capt. Montgomery's first-prize two-year-old Clydesdale at the Ayr Show, 1920.

liniment as one made of 1/2 oz. tincture of iodine, 2 drams gum camphor, 4 oz. extract of witch hazel and alcohol to make a pint. The foal should be given 5 to 10 grains (according to class and size) of iodide of potassium in a little of the dam's milk three times daily, and it should be helped to nurse at least every hour if not able to nurse without help. The mare should be well fed on milk-producing food, as bran, rolled oats, good hay, raw roots or grass if procurable, and should be given 1 to 1 1/2 drams iodide of potassium 3 times daily. Such treatment may be successful in arresting the ravages of the germ and destroying those present. When the disease has reached that stage where abscesses are formed they should be lanced, and cavities

flushed out well three times daily with a 5-per-cent solution of carbolic acid. When the articular cartilages have been destroyed and the bones can be heard or felt grating against each other, the patient should be destroyed.

Clydesdales at Ayr and Kilmarnock.

By SCOTLAND YET.

Three of our great spring shows have now taken place. Some time ago I sent an account of the Glasgow Stallion Show. During the past six days we have had both the Kilmarnock and Ayr shows. In former years there was an interval of ten days between these two events; this year there was an interval of only four days. In a certain sense this proximity robbed the events of much of their interest. In another sense it provided a favorable opportunity for instituting more than one comparison, e. g., at Kilmarnock the system of adjudication adopted was that of single judging; at Ayr, which stubbornly adheres to precedent, judging was carried through on the old system of a bench of three, all three acting together. At both shows there was an exceptionally fine display of Clydesdales and Ayrshires. The bench of three attracted the heaviest entries, and especially in the class of two-year-old colts seldom has there been witnessed a finer display than at Ayr. While the Ayrshire Agricultural Association refused to accept the panel of judges put forward by the Councils of the two breed societies interested, it is rather significant that in so far as the Clydesdale benches were concerned, all the six judges, but one, are on the panel for 1920. At Kilmarnock there was a splendid show of brood mares. The winner was Alex. Niven's Veda, a four-year-old, by Dunure Footprint, whose dam is an own sister to the dam of that very fine horse, Dunure Refiner. Both of these mares are descended in direct female line from the world's famous champion, Moss Rose 6203—from 1882 to 1898 a most successful winner. Veda was very near the foaling and was not shown at Ayr. She was sold there to Falconer L. Wallace, of Balcairn, Old Meldrum, the famous breeder of Short-horns, and proprietor of what used to be called the Edgote herd. Veda was only placed reserve female champion at Kilmarnock. She is a great mare, and has changed hands at a very high price. The first yeld mare at both shows was M. S. Thomson's fine, big, black mare, Patience, also by Dunure Footprint, and reserve for the Cawdor Cup in 1919. Her headquarters are at Spotsmains, Kelso. The first three-year-old mare, and the female champion at Kilmarnock, was James Kilpatrick's Craigie Sunray, by Bonnie Buchlyvie, out of Wells Lady Ray, a daughter of Dunure Footprint, and winner of the Cawdor Cup last year. Craigie Sunray is a very bonnie, level and true filly. She is perhaps neat enough but her balance and quality are undeniable. The first two-year-old filly at both shows was James Gray's beautiful quality big filly, Peace, by his own horse Botha. This is a right good filly. Her sire we always thought a first-class horse. He is a son of Baron of Buchlyvie, and unlike several of our best present-day sires, breeds his stock of first-class dark-brown colors. Peace makes peace, as everyone admits her merits. At Kilmarnock, Lord Forteviot, of Dupplin, Perth, who is a new patron of the breed, was first with an exceptionally true yearling filly of his own breeding, got by Dunure Footprint, out of a mare by Signet

16816. This is a very promising filly. The second at Kilmarnock and the first at Ayr was the first at Aberdeen, Robert Young's Park-hall Perfect Lady, by the veteran sire Royal Favorite 10630. This is a filly which everybody is pleased with. The winner in the three-year-old stallion class at both shows was James Kilpatrick's Craigie Excellence, a very good horse, by Rising Tide. He was second at the Stallion Show to the famous Rising Star, whose owner Thomas Clark is also owner of Rising Tide. Craigie Excellence was male champion at Kilmarnock. The best classes of males at both shows were those for two-year-olds and yearlings. At Kilmarnock, Craigie Alacrity was first, but at Ayr he had to give way to A. M. Montgomery's Fyvie Sensation, a beautiful colt bred by Messrs Donald, Lethen, Fyvie, and got by Hiawatha Again. This colt has almost ideal "underpinning." His top is none too well furnished at present, owing to his having lately come through strangles. He pleases all critics. After Craigie Alacrity, at Kilmarnock, came G. A. Ferguson's Premier Dale, which also followed him at the Stallion Show. He was not shown at Ayr, as Mr. Ferguson was to have been one of the judges but was prevented from acting through illness. In third place at Ayr, as at Glasgow, stood James McConnell's great colt, Record, bred by Mrs. Kinloch, the owner of Hiawatha Again, and got by Prince Ossian 16001, out of a mare of the same race as Hiawatha Again. This is a colt of immense substance and growth. He was bought at Lanark in October for £3,400, and has numerous

admirers. After him, in fourth place, came a colt which has more admirers than most. This is James Hamilton's chestnut bay, Dunduff Chancellor, a son of Dunure Footprint, with splendid feet and legs, and an unusually good top. His own sister, Dunure Wish, a black filly a year older, was first at the H. & A. S. last year. At Kilmarnock the first and second yearlings were, respectively, G. A. Ferguson's Silverdale, which was third at Glasgow, and James Kilpatrick's Craigie Premier, while the Glasgow first-prize colt was third. At Ayr the colts which were first and second at Glasgow were again first and second. The first is Walter Robertson's Auchinleah Impression, by Gowanhill Footprint, and the second, H. E. Robert's beautiful colt from Monkcastle, Carlisle.

AYRSHIRES.

Ayrshires made a splendid exhibit at both shows. In the female classes Jacob S. Murray, Daljig, Cumnoch, and Mrs. McAlister, Mickle Kilmory, Rothesay, showed great cows with good milk records, as well as individual merit. In the male classes the two highest priced bull stirks of 1919 and 1920—Howie's Hot Stuff and Mendel, were champions.

AGRICULTURAL CONDITIONS.

We are having a very cold, backward spring. Often we have had blizzards in April, but this year we had none. Alike in 1917 and 1919, we had snowstorms after the middle of the month, which wrought havoc among the lambs, and spoiled the prospects of flockmasters. This year it is not the hill farmer who is complaining—he is in a highly cheerful mood—it is the arable farmer. The hill farmer has had one of the best lambing seasons he can remember. The spring has been abnormally wet, but that does not adversely affect the ewes. What plays havoc with them is a snowstorm and prolonged frosts. The flockmaster is put to his wits' end to bring his ewes to the lambing, and the shepherds have a sorrowful time gathering the lambs which are often weakly and require to be "spoon-fed" for a season. This year both flockmasters and shepherds are smiling broadly. Stores of hill hay have not been drawn upon, and ewes have come through the winter in good form. The only complaint is that twins are scarce. But when singles come strong there is less need of twins to make up the numbers, and the death rate this year is almost nil.

With the arable farmer things are not at all in a good way. The man who farms heavy clay land is at his wits' end. The season has been abnormally wet, and in such circumstances it is folly to attempt to work clay land. Even on lighter soil it is of primary importance to get a dry seed bed. This has been almost impossible. Curious sidelight is thrown on the situation by a social fact. I am writing this in the Strathearn Hydrophathie, Crieff, a favorite rendezvous for those seeking rest and refreshing. This is the third season in which I have spent the first week in May in this house. During the past two seasons quite a large number of farmers and their wives were among the visitors; spring work was over and there was a breathing time. This season there is not one farmer or farmer's wife here. The season is too backward. Spring work is too far behind to admit of holidaying. Let us hope May may be genial. This, the first of the month, has been warmer than most. The sun has shone brightly, and while he was in his strength it was easy to believe that summer was nigh. In the evening the weather is again chilly, and the weather signs hardly indicate a prolonged spell of dry weather. Heat would work wonders for us. For one thing there is likely to be a good hay crop. Under normal seasonable weather, it is said, "A dripping May makes hay." Thus far we have had quite enough "dripping"—what is wanted now for every crop is heat. With that 1920 promises to be an all-round prosperous year for the farmer.

Housing is a grave problem both in the rural and the urban areas. The pressure is not so acute in the former, but it is there perhaps in a modified or less direct form. Farmers have not nearly enough cottages for their men. This scarcity leads to a continuous stream of emigration from the rural to the urban areas. When the young farm employee wants to take up house, too often there is no house for him to bring his bride home to. He, therefore, goes off to the town. This intensifies the housing demand there. The situation is so strained in some areas that there is in it the peril of social upheaval. To-night I have just been reading that there is a village in England in which there are four empty cottages. The said village is on the borders of Dorset and Wilts and nine miles from the nearest railway station. I do not suppose the case could be paralleled in Scotland. One great trouble is that the Farm Servants' Union, or at least its responsible leaders have resolutely set their faces against what they call the "tied" house; i. e., a house built for a farm employee, occupancy of which is part of his remuneration as such. Should he leave the employment, he must leave the house. One recognizes the drawbacks to the arrangement. Parties are not on equal terms. Should the servant prove unsatisfactory he may be dismissed, and dismissal means vacating the house to make room for his successor. On the other hand, the employer may be unsatisfactory, but the employee has no redress. In order to remain in a house over his own and his family's head he is compelled to put up with many inconveniences, if not worse. At the same time it is difficult to see how houses can be built for farm employees. Such houses could be built on the village or farm, but it would mean building in the heart of the village or on the farm, and such a situation would be a disadvantage to the village or farm. It would mean building in the heart of the village or on the farm, and such a situation would be a disadvantage to the village or farm. It would mean building in the heart of the village or on the farm, and such a situation would be a disadvantage to the village or farm.

daily task, while his health might be endangered. The difficulty has been solved in the past by the exercise of mutual forbearance, and it does not appear that any other solution is feasible in the future. Much of this mutual goodwill has been manifested in the statutory collective bargaining rendered necessary under the Wages clauses of the Corn Production Act.

LIVE STOCK.



A Boy and His Pets.

It does not pay to buy a poor bull even if it is cheap.

Commonsense is an important factor in successful stock feeding.

You can be as successful as many prominent stockmen of to-day, but you will likely have to invest more than you customarily do in a herd sire.

At L. R. Kershaw's sale of Doddies in Okla., 71 head averaged \$1,942. Plowman that noted Angus herd sire went under the hammer at \$40,000.

Wishing for a well-bred, well-kept herd won't get it unless there is action, good judgment in breeding and feeding and determination to arrive at a definite goal.

When purchasing or selecting breeding stock look for individuals with strong constitutions. Narrowness behind the shoulder and tucked up at the fore-flank are objectionable.

Did you ever weigh the steers turned on grass at varying intervals in order to ascertain the loss or gains in weight? Prof. Toole gives figures in an article appearing in these columns which should be interesting to stockmen.

The stock are now on grass for another five months period, while their owner toils early and late in the field to provide fodder for seven months stable feeding. If the pasture season were longer the farm life would be more attractive.

When calves are marketed by the thousands this spring where are the stockers and feeders to come from next year? The man equipped for raising calves might find it profitable to rear a bunch of breedy youngsters of the beef breeds.

A Haldimand County subscriber writing to "The Advocate" fails to see much profit even in pure-bred live stock when hundreds of dollars must be paid out for feed to keep the herd through the winter. Parts of this county were hard hit by the adverse weather conditions of last year consequently many barely had a crop worth harvesting. Conditions over which man has no control, limit his farming operations in many instances, and yet the city consumer wonders how the tiller of the soil has the nerve to accept the present prices for farm produce.

Big Litters Which Finish Early.

Ninety-six pigs from three sows in twelve months is a record many breeders would like to emulate. In March of 1918 W. Atkinson, a Middlesex County farmer, had three sows farrow, again in September of the same year they farrowed and three more litters were born before the year ended in March, 1919. At five-and-a-half months a couple of litters were sold averaging 205 pounds, and that with winter feeding. At six months, one week a bunch of ten averaged 232 pounds, and Mr. Atkinson had eight go 259 at seven months. These pigs would turn a profit. A prominent feeder once remarked that if pigs were fed three-dollar per hundred feed and disposed of at eight months old one would break even and that the earlier they were marketed the better. Many farmers are getting pigs up to two hundred pounds' weight under seven months and a half a year. It is the early finishers which are the best. Mr. Atkinson's pigs were farrowed in the month of March, and he had them marketed in the month of March, 1919. It is a record which is well worth emulating. It is a record which is well worth emulating. It is a record which is well worth emulating.

wheat are added. The grain used other than oats depends largely upon the availability and price. This spring's litters from the three sows are running in a paddock and are particularly thrifty and growthy for their age. The progeny of one of the sows above mentioned have a little better form and do better than the others. It is just a question if hog men pay sufficient attention to the selection of the sows used. It stands to reason that the progeny of a sow that is a good feeder is likely to make more economical gains than pigs from a sow that is rather hard to keep in flesh. These characteristics may go back several generations. Breeders might advisedly pay more attention to the feeding capacity and early finishing qualities of their pigs than they do. Sows that raise big litters which finish at around six months are valuable and their progeny should make good breeding stock.

Losses of Young Steers Going to Grass.

BY PROF. WADE TOOLE, O.A.C.

The average feeder keeps no records of gains and losses on his steers when turned from the stable to pasture, and the information contained in the following paragraphs may be interesting and valuable to some.

In the summer of 1918 fifteen calves were purchased by the Ontario Agricultural College to be put on an experiment for nearly two years to determine the value of breeding in beef production. These calves consisted of three pure-bred steers, including a Shorthorn, an Aberdeen-Angus and a Hereford in one group; three Shorthorn-Hereford cross-bred steers in another group; three grade Shorthorn steers sired by a good pure-bred bull in a third group; three scrub beef-bred steers in a fourth group; and three dairy-bred steers (pure-bred Holstein) in a fifth group. While it is not intended to give out the results for the entire feeding period until the experiment has been carried for several years, it might be well to publish some facts regarding two phases of the experiment upon which the figures will already carry some weight.

These calves were put on rather heavy feeding rations on the first of October, 1918, and were stall fed until May 16, 1919, when they went out to grass. Most of them were in very good condition indeed when they went to pasture, and it is significant to note the losses in weight when first going to grass. The pure-bred steers weighed 935 pounds, 685 pounds, and 580 pounds on May 16th. On May 23rd they had lost respectively 120 pounds, 75 pounds and 90 pounds, or an average of 95 pounds per steer. The cross-bred steers weighed 845 pounds, 700 pounds and 730 pounds, respectively, when turned out and one week later had lost 105 pounds, 85 pounds and 105 pounds, respectively, or an average of 98.3 pounds each. The grade steers weighed 800 pounds, 600 pounds and 595 pounds, respectively, when they went to grass and lost in the first week 105 pound 90 pounds and 65 pounds respectively, or an average of 86.6 pounds each. The scrub steers weighed 750 pounds 740 pounds and 805 pounds on May 16th, and on May 23rd had lost 90 pounds, 100 pounds and 100 pounds respectively, or an average of 96.6 pounds each. The dairy-bred steers weighed 615 pounds, 585 pounds and 520 pounds respectively, and lost 90 pounds, 75 pounds and 80 pounds respectively during the first week on grass.

During the second week on grass or from May 23rd to May 30th the pure-breds still made an average loss of 1.7 pounds per steer. The cross-breds lost 13.3 pounds per steer. The grades gained 5 pounds per steer. The scrubs lost 10 pounds per steer, and the dairy steers lost 8.3 pounds per steer. The percentage loss for the first two weeks at pasture ran from 11.6 per cent. to 14.3 per cent. of the original weight. From May 30 to June 6 small gains were made in all groups but one, the cross-bred steers still showing a loss of 1.7 lbs. each. From June 6 to June 20, a two-week period, the pure-breds gained 36.6 pounds per steer, the cross-breds 48.3 pounds per steer, the grades 35 pounds per steer, the scrubs 56.7 pounds per steer, and the dairys 37.1 pounds per steer.

These steers were on extra good pasture, and the losses in weight shown would be quite typical of young steers in fairly high condition when they went to grass. The scrubs were about ten months older than the other calves and, with the dairy calves, were not in quite as high condition as the other groups so that their losses on grass were not quite so heavy proportionately, and when they did start to gain, being in lower condition, they made somewhat more rapid gains for a time. Three weeks after going out to grass all groups were started to gain, but it was not until July 18, nine weeks after going out on pasture, that all groups with the exception of one were back to their stable weight before going to grass, and that one group was still 10 lbs. short of its May 16 weight.

These figures are somewhat significant, and would lead one to believe that with young steers around a year old or a little over and in fairly high condition from good stable feeding, turning to grass gives them a setback in weight which it takes at least eight or nine weeks on good pasture to regain. Such results, however, would not be obtained with thin cattle. Feeders know that very thin cattle turned out to pasture rapidly improve in weight and condition, but it would seem that reasonably fat cattle about ready for the butcher are likely to lose heavily for a time when going to pasture. If the price is right and the cattle fairly fat it may pay better to sell than to turn to grass for a short grass period. Of course, it is a different matter with thin cattle or with cattle going out for an entire summer's grass.

Cattle methods, few of the intelligible would save record of It is so ea considers with ama take this There which is of every adopt a m form of se writer:

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Private Herd Records.

BY PROF. G. E. DAY.

Cattle breeding is a business and requires business methods, but it is an unfortunate fact that comparatively few of the smaller breeders keep any systematic or intelligible record of their operations. Many a time it would save a breeder loss of time and money if he kept a record of the cattle which pass through his hands. It is so easy to keep such a record that when a person considers the great importance of doing so, he is filled with amazement that so few breeders seem willing to take this small trouble.

There are two books which should be kept, one of which is a service book in which an accurate record of every service should be kept. Each breeder can adopt a method to suit himself, but the following simple form of service book has been found satisfactory by the writer:

Cow	Date	Bull
Tillie 142340	Jan. 1, 1920	President Wilson 116821
Rose Beauty 142344	Jan. 3, 1920 Jan. 24, 1920 Feb. 14, 1920	President Wilson 116821
Rosebud 2nd 142343	Feb. 3, 1920 Feb. 24, 1920	President Wilson 116821

It will be noted that the spaces are made deeper than is necessary to hold the name of the animal, so that if the cow returns, several services can be reported without re-writing the name of the cow. However, the method employed is not important, but it is very important that a complete record of services should be kept, no matter what form is adopted. Any book with blank pages can be used, but it is just as well to use a book with fairly substantial binding, and when the book is filled, it should not be destroyed, but carefully filed away, because one never knows when information such as this may be urgently needed.

A herd record is of the greatest importance, and is extremely simple to keep. The following form has been used by the writer for many years, and has given complete satisfaction:

Sex	Name	Record No.	Color	Date Birth	Sire, Name and No.	Dam, Name and No.	Date Sold	Purchaser	Remarks
M	Rosebery	114620	Rn	Sept. 18 '15	Sultan 114619	Duchess (imp.) 129741			
F	Annie	125871	R	May 15 '15	Village Smith 91694	Beauty 66726	Feb. 15 '20	J. Blank, Blank City	Price \$600 Bred to Rosebery Sept. 5, '19
F	May	125867	R & W	Sept. 16 '16	Raleigh 87398	Winsome 76384	Oct. 19 '19	Butcher	Non-Breeder
F	Snowdrop	125875	W	Aug. 27 '15	Lindsay 92118	Bess 104991			Died, At g., 1916
F	Luella	125876	R	Dec. 14 '15	Homewood 89426	Colleen 90622			
1/2"	2 1/4"	1"	1/2"	1"	2 3/4"	2 3/4"	1"	2 1/4"	2"

The figures at the bottom of the columns indicate the width in inches of each column, the form as given here being very much reduced. It will be noted that the form calls for a total width of 16 inches, the vertical line between sire and dam being in the centre. Thus, a blank book with pages 8 inches wide can be made to answer very nicely, half the form being put on one page and the other half on the opposite page, with horizontal lines running across the two pages. If a blank book can be obtained with pages 16 inches or more long, so that the whole form can be put on one page,

it will be found more convenient than to use two pages. The horizontal lines should be placed far enough apart to accommodate two lines of writing, as the space will often be needed.

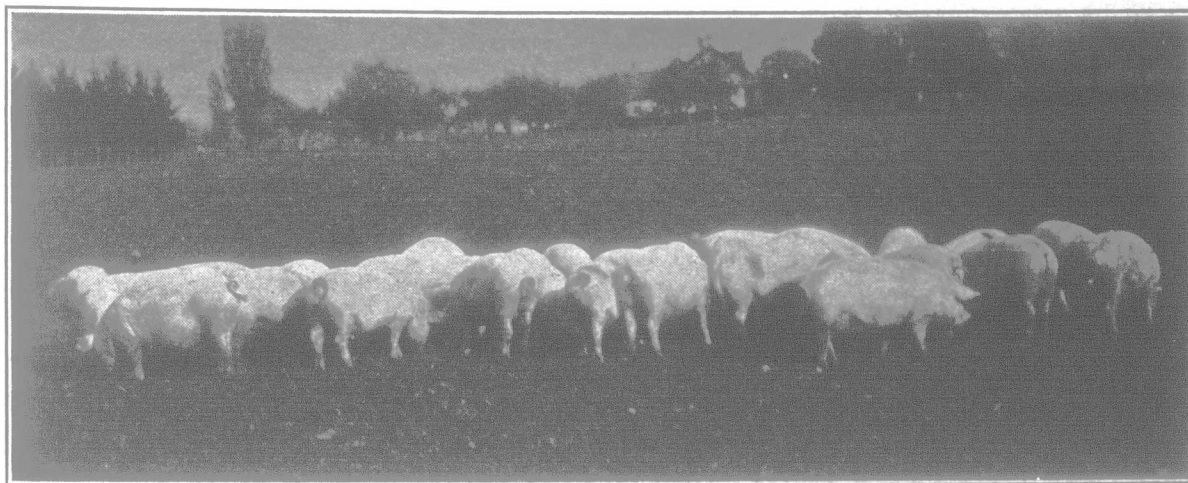
As to abbreviations appearing in the form, of course M stands for "male," and F for "female." Also R means red; Rn, roan; W, white, and R & W, red and white.

A few lines of the form have been filled in with more or less fictitious information to illustrate the use of the record. Rosebery is apparently the herd bull, at any rate he is retained in the herd. Annie was sold to J.

methods in keeping herd records, or to an entire absence of anything worthy of the name.

Thumps in Swine.

An abnormal condition in swine, technically called "Spasm of the diaphragm," commonly called "Thumps," is usually caused by high feeding and want of exercise. It is seldom, if ever, noticed in swine, that, although they may be highly fed, are allowed a reasonable amount of green feed or its substitutes, and also allowed to



About Ready for the Packing-house.

Blank for \$600. The service book will show the date she was bred, but in the case of females which are sold, it is not a bad plan to enter date of service in this record. May proved a non-breeder and was sold to the butcher in 1919. Snowdrop died in 1916, and Luella is still in the herd. Thus the record gives indisputable evidence regarding every animal which has ever been in the herd, and will prove invaluable in case of a dispute. The longer such a record is kept the more valuable it becomes. It will be noted that most of the information regard

take plenty of exercise. While really a disorder of the nervous system, it is caused by disorder of the digestive system, which causes irritation to the stomach and bowels. It is commonly seen in young pigs that are kept in premises of limited space, and highly fed. It consists in a spasmodic or jerking contraction and relaxation of the diaphragm. The diaphragm is a fan-shaped muscle which separates the abdominal cavity from the chest or thoracic cavity.

The condition was for a long time believed to be a diseased condition of the heart, but this was a mistake. If the hand be placed over the heart, just at the elbow of the left fore leg, and the heart-beats counted at the same time that the jerking contractions of the diaphragm are noted, it will be seen that there is no relation between the two. The direct cause of thumps is an irritation of the nerve that supplies the motive power to the diaphragm which is the same nerve that largely supplies the stomach, hence the most common cause is digestive derangement. Inflammation of the stomach and bowels is sometimes complicated by the development of thumps, but overloading the stomach and lack of exercise are the most common causes. Diseases of the lungs or heart also may cause the trouble.

Symptoms.—The most prominent symptom is the jerking movement of the body. At each contraction of the diaphragm there is a bulging outwards of the flanks and a drawing inwards of the ribs. Sometimes at each thump there is a peculiar sound made, somewhat resembling the noise produced by hiccup in man. The symptoms are more or less marked, according to the severity of the attack, and are usually worse shortly after a meal when the stomach is full. The thumping, in some cases, is forcible enough to cause the body to sway forwards and backwards. The thumping is usually irregular, but in rare cases may be regular and occur at the same time as the heart-beat, in which cases a mistake in diagnosis might be made. The course of the disease is variable. A recovery may take place in a few days, or the trouble may continue for weeks. In cases of long-standing the animal loses flesh, and becomes run down and stunted.

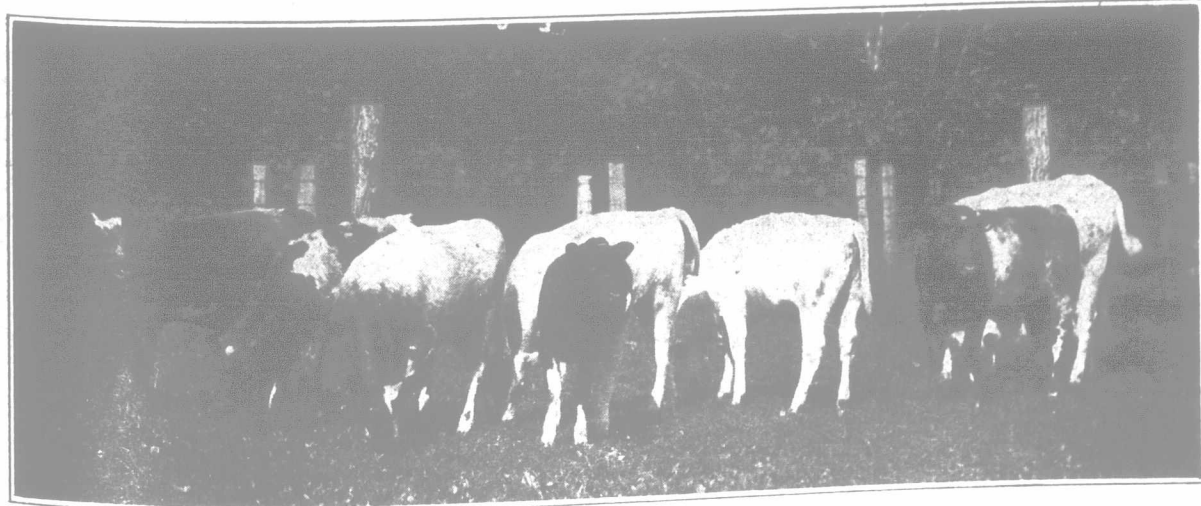
Treatment.—Preventive treatment consists largely in giving young pigs plenty of room in which to exercise; light, airy quarters, with plenty of sunshine and laxative feed. Curative treatment consists in the administration of laxatives, as one-half to two ounces of Epsom salts or raw linseed oil, feeding lightly on laxative feed, and supplying a range where there will be plenty of room to exercise. If the spasms or jerking be excessive it can be controlled by administering five to fifteen drops of tincture of belladonna, according to the size of the patient. This should be diluted in a dessertspoonful of water and carefully administered, and may be repeated every two hours, as long as necessary.

EVERSION OF THE RECTUM IN SWINE.

Eversion of the rectum in swine is caused by either of two opposite conditions, that is, either constipation or diarrhoea. In the former case the rectum protrudes as the result of excessive straining in the endeavor to expel the contents of the impacted bowels; and in the latter case from excessive straining due to intestinal irritation.

Symptoms.—A portion of the rectum or its mucous membrane is noticed protruding out of the anus. In some cases it is noticeable only when the animal strains, and returns soon after straining ceases. In more severe cases the protrusion remains as a round, red or purple-colored mass, which gradually becomes larger and darker. Later it may become dry and show cracks on its surface. It may be itchy and cause the patient to rub against any convenient object. If not treated it finally decomposes and may slough off.

Treatment.—As treatment is often unsatisfactory, the bowels should be in a normal condition by proper



A Group of Shorthorn Calves, all Villagers.

ther than oats depends price. This spring's running in a paddock growthy for their age. above mentioned have than the others. It is sufficient attention to It stands to reason a good feeder is likely than pigs from a sow flesh. These charac- generations. Breeders ention to the feeding qualities of their pigs big litters which finish ble and their progeny

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records of gains and from the stable to ained in the following d valuable to some. calves were purchased ege to be put on an determine the value these calves consisted ing a Shorthorn, an in one group; three ers in another group; by a good pure-bred beef-bred steers in a ed steers (pure-bred it is not intended to feeding period until for several years, it facts regarding two hich the figures will

ther heavy feeding 8, and were stall, fed out to grass. Most on indeed when they nt to note the losses ass. The pure-bred nds, and 580 pounds had lost respectively ds, or an average of red steers weighed ounds, respectively, had lost 105 pounds, ively, or an average steers weighed 800 , respectively, when rst week 105 pound y, or an average-of weighed 750 pounds 16th, and on May ds and 100 pounds ounds each. The ds, 585 pounds and ounds, 75 pounds e first week on grass. or from May 23rd ade an average loss ss-breds lost 13.3 ined 5 pounds per per steer, and the r. The percentage ure ran from 11.6 inal weight. From made in all groups showing a loss of ne 20, a two-week ounds per steer, er, the grades 35 nds per steer, and

l pasture, and the te typical of young ey went to grass. der than the other ere not in quite as o that their losses opportionately, and n lower condition, gains for a time. ss all groups were uly 18, nine weeks l groups with the able weight before was still 10 lbs.

ificant, and would g steers around a ly high condition rass gives them a least eight or nine uch results, how- a cattle. Feeders to pasture rapidly t would seem that r the butcher are going to pasture. ly fat it may pay for a short grass matter with thin entire summer's

feeding and environment. When the condition is due to constipation, all the faeces that can be reached with the finger should be removed and the rectum injected with raw linseed oil. Wash the tumor with warm water and then apply strong alum water (as much powdered alum as warm water will dissolve) and carefully force back into position. Give the patient a laxative of one to four ounces of raw linseed oil (according to size) and feed lightly on easily-digested, laxative feed. Repeat the removal of the contents of the rectum every few hours, and after the removal inject about four tablespoonfuls of the alum water.

If diarrhoea be the cause of the trouble, the local treatment of the protrusion should be as above, but feed on dry, chopped grain and give one-half to two teaspoonfuls each of laudanum and powdered catechu in a little new milk every three or four hours until diarrhoea ceases. In either case it is sometimes necessary, in order to prevent re-ersion, to put a stitch of silk or catgut through the lips of the anus, or arrange a truss to cause pressure upon it. In such cases, of course, it is necessary to remove the obstruction each time the contents of the rectum are to be removed, except when it is escaping in fluid form.

W.H.P.

Live-Stock Prices in England.

Despite the inclement weather—and rain has fallen every day in April in many parts of England—trade in commercial live stock has been remarkably active, particularly for dairy cattle, and store animals for finishing as feeder lots. There still continues an excellent tone among commercial pigs, and soldier newcomers, and others interested in pig keeping, find it much easier to buy their in-pig gilts in the ordinary weekly markets than at the auction sales of pedigree herds. Indeed, to buy any pedigree cattle, sheep, or pigs, to-day, means the investment of a considerable outlay of money.

Dealing first with non-pedigree dairy cattle, they have just made £90 down to £72 for cows in milk and £74 down to £67 for cows in calf, at Penrith. Milkers fetched £81, £70 and £66 in Kirkby Stephen; £84, £70 down to £50 in Dorchester; £66 10s. in Nottingham; £64 in Darlington; and £60 in Grantham, and several other marts. There is at the moment a noticeable rise in the value of dairy bred bulls, of the Shorthorn stamp, and these have been realizing £71, £69 10s., and £52 in Penrith where special sales of these young potential sires—bred from deep milking cows—are offered for sale.

It is true the wet weather has taken the spirit out of the store (feeder) trade, but Hereford steers scaling 9½ cwt. are making over £50 apiece, in Welsh Border markets, or 112s. per live cwt. Shorthorn heifers have realized £46 5s. at Gateshead; heifers for short-keep retailed at £45 in Carlisle; three-year-old bullocks made £40 to £44 at Doncaster; while some 30 three-year-old Devon steers belonging to F. Yendell realized £50 each in Crediton, where heifers made £46 each. Eight bullocks nearly ready for killing fetched £60 each in Lincoln where others sold at £55 down to £40 apiece. Blue-grey bullocks made £60, and Galloway bullocks £53 in a special Carlisle grazing cattle sale.

Store sheep trade has been dearer. Ewes made up to £6 at Exeter. Kent tags were returned at £6 15s. in Canterbury; Lincoln long-wools realized £6 12s. in Lincoln; ewes with twins, £10 in Louth; Suffolk crossed, £4 12s. in Carlisle; half-bred Lincoln ewes with lambs, £8 5s., and Lonk ewes with lambs, £5 10s. in Skipton.

Eight-week-old pigs have made £6 apiece in Kirby Stephen market; £4 5s. in Settle; £5 5s. in Nottingham; and £4 10s. in Peterborough. Stronger kinds have sold up to \$14 and even to £17 each. In-pig gilts have been retailed at £23, £25 and £27 in Midland towns, and sows at £25 to £30 in Yorkshire and Lincolnshire markets.

There is no stopping Berkshire pigs from soaring in the high price line. At the sale of the Duke of Westminster's herd, at Eaton, Chester, 62 head averaged £115 apiece, and the top price was £640 10s. paid for a sow. Next came £525 paid for a gilt. These two prices are Berkshire pig breed records in England.

An average of £384 10s. 10d. for 46 head of Scotch Shorthorns was obtained at the break up of Harry Butler's herd at Badminton, Gloster. Two Lavender heifers made 1,700 and 1,200 guineas respectively, and a five-year-old cow, a Broadhooks, by Collyme Knight Victor, touched 2,000 guineas—a beef cow record in England.

In connection with the last three sales of Hereford cattle held by the Herd Book Society, some 371 bulls have been sold for £46,173 8s., or a general average of £124 5s.

Lambing results in the flocks of members of the Leicester Sheep Breeders' Association have proved very favorable, apart from the excessive rainfall England has suffered this spring. Leicester flocks are kept in six counties, under varying conditions, but many "doubles" and not a few healthy "triplets" have been born in Lancashire flocks and survived the bad weather.

H. J. Dent's Hereford bull, Perton Bandit, made 325 guineas, and P. E. Bradstock's Charnier, 300 guineas at the Herd Book Society's sale in Hereford.

Guernseys are making 300 and 220 guineas at auction sales in England. This breed has yet to be appreciated in Britain—which fact may sound strange to Canadians.

British breeders of pedigree live stock are enjoying a round of prosperity hitherto unknown in the annals of their export business, which has always been a flourishing one. Official matters show that for the first quarter of the year the volume of trade touches well over the million pounds sterling mark. Compared with the first three months of 1919, the business has increased

some 773 per cent. In March alone the value of British stock sent abroad was £312,695.

Taking cattle first, some 749 head were exported in March at "a declared value" of £210 7s. 9d. each. Since Jan 1, 1920, some 1,492 cattle have been sent out of the country with £313,970, or £210 8s. 8d. apiece according to the Board of Trade returns which do not put the same value upon the cattle as the exporters themselves do! Canada has bought 90 cattle at a value of £904 each; Argentina 432 worth £291 apiece; and U. S. A., 517 head estimated (officially) as worth £107 some 12s. each. During the first quarter of the year 1,526 pedigree sheep have been sent abroad at values of £29,156, or £19 2s. each. Argentine buyers took 226 head at £147 apiece; and the rest have gone to Uruguay, Australia, New Zealand and Canada. The 71 pigs exported have averaged £31 14s. 4d. each. New business with Switzerland and British East Africa is opening out to English breeders of pigs.

So far some 9,692 horses of the declared value of £648,188 have been sent from England. It is noticeable that Holland and Belgium are buying horses at £45 to £47 apiece, as against £5 to £9 in 1913. France is paying £78 17s. for her horses now as against £53 in 1913.

Britishers have imported 318 horses worth £398,76, or £125 7s. 11d. each this year. These are mainly Percherons from Canada and U. S. A.

ALBION.

THE FARM.

Schooling Boys for Soldiers.

EDITOR "THE FARMER'S ADVOCATE":

The House of Commons at Ottawa devoted some of its time during the present session in discussing a proposal that military training begin at twelve years of age by having boys of from twelve to fourteen years in junior cadet corps, and from fifteen to eighteen years in senior cadets, and at nineteen years to undergo three months' field training under military officers. That would virtually mean beginning military instruction in or parallel with the public schools, thus detracting from useful studies, and carrying on through continuation or consolidated schools, high schools and collegiate institutes. In the two latter, in the form of uniformed cadet corps, military drill to some extent is already in vogue. Parents and school boards need, therefore, to give very serious heed to any moves designed to promote this type of education. Are they prepared to see it elaborated through the secondary schools and also engrafted in the public schools? Federal M. P.'s know that the constitutional control of education rests with the provinces, and that the Dominion Parliament cannot meddle with the schools. But only with the pupils of the latter could these cadet organizations be effectually developed. Such resolutions as the one debated at Ottawa are probably calculated by the promoters to nurture in the public mind the idea of early military training upon the theory expressed by Alexander Pope a couple of centuries ago:

"Tis education forms the common mind,
Just as the twig is bent the tree's inclined."

It is, therefore, important to consider the judgment of authorities competent to pass upon this subject. A report published in the United States contains the views of eighty of the most eminent leaders in education and other professions. They were far from being classed as impracticable pacifists. It is pointed out that Germany, where militarism reached its climax, did not begin military drill in the public schools. The case is cited of Switzerland, which has a very efficient military system, training for which does not begin until about twenty years of age, but gymnastic drill is employed in the schools. The report of a Massachusetts commission is cited, including the views of military experts, and declares against military training in public schools as of little or no value from the standpoint of practical soldiering. The fundamental objection urged against crowding military drill into the curriculum with the use of uniforms, etc., is that it implants in the minds of boys the ideas of militarism and war, whereas it should be to prepare good citizens for the productive arts of peace. These eighty authorities pronounce emphatically against military training for boys.

In Canada it is particularly objectionable on the ground that it would tend to divert young men from industry and the depleted ranks of farming. Confronting the need of a couple of hundred thousand additional workers to bring Ontario farm production up to what it might be, what folly to inculcate a type of education that would have the opposite effect! Existing military organizations will grow fast enough without drawing school boys into the maelstrom.

A favorite plea is that military training is desirable for self-control and discipline. It may inculcate a sort of unreasoning obedience to authority which probably reached its highest degree of perfection in Germany preparatory to the war, but the humiliating tragedy of that nation and its "invincible hosts" going down before the morale of the Allies teaches a different lesson. We are surely finding our way to a more rational school discipline through the instrumentality of enlightened teachers who develop personal character, cooperation,

the well-being of others, and animate individual intelligence.

The exponents of military education also lay great stress upon physical advantages to be gained. There is evident need for medical oversight and physical culture in the schools. It was reported that out of 2½ million men examined in England by medical service boards, only three out of every nine men were listed as really "fit." In the United States three million out of 13 million men were reported unfit to serve their country. In the Canadian Parliament it was stated that sixty per cent. of those who first offered their services in Canada for the war were found defective in some form. Now, making allowance for the exactions of military standards, this in reality is an indictment of modern conditions of living and work in the congestion of cities and towns. Resolutely approached through the schools lies an effectual way to improvement needed to recover from the losses of killed and disabled by the war. An outstanding feature of the last meeting of the American National Education Association was the definite recognition of the need of a complete program of physical and health education. In the public school course this will be mainly achieved through the medium of teachers whose normal training will have the support of inspectors and school boards backed by public opinion and the sympathy of parents. In conjunction with regular courses provided in physical culture and drill, Ontario teachers-in-training have the advantage of such text books as "Physical Exercises for Schools," published by the Strathcona Trust, and "Physical Training," by Dr. Jas. W. Barton. Various forms of simple and interesting marching drills and calisthenic exercises are given, designed to develop prompt attention, obedience, the development of limbs, spine, lungs and other parts of the body with and without the use of wands and other appliances. Some of these are used indoors with rhythmic songs, others upon the playground where athletics come into operation. Much can be said in favor of directed open-air sports which develop physique, initiative, decision in emergencies, and prompt action. A great deal of the prowess of English soldiery is credited to wholesome field sports. For youngsters, free play is vastly superior to the stereotyped rigidity of military drilling in promoting growth and the natural functioning of the organs.

From the foregoing considerations it is clear that military training in the public schools deserves condemnation as unnecessary and mischievous in tendency, while the physical culture and disciplinary results desired can be better attained in other ways. Organizations having at heart the good of agriculture are well warranted in resisting attempt to fasten it upon the schools. At the same time they should strengthen the hands of ministers of education in providing for attention to the healthful development of the youth who are presently to assume the burdens of the country's work and who could once more be relied upon for the country's defence should such an emergency ever again arise.

Middlesex Co., Ont.

ALPHA.

Clover Silage Successfully Made in British Columbia.

Circumstances frequently arise which make it desirable to ensile clover. We frequently get reports of this being successfully done, but usually in conjunction with some other crop. W. H. Hicks, Superintendent of the Experimental Farm, Agassiz, B.C., reports that clover silage is made by them successfully and in the following manner.

"The most common practice is to cut the clover for the silo when in full bloom, that is, when right for hay making. Care must be taken not to leave the harvesting period too late. It is better to err on the early side rather than postpone the cutting too long. While the plants are young the stalks and leaves are more tender and break up more easily. There is also the advantage of obtaining an earlier second crop. Only as much should be cut at one time as may be placed in the silo during the day. The mower should be started early in the morning while the dew is on and followed at once by the rake. The clover should not be left to wilt between cutting and ensiling. If severe wilting does take place better results are obtained by adding water. The clover ought to feel wet as it drops into the silo. Frequently, attempts are made to make silage out of clover after it is spoiled for hay. This is a poor policy. Partly spoiled clover makes very inferior silage as it loses its color and likely decay has begun.

"Clover silage has been made with some degree of success by placing in the silo without cutting. This should not be done if it can be avoided. Not only is there less liability of the clover spoiling when cut into short lengths, but it can be placed in the silo and also removed with much greater ease. The knives on the cutter must be kept sharp and set to cut approximately half-inch lengths. It is a good plan, where possible when ensiling clover, to put a layer of corn on top to weight down the mass below and secure a more thorough packing and thereby also a better quality of silage."

It is only possible, of course, to use corn in conjunction with clover when the clover is being ensiled in the fall. The point, however, is worth bearing in mind that the clover should be weighted down in order to exclude air and produce the proper kind of fermentation. The Superintendent furthermore states that it is easier to make clover silage when the percentage of clover in the mixture is high. Grasses are inclined to be more wiry, stiff and dry, thus requiring more weight to press the mass firmly into the silo to exclude the air.

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Some Second-Choice Crops for June Planting.

It frequently happens that circumstances prevent one from doing as much seeding and planting as the plans called for, and the first of June finds many farmers with land unseeded. This should give no cause for alarm, as there are other crops which give fair returns in grain and fodder, even though they may not be so desirable as the standard crops already seeded. During the last two or three years even corn has been planted early in June with a fair measure of success and there are yet millet, buckwheat, emmer, turnips, rape, potatoes, etc., which can be planted on unseeded soil if the plan is not to leave it for summer-fallow.

MILLET FOR FODDER.

There has never been very much enthusiasm aroused over millet, but this year it might prove a profitable crop to produce on otherwise idle land. The prospects are not good for bountiful pastures, and the meadows are only fair. If pastures are scanty and the hay crop light, some millet would be appreciated as fodder in the late fall and during the winter. Especially when mixed with silage, will millet be very acceptable as a winter roughage. This crop can be seeded even up to the first of July, but one should choose varieties according to the season. Hungarian Grass is best for late seeding, while Japanese Panic, or Japanese Barnyard, are best when seeded early in June.

About 25 pounds of millet seed per acre is the proper rate of seeding. The ground should be very carefully prepared, rolled and harrowed in order to provide a moist seed-bed. Under suitable conditions provide a moist seed-bed it is slow coming on, and the weeds are likely to swamp it or retard it greatly. A moist seed-bed in good tilth is very desirable for millet.

EMMER FOR GRAIN FEEDING.

Emmer is a grain crop which can be seeded rather late and still give favorable results. It gives a little larger percentage of hull than barley, but a smaller percentage of hull than oats. Emmer is considered about equal to barley for feeding purposes. This crop has never become popularized throughout Ontario, and since it is not known generally, farmers refrain from resorting to it, even for such special occasions as late seeding. If one is likely to be short of grain, emmer might be considered as an alternative crop.

BUCKWHEAT FOR STRAW AND GRAIN.

Buckwheat is not grown extensively in Ontario, but in the Maritime Provinces a considerable acreage is annually devoted to it. From twenty to thirty bushels per acre is an average yield, and the grain when used with discretion can be fed to almost any class of live stock. When straw and grain are both needed, buckwheat will help out handsomely, and it does not have to be seeded on good soil. Light land will produce a crop of buckwheat when other crops would fail on it. Three pecks to a bushel is sufficient seeding, and it can be either broadcasted or drilled. The rye buckwheat is grown most extensively in the Maritime Provinces, but the silver hull variety may be a little easier to obtain in Ontario.

Buckwheat fills better when it does not bloom during the hottest weather. For this reason, it is sown rather late in the season, even up to July 1. Any time between June 20 and July 1 will be suitable for sowing buckwheat.

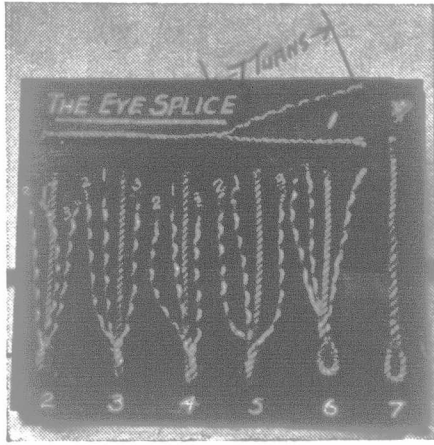
TURNIPS FOR ROOTS.

It is needless to dwell on the value of turnips as feed for live stock. They are too well known to require comment, but the labor problem interferes with the production of them to any appreciable extent. On account of the fly and other pests, turnips are better sown late, even up to June 20, but one often gets in difficulties then because the ground is dry and the seeds do not germinate as one would like. In a dry season, turnips are better sown on the flat. However, the labor problem again enters in here, and influences one to sow them in low ridges in order to facilitate thinning and hoeing. Swedes are most desirable for winter storing, but there are several varieties of fall turnips, such as Sutton's Purple Top Mammoth, Sutton's Imperial Green Globe, and Red Top White Globe, which are all right for fall feeding. These summer or fall turnips yield heavily, but will not keep any length of time. We have seen these pulled from the field, in the Maritime Provinces, and fed tops and all to live stock with satisfactory results. The bronze type of turnip is most extensively grown in the Maritime Provinces as a main cropper, but in Ontario the Purple Top Swede is an old stand-by. One should think twice however, before he plants too large an acreage of turnips. There is a good deal of hand work in connection with them, and unless one has time to thin, hoe them and keep them clean they are better left unplanted. It would be well, however, in any case to grow a few for winter feeding. There is nothing better for a steer off his feed, or an ailing cow, than a few turnips.

RAPE FOR FALL PASTURE.

The advantages of a small crop of rape have never been appreciated in this country. It makes excellent pasture in late summer and early fall for sheep or hogs, and there is nothing better to put store cattle into condition for winter feeding. Thousands of dollars are lost each year by marketing lambs just after weaning. It would be far better to give them a month or two on a clover or rape pasture. They would gain a good many pounds and the market would then be stronger. The Dwarf Essex variety is most popular and it can be seeded

broadcast or in drills. About two to two and a half pounds of seed is required when planting in drills, and about five pounds when sown broadcast. When sheep and lambs are to be pastured on this crop, it is somewhat dangerous having very pronounced ridges as the lambs are likely to get on their backs between the rows and die before being assisted to escape from the trap. It will pay to put the land in good tilth for rape and give it a dressing of manure, if there is any to spare at this time of year. Rape, like buckwheat, is a good crop to smother out bad weeds, and the more it is encouraged by fertilization the more effective will it be in eradicating other plants. A small patch of rape planted near the buildings would afford excellent green feed for hogs even if it had to be cut and thrown to them. It is splendid for growing or breeding stock and for fattening hogs it is valuable as a feed and as a tonic.



A Useful Splice on the Farm.

CABBAGE FOR SHEEP FEEDING.

Shepherds, particularly those doing any exhibiting at the fall and winter fairs, like to have a few cabbages along to stimulate the appetites of, and provide succulent feed for the sheep. Even for the sheep at home under winter conditions, cabbages are very acceptable. They can be set at this season of the year and produce a large tonnage per acre.

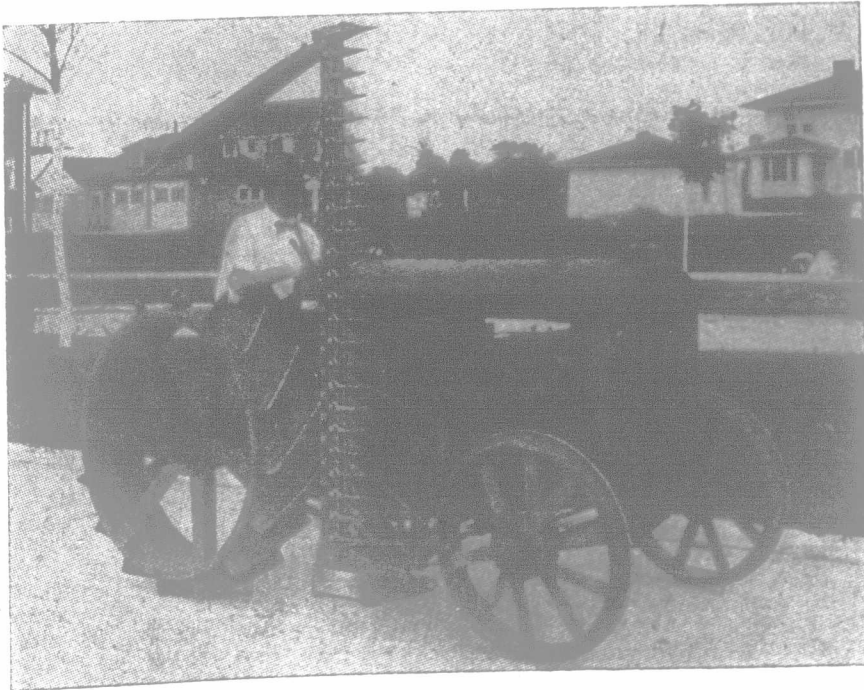
OTHER STANDARD CROPS.

Potatoes and beans can still be planted during June, but farmers generally provide what land they need for these crops when planning their spring work. The list of special or second-choice crops has not been exhausted, but enough has been written to suggest how idle land can be made to produce and how the mow and grain bin may be filled.

AUTOMOBILES, FARM MACHINERY AND FARM MOTORS

A Tractor-Mower Combination.

A mowing machine attachment for four-wheel tractors is shown in the accompanying illustration attached to a small tractor. A similar combination can be made with most tractors of the same general type. The combination provides a one-man motor mower with the working parts in position to be controlled easily and observed by the operator. Power for driving the knife is transmitted through the pulley shaft. It has a short pitman with the pitman drive wheel located relatively high with respect to the knife. Development of this device marks another step in combining tractors and implements in such a manner as to make a real one-man outfit.



A Tractor-Mower Combination for the Farm.

The Eye Splice.

The eye splice is one of the most useful "kinks" any man can know. No one can make an ordinary rope halter or a respectable halter shank without knowing how to make an eye splice correctly. Many can make it once in a while "if they have luck." There is no element of luck at all. The accompanying photograph may help some to follow the first three important steps in making this very useful splice. If the first three moves are right no further trouble will be encountered, if any one of the first three steps are wrong the splice never will be right. So our advice is—spend a few minutes getting the right system, and you will always have "good luck." We will follow the illustrations step by step from the first to the completed splice as shown in the seventh.

Undo the three strands carefully for about seven or eight turns. After the three strands have been unwound place them on the rope as shown in 2, making the desired size of loop or eye. We have now numbered the three strands 1, 2 and 3. The center strand, 1, is entered under a strand of the rope as shown in 3. The strand 2 goes to the left and passes over the strand the first one is under, as shown in 4. The last strand, 3, is the one that usually causes trouble, because it passes to the right of 1 and comes in from behind as shown in 5. The three strands now come out at the same level (like the three leaves on some plants). If the three strands do not appear this way, then something is wrong, and the sooner it is rectified the better. Never pass over more than one strand at a time. After the three strands have been entered, you have to keep passing the three strands in the same consecutive order over and under one strand at a time. A neater splice is made by gradually tapering off the strands. If the work has been done carefully the finished splice will appear as it does in the seventh step. There is nothing hard or complicated. Follow a definite system and you will always finish up as you had hoped to do.

Adapting Plow to Tractor Important.

An erroneous impression is held in some rural communities that an entirely new outfit of implements must be bought when the tractor is purchased. There are, of course, "tractor plows" on the market, and these are the result of careful study and experiment on the part of competent engineers, and do their work well. But the tractor will pull the ordinary plows designed for use with horses, and do good work with them. Some attention, however, must be paid to the hitch, and the line of draft figures largely in the calculations.

The draft lines of a plow bottom are fixed. The hitch must be made so that this plow will be pulled in a certain way, a very definite way. The tractor, in other words must be hitched to the plow so that the farmer is getting the very best work with the outfit.

A test of whether the plow is properly hitched and working correctly is made by measuring the height of the furrow bank and the width of the furrow slice. If both are equal, the hitch is correct and the plow is doing all that it can do in the way of making a good seed-bed. Of course the plows must be pulling parallel with the furrow bank at the same time. If the plowing is not just what it might be when the height of the bank and the width of the slice are not the same, then the wrong kind of bottoms are being used.

Often the tractor is condemned by the farmer within the first half hour of its use because of an improper hitch, which greatly multiplies the possibilities of a bad job of plowing. If the farmer cannot hit upon the right hitch himself, he should send for the tractor agent, who should be competent to do it for him.

As stated, there is a great difference between the centre line of draft on a tractor and a team of horses, or one horse. The variation in the centre of draft of horses is much less than in tractors. Therefore, tractor owners and operators find a little more difficulty in properly adjusting tractor plows to the tractor than they do adjusting horse plows to horses.

The centre of power delivery on a tractor is a point on the rear axle which is equally distant from both wheels. But the centre of power delivery on horses is the point on the shoulders where the tugs are fastened to the hames, and midway between the outside horses, in the case of a team. The centre of power on horses, therefore, lengthens the distance between the centre of weight of the plow and the centre of power, so that it is almost the length of the horses farther ahead than it is on the tractor. This narrows the vertical angle of draft, and diminishes the evil effects of raising or lowering the centre of power. A difference of six inches in the height of a tractor drawbar

means a great deal more difference in the effect on the plow than does six inches in the height of the horses.

One other vital difference between the hitch of a tractor and the hitch of a horse is that the swivel in the horse hitch is on the clevis of the plows, while in the case of the tractor the swivel is on the drawbar of the tractor. Therefore a horse plow set to plow correctly will permit of greater variation in the application of power than a tractor, because the drawbar on a tractor plow, being rigid, causes it to swerve one way or the other with every variation in the travel of the tractor. Because of the necessity for placing the levers of the plow where the tractor driver can get at them handily, the hitch of the tractor to the plow must be made rigid on the plow in order that the tractor may control the direction in which the plow travels, whereas a longer hitch connection between the plow and tractor would necessitate some other means for operating the plow levers from the tractor seat. Generally, tractor makers compromise on the hitch problem because of the desire to make a one-man outfit.

In the past few years there has been a great deal of discussion among farmers and tractor engineers regarding the proper speed for plowing. The speed makes quite a difference in the job of plowing, as any farmer can tell by increasing the speed of his tractor about one mile an hour and comparing the difference. The higher speed seems to throw the furrow slice further and to pulverize the soil more.

At the time of the last Los Angeles tractor demonstration, it was the consensus of opinion among tractor men that the plowing speed should not exceed two and one-half miles per hour for best work. Comes now some tractor experts who say they have found that a plowing speed of three to three and one-half miles per hour has been better, because of the greater pulverization of the soil. A horse usually plows at a speed of from one and three-quarters to two and one-fourth miles per hour, and the revelations alleged to have been made lately by these engineers are highly interesting in that they mean, if found correct, that the field can be plowed quicker and a lot better by speeding up the tractor.

It is now declared that when the tractor is plowing at a speed of from two to two and one-fourth miles per hour the furrow is turned over slowly and remains almost in the same shape as it was in the body of the soil. Hence the furrow slices are laid against each other, and the field takes on a rigid appearance. When the plow goes through the ground at a speed of one mile per hour faster the force of the bottom throws and pulverizes the slice at the same time, it is claimed, and a greater amount of soil surface is thus exposed to the elements for drying. —By Marvin H. Loomis.

Ebenezer: President, Gladstone Shaw, Mono Road; Secretary, Clifford Dobson, Woodbridge. Streetsville: President, Gordon Bentley, Streetsville; Secretary, Hubert McCaugherty, Streetsville. Caledon: President, Jas. Hillyard, Caledon; Secretary, Harold Cameron, Alton. Palgrave: President, Leonard Verner, Bolton; Secretary, Melville White, Athlone. Cheltenham: President, Frank Petch, Cheltenham; Secretary, G. O. Kirk, Inglewood. Bolton: President, Howard Jaffary, Bolton; Secretary, Norman Black, Nashville.

As a matter of interest to readers, the following constitution adopted by the new organization is given herewith:

"1. The Association shall be known as the Peel Union J. F. I. A.

"2. The Association shall meet at least once a year, with as many additional meetings as would seem necessary.

"3. The objects of this Association shall be:

(a) To further all aims and interests of the present J. F. I. A. Branches and to stimulate interest in their activity.

(b) To hold County Stock Judging Competitions and Public Speaking Contests;

(c) To arrange inter-society debates and promote other work which concerns the County as a whole;

(d) To cultivate acquaintance and friendship between the various branches and their members.

"4. The officers of the Association shall consist of a President, Vice-President and Secretary-Treasurer, elected at the annual meeting and a Committee of Management or Directors composed of the Presidents and Secretaries of the Branch J. F. I. A. Associations in the County.

The Association year shall commence on March 1st.

"5. There will be no membership fee. Members of the Branch Associations shall be members of the Peel Union J. F. I. A. provided that the Branch Association forwards \$5 to the Peel Union.

"6. Ten members of the Association shall constitute a quorum for the transaction of business. Four members of the Executive shall constitute a quorum for the transaction of business.

"7. This Constitution may be amended by a majority vote at any regular meeting."

JUNIOR WOMEN'S INSTITUTE ALSO FORMED.

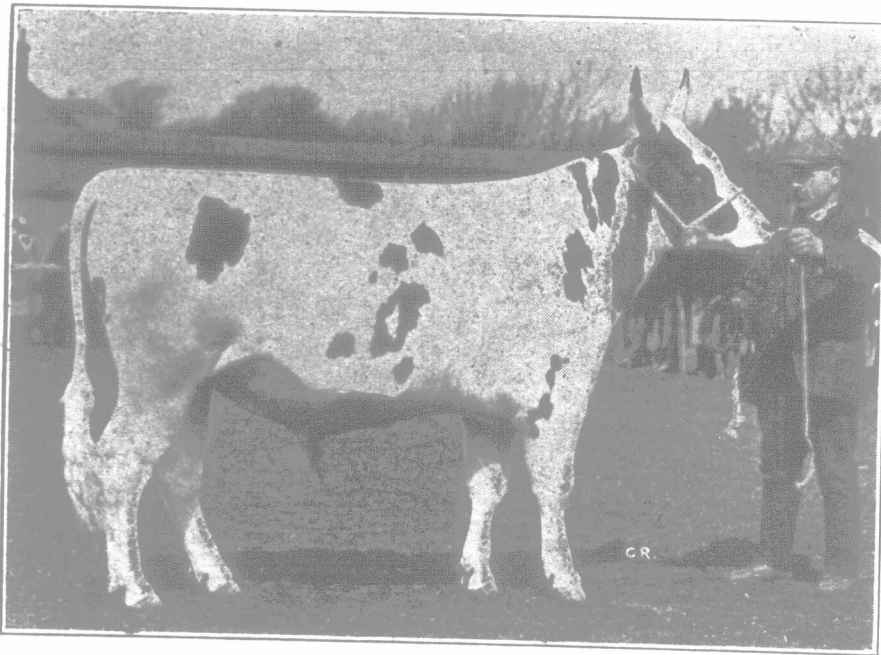
While the young farmers were meeting at the Royal Hotel, about sixty of their sisters were meeting at the Victoria Hotel, across the street. The tables there had been prettily decorated, and as a result of the banquet held there also a Junior Women's Institute was organized with the following officers: President, Mildred

milk, in 365 days, 10,412 lbs. of milk and 446 lbs. of fat.

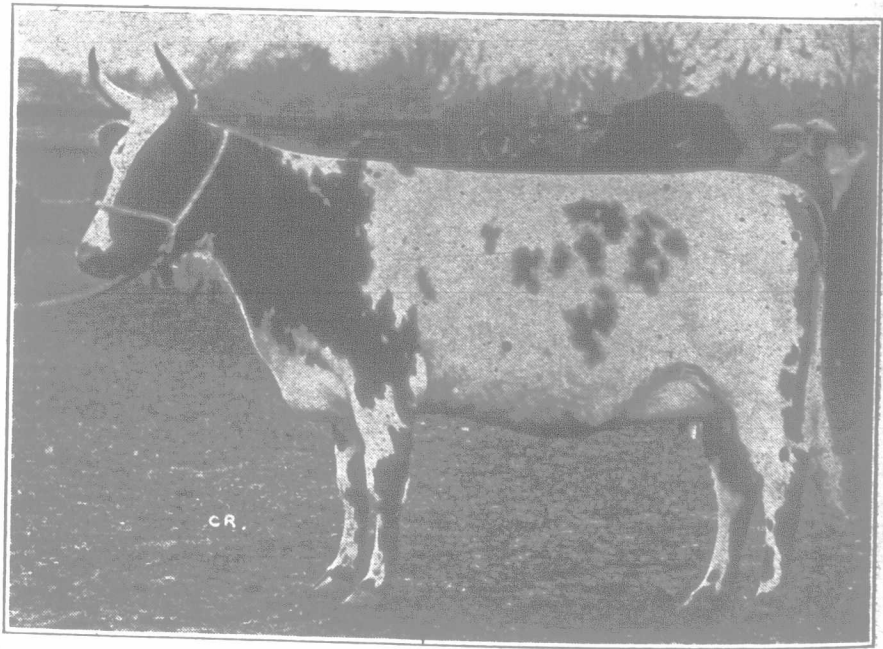
Elgin County Pure-Bred Holstein Sale.

Sixty head of pure-bred Holstein cattle were sold at the recent sale of the Elgin County Pure-Bred Holstein Breeders' Club, at St. Thomas, on Wednesday, May 12. Forty-three females averaged \$208; ten males averaged \$154, and heifers under two years averaged \$135. The attendance was good and included buyers from most sections of Western Ontario. The high price of the sale was \$410, paid for Forest Ridge Segis Lady, the six-year-old cow that sold to A. E. Hulet, Norwich, Ont. J. B. Hanmer bought Ourvilla Maplecrest De Kol, the second high-priced cow, for \$400; while C. S. Butler, St. Thomas, paid \$355 for Woodland Korndyke De Kol, the high-priced male. The following is a list of the sales of \$100 or over:

Ourvilla Maplecrest Lad, F. E. Huntley, Putnam	\$300
Mercena Canary Lass, H. Matthews, Putnam	260
Woodland Netherland, J. S. Campbell, St. Thomas	195
Mercena Prince 2nd's Canary, H. Miller & Son, Bridgeburg	200
Ourvilla Della Fayne, F. W. Baker, West Lorne	190
Ourvilla Aggie Fayne, M. Zavitz, Ridgeway	200
Segis May Fayne, W. W. Brown, Ridgeway	250
Ourvilla Boutsje Fayne, E. D. Disher, Ridgeway	170
Ourvilla Korndyke, J. H. Cloake & Son, St. Thomas	275
Ourvilla Maplecrest De Kol, J. B. Hanmer, Norwich	400
Ourvilla Petunia 2nd, W. H. Falls, Belmont	170
Ourvilla Helbon Abbecker, G. E. Bedggood, Thorndale	255
Ourvilla Cornelia Teake, A. E. Hulet, Norwich	290
Ourvilla Belle Alban, G. E. Bedggood	380
Ourvilla Aaggie Fayne 2nd, W. H. Falls	125
Quo Vadis 2nd, H. Miller & Son	150
Beauty Kent, Milton F. Marsh, Arkona	140
Aaggie De Kol Ocoola, H. Miller & Son	250
Valleybrook Elsie 2nd, F. W. Baker, West Lorne	240
Princess Mauleen De Kol, Fred Carr, St. Thomas	245
Pontiac Fayne Lass, W. H. Falls	160
Forest Ridge Segis Lady, A. E. Hulet	410
Mauleen Rose De Kol, E. D. Disher	160
Monica Deboer, W. H. Falls	125
Princess Jean Deboer, E. D. Disher	120
Bessie Abbecker Fayne, F. Wilson, Hagersville	165
Phoebe Alcartra De Kol, F. Carr	210
Major Echo Calamity, D. B. Heakes, Norwich	120
Woodland Korndyke De Kol, C. S. Butler	355
Woodlawn Korndyke Colantha, E. C. Gilbert, St. Thomas	200



Howie's Hot Stuff.
Champion Ayrshire male at the 1920 show at Ayr, Scotland.



Champion Female at Ayr.
Champion Ayrshire female at the 1920 show at Ayr, Scotland.

CANADA'S YOUNG FARMERS AND FUTURE LEADERS.

Junior Farmers of Peel County Organize.

The various junior farmers' improvement associations in the County of Peel held a union meeting and banquet, at the Royal Hotel, Brampton, on Friday, May 14. It had been felt that there should be some central body directing and assisting the work of the junior farmers' associations throughout the County, and it was decided to meet together around the banquetting board with the idea of forming a County organization. After some discussion, and addresses by Joe Snyder, Downsview, a very prominent junior farmer of York County, and J. C. Steckly, Agricultural Representative, York County, the organization of the Peel Union Junior Farmers' Improvement Association was proceeded with and the following officers elected: President, Frank Petch, Cheltenham; Vice-President, Norman Ward, Malton; Secretary, Hubert McCaugherty, Streetsville. The officers of the branch associations for the year 1920 are as follows:

McCaugherty, Vice-President, Alice Hooper; 1st Vice-President, Muriel Verner; Secretary-Treasurer, Aileen McQuarrie.

THE DAIRY.

Ayrshires in the R. O. P.

Thirty-five Ayrshire cows and heifers qualified in the Record of Performance from April 15 to May 15. Sixteen mature cows were led in milk production and in pounds of fat by Eastcourt Merry Maid, from the Nova Scotia Agricultural College, Truro, with 11,895 lbs. of milk, testing 4.03 per cent. fat, and yielding a total of 480 lbs. of fat in 365 days. Rosette, owned at the School of Agriculture, Oka, La Trappe, Quebec, came second with 10,533 lbs. of milk and 412 lbs. of fat, with an average test of 3.91 per cent. Lone Pine Belle leads a class of six four-year-olds, with 12,545 lbs. of milk, 365 days. Ten entries appear in the three-year-old good average fat test, that in 326 days and with a and 453 lbs. of fat. Of the three entries in the two-year-old class, Milk Maid of Orkney 2nd stands first by a heavy margin, having produced from 4.29 per cent.

Zillah Calamity, A. Garroch, St. Thomas	260
Daisy De Kol Fayne, C. Smith, Lambeth	130
Nettie Pietertje Hartog, F. W. Miller, Lawrence Station	120
Queen Mary of Ormsby, J. B. Hanmer	340
Courtland Bell Hengerveld, Ward Hodgins, Clendoyne	150
Sadie Sevangeline, H. Miller & Son	130
Sunnybrook Dolly Pontiac 2nd, A. Axford, St. Thomas	150
Sunnybrook Alfaretta De Kol, Ward Hodgins	265
Duchess Fayne De Kol, F. W. Miller	125
Sunnybrook Lady, W. H. Falls	120
Princess Aaggie C., E. D. Disher	175
Sprucedale Amethyst, H. Miller & Son	140
King Veeman Artis, Gilbert Smith, Bridgeburg	105
Trixie Bell, W. H. Falls	135
Angelique Netherland, S. McCallum, Belmont	135
Mona Grace Pontiac, W. H. Falls	165
Bessie Teake of Lee, J. S. Campbell, St. Thomas	130
Queen Vida Wayne, M. F. Marsh	145
Bessie Spink Netherland, G. E. Bedggood	140
Correct Inka, Clarence Cox	100
Josie Butter Baroness, C. Martin, St. Thomas	180
King Pontiac Artis, W. H. Falls	160
Annie Posch Fairview, S. G. Turnbull, Komoka	230
Bonnie Abbecker, B. Carr, Glanworth	380

Practical

Farmers are business instinct. man would handle their connection with farms and one men allow the milk at the factory be principle of an excuse for to say that the on the farm b

In spite of acid condition, early as the m cool some milk fit for manufa that the presen return the cost pounds returne producer the w as pig feed, w value of the v In many cases profitably, und sale one. We us by the man in the month down on a Mo time for \$2.40 to that farmin spoiled milk of milk as pig fee away. June w safe to assume several times o ducers of some 400 dairymen one does not n what loss occur Canada as a v hay, \$60 bran, of pig feed at \$

How can th because there have a can of milk powder p least 65 degre even in hot wea of less than 6 because ice wa cases dirty cans to be placed sterilizing outfi in the holding when it reache and they shoul from the factor In too many ca anywhere abou if not until m all. This gives accumulation easily get in a night's milk. remaining in th and this stays i possibly filthy there is a ring can. This is so at the factory a cheese factory facilities provid

With refer above it may b extent that it promptly after covers placed o leathery layer of have been stand for the milk int because it was could thus be go the covers off th for cheese mak results were sec cans as soon as possible to ma but it also beco the cans to evap top, thereby cr some of which clots which it of this clotted making, while f such clots canno the milk so as should be cover them.

A good deal will be lost if injurious bacter milk are assist ness permits t bacteria to gain can only retar

Practical Methods of Cooling Milk on the Farm.

Farmers are often accused of showing a lack of business instinct. It is certain that no successful business man would handle his products in the way some farmers handle theirs. This is particularly noticeable in connection with the handling of milk produced on dairy farms and one cannot help but be surprised that dairymen allow themselves to be so careless as to produce milk at considerable cost and have it turned back from the factory because it is too warm or has soured. No principle of good business can be found that will provide an excuse for this kind of negligence and one is inclined to say that there is no excuse whatever for milk souring on the farm before it can be delivered to the factory.

In spite of this a great deal of milk is delivered in an acid condition, especially in hot weather; and even as early as the middle of May when the weather is still cool some milk must be turned away because it is not fit for manufacturing purposes. Producers now argue that the present prices for milk barely, if they do actually, return the cost of production. This being so each 100 pounds returned from the factory as spoiled costs the producer the whole selling price of the milk less its value as pig feed, which will rarely exceed one quarter the value of the whole milk for manufacturing purposes. In many cases there are no hogs on the farm to use it profitably, under which circumstances the loss is a wholesale one. We have in mind one instance which was given us by the manager of a large condensery last year when in the month of June fully 18,000 pounds were turned down on a Monday morning. Milk was selling at that time for \$2.40 net to the producer which meant a loss to that farming community from the 18,000 pounds of spoiled milk of at least \$300, allowing for the value of the milk as pig feed, and of at least \$425 if it was thrown away. June was of course, very hot last year but it is safe to assume that this occurrence was repeated at least several times during the season with a loss to the producers of some thousands of dollars all told. Probably 400 dairymen are patrons of that condensery so that one does not need to use much imagination to estimate what loss occurs over the Province of Ontario or Eastern Canada as a whole. It is poor economy to feed \$30 hay, \$60 bran, \$90 oilcake, or \$70 grain for the production of pig feed at \$2.40 per 100 pounds.

How can this loss be overcome? It can be overcome because there are patrons to every factory who never have a can of milk turned back. Condenseries and milk powder plants demand a milk that is cooled to at least 65 degrees Fahrenheit and there are patrons who even in hot weather can maintain milk at a temperature of less than 60 degrees. Not all milk is turned back because ice was not used to cool the milk. In many cases dirty cans are used and the blame for this is mostly to be placed upon the farmer, although the factory sterilizing outfit is sometimes at fault. The first process in the holding of milk so that it will be clean and sweet when it reaches the factory is to have the cans clean and they should be examined as soon as they are brought from the factory to see if they are fit for filling again. In too many cases cans are left at the roadside or lying anywhere about the house or barn for several hours, if not until milking time, before they are touched at all. This gives them plenty of time to gather up a nice accumulation of dust and if the weather is hot they easily get in a very poor condition for receiving the night's milk. Moreover, there is always a little water remaining in the can when it gets back from the factory and this stays in the can all day and becomes stale and possibly filthy under some circumstances. Oftentimes there is a ring of cream left around the inside of the can. This is seldom removed by the steaming received at the factory and if the milk is being delivered at the cheese factory there are seldom if ever any sterilizing facilities provided.

With reference to the ring of cream mentioned above it may be said that this is not necessary to the extent that it is often found. If the milk is cooled promptly after it has been drawn from the cow and the covers placed on the cans there will not be that thick, leathery layer of cream on top of the milk after the cans have been standing all night. It used to be the custom for the milk intended for cheese making, to be aerated, because it was thought that animal heat and odors could thus be got rid of by the simple expedient of leaving the covers off the cans. Experiments with milk intended for cheese making however, have shown that the best results were secured when the covers were placed on the cans as soon as the milking was done. Not only is it possible to make better cheese with milk so treated, but it also becomes impossible for the air surrounding the cans to evaporate the moisture from the cream on the top, thereby creating a tough, leathery layer of cream some of which will stick to the sides of the can, or form clots which it is impossible to break up. A good deal of this clotted cream is lost in the process of cheese-making, while for the manufacture of other dairy products such clots cannot readily be distributed again through the milk so as to make a uniform product. The cans should be covered as soon as the milk is strained into them.

A good deal of the beneficial effect of proper cooling will be lost if the milk is put into dirty cans. The injurious bacteria which cause souring or spoiling of milk are assisted by heat and carelessness. Carelessness permits the use of dirty cans and thus allows the bacteria to gain entrance to the milk. Cooling the milk can only retard the development of these bacteria for

the time being and it often happens that milk which may be cool when delivered to the factory will still contain sufficient bacteria to cause souring in a very few hours. As soon as the cans have been brought back from the factory they should be taken care of and placed upside down in the milk house with the covers off so that any moisture that is inside them may drain out. A slatted shelf or bench will prove the best arrangement for holding the empty cans.

In the actual cooling of the milk the result is more important than the method adopted. Certain good methods will prove more practical for some farms than others. Ice, while an absolute necessity under some circumstances, is not at all necessary on some farms. The difficulty is that too many men try to get along without ice when it would pay them abundantly to use it. In certain districts, notably the Brownsville district in Oxford county, flowing wells are to be found, which, if used in conjunction with cleanliness, will effectively take care of all problems connected with the cooling of milk. Running water can here be secured at a temperature that will keep the milk well below the 65 degrees demanded at the factory and the only problem left for the dairyman is the question of cooling the milk promptly. In other places very deep wells of cold water are found and there should not be any trouble from bad milk where water can be obtained at a temperature of 45 or 48 degrees F. In such cases ice is only necessary where the water is none too plentiful and the tank cannot be emptied and refilled once a day in hot weather. Even where the water is plentiful, however, ice may be necessary if the milk house is warm or if the warm air can play too freely over the tank.

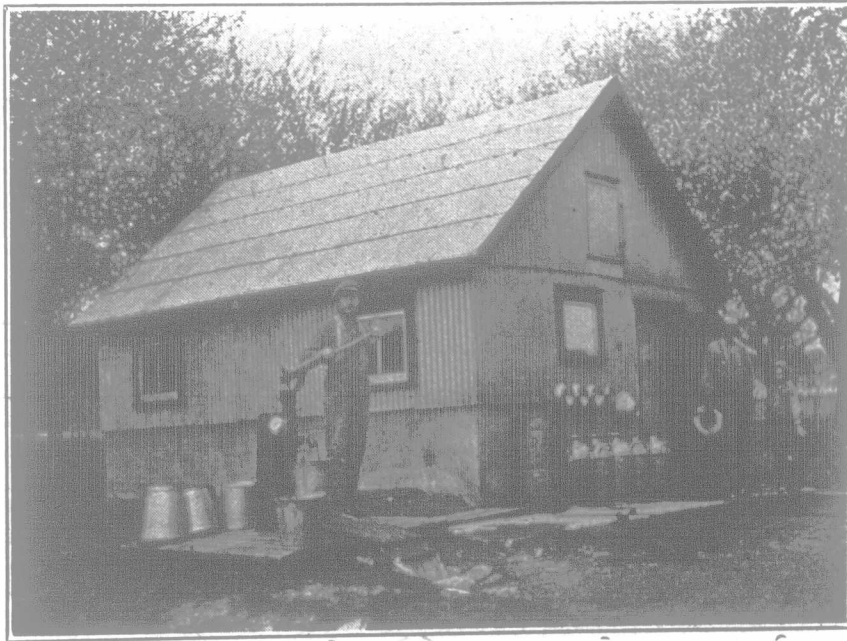
This meant that milk could not be delivered at the factory, which was only a few hundred yards away, under 70 degrees temperature. A new owner quickly remedied this by cutting into the water pipe from the well, directly under the large storage tank, thus making it possible by the use of valves and a separate line of pipe, to carry the water directly from the well to the milk house. Milk was afterward delivered to the factory at between 60 and 65 degrees. In the majority of cases the water from the tank in the milk house is afterwards used for the watering of stock from a trough or basin in the barnyard and in such cases the milk house tank rarely gets a special refilling because water is pumped only when the trough in the yard is low. This arrangement may be made perfectly satisfactory from the standpoint of milk if care is taken to do the pumping at night. In such cases, however, the water should always enter the tank in the milk house from below and overflow from the top to the trough outside.

Where ice is used not very much is necessary although it is better to use more than necessary rather than not enough. One pound of ice has a cooling value equal to about a gallon of water from the coldest well. The ice is put into the water with the night milk, the quantity used depending somewhat upon the kind of weather, the coldness of the water, the amount of milk, and the time that the milk is delivered to the factory in the morning. An important point is to get the milk cooled quickly after milking and for this purpose stirring is effective. For the first few minutes after the milk is put into the can an occasional stirring will help to lower the temperature by bringing all of the milk into contact with the side of the can next to the cold

water. Once cooled and buried in cold water, milk is in a condition to keep for a much longer time than if it were allowed to cool slowly. In the morning the milk must be cooled quickly before it is taken to the factory and all the time there is for this is usually while the family is at breakfast. If the milk is to cool properly and as quickly as this, more stirring is necessary, but it does not need to be rapid. Frequency is much better than rapidity.

It is a pleasure to run across an occasional milk house the owner of which takes a pride in keeping it clean and in producing clean milk. Such a milk house is owned by D. E. Shively, Elgin County, and such an owner is Mr. Shively himself. It appeared to be a real pleasure to Mr. Shively to explain to a representative of "The Farmer's Advocate" his successful method of cooling milk for the benefit of other readers of these columns.

An illustration of this milk house appears herewith and the following remarks concerning it will, we hope, induce others of our readers to take better care of their milk. Mr. Shively is a patron of a condensery and when the plant began operations he made up his mind if he was to be paid according to the quality of his milk with all sour milk turned back, it would pay him to cool it properly. Consequently in 1913 he built the milk house shown herewith. The work was done by himself and the milk house with the equipment in it, which is very complete, cost about \$800. The house itself is 14' by 18' with cement floor and half walls. The upper part of the walls and the roof are covered with galvanized roofing. Under this is a layer of prepared roofing, then boarding, then prepared roofing and then boarding on the inside. It is capable, according to Mr. Shively, of withstanding a temperature of 25 degrees below zero before the frost can get inside. It is situated close to the barn on the north side and is partly shaded in the forenoon and afternoon by fairly large trees with doors at both the north and south ends. Entering the door shown in the illustration, a patented cooler is found to the left of the doorway. This cooler has a large bowl in the top into which the milk is strained from the milk pail. From this bowl the milk flows into a shallow trough in the bottom of which small holes are punched so that the milk can be fed in small streams over the cooling coils below. The milk falls down the outside of these coils for a distance of about 16 inches to another trough at the bottom from which it flows into the milk can. The water is fed to the inside of the coils from a barrel situated in the corner of the milk house nearest to the photographer, by means of a line of hose which enters the cooler at the bottom. Another line of hose takes away the waste water from the top so that when the milk gets to the bottom of the coils it is acted upon by the coldest water. Just inside the door also and under the cooler is the cement tank where the cooled milk is placed overnight. This is built in the ordinary way but is fed from an open pipe emptying into the top of the tank. The outlet is through a drain pipe.



A Modern, Commodious, Well-equipped Milk House.
On the farm of D. E. Shively, Elgin County, Ont.

There is no doubt, that the most successful patrons and the ones who have the least trouble with bad milk under average conditions are those who have wisely selected a location for the milk house. This should, wherever possible, be on the north side of the barn with windows on the east and west sides to allow for a circulation of air. In many cases, too, the milk house can be placed under the approach to the barn floor and if this approach happens to be on the north side of the barn no more suitable place can be found, provided it is kept clean. Cement walls, floors and ceilings make it possible to keep the place clean with the least trouble by merely using a hose over the whole interior at frequent intervals. A very frequent trouble with milk houses situated so close to the stable is that they become dirty and filled with things that have no business there, but are put there because the milk house is the handiest place to put them. Old planks, bags, tools and small pieces of machinery are frequently placed there and all tend to prevent the production of clean, sweet milk.

The most common tank is the cement one sunk below the floor sufficiently so that a can of milk can be lifted into it easily. We have seen very neat arrangements provided for hoisting the cans from one part of the tank to another, or for carrying the cans from the tank to the milk house to the wagon drawn up outside. Galvanized tanks also are frequently found and side. Generally speaking may be of all sizes and shapes. A tank should hold two cans side by side crosswise and a tank should be made long enough to hold all the cans that and may be required. The intake of water may be either from the bottom of the tank, which is probably preferable, or from a tap or spout at or near the top edge. In any case the water should come from the well directly to the tank and not by way of a storage tank. We know of one instance where the water for tank. We know of one instance where the water for cooling the milk formerly reached the milk house by way of a wooden storage tank at the south east corner way of the barn and from there had to pass to the water bowls in the stable before it got to the milk house.

The water pipe runs along the end wall above the tank and partly along the side wall to a rotary pump which draws the water from the well outside and is operated by a gasoline engine which by the way is in remarkably fine condition and has been in operation since 1910. It is surrounded by a stout framework so that no one can come into contact with it when it is running. Between the rotary pump and the nearest corner of the milk house are three valves and an upright water pipe. The upright feeds the barrel which acts as a storage tank for the cooler and the supply here is controlled by one of the valves. The valve nearest the corner controls the feed to the cement tank and the third valve controls the supply of water to a line of hose which can be used for washing the floor, or taken outside and used to wash buggies. The pump of course, is operated from a line shaft connected to the engine and toward the far end of the house on the same side as the pump stands the cream separator. The well is 25 feet deep and provides water at a temperature of 45 degrees. The pipe only goes into the well about 12 feet and the pump is about 8 or 10 feet from the well. Mr Shively says that by the use of his cooler, the cold water from the well and the well insulated milk house he can hold milk until Monday morning at a temperature of 55 degrees without changing the water in the tank. He figures that his \$800 is very well spent because he can easily get full value for the interest on his money in milk that is not turned back from the factory.

Making Cheese at Home.

Those cheeses which require the use of molds and several days in which to finish the cheese should be avoided. This means making soft cheese which should be eaten in a fresh condition only, and the making process should not extend over twenty-four hours. One of the best varieties of home made cheese is Neufchatel. It is made as follows:

Use sweet whole milk, free from odor or taints. Temper it to 72 degrees using a dairy thermometer, and add two to two and a half ounces of good starter (fresh, sour buttermilk of clean flavored clabbered whole or skim-milk) to ten gallons, or one and one-half to two teaspoonfuls to one gallon of milk.

Rennet extract is now added at the rate of two and one-half to three cubic centimetres (about one-half teaspoonful) to ten gallons or five to six drops to one gallon of milk. Rennet is always diluted 20 to 40 times in cold water before using. Mix it into the milk by gently stirring for two or three minutes. Junket tablets may be used, in which case consider one tablet as equal to 15 to 20 drops of rennet extract.

The milk is set in pails holding about 20 pounds. Shot-gun cans, 9 inches in diameter and 12 to 14 inches high are best. The cream will not rise so readily on milk set in such cans and the temperature is more easily controlled. At intervals of 15 to 20 minutes for one to one and a half hours after adding the rennet, the milk is stirred gently over the surface (one inch deep) to keep the cream from rising. The temperature should be maintained throughout the setting period. This is best done by placing the pans or pails in a tub of water. The temperature of the water should be slightly higher than that of the milk. Cover the milk containers and leave undisturbed for 16 to 18 hours. If the milk is set about three or four o'clock in the afternoon, it should be ready for draining about eight or nine o'clock next morning. Before the curd is put to drain, it should have drawn away slightly from the sides of the vessel and the separating whey should be quite sour. It is important that the whey be quite sour before the curd is ladled into the draining cloth.

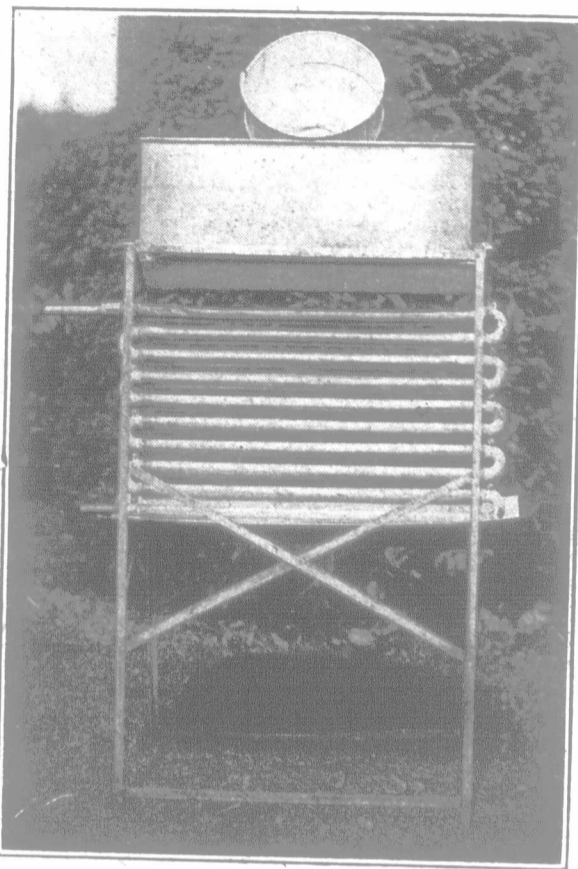
Bleached cotton costing about 20 cents a yard at present prices is the best to use for draining whole milk curd. Cut the cloths 27 inches square. Hem the edges and sew tape on the corners. Spread the cloth over some sort of shallow dish or mixing bowl. Not more curd than that from about one gallon of milk should be put into each cloth. A long-handled, sharp-edged ladle is convenient to transfer curd from the pail to the cloth. Give same a cutting motion so as to break the curd as little as possible. Tie opposite corners of the cloth, forming a sack, slip a stout stick, such as a broom handle, through the loop and support the ends so that there is room under the sack for a basin to catch the whey. Several sacks of curd may be placed on one stick. The curd drains best in a cool place. When the whey has ceased to run in a stream, pull the cloth up on one side so as to turn the mass of curd over in the sack. The next time the cloths are pulled up from the opposite corners. This will facilitate the drainage process. If the curd does not peel clean from the cloths when it is turned over in the sacks, it is not sour enough when ladled out. The cloth should not be untied and the curd scraped from the sides with a knife, as this is necessary work, besides it tends to break up the mass of curd which retards the escape of the whey.

When the loose whey has drained off and the curd has begun to firm, the cloths should be taken from the stick. Untie the corners and wrap the cloths tightly over the mass of curd. Place same between two pieces of board and apply pressure. Ordinary pails filled with water will serve the purpose quite well. At intervals of from 15 to 20 minutes the weights should be removed and the curd worked out over with a large spoon, or simply kneaded with the cloth between the curd and the hand. Continue this process until the curd is sufficiently dry. If draining is begun about eight o'clock in the morning, the curd should be ready for salting in four or five hours. The whey will escape very slowly unless it is sour enough when the curd is ladled into the

draining cloths. Salt is added to taste, or at the rate of one ounce to four or five ounces of cheese. When this is mixed in well and dissolved, the cheese is ready to use.

Cow Testing Brings Results.

Items of dairy news received from the Dairy and Cold Storage Branch, Department of Agriculture, Ottawa, contain the following with regard to cow testing, all of which indicate that there is a tremendous amount of work to be done yet before the average owner of dairy cows will have increased the annual milk yield to the extent that has been accomplished by the British Columbia Association which is mentioned below: In British Columbia cow testing association work is proceeding with good results as usual. Six associations



With this type of cooler, as well as with the type described in the accompanying article, the water runs through the coils and the milk is cooled as it runs down the outside.

are now in existence with two more to be instituted later on. The average yields per cow secured in one association for four years are here given:

1915		1916		1917		1918	
Milk	Fat	Milk	Fat	Milk	Fat	Milk	Fat
4,950	231	5,044	229	5,958	280	6,193	303

The great need of the Province at this moment is dairy stock, especially for the newer districts now developing.

An Eastern Ontario dairyman, with many others, keeps individual records of production of each of the 19 cows in his herd and some interesting facts about individuals in that herd were discovered from records kept during 1919. The herd average was found to be 5,680 lbs. of milk and 224.5 lbs. fat, but the best cow, aged 6, produced 12,086 lbs. milk and 409.3 lbs. fat

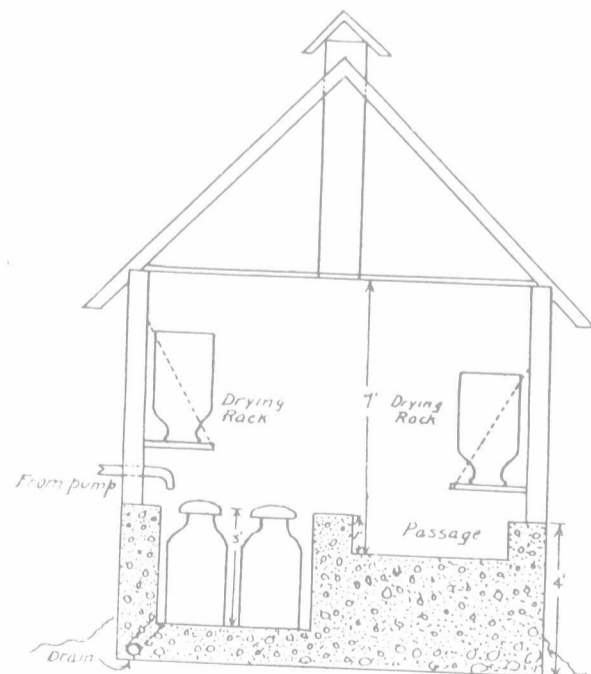


Diagram showing a good arrangement of cooling tank and can racks in the milk house.

in 10 months, whilst the poorest cow, aged 15, only milked for 7 months and produced 2,764 lbs. milk and 113.4 lbs. fat. This means that the best cow produced nearly six times as much milk and four times as much fat as the poorest cow, or in dollars and cents, she made \$210.06 profit above cost of feed, whilst the poorest cow was kept at a loss if the average price received for milk during the year be placed at \$2.40 per cwt., and the average cost of feed per cow at \$80.00. These facts were revealed by cow testing, and every dairy farmer must keep records if he would know just what each cow is producing. Blank forms for keeping dairy records can be obtained free from the Dairy Commissioner.

During the month of March the Quebec Department of Agriculture co-operated with this Branch most successfully in a special campaign to promote cow testing in that Province. The staff of 55 dairy instructors was assigned to this work for the whole month, and spent their time organizing cow testing centres. They held meetings at which there were 12,037 persons in attendance, and 7,742 farmers decided to make a start at keeping a record of the production of their herds. There are some 37,563 cows in these herds, which means that there will be about three times as many cows tested in Quebec this year as there were in 1919. While on this work 2,511 farms were personally visited by the inspectors. The results show that there is a progressive spirit among the farmers of Quebec, and that they are anxious to improve the production of their herds. A great deal of good is bound to accrue from the work of the instructors. They personally met the farmers of their districts and were able to discuss with them better methods of dairying and better care of milk and cream.

A Few Churning Difficulties.

There is always a reason for it when the butter fails to "come" after a reasonable amount of time spent in churning. There are in fact a number of different conditions which may combine to cause the difficulty or any one alone may do it.

All milk is composed of water, casein, fat and other ingredients, the three named predominating. When the cow is fresh the proportion of water in the milk is greater than at any other time. The fat globules are then larger and consequently are more easily separated in the process of churning than when the cow becomes nearly dry. During the latter part of the period of lactation, too, the milk becomes viscous or sticky as the water content diminishes and the minute globules of fat are more easily entangled in it, thereby retarding separation. This then is one cause of difficulty in churning, namely, a viscous or sticky condition of the milk. The milk from fresh cows or cows not far advanced in the period of lactation never gives trouble in this way.

The viscous condition can be relieved by diluting the milk with water that is hot enough to raise the temperature of the milk to at least 100 degrees before separating the cream. The trouble most often occurs on farms where only a few cows are milked and where there is no milk from a cow that has recently freshened to mix with the milk that has become viscous. In a large herd where there are fresh cows or cows that have been giving milk but a short time and the milk is all mixed together before the cream is separated from it, a difficulty of the nature above named rarely occurs.

Another cause of difficulty in churning is attempting to churn unripe cream or cream which is too thin. Cream that is properly ripened is about as thick as molasses and is glossy in appearance. When a cup is dipped into it a thick coat of cream should adhere to it and the cream should be pleasantly acid, free from lumps either of cream or curd and without any whey in the bottom of the can. Such cream if churned at the proper temperature ought to be made into butter in thirty minutes provided all other conditions are right. When cream is being ripened it should be stirred thoroughly at frequent intervals so that it will ripen evenly. Besides making for easy churning cream properly soured or ripened will result in a well-flavored butter.

Proper agitation of the cream in the churn is necessary for butter to come quickly. The churn should be about one-third full for the best results. The fat globules of the cream are gathered together by concussion. If the churn is too full the hard concussion which is necessary is prevented, resulting in the butter not gathering readily and in an incomplete separation of the fat from the buttermilk.

The ease of churning and the quality of the resultant butter depends a good deal on the speed with which the churn is revolved. When the agitation is too fast the butter comes with no grain, if the agitation is too slow the concussion is not sufficient to drive the fat particles together. In the large creamery the speed of the churn is timed to so many revolutions per minute, and the same should be the case with the hand churn on the farm.

There is a possibility of having cream so rich that there will be no concussion in the churn. This difficulty is easily remedied by adding water at churning temperature. Frequently the cream foams up and almost fills the churn. This condition is due to the presence of gas producing ferments accentuated by cold or low fat content. The addition of a little water at ten degrees above churning temperature or a handful of salt will usually relieve the situation.

The temperature of the cream at the time of churning must be given proper attention to obtain best results. One should not guess at the temperature but depend

upon a rel... cream shou... during war... longer to br... temperatu... minutes or... doubtedly... peratures... cold weat... Some variat... as outlined... butter in h... much harde... reason the... degree of l... should find... ture most c... weather, an... with.

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When th... the location... saver it is... The most c... but a great... place some... to the hog... milk house... a milk hou... cleanliness... venience ar... of setting t... feed room v... good of th... the separa... by a good... trouble fr... likely to p... too, is to p... are very di... an accum... removed.

upon a reliable thermometer. During cold weather cream should be churned at a higher temperature than during warm weather. If it requires forty minutes or longer to bring the butter it is more than likely that the temperature is too low. If the butter comes in fifteen minutes or less the temperature of the cream is undoubtedly too high and soft butter will result. Temperatures often recommended are 56 to 62 degrees in cold weather and 52 to 56 degrees in warm weather. Some variation may be required according to conditions as outlined in this article. Cream should be made into butter in half an hour. Some cows yield milk with fat much harder in composition than others, and this is the reason the cream from one cow will stand a higher degree of heat than will that of another cow. One should find out with a good thermometer the temperature most satisfactory for him during cold and warm weather, and the other conditions he has to contend with.

For easy churning the cows from which the cream is obtained should be fed in part at least a succulent feed, such as roots or silage. When cows are on dry feed the composition of the fat globules is such that they do not coalesce easily. Although it is not possible to change the percentage of fat in the milk of cows for any length of time, it is possible to change the composition of the fat by means of feeding so that it can be more easily churned.

The Cream Separator a Necessity.

Few arguments are needed to convince the wide-awake farmer who produces cream for butter making that a cream separator is a necessity. The fact that the cream is secured almost as quickly as the milk is drawn and the additional fact that more cream is secured and of the desired quality so far as richness is concerned, are arguments sufficient in themselves to convince any one who has a herd of any size and who follows dairying for the money there is in it. In addition, the separator means less labor, less ice and less inconvenience and scrubbing of dairy utensils for the housewife or the helpers—who are all so scarce at this time.

Creamermen want cream that has been separated with a machine because they know that the cream will average a much better quality; which will mean that they can make a much better grade of butter. The separator therefore takes its place as an important factor in the development of our creamery butter industry. Not only does the separator assist in making a better quality of butter, but the skim-milk from the separator is of much better quality in that it is fresh and warm and quite different from the old, cold and sometimes sour skim-milk that is secured from the deep setting or shallow pan methods of separation.

All cream separators, however, are not equally good and there are many different kinds on the market, each of which has its special merits or demerits. Probably all of the standard machines on the market will do good work if properly set up, kept clean and properly handled. The principle of operation is the same in practically all of the machines, but there are certain factors that must be considered. Durability is one of these factors and a separator requires to be strong and well built, especially strong and durable in the vital parts. It is a machine that is to be used twice daily the year round and in this respect differs markedly from many of the machines in use on the farm. Simplicity is another important factor that must be considered, in as much as there should be no complicated mechanism that the average man cannot understand. Efficiency with simplicity should be one of the guides for the purchaser. Ease of cleaning and ease of turning are both factors that need no further elucidation, while capacity, too, needs no further argument than to say that time is worth money and the separator should be large enough to separate the milk in the shortest profitable time. When the men are busy on the land, at seeding, haying or harvest, a great many chores seem to eat unduly into the day's work and to run the milk from 6 to 30 cows through the separator becomes quite a chore. Another important matter is the ease with which repairs can be secured. The usefulness of any machine can be lessened to a marked degree by the absence of any handy supply of repairs. Cream separators must be used very regularly and even a few days loss of cream means money to the owner.

When the separator is installed it will pay to choose the location with care. Since the separator is a labor saver it is foolish not to put it in a convenient place. The most convenient place will vary with every farm, but a great deal of carrying will be saved if it can be placed somewhere near the dairy stable and fairly near to the hog barns. The most natural place is in the milk house if there is one and in most dairy districts a milk house is considered a necessity. Sanitation and cleanliness, however, are just as important as convenience and one should avoid the too frequent mistake of setting the separator in a corner of the stable or in the feed room where dust and dirt are too plentiful for the good of the milk and the cream. If the room where the separator is kept is not separated from the stables by a good, solid partition there will be more or less trouble from bad air and offensive odors which are likely to taint the milk. A mistake that is often made, too, is to put the separator in a room where the floors are very difficult to keep clean and where there is always an accumulation of dirt that is almost never wholly removed. Walls, too, are a source of dirt and these

should be smooth and preferably painted so that the place will have a neat and sanitary appearance. The floor should be solid so that the separator may have a good foundation. The machine must stand level to work properly. Sometimes separators do not run smoothly because they are not standing on the level.

Once installed, the care of the separator assumes first importance. The first and wisest thing to do is to read the manufacturer's instructions carefully and then follow them. These instructions are designed to be accurate and to keep customers of the firm satisfied with their purchase. Moreover, it is only to be supposed that the manufacturer should know more about his machine than anybody else. See that the machine is kept firm and level. A little thought will convince even the most careless of the necessity for this. The revolving centrifuge, to run smoothly, must be allowed to revolve without any swaying motion, because this will cause many knocks and early wearing out of the machine. Oiling is the next matter for consideration and the frequent use of good separator oil will be well repaid by the satisfaction and continued wear that will result. The dirty oil should be drained out occasionally and replaced by fresh, after cleaning out with kerosene and draining this off.

It is necessary to see that the bowl is put together properly each time. With some machines the discs must be put together in a certain order so that the bowl will balance properly and efficiency in separation be secured. Regulating the speed of the bowl is also important and the machine should be started slowly and the speed increased slowly until the proper speed is reached, which is usually indicated on the machine, particularly on the handle. Maintain a steady speed so that the work of the machine will be uniform. Carelessness in turning will result in loss of butter-fat in the skim-milk. Another practice which is not often followed but which is good is to run enough water into the separator to fill the bowl before the milk is put in. This makes washing easier since it prevents the milk from sticking to the parts of the machine. Dirt in the milk is very likely to clog



Poultry of all kinds can be kept to advantage on the farm.

the machine and hence the necessity of thorough straining before the milk is put into the supply can. The separator works better also when the milk is warm and it should be about the same temperature as the cow's body, which is about 100 degrees. For this reason milk should not be allowed to stand after milking before it is put through the separator. Have the speed up and uniform before the milk is turned on and then open the tap to its full capacity.

Put about a quart of warm water or fresh skim-milk through the machine after all the whole milk is through so as to flush the bowl free of any cream that may be clogged in the bowl. If warm water is used the washing of the interior parts of the machine will be made easier. Allow the speed of the machine to run down without the use of the brake and the fact that the bowl will run a long time without stopping is proof that it is in good running order. Unnecessary stopping of the bowl tends to shift it out of adjustment. Immediately after using wash the separator and use the utmost care that it is washed thoroughly. Bad flavors in milk are often due to poorly washed utensils. The following directions if followed will keep the separator clean: Take the bowl apart immediately after it has stopped and wash thoroughly after every separation. Rinse all parts thoroughly with cold, or lukewarm water to remove the milk, since hot water tends to cook the milk and makes washing much more difficult. A solution of warm water and soda are advisable for washing and every crack and crevice of the tinware should be reached well with a stiff brush. Scald all tinware with boiling water or steam by placing all the parts of the separator in the big supply can at the top of the separator and pouring boiling water on them and leaving them to stand for five minutes. A dish cloth should not be used as the tinware will dry itself properly if well scalded. After five minutes, drain off the hot water and place the parts of the separator on some clean shelves to dry. Wipe the frame of the separator after every separation and clean up any milk that may have been spilled on the floor of the milk room.

POULTRY.

Miscellaneous Poultry Notes.

The following notes by the Poultry Division of the Live Stock Branch, Department of Agriculture, Ottawa, throw interesting sidelights on the poultry industry of Canada, and the problems connected with the marketing of Canadian eggs.

The export season opened May 8 with shipments of 825 cases of States eggs to Liverpool and 420 cases of Canadian eggs to Glasgow. Cable advices point to a slightly improved market in Great Britain and if this continues and lower prices ruling on this side, it is altogether likely that further business will be done. On account of the favorable prices being paid for poultry in Great Britain inquiries have been made with regard to the possibility of obtaining refrigerator space for export and information has been received from the Canadian Pacific Ocean Services, Limited, stating that any application for refrigerator space for June sailings should be made immediately. The ocean rate for refrigeration at a temperature of twenty-five degrees or lower is now \$2.50 per 100 lbs.

Owing to rigid Government inspection at point of shipment, Canadian eggs last year sold on the British market at a premium as high as twenty-four cents per dozen, or about one million dollars in the year. According to recent cables, on account of the reputation established last year, Canadian eggs are in good favor on the British market. Figures for the fiscal year ending March 31 show that animals and animal products to the value of over three hundred million dollars were exported from Canada, an increase of sixty-nine millions over 1918. Included in the above were over four hundred cars of eggs, approximately six million dozens. Of these, sixty-eight cars were "fresh extras," and ninety cars "fresh firsts," while twenty-seven cars were "storage extras," and two hundred and five cars were "storage firsts." Nearly all went to Great Britain. This was an increase of over five million dozens over 1918.

The London Morning Post said recently as follows: "Eggs from other countries in 1913 represented 63 per cent of the population in Great Britain, whereas in 1918 only 8 eggs per unit of population were received from overseas—a reduction equal to 87 per cent. To indicate the drop, it may be stated the actual decline of egg imports was 189,235,350 dozen, the weight of which, with cases, would have been upward of 157,000 tons. These figures reveal the fact that, whatever price consumers were willing to pay there were last year nearly 300 eggs fewer per

family than previously used. Prior to the revolution in Russia, as a result of food shortage and closing of her outlets, the poultry stocks had decreased by 75 per cent. Germany and Austria-Hungary have been almost swept bare and the same is true of Belgium, which supplied her own needs, but had none to spare. For various reasons, mainly by scarcity and high prices of feed, France has reduced her flocks of poultry by 50 per cent. As her consumption was relatively the highest of all European countries, for a long time to come she can have no surplus for export, even if she has not to import. Italy appears to have suffered least of all in this respect. Before the war, however, her consumption was rapidly overtaking production. So far as Denmark and the Netherlands are concerned, the fowls in Denmark now number only one-half as many as they did early in 1914, and in the Netherlands only one-fourth as many. Had it not been for supplies from Egypt, the United States of America, and Canada, which in this trade prior to 1914 were non-existent or negligible, the shortage of imports into Britain would have been much greater. At the same time the totals from these three countries in 1918 were small, in the aggregate amounting to 13,800 tons. These from Egypt were equal to 2.19 per head of population in Great Britain, from Canada to 1.16 per head, and from the United States to 1.05 per head, the group represented less than two weeks' normal consumption."

Partial disclosure of the attitude to be taken by both parties to the Chinese egg case in Washington was given at Olympia, Wash., recently, when the Poultrymen's Association filed its brief and the attorneys for Parrott & Co. gave a partial idea as to their attitude. The poultrymen's brief is all from the health standpoint, and has as its main source of information, Dr. Murphy, a Catholic priest who was in China many years as a missionary, and is now engaged in newspaper work in Seattle. Dr. Murphy claims that the Chinese eggs are very old by the time they are gathered from the farms, that it takes weeks longer to bring them to this

country and that they are produced under insanitary conditions. He holds that Chinese eggs come from a part of the country where the temperature is 100 to 115 degrees and that eggs start to incubate at 103 degrees, and that this process starts within 48 hours after laying. Therefore, he says any storage only delays this deterioration and that the break-down starts again as soon as withdrawn for use in the United States.

Few people realize the potential business opportunities offered in the commercial hatching of chickens. In China and Egypt commercial hatching has been a business enterprise for centuries but it is only recently that it has assumed any commercial status in America. Last year millions of day-old chicks were sold and shipped long distances in the United States. The small incubator is giving place to the mammoth machine holding thousands, while in some instances room incubators and separate buildings have been devised for hatching purposes. Separate rooms in storage have been equipped and set aside for hatching purposes and the industry in a commercial way bids fair to assume large proportions. Those having most knowledge of this business look forward to the day when a chain of hatcheries right across the Dominion will largely supply Canada with its rural requirement in the way of day-old chicks.

HORTICULTURE.

Pear Blight or Fire Blight.

It is not too much to say that no one factor has contributed so much to the unpopularity of the pear as a commercial fruit proposition as the prevalence of pear blight or fire blight and the difficulty of controlling it successfully. This destructive bacterial disease attacks pears, apples, quinces and crab apples as well as the mountain ash and the hawthorn. It is especially destructive on the pear and if allowed to spread unchecked will completely destroy an orchard in a very short time. In some districts admirably fitted by climate and soil conditions for the culture of pears, growers have practically abandoned the idea of growing this luscious fruit because of the damage done by blight and because it is thought that too much labor is required to control it. Various names such as blight, fire blight, pear blight, twig blight, blossom blight and body blight are given to this disease which is found in nurseries as well as orchards.

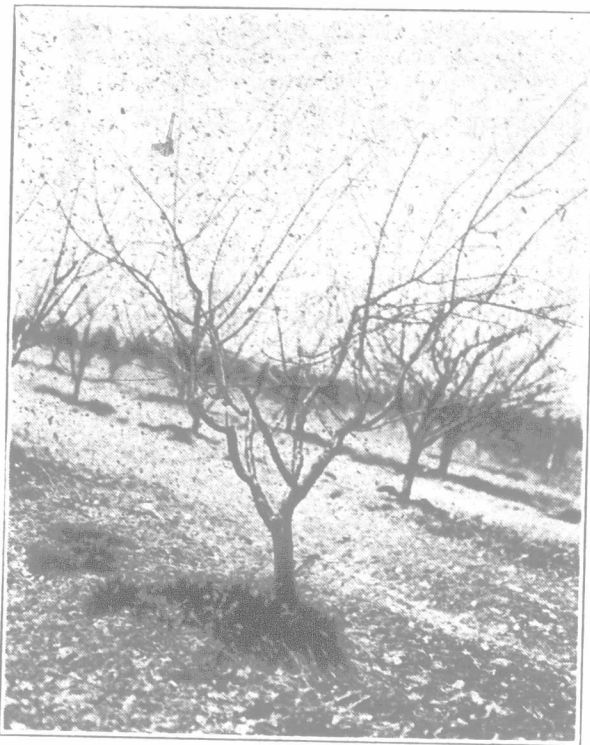
All varieties are not equally susceptible to attack, but among pears Clapp's Favorite has proven to be about the most susceptible, with Bartlett and Flemish Beauty very bad also. Keiffer rarely suffers much from blight and Seckel is not seriously damaged as a rule. Among the common varieties of apples King, Tolman, Alexander, Gravenstein Rhode and Island Greening are very susceptible, while Spy Duchess and Ben Davis suffer a great deal less. No variety is entirely immune, especially from blossom infection. In apples there is a great deal less injury from blight on the larger branches, probably because the bark of the apple is harder than the pears and less succulent so that it is more difficult for the disease to progress.

The cause of the disease as mentioned before is a species of bacteria known to bacteriologists as *Bacillus amylovorus*, which is very minute and possesses remarkable powers of multiplication. Millions may be produced from a single bacterium in a day, so that its spread may be very rapid. The organism feeds on the food substances found in the living bark and soon kills the part attacked. Weather that is warm and moist greatly favors their development as it also favors the rapid growth of the trees and provides plenty of succulent wood upon which the bacteria can feed. The disease is distributed chiefly by insects, particularly ants, which are fond of the nectar in the blossoms, and by bees and other insects which may also visit the blossoms. During the winter the organism lives in the healthy bark around the dead areas. The germs multiply then with the rise of sap in the spring, and after they have clogged the tissues of the bark will very often cause a gummy exudate on badly infested trees. Ants are very fond of this, and their legs and mouth parts become infested as they feed. Later on in the season the exudate is much more abundant on the twigs and other infested portions of the tree, so that sucking or bark insects readily act as carriers.

The symptoms of infection vary with the portion of the tree affected and the severity of the disease. In June the young fruit with its enveloping leaves may frequently be wilted and dying. These dying leaves become brown on apples and nearly black on pears, and are very conspicuous. On a single apple or pear tree there may be hundreds of these little dying twigs. This is the result of blossom infection, which causes a good share of the damage done later on. During the remainder of the season other twigs, suckers and branches may die, and the leaves remain attached to the branch

instead of dropping to the ground. The organism having found its way into the blossom and the twig, works its way down until it very often reaches the larger limbs, or even the body of the tree. Roots may also become inoculated by infested suckers, and on these diseased branches the bark will become spongy and swollen. If the injured bark is cut it will usually be streaked beneath the surface with brown or reddish-brown. This diseased bark finally dies and shrinks and cracks away from the good bark surrounding it. Black rot fungus may later invade these cankered areas and hasten the damage resulting from the first infection.

Control is extremely difficult, but it has been proven to be possible if the work is done with sufficient thoroughness and at the right time. The most careful man on the place will be none too reliable to look after this work, which consists in removing the infected parts as soon



A Young Apple Tree Completely Killed by Blight in a Cultivated Orchard.

as they are noticeable. If no special efforts have been made to control pear blight heretofore, a very critical and important time is just about at hand, when the wilting of the young fruits and leaves is likely to occur after the blossoms have fallen. Prompt attention should be given to the first signs of this wilting, and the infested twigs should be either broken off or cut out before the disease can pass down to the larger branches. A great deal of the success of later treatment depends upon the thoroughness of this inspection. In orchards that are highly prized as commercial propositions, it is recommended by Professor L. Caesar, Provincial Entomologist, that inspection be made every day or two for a period of about two weeks at this time of year, in order that all traces of the blight may be removed. After this period, in good growing weather the Orchard should be gone over once a week, although in dry weather once every two weeks will be sufficient. It is also recommended



Young Pear Trees Growing in a Sod Strip at the Horticultural Experiment Station at Vineland.

that when cutting out twigs or branches the cuts should be made about eighteen inches below where the disease shows on the bark; otherwise the organisms may not all be removed. On large apple trees it is often impracticable to remove blossom blight, but on these large trees it is seldom that the disease will run more than a few inches down the stem. Certain varieties of apples that are very susceptible to the disease should be treated exactly the same as the pear.

Really the best time to control blight is after the leaves have fallen in the autumn and before there is any movement of sap in the spring. If the infected branches are cut out at this time, and care is taken to cut well below the areas that are shown to be infected, a great

deal of the injury can be cut out. Dead areas on the larger branches or on the trunk of the tree may be removed with a pocket knife or a draw-knife, cutting away the bark down to the wood and making sure that all the bark is cut out back to the healthy tissue. Healthy tissue can be determined by the fact that one can readily tell that the inner bark and the cambium are alive. Again, about the first week in April an inspection should be made to see that no diseased parts have been overlooked. Any cuts that are made after the sap begins to move in the spring should be thoroughly disinfected with corrosive sublimate at a strength of one part to one thousand parts of water, or one tablet (such as can be purchased at any drug store) to one pint of water. The pruning knife or saw must also be disinfected after each cut in order to avoid spreading the disease further. Prunings should be removed promptly and burned, as they are a ready source of contamination. This early inspection, if carefully done, will remove practically all traces of blight so that insects will not be contaminated later in the season and spread the disease by means of the blossom.

Heavy fertilization, heavy pruning, and intense cultivation are not wise in orchards suffering from pear blight. The accompanying illustration shows a young apple tree that has been completely killed by blight in a cultivated orchard, and the second illustration shows a method of cultivating pears that has been adopted at the Vineland Experiment Station and by some growers. A strip of sod along the tree row is left as a partial check on the growth of the tree.

The Vegetable Section in Fall Fair Prize Lists Should be Revised.

During judging trips of considerable length in different parts of the Province I could see that many of the lists could be made of much greater value if they were radically changed. To my mind the exhibit of vegetables at fall fairs should be largely for the educational value and not so much for the amount of the prize. They should be of value not only to the producer of the article shown, but also to the general public who hope to receive some benefit therefrom in the quality of the vegetables supplied them. To the producer it should mean that it is a sample of the general run of his crop. For this reason it would be much better to include in this list only the vegetables common to the vicinity and in season, to some extent, at the period when the fair is held. For this reason plants like peppers, egg plant, sweet potatoes and even watermelons could not be listed in many sections as they are plants which require special attention for their growth and are not commonly grown in all parts of the Province. Plants like rhubarb and asparagus should not be included unless as a canned product, because they are far from their best at fair time, especially if we follow out the ideas mentioned before.

In some prize lists we find a large number of classes under one vegetable. One prize list that I noted had eleven classes of potatoes where three would have done. Here in Ontario we are trying to standardize the potato crops, and we have cut down the recommended varieties to three. Irish Cobbler for early and Green Mountain and Rural New Yorker for late. We desire to bring the crop of potatoes in Ontario to such a high standard that they can compete successfully with New Brunswick in car-load lots. For this reason why is it necessary to put our prize lists names of varieties like Eureka, Rural Blush, Beauty of Hebron, Farmer's Favorite, and more especially that one commonly seen of "any other variety correctly named." One prize list mentioned white potatoes and colored potatoes; another listed early and late. In another case we have a collection of potatoes mentioned "not to exceed 15 distinct varieties each named." We find Eureka and Irish Cobbler mentioned in the same list; these are the same potatoes under a different name. Again we have Delaware, Green Mountain and Carmen No. 1; these all belong to the same type.

Take another vegetable—celery—we have red mentioned and we have pink. This refers to the same and there is no demand for it on the market. For this reason it should not have a place on the list. If we mentioned only Golden Self-Blanching for early and Winter Queen for late we would be doing all that is necessary.

Another is long beets; these do not sell on the market, and are not of as high a quality as a rule as the Turnip Rooted Beet. The Detroit Red variety alone would fill the bill much better.

Then again in tomatoes I find varieties such as Stone and Imperial in one particular prize list; the Stone tomato has never proved satisfactory in any part of the Province, for while it is a nice shaped tomato and has a good color, it is far too late in ripening to be of any value. It is not nearly as good a variety as either John Baer or Bonny Best, or even the old Chalk's Jewel, so why should it be listed? The Imperial tomato is one of the older varieties which has largely passed out of use. It was never a good variety for show use or home consumption. If you want a pink use Livingstone's Globe.

In another place we have mentioned "three of the largest cucumbers." Why should it not be better to make your list as "Slicing and Picklers," as these are the two that are commonly used? The large green cucumber, when the seeds are fully developed, is absolutely useless from the consumption standpoint. If it were ripe it could be used as a preserve, but not otherwise.

By cutting down your vegetable list to a large extent

the extra prizes. The exhibitors, Of course, who are known if the rules could have unless they have a perfect desire.

There is more value; into two sections the town growth while should be more comparatively so who has the highest mark from the display.

I note important one prize list. vegetables a raised or current year bona-fide one and in any case to having you would have exhibitor who is; "exhibitor One of the time is the to where the interfering, over and stand for the good allowed to be judge is won and the competition for the judge every move judge's work done, when benefit.

The last that the judge the common In Bulletin vegetables in the man show have often whose know I am at a list of the eties in e vegetable used for the of a list.

Artichok White; Bea Golden, G Stringless; Egyptian, Red; Bruss Dalkeith; Jersey Waki hagen Mar Enkhuizen, Head, Chest Rock; Carr tenay, Dan flower—Sno —Paris G Queen; Citr Preserving; en Bantar Evergreen; Improved Chicago P Plant — Bl Endive — M Horse Radia; Kale—Kohl Rabi Nonpariel Sugar Sw Early Red, I White Welc pion Moss Thomas Lay Hamilton New Yorker Field; Radis White Chir Victoria; Sa —Viroflay; Boston Mar Marrows; John Baer, Globe; Tur Cole's Early Specialist, C

the fine season should follows. Th work, and fe

Dead areas on the tree may be removed by drawing-knife, cutting and making sure that the tissue is healthy. One can readily remove the diseased areas. Again, inspection should be made before the sap begins to flow. Disinfect with one part of one percent of water. The disinfectant after each use should be burned, as it is very dangerous. This early removal practically prevents the disease by means of...

Fall Fair Revised.

...length in difference that many of the exhibitors if they do not exhibit for the educational amount of the only to the general benefit therefrom in them. To the sample of the reason it would be to some extent, For this reason potatoes and in many sections attention for crown in all parts and asparagus canned product, fair time, especially before.

Number of classes that I noted had would have done. Prize the potato recommended varieties Green Mountain desire to bring a high standard New Brunswick it necessary to as like Eureka, mer's Favorite, y seen of "any prize list mentatoes; another e have a collected 15 distinct reka and Irish se are the same gain we have in No. 1; these

we have red sers to the same rket. For this e list. If we e for early and ing all that is

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eties such as prize list; the ry in any part ed tomato and ening to be of riet as either Chalk's Jewel, rial tomato is passed out of w use or home Livingstone's

three of the be better to as these are e large green oped, is abso- ndpoint. If erve, but not a large extent

the extra money could be applied to the value of the prizes. This would tend to draw a larger number of exhibitors, and that is what makes the show a success. Of course, there would be a tendency for certain men who are known as professional exhibitors to enter, but if the rules of the show were strictly adhered to you could have very little competition from such men unless they really were growers, and in this case they have a perfect right to show at as many fairs as they desire.

There is a class that I would like to see made of more value; that is the collection. This might be divided into two sections; one for the farm and the other for the town garden. The prizes given should be made worth while. The number of vegetables to be shown should be mentioned and should be limited to a comparatively small number and the prize given to the one who has shown the best taste in displaying and for the highest market value. It should be judged entirely from the display and consumption standpoint.

I note in looking through the rules, two very important ones which I think should be included in every prize list. The first one is as follows: "grain, fruit, vegetables and dairy products must have been grown, raised or manufactured by the exhibitor during the current year and must be entered in the name of the bona-fide owner." If this rule is strictly adhered to and in any case of dispute the exhibitor made take oath as to having produced the article exhibited, I think you would have very little trouble from the professional exhibitor who was not the actual grower. The second is: "exhibitors will not be allowed to pace their exhibits." One of the biggest difficulties in judging at the present time is the tendency of many exhibitors to stand close to where the judge is working and, while not actually interfering, the moment the judge is through he goes over and starts talking about it. It would be far better for the good will of everybody concerned if no one was allowed to loiter anywhere near the exhibits while the judge is working. Where there are a number of entries and the competition is close it is practically impossible for the judge to do good work if he is being watched at every move. If the exhibitor does not agree with the judge's work the only time to talk is after the judging is done, when they can both talk it over to their mutual benefit.

The last thing I would like to make mention of, is that the judge employed should be a man who knows the common varieties and their distinctive markings. In Bulletin 270 we have tried to show the standard of vegetables in picture form and there is no reason why the man should not know the distinctions, although I have often been with men who are good judges, but whose knowledge of varieties was very weak.

I am attaching to this a list of the standard varieties in each type of vegetable which may be used for the compilation of a list.

- Artichoke — Red or White; Beans — Yellow, Golden, Green, Giant Stringless; Beets — Flat Egyptian, Detroit Dark Red; Brussels Sprouts — Dalkeith; Cabbage — Jersey Wakefield, Copenhagen Market, Glory of Enkhuizer, Danish Ball Head, Chester Savoy, Red Rock; Carrots — Chantenay, Danvers; Cauliflower — Snowball; Celery — Paris Golden, Winter Queen; Citron — Colorado Preserving; Corn — Golden Bantam, Stowell's Evergreen; Cucumber — Improved Long Green, Chicago Pickling; Egg Plant — Black Beauty; Endive — Moss Curled; Horse Radish — Bohemian; Kale — Dwarf Scotch; Kohl Rabi — Purple, Green; Lettuce — Grand Rapids; Nonpariel, Big Boston; Muskmelons — Orange, Giles, Sugar Sweet; Onion — Southport Yellow Globe, Extra Early Red, Danvers' Yellow Globe, Silver Skin, Bartlett's, White Welsh, Egyptian, Prizetaker; Parsley — Champion Moss Curled; Parsnip — Hollow Crown; Peas — Thomas Laxton; Peppers — Ruby King, Chinese Giant, Hamilton Market; Potatoes — Irish Cobbler, Rural New Yorker, Green Mountain; Pumpkin — Connecticut Field; Radish — Scarlet White Tip Turnip, China Rose, White Chinese, Round Black Spanish; Rhubarb — Victoria; Salsify — Mammoth Sandwich Island; Spinach — Viroflay; Squash — Green Hubbard, Golden Hubbard, Boston Marrow, Vegetable Marrow, Bush and English Marrows; Swiss Chard — Silver; Tomato — Earliana, John Baer, Bonny Best, Chalk's Jewel, Livingstone's Globe; Turnip — Golden Ball, Swede; Watermelon — Cole's Early. Address by A. H. MacLennan, Vegetable Specialist, Ontario Department of Agriculture.

The fine weather this year during the blossoming season should mean a good set of fruit if no bad weather follows. The bees have had a splendid opportunity to work, and fertilization should be fairly complete.

Changes in Handling of Fruit by Express Companies.

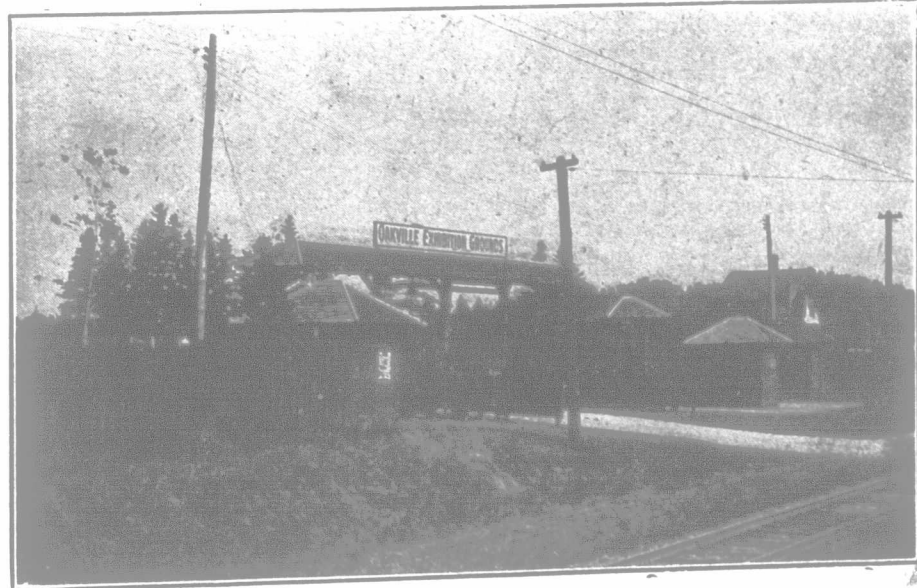
Fruit growers and shippers will benefit from a careful perusal of the following announcements sent us by G. E. McIntosh, in charge of transportation, Fruit Branch, Department of Agriculture, Ottawa:

- "1. The wagon service of collection for less carload shipments has been cancelled, and neither collection nor delivery service will be performed for carload shipments.
- "2. Partial unloading of carload shipments to points in Manitoba, Saskatchewan and Alberta is permitted at two points in transit, each opening to be subject to an additional charge of \$5.00.
- "3. Express companies are required to have carload shipments of fruit switched to the team tracks adjacent to the passenger station at destination, convenient for unloading, and without additional charge.
- "4. The special rates do not apply on shipments of less than 100 lbs.
- "5. No wagon service will be performed on returned empties.
- "6. Unless otherwise specified the charges for supplying ice in transit at points east of Port Arthur will be 20 cents per 100 lbs.
- "7. Shipments moving at the special commodity rates in carloads will not be loaded or unloaded by the express companies."

FARM BULLETIN.

Criticism of Tax Proposals During Budget Debate.

During the Budget debate at Ottawa, F. F. Pardee, West Lambton, criticized in some detail the tax proposals of the Government, with special reference to the tariff and the luxury tax. As it affects the ordinary consumer, the Member for West Lambton showed the duty on a great many necessary articles to be as follows: oatmeal, 60 cents per 100 pounds; eggs, 5 cents per dozen; tea and coffee, 10 cents per pound; sweetened biscuits, 30 per cent; sago and tapioca, 27½ per cent.; fresh tomatoes, 30 per cent.; cleaned rice, 75 cents per 100 pounds; cheese, 5 cents per pound; butter, 4 cents per pound; beans, 25 cents per bushel; potatoes, 20 cents per bushel; peas, 15 cents per bushel, barley, 15 cents per bushel; wheat flour, 60 cents per barrel; macaroni, \$1.25 per 100 pounds; Paris green, 10 per cent.; sewing machines, 30 per cent.; cotton and linen thread, 25 per cent.; ready-made clothing, 35 per cent.; under-



The Fall Fair is an Important Factor in the Social and Industrial Life of the Community.

shirts, drawers, socks and stockings, 35 per cent.; velvet, velveteen, silk, velvet plush and silk fabrics, 30 per cent.; fabrics manufactured of silk, 37½ per cent.; needles and pins, 30 per cent.; lamps, 30 per cent.; lamp wicks, 25 per cent.; cotton and cotton fabrics, 20 to 32½ per cent.; boots and shoes, 25 per cent. plus 10 per cent. luxury tax; hats and caps, 30 per cent. plus luxury tax; woolen blankets, 35 per cent.; plain flannel blankets, 35 per cent. For some years there was a 35 per cent. duty, or \$350, on a \$1,000 automobile, in addition to a war tax of 7½ per cent. or \$75. This, plus a 10 per cent. luxury tax, would bring the final cost of the auto to \$1,567.50. To-day, according to Mr. Pardee, there is really not one per cent. of a luxury tax on autos, because under the excise luxury tax, as levied by the present Budget, of 15 per cent. an auto costs \$1,000 plus the duty \$350, luxury tax \$202.50, or a total of \$1,552.50. Dealing with the textile industry, the speaker showed that the woolen textile industry had not been touched by the new tariff and enjoyed the protection of from 3 cents per pound to 30 per cent. It operates seventy-five mills and employs 5,019 persons at an average wage of \$624.04. The capital invested is \$19,268,202, and its net profit was \$3,578,318, or 18.41 per cent. The hosiery and knit goods industry employed 13,000 persons at an average wage of \$516.32 per year in 1918. It had a capital invested of \$31,092,866, with a net profit of \$7,709,246, or 24.7 per cent. The cotton textile industry operated twenty-six plants and employed

16,004 persons, at an average wage of \$538.23. It had a net profit of \$8,406,062, or 25.8 per cent., after enjoying a protection of 35 per cent. "In Great Britain," said Mr. Pardee, "there is a tax on wealth, a tax on property, a tax on all those places where you find wealth. In Canada you have a tax on people, you have a tax on food, clothes and comforts; you have a tax on the man and his family. It is not the way to get people to come to our shores."

Holsteins Bring Good Prices at Seaforth.

The dispersion sale of Holsteins, held by John A. Archibald, at his farm near Seaforth, on Thursday, May 27, was a decided success. In all there are some 33 head catalogued, which number included a half dozen young calves, and the total receipts received for the herd amounted to \$7,245. Twenty-seven cows and heifers, which number included five heifers under the year, made an average of \$248, with the top price being \$500, paid by Chris. Schrog, of Zurich, for the two-year-old heifer K. S. A. C. of Angeline De Kol. This heifer was a daughter of King Segis Alcartra Calamity and Witzzyde Evangeline De Kol, the latter being a 31-lb-cow sired by Witzzyde Roger Mechthilde. A few-days-old calf from the top-priced heifer also sold to Mr. Schrog at \$105. While the general average for the day was good, there were several excellent bargains in the way of fresh cows, but in every case their calves sold for well up to \$100 each, which would help the average considerably if they were taken as one lot. The weather was fine and there was a good crowd present, many breeders having come from all parts of Western Ontario, and several from counties east of Toronto. Following is a list of the animals sold for \$100 and over, together with the names and addresses of the purchasers:

K. S. A. C. Evangeline De Kol, Chris Schrog, Zurich	\$500
Bull calf, Chris. Schrog	105
Cherry Grove Lulu, Robt. Thompson, St. Paul	280
Heimke Mercena Faforit, Frank Fame, Stratford	260
Countess Calamity Korndyke, W. Williamson, Brownsville	290
Lillian De Kol Queen, Percy Sparling, Cromarty	250
Cherry Schuiling, Geo. Sexton, Scarborough	320
Duchess Johanna Lyons, W. Williamson	250
Johanna Korndyke Inka, W. Williamson	180
Beauty Pietertje Posch, Geo. Dawson, Etobicoke	210
Rosemaid of Annfield, W. Williamson	270
Jewel Mercedes Johanna, Jasper Pridham, Cromarty	395
Fairmont Lady Alcartra, Wm. Steinacher, Stratford	260
Blanch De Kol Pontiac, Dan Dew, Hensall	235
Heifer calf, Andrew Steinacher, Stratford	100
Jenny Hartog, Wm. R. Archibald, Seaforth	300
Calvert Queen, W. S. Shearer, Listowel	300
Ianthe Mechthilde Korndyke, Carl Smith, Arkona	190
Korndyke Alice Segis, Frank Fame	210
Zetta Burke Creamelle, Orville Cann, Exeter	185
Princess May Hengerveld, W. Williamson	230
Huron Cherry Snowball, Archie Muir, Scarborough Jct.	190
Huron Cherry Dutchland, Archie Muir	205
Lady Jane Dewdrop, Wm. Steinacher	300
Mantel Calamity De Kol, Archie Muir	300
Nora Lyons, Percy J. Parsons, Staffa	235

Milk Commission Named.

It has been announced by the Honorable Manning Doherty, Minister of Agriculture for Ontario, that a commission to investigate and report periodically on the cost of milk production has been appointed. The members of this commission are: E. S. Archibald, Director, Dominion Experimental Farms, Ottawa; A. Leitch, Director of Farm Surveys, O. A. C., Guelph; R. L. Hicks, Newtonbrook, representing the producer; Thos. Bradshaw, formerly Finance Commissioner for the City of Toronto, representing the consumer, and Charles McNaught, City Dairy, Toronto, representing the distributor. It is understood that the commission will be permanent and will act without remuneration, making reports possibly three times a year, say September 1, January 1 and April 1, as to the cost of producing and distributing milk in various districts of the Province.

Retail Cheese Price De-Controlled.

It is announced that a cablegram has been received from the British Ministry of Food by the Federal Minister of Agriculture, as follows: "Maximum retail prices for privately imported cheese have now been withdrawn. Government cheese still governed by a maximum retail price of 1 shilling and 8 pence (40 cents) to the pound." The interpretation placed upon this cablegram is that Canadian cheese may be sold in England at any price offered by the open market. We understand that the only Government cheese now coming to the market is the New Zealand cheese and some stocks of Canadian cheese of the season of 1919 still held by the British Ministry of Food. In view of this final lifting of control on Canadian cheese, it is thought by some factory salesmen that cheese should not drop below 28 cents this season.

Toronto, Montreal, Buffalo, and Other Leading Markets

Week Ending May 27.

Receipts and Market Tops.

Dominion Department of Agriculture, Live Stock Branch, Markets Intelligence Division

Table with columns for Receipts, CATTLE (Top Price Good Steers), CALVES (Top Price Good Calves), HOGS (Top Price Selects), and SHEEP (Top Price Good Lambs). Rows list cities: Toronto (U. S. Y.), Montreal (Pt. St. Chas.), Montreal (East End), Winnipeg, Calgary, and Edmonton.

Market Comments.

Toronto (Union Stock Yards.)

Cattle receipts were a trifle light during the week; as a result, prices developed a stronger tendency and sales were made at the highest level of the season. On Monday 2,600 cattle were on sale and under brisk trading values appreciated by 25 cents per hundred. On Tuesday the market was quiet but was again active on Wednesday when a further accession in values occurred, handy-weight butchers being the most favored grade. The market closed with a steady undertone on Thursday. Quality was on the whole exceptionally good, many choice cattle being on sale. Reports from country points indicate that the number of stall-fed cattle to be marketed is being reduced to a narrow volume and as a result values are likely to be maintained at a high level for the next three weeks or until such time as grass cattle start to move in liberal numbers. The offering of heavy steers included a few choice individuals and one choice steer weighing 1,510 pounds sold at \$16.50, the top of the week's market. Three head averaging 1,260 pounds each sold at \$16.25, while a straight load of 17 head averaging 1,410 pounds sold at \$15.00; the majority of the 1,200-pound steers and upward moved from \$14.75 to \$15.50. Steers from 1,000 to 1,200 pounds were represented by many choice loads and while a few individuals sold up to \$16 and \$16.25, one of the best loads on sale averaging 1,100 pounds, went to the scales at \$15.60, while several loads of about equal weight sold at \$15.25. Most of the sales in this class made from \$14 to \$15, several hundred cattle moving within that range. Steers and heifers under 1,000 pounds in weight included many of baby-beef quality and these sold generally from \$15.50 to \$16, with a few at \$16.25 and 12 very smooth cattle which averaged 750 pounds at \$15.75. Butcher quality sold mostly from \$13.75 to \$14.75, but sales at \$15 and \$15.25 were not unusual, three head averaging 980 pounds realizing the latter price; a load averaging 950 pounds sold at \$14.80 and several loads of about equal weight at \$14.50 per hundred. Cows and bulls had an equally good movement as steers and one choice cow which weighed 1,530 pounds sold at \$14.50, while several sales were made from \$13.50 to \$13.75; the range for most of the sales of good cows was, however, from \$11.50 to \$13. Good bulls sold up to \$12.75, and very smooth bulls 25 cents to 50 cents additional; medium quality in both grades sold from \$9 to \$11 per hundred. High cost is retarding trade in stockers and feeders and dealers report a very slow inquiry as farmers and graziers are rather skeptical about laying in cattle at the present high values. Any sales made were from \$12 to \$13.50 per hundred with stockers from \$11 to \$12. There was some demand for milch cows and a few sales were made from \$130 to \$170 each with medium quality from \$80 to \$125. The calf market was very dull and values were at the lowest level of the season. A few choice calves sold up to \$18, several sales were made at \$17, but most of the calves moved from

Table with columns for Classification, No., Avge. Price, Price Range Bulk Sales, Top Price, and MONTREAL (Pt. St. Charles) Avge. Price, Price Range Bulk Sales, Top Price. Rows list various stock types: STEERS, HEIFERS, COWS, BULLS, CANNERS & CUTTERS, OXEN, CALVES, STOCKERS, FEEDERS, HOGS, LAMBS, SHEEP.

\$12 to \$15.50 per hundred. Buffalo speculators were operating and were a factor in maintaining quotations at present levels. The sheep trade is much easier and values generally \$2 per hundred lower. Spring lambs are selling from \$8 to \$15 each, a few at \$18 per hundred, yearlings up to \$15, and ewes from \$8 to \$13 for unclipped, with well-clipped sheep two to three dollars less. The hog trade was about steady with that of the previous week. On Monday and Tuesday, hogs sold from \$20.25 to \$20.50 per hundred, but on Wednesday and Thursday hogs moved from \$20 to \$20.25. Packers contend that they cannot cater to the overseas demand at present values and local consumption alone is responsible for maintaining values at present levels. The total receipts from January 1 to May 20, inclusive, were: 114,718 cattle, 35,622 calves, 136,062 hogs and 17,408 sheep; compared with 122,431 cattle, 25,248 calves, 142,957 hogs and 27,812 sheep, received during the corresponding period of 1919.

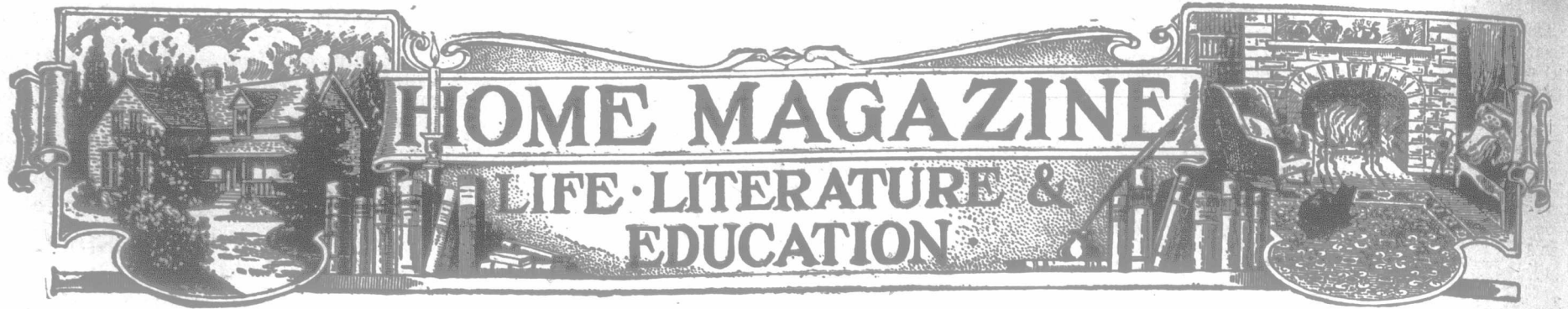
Montreal.

While the market for the week was reported as being lower on a quality basis, sales prices were practically similar to

those prevailing during the previous week. Cattle from the Toronto market and points in Western Ontario sold from \$14 to \$16.10 per hundred on choice heifers and steers, while from \$12 to \$13 was paid for good bulls and \$11 to \$13 for respectable cows; these cattle were all of beef breeding and fat. Steers from Eastern Ontario and the Eastern Townships of Quebec sold up to \$14.25, and good cows and bulls from \$10.50 to \$12. Cattle from points East of Quebec brought generally around \$10 for good bulls and up to \$11.50 for oxen. Strippers in fair flesh sold around \$9 to \$9.50, and plain thin cows around \$8. Canners and cutters moved from \$5 to \$7. The calf market was lower by \$1 and \$1.50 per hundred. A few choice milk-fed calves from the Huntingdon district brought up to \$14. Straight car lots of good calves were sold up to \$13.50; straight loads of medium quality from \$11 to \$12 per hundred and thin poorly fed calves down to \$8. During the week Veterinary Inspectors held all calves of immature quality arriving at the yards or plants; any held calves that did not pass post mortem inspection were confiscated according to regulation. There was a considerable increase in the volume of spring lambs arriving throughout the week. Lambs of light

weight and poor quality are becoming more difficult to dispose of. Prices ranged generally from \$8 to \$12 per head. The top for clipped sheep was \$12. Some very thin old sheep were offered and these were slow sellers at \$8 or under. Butchers paid \$21.25 off cars for select hogs of medium to light weights. Packers paid \$20.50 off cars for mixed lots of hogs principally from the East. Sows were in most cases priced \$4 less than selects. Some sows, however, brought \$18. Stags were \$7 less than selects. The total receipts from January 1 to May 20, inclusive, were: 11,193 cattle, 27,717 calves, 22,982 hogs and 5,577 sheep; compared with 12,923 cattle, 29,633 calves, 26,523 hogs and 6,120 sheep, received during the corresponding period of 1919. EAST END.—The total receipts from January 1 to May 20, inclusive, were: 12,806 cattle, 24,009 calves, 15,408 hogs and 4,594 sheep; compared with 15,006 cattle, 21,148 calves, 14,553 hogs and 6,451 sheep, received during the corresponding period of 1919. Winnipeg. The receipts of live stock for the week were eleven hundred and seventy-one cattle, three hundred and fifty-two calves, seventy-seven sheep and twenty-eight

JUNE 3, 19... hundred and receipts show... Nothing was for the week... Arrivals of and scarcely requirements... Monday was end trading on Tuesday... fifty head of quality butch strength and from 75 cent close of the handy-weight selling class, freely at firm grades of but and cutters while the of Choice stocker from \$9.50 to changed hand common going Good feeder to \$11.75 with... Dressed H hogs have no and prices ho per lb. for city Poultry.— and trading stock. There this, Turkey and chickens Potatoes.— reported paid time but car were available lbs., while r Sales were be prices, ex-sto dealers find th position. Maple Proo syrup and sug a steady tra changed price of syrup, and sugar. Eggs.—As t quality of e not overly la being 57c. pe 54c. for No. Butter.—T shows a dec the increase grass goods Pasteurized c finest cream creamery, 52 being done boards in Q cleared durin fractionally o Grain.—Th was firmer a Western were No. 2 feed tough feed an Millfeed.— place in mix shorts being flour the pric in each insta cash. Baled Hay. steady, with to \$32 per to and clover an to \$28, ex-tra Hides and a general dec and steer an 24c. per lb., bu to 35c. and lambs were s clips, 50c. an Horsehides w Vic Following v Bonds on the May 29: Vic 98 to 99; Vic



Song.

"Blows the wind to-day, and the sun and
the rain are flying.
Blows the wind on the moor, to-day and
now,
Where about the graves of the martyrs
the whaups are crying,
My heart remembers how.

"Gray recumbent stones of the dead in
desert places,
Standing stones on the vacant wine-red
moor,
Hills of sheep, and homes of the silent
vanished races,
And winds austere and pure.

"Be it granted me to behold you again
in dying,
Hills of home, and to hear again the
call,
Hear about the graves of the martyrs
the peewits crying,
And hear no more at all."
—ROBERT LOUIS STEVENSON.

More About "Tusitala"— Teller of Tales.

PERHAPS it was Raymond Knister's article on "R. L. S." that put us in the mood of it. At all events no apology seems necessary in continuing the story of the well-beloved "Tusitala"—teller of tales. And in this place it appears well to begin at the beginning.

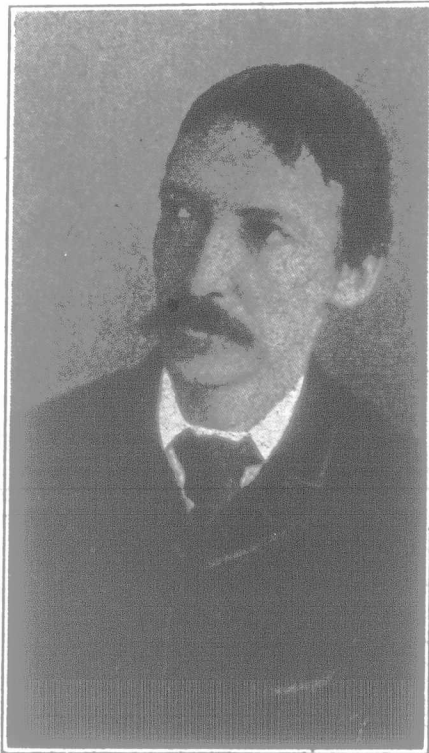
It seems strange that in a family noted entirely for eminence in one line of endeavor should appear a member or two endowed with an absolutely different sort of genius, yet this not infrequently happens. It happened in the case of Robert Louis Stevenson. His father, Thomas Stevenson, was a distinguished civil engineer, a builder of lighthouses, who, in turn, was the son of the still more distinguished Robert Stevenson, builder of the famous Bell Rock lighthouse. His mother was Margaret Balfour, and on her side of the house, also, was mathematical talent. Yet from the midst of all this prowess in calculus and mechanics sprang Robert Louis, writer, lover of romance, dreamer of dreams, and his not more practical cousin, R. A. M. Stevenson, artist, writer and critic.

Robert Louis was born at Edinburgh on the 13th of November 1850. From infancy he was sickly, and his education was continually interrupted, not at all to his displeasure, for he liked much better to roam along the "heathy Pentlands" and the shores of Forth, near his father's summer home, than to bend over books in the classroom. Indeed very often he played truant, but he could scarcely be called an idler since, even when a very small lad, he was wont to carry a notebook in his pocket in which to jot down bits of description, or fragments of the conversation of old seamen mending nets by the sea. Even then, though all unconscious of it, the urge of authorship was upon him.

From the ages of 13 to 17 he spent much time travelling for his health in the south of England and abroad, especially in France where he found happy hunting grounds for his sunny spirit. And during these restless days he grew up into a tall, slight youth with a sallow skin, burning black eyes, and hair oblong and straight as that of an Indian. Lang the artist, who met him later at Barbizon gave the following description of him, in the jerky manner of speech said to have been peculiar to that artist and critic.

"Montone, Promenade. Saw him coming. Didn't like him. Long cape. Long hair. Queer hat. Damned queer.

Hands: white, bony, beautiful. Didn't like the cape. Didn't like the hair. Looked like a damned aesthete. Never liked aesthetes. Can't stand them. Talked well. Saw that. Still seemed another aesthete Colvin had discovered. Didn't like him at all. . . Later—Oh,



R. L. S.

yes—but I needn't tell you that. Didn't like him at first. Took time."

Stevenson's father, like the fathers of nearly all literary celebrities, saw with no approving eye his son's absorption in literature. He failed to see the keen

study of human life that went with it. He failed to see the possibilities of the tendencies wrapped up beneath that apparent disregard of the practical. He wanted his son to be an engineer like himself, and it was characteristic of "R. L. S." that at first he tried to gratify that desire; from 1867 to 1871 he took up engineering at Edinburg University, but in spite of himself was more engrossed with historic and imaginative literature than with measurements and calculations. The usual pleadings and disputes followed. Upon one occasion the youth wrote:

"It is awful how slowly I draw and how ill. . . When I'm drawing I find out something I have not measured, have not noted, or, having noted, cannot find; and so I have to trudge to the pier again ere I can go further with my noble design."

In another letter (to a friend) he wrote of one of the altercations:

"We have had an awful scene. All that my father had to say has been put forth—not that it was anything new; only it is the devil to hear. I don't know what to do—the world goes hopelessly round about me; there is no more possibility of doing, living, being anything but a beast, and there is the end of it."

—It's the old story of the effort of an unimaginative parent to do what he considers best for his child, failing to see, as sometimes happens, that it is impossible satisfactorily to force a square peg into a round hole.

The upshot of it all was that in 1871 Robert Louis abandoned engineering and began to study law—with no greater success. Also his revolt against conventionality widened the breach, which was never fully bridged. There came a day when the eyes of the older man

were opened, but "R. L. S." was then far away, and he never met his father again. The manner of the awakening was as follows: Among those who had been associated with the father was the distinguished Scotch scientist, James Dewar. The scene took place in Berwickshire, and Dewar, seeing with the detachment of not being a relative, took up the cudgels for the son's literary aspirations. Thus is told the story:

"At last, by way of ending the argument, he (Dewar) half-jocularly offered to wager that, in ten years from that moment, R. L. S. would be earning a bigger income than the old firm had ever commanded. To his surprise, the father became furious and repulsed all attempts at reconciliation. But six and a half years later, Mr. Stevenson broken in health, came to London to seek medical attention, and, although so feeble that he had to be lifted out of his cab, called at the Royal Institute to see the professor. He said: 'I am here to consult a doctor, but I couldn't be in London without coming to shake your hand and confess that you were right after a' about Louis?' The frail old frame shook with emotion, and he muttered, 'I ken this is my last visit to the south.' A few weeks later he was dead."

Formative Influences.

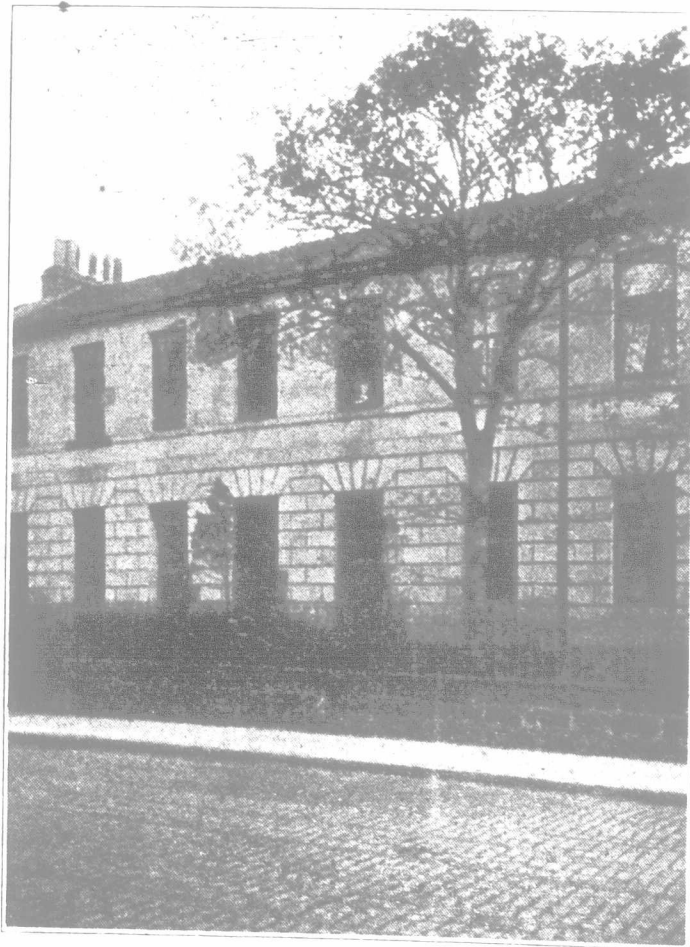
When he was about 25 years of age "R. L. S." fell under the formative influences which decided his choice of a career. It was then that he met Mr. Sidney Colvin, Mr. Leslie Stephen (head of the *Cornhill Magazine*) and W. E. Henley, the English poet. In that same year, also, his cousin, the "R. A. M. Stevenson" above mentioned, introduced him, in France, to the artist colony at Barbizon. An immediate result of these influences and travels was the writing of *An Inland Voyage*, published in 1878, a series of short stories issued as the *New Arabian Nights*, *Will o' the Mill*, and *Travels With a Donkey*.

At Barbizon, also, the young writer met Mrs. Osbourne, whom he married at a later date, after spending a miserable winter of illness and poverty (1879-80) in San Francisco, whither he had followed her.

In 1880 with his bride he returned to Europe, and the date marks a turning of his fortunes but not of his health. Often he could work only 3 or 4 hours a day, but the amount he accomplished in that time was prodigious. In 1881 the collected essays known as *Virginibus Puerisque* were published. In the same year (1881) he wrote the Scotch story *Thrawn Janet*. Then in 1882 appeared *Treasure Island*, which met with immediate and universal recognition. It was followed by a book of essays *Familiar Studies of Men and Books*, and from this time "R. L. S." was known "not only as a writer of unquestioned originality and distinction, but as the head of a school and an influence in literature of profound import."

In the autumn of 1884 he and his wife, who proved to be an excellent nurse of his works as well as an excellent nurse for his disease-racked body, settled at Bourne-mouth where they stayed until the summer of 1887. Here were written *Prince Otto*, the well-known *Child's Garden of Verse*, and that most original conception, *The Strange Story of Dr. Jekyll and Mr. Hyde*. Also, during this time, he collaborated with Henley in writing some dramas, which were not very successful.

R. L. S. had, however, found his literary feet. He now knew that Romance must be his chief *metier*, and with the discovery came the writing of those books upon which his fame is chiefly based: *Kidnapped* (1886), *The Master of Ballantrae* (1889), *David Balfour* or *Catrina* (1893).



No. 8, Howard Place, Edinburgh
Where Stevenson was born on November 13th, 1850.

Across the Ocean Again.

Tuberculosis, that insidious foe, even of genius, which sometimes it seems to nurse, again forced him to a new dwelling-place. From Bournemouth he went once more across the ocean, and settled for a time at Lake Saranac in the Adirondacks. "America," he wrote home "is a fine place to eat in and a great place for kindness, but Lord, what a silly thing is popularity! I envy the cool obscurity of Skerryvore."—He had looked his last upon Skerryvore.

About this time his volume of poems *Underwoods* was published, also some volumes of short stories.

Hunted from place to place by the search for health he went, in 1888 to Samoa, that balmy spot in the mid-Pacific which has since been chiefly known because of his name. Here the family settled at "Vailima," the henceforth famous estate with its rambling dark green, red-roofed house part way up the shaggy side of Mount Vaea. "My house is a great place," he wrote to a friend. "We have a hall fifty feet long with a great redwood stair ascending from it where we dine in state." Of its outside aspect: "The house is in the midst of great, silent forests. There is a burn close by and when we are not talking you can hear the burn, and the birds, and the sea breaking on the coast three miles away and six hundred feet below us."

Here for the next six years Stevenson was the leading white citizen of the island and his home the center of its social life—the center, indeed, to which pilgrims turned their faces from many parts of the world, for tourists and admirers held their visit to the Hawaiian islands incomplete without a glimpse of "R. L. S.," the beloved, not only because of his writings, but also because of the wonderful charm of personality (upon which Mr. Knister dwelt in last week's article) which shone through them and irradiated every place in which he chanced to be.

To the natives he soon became almost an idol. They called him affectionately "Tusitala," which means "teller of tales." Of their devotion many stories have come down the years. One is told in Mrs. Strong's (his stepdaughter) *Memories of Vailima*. "One day the cook disappeared, and Stevenson asked Sosimo, his native servant, to bring him up for lunch some bread and cheese. Sosimo appeared with a perfect salad, omelet and coffee.

"Who cooked this?" his master asked, in surprise.

"I did," answered Sosimo.

"Well," he said, "great is your wisdom."

Sosimo bowed, but gravely corrected him:

"Great is my love."

During his six years at Samoa Stevenson wrote constantly,—stories of life in the islands, *The Wrecker* (1892) and *St. Quix*, but never again did he achieve work equal to that written before his departure from Europe, with the solitary exception of *The Weir of Hermiston*—a brief flare of genius before his death, which came at Vailima on the 3rd of December, 1894.

Some time before that sad day he wrote to his friend, S. R. Crockett the writer: "I shall never set my foot again upon the heather. I shall never walk by the Fisher's Tryst and Glencorse. Here I am until I die." Two days before the end he wrote to Edmund Gosse an acknowledgement of the dedication of a volume of poems to him: "May you write many more books as good as this one—only there's one thing impossible you can never write another dedication that will give the same pleasure to the vanished Tusitala."

He had wished to be buried on the summit of Mount Vaea, and when his body lay in state at Vailima, with the big Union Jack which had floated over the house thrown over it, the sorrowing natives hewed a road through the underbrush to the summit. It was the Samoans also who carried him to his last resting place, bearing the coffin shoulder high, and joining as they went in the refrain of a dirge improvised by one of the chiefs:

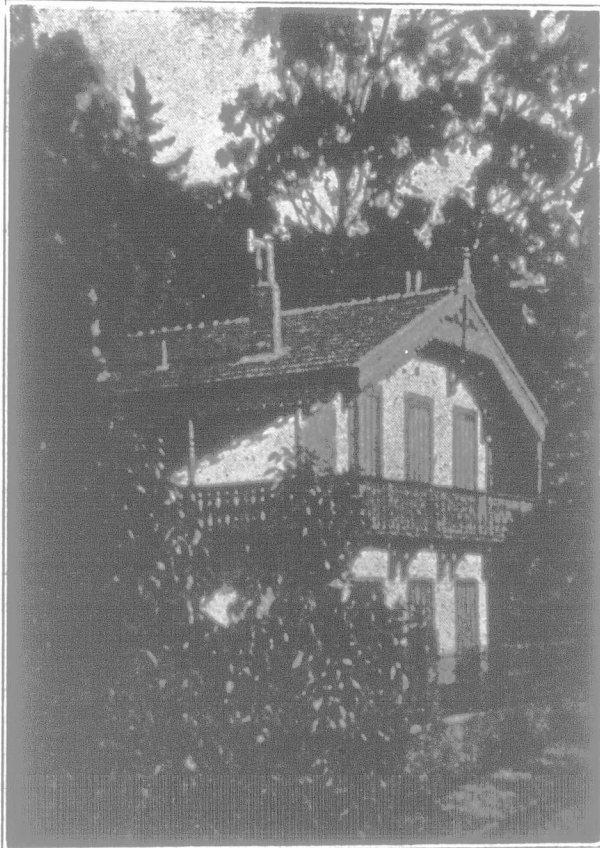
"Groan and weep, my heart in its sorrow:
Alas for Tusitala, who sleeps in the forest!"

His Philosophy and the Quality of His Work.

Someone has said of "R. L. S.," "His was a world of Romance, of Sunny

Skies." Nevertheless his philosophy was that of a man of exceptional strength of character—the strength that can smile through almost ceaseless suffering, the strength that clings to high ideals in the face of every backset. Once he wrote a prayer: "GIVE US TO AWAKE WITH SMILES. GIVE US TO LABOR SMILING. AS THE SUN LIGHTENS THE WORLD, SO LET OUR LOVING KINDNESS MAKE BRIGHT THE HOUSE OF OUR HABITATION." And again: "When the day returns to us, call us up, eager to be happy, if happiness be our portion, and if the day be marked for sorrow strong to endure it." As one critic has written of him: "This wounded soldier did not merely refrain from groans; he gave forth instead a war song so juvenile and inspiring that thousands of

in his works. He was one of the few writers who found it possible to write a good story with love between the sexes omitted. Towards the close of his life he wrote: "I have never pleased myself with any women of mine." It is in his stories of Scotland that he has been, perhaps, at his best. Stevenson himself was always a great admirer of Sir Walter Scott's work. At ten he read *Rob Roy* and years later he said, "When I think of that novel I am impatient with all others; they seem but shadows and impostors;" yet, says Neil Munro, "there are few Highlanders who would not, so far as purely Highland features are concerned, prefer the adventures of David Balfour to those of *Waverley* or *Rob Roy*."



"Chalet la Solitude," Hyeres, France.

In this house Stevenson lived during 1883. Despite his apparent joyousness he wrote, towards the close of his life, "I was only happy once, that was at Hyeres."

men without a scar went back into the battle."—And what better work can any man do than that in the great battle of life?

Stevenson held an unswerving belief in the ultimate goodness of all things. "There grows more and more upon me," he said, "that belief in the kindness of this scheme of things," and perhaps it was that conviction that lent such un-failing buoyancy to his work. In his stories he wrote best of the romance of boyhood and young manhood. He was not especially happy in his delineation of women, indeed, with the exception of Catriona (who is really delightful) they are given but little attention, and, possibly as a consequence, "the gentle passion" plays but a subordinate part

in his works. He was one of the few writers who found it possible to write a good story with love between the sexes omitted. Towards the close of his life he wrote: "I have never pleased myself with any women of mine." It is in his stories of Scotland that he has been, perhaps, at his best. Stevenson himself was always a great admirer of Sir Walter Scott's work. At ten he read *Rob Roy* and years later he said, "When I think of that novel I am impatient with all others; they seem but shadows and impostors;" yet, says Neil Munro, "there are few Highlanders who would not, so far as purely Highland features are concerned, prefer the adventures of David Balfour to those of *Waverley* or *Rob Roy*."

It is as a story teller that Stevenson is best remembered, and yet his books of essays are by no means to be passed over. As a critic has said: "Stevenson as an essayist stands apart in virtue of his refined and subtle psychology."

Since his death a vast amount of literature—"Stevensoniana"—has grown up about his memory. Among those volumes that may be recommended to those who would read further are: *On the Trail of Stevenson*, by Clayton Hamilton; *Memories of Vailima*, by Mrs. Strong; *R. L. Stevenson*, by Prof. W. Raleigh; *Life of Stevenson*, by Mr. Graham Balfour; and *The Letters of Robert Louis Stevenson*, edited by Sidney Colvin. The book last mentioned gives



Stevenson's Residence at Vailima, Samoa.

intimate glimpses of the man himself, outside of his art. And yet his art and he were one. Artist as he was to the fingertips, nothing that he wrote could be other than an expression of himself.

[NOTE.—Since the last words of the above were written the latest book-reviews have come in, featuring another addition to the mass of literature about Stevenson, viz.: *A Book of R. L. S.*, by George E. Brown, Published by Charles Scribner's Sons, New York.]

Your Health.

"MEDICUS."

High Blood Pressure.

HIGH blood pressure, like a flying machine, is an expensive luxury and often hard to control. It has the result of hardening of the walls of the arteries (arterio sclerosis). You and I are born with blood-vessels that have a lot of rubber in their walls. They are elastic; they expand and contract with every beat of the heart. Then comes a time when lime is deposited among the strands of rubber, and the elasticity is lessened. As a result the heart has to contract or beat harder or more forcibly to keep the blood circulating properly. It is similar to pumping water into a rubber hose, then as the hose wears out we wind it with iron wire. If you have to work the pump you will know it is easier when you have an elastic rubber hose than it is later when the hose has been made stiff by the iron wire. So it is with the heart. When the arteries lose their elasticity and become hard and stiff, the heart has to work harder. Then if some extra strain is thrown on the circulation, the extra hard beats of the heart may cause the arteries to break and a hemorrhage results. If it is in the brain, the patient has a stroke. A hemorrhage in the back of the eye may cause blindness. Some patients with hardened arteries and high blood pressure have persistent nose-bleeds and feel better afterwards because the bleeding relieved the pressure temporarily.

Causes.—Some of us are born with more elastic in our arteries than others. They belong to the "long-lived" people. Syphilis and alcohol are two common causes of hardened arteries—arterio sclerosis. Hard work may be a cause, but, again, others say hard work never killed anybody. Worry has a deleterious influence on the heart and blood vessels and may account for the marked prevalence of this disease. Another important cause, in my opinion, is the excessive consumption of meat. This generation has eaten more meat than any other generation in the world's history. The hired man has that fallacy inborn—he has to have meat three times a day if he is to do hard work. (A dog fed on nothing but meat soon dies). The hired man should have an excess of carbohydrates and fats. Of course meat is tasty—everybody likes it. It is handy for the cook. She can make so many appetizing dishes with meat. "If you haven't meat for breakfast or supper you don't seem to have anything to eat." Adults should not eat meat more than once a day.

Treatment.—Once lime is deposited in your arteries you can't get rid of it. The one thing you must do is to not throw too great a burden on your heart. If running makes you short of breath, don't run. If you find that any particular work or exercise makes you "puff", avoid it. If you will follow this simple rule, you should outlive your arterio sclerosis. Avoid meat. Not more than once a day. Oatmeal porridge at least once a day has been proven to be of great value in the treatment. In fact if we used more porridge and less meat there would be less high blood pressure.

Conclusions.

1. We inherit the rubber in our arteries, some more than others, and so some live longer than others.
2. Prevention, by leading a sane life with no great excesses of work or worry. Avoiding alcohol and syphilis.
3. Diet: Oatmeal porridge is one of the best foods to prevent the development and stay the progress of high blood pressure. Meat not more than once a day.
4. Shortness of breath is the best indication that you have reached the limit of endurance for your heart.
5. If you have a high blood pressure ask your family doctor to examine your

urine carefully to make sure there is no kidney complication.

Hives.

Mrs. J. M., Wellington Co., Ont.: "I have a daughter 17 years of age who is the picture of health to look at. Two years ago, in July, we had very hot weather and her hands commenced to swell, and a few days later her face did, and she broke out with 'hives.' Now if she gets slightly heated her fingers begin to swell and when she gets cooled down the swelling goes down."

Ans.—The most likely cause of the swelling and burning is "food anaphylaxis." Certain foods, e.g., strawberries, salmon, cause "hives" and rashes that are extremely itchy. It is unusual to have much swelling of the skin except where the blotch is. Whenever your daughter eats this certain food, irrespective of the weather, she will have a recurrence. Your problem is to find out the particular article of diet that causes the trouble. You would almost need to have the help of the family doctor.

During an attack ordinary baking soda—one-fourth teaspoonful four times a day, will relieve the itching greatly. Externally apply talcum powder freely. If the itching is intense a few drops of carbolic acid in a pint of real hot water used on cloths will be very acceptable to the patient. Then when the skin is dried apply talcum powder.

Constipated Baby.

Mrs. G. T., Elgin Co., Ont. "My baby, which is 11 months old has suffered from birth from constipation. Has been a bottle-fed baby since about 4 months of age. Am feeding Borden's condensed milk with barley water, also a little well-cooked oatmeal strained into it, and a small crust three times a day. Have tried orange juice with no results. Am now using prunes, sometimes getting little results, sometimes not any. Have had to give enema almost every morning; if I let go until next day she screams terribly when I give enema. I am told it will become a habit if continued. I can get a free movement by using Phillips' Milk of Magnesia, but do not want to do this if Nature will do its own work. Also what is the cause of offensive water? Weight of baby is 20 lbs.

Ans.—At 11 months of age your baby should be able to take whole milk, pasteurized. So stop the condensed milk. Sugar added to the drink will cause the bowels to move. You can give ordinary sugar, 2 tablespoonfuls, during the day in divided doses; or, better yet, boil a salt sack filled with flour for 4 hours. Remove the crust. Dry the core in the oven. Grate it down and give 2 tablespoonfuls during the day in the feed. I think your baby is getting too much fat in the milk. Skim the milk. If the bowels move too freely reduce the amount of sugar. Be sure and feed her orange juice, or, better yet, one or two tablespoonfuls of tomato juice (canned tomatoes). At her age she should be able to take some additional food, crust of bread white of poached egg, strained vegetable soup, rind of bacon. Make a record of her weight every 2 weeks on the calendar, and send me the record. It may be necessary to use the Milk of Magnesia for a short time, but you should be able to cure your girl by diet alone. Give her plenty of water four or six times a day.

Hope's Quiet Hour.

Care Not For It.

Wast thou called being a bondservant? Care not for it.—I Cor. VII 21 (R. V.).
If you were busy being kind,
Before you knew it you would find
You'd soon forget to think 'twas true
That someone was unkind to you.
If you were busy being glad,
And cheering people who are sad,
Although your heart might ache a bit,
You'd soon forget to notice it.
If you were busy being true
To what you knew you ought to do,
You'd be so busy you'd forget
The blunders of the folk you've met.
If you were busy being right,
You'd find yourself too busy, quite,
To criticize your neighbor long
Because he's busy being wrong.
—Rebecca Foresman.

St. Paul's counsel to slaves who had accepted Christ as their Master was "Care not for it!" He seemed to think that the humiliation of being a slave was a trifle, not worth considering. One who is scorned by an earthly master has the joy of knowing that he is "the Lord's freeman"—the friend and brother of the King of Kings.

What a lot of misery we make for ourselves by caring more for the world's opinion than for the judgment of God. Sometimes it is the fashion to wear old clothes (or overalls) but how many women have lost their peace and joy because their clothes were shabby or a year or two behind the fashion!

Can you imagine a man as great in spirit as St. Paul spoiling the happiness of one glad hour because his Sunday robes

margin). Around us we see the great cloud of witness (the heroes of the faith mentioned in the 11th chapter) and before us is our Great Example, "Who for the joy that was set before Him endured the cross, despising the shame."

During the war many women felt that nothing else mattered if only their "men" came back safely. Yet many of them have forgotten the joy of re-union by this time, and are fretting about the price of sugar, or lamenting over a broken cup, or the weather, and spoiling their lives by short views. Why should we concentrate our attention in a dreary foreground to life's picture, when we might look up to the sky and the glorious stars? Why should we magnify small troubles, when we are the children of God and sure of His love?

entering the literary field. He promptly replied: "Postage stamps." She could never succeed, in that or any other worthy profession, unless she was brave enough to try and try again when her manuscripts were returned. One who cares overmuch about a failure or a rebuff will never "make good." Your first attempt seems to have been an utter failure. "Care not for it!" Don't waste the precious hours in doleful complaining. Don't make yourself and your friends miserable over a passing disappointment. The War would never have been won if our soldiers had lost heart whenever they were forced to retreat. Those who saw sad processions of refugees; driven from their homes in Belgium and France, were often astonished to see the useless things those distracted people were trying to save.

"Here was an old man with an alarmclock; there an aged woman with an empty bird-cage. A boy carried half a dozen saucepans. . . . Quite a lot of them clutched a bundle of old umbrellas" wrote one pitying observer.

Perhaps the great cloud of witnesses watching our life-race, is marvelling as much at the things we clutch as treasures. The women who struggle and sin in order to be able to hang diamonds in their ears and cover their necks with expensive jewelry! The men who spend all the best years of their life in a frantic attempt to add another, and yet another, figure to their bank account! The woman who pays out her most priceless possession for the empty satisfaction of a title and a grand house! Are these possessions worth the price?

There are some things we should care about, — and care tremendously! but there is a sad waste of time and opportunity in this life, because we are apt to care for

the wrong things.

Many a broken friendship has resulted from pride and vanity. When the first trouble arose a word or two of explanation would have healed the little wound. But both parties cared too much for their own dignity (or what they called "self-respect") to make the first advances. Each thought that to "speak first" would be to acknowledge herself in the wrong, and so the little wound festered until it poisoned the springs of love in the heart.

If your self-love has been wounded, care not for it. It is a trifling matter compared with the great treasure of friendship. For the paste-jewel of pride shall we block the way to Christ? Dare we ask Him to forgive, "as we forgive," when we are allowing pride to trample on love?

Let us try to look at things through Christ's eyes. He thought love and service were immeasurably greater than earthly grandeur. A man was trying to cheer his dying friend, and said to him; "You may be mayor of the city yet." The answer was decided: "It is a very little thing to be mayor of the city." Many things for which men have sacrificed time and strength, yes—and even honor!—will be seen, in the revealing light of death, to be "very little." Why should we wait for death? The present time is ours to be used, and the years are slipping swiftly through our fingers. Are we piling up treasure on earth, only, or do we care infinitely more for truth and purity, love and service?

Where there's a will there's a way; and our desires will carry us steadily nearer to God or will anchor our hearts more firmly to earth.

A "bearer" on the battlefield was carrying a wounded man, when a German—who had been shot in both legs—spat at him. A comrade said indignantly: "I leave that fellow to me. I'll soon make him so he'll spit no more at all. The dog!" But the man who had been insulted said cheerfully: "No, let him alone till I come back; then I'll be even with him!"

His way of getting "even" was to carry him to the doctors to be cared for. The insult was a trifle, in his opinion, but the chance of saving a life,—the life of an enemy!—was not to be lightly thrown away. It was a challenge to be



Stevenson's Family and Household.

The group shows himself, his wife, his mother, Lloyd Osbourne (his stepson), Mrs. Strong, and the native servants.

were shabby? If he could have been so easily ruffled he would not have been a great man.

Because we are constantly being moulded by our daily desires, it is most important that we learn to care most for things that really matter. If, day after day, we set before us our aim the praise of men, we are sure to care less and less about winning the Great Master's "Well done!" Then—when the reward we have worked for so persistently has at last been won, and enjoyed to the full—death will open the door to the next part of our life. The things we have struggled for must be left behind.

Is it worth while straining every nerve to win things which perish in the using? Life is a great opportunity and we must not clog our steps by loading ourselves down with trash.

"Let us also," says the writer of the epistle to the Hebrews, "lay aside all cumbrance, and the sin that is admired of many, and let us run with patience the race that is set before us, looking into Jesus the Captain."—Heb. 12:2 (R. V.)



Stevenson's Tomb on the Summit of Mount Vaea, Samoa.

Two "k's", an "o", a "d" and an "a"

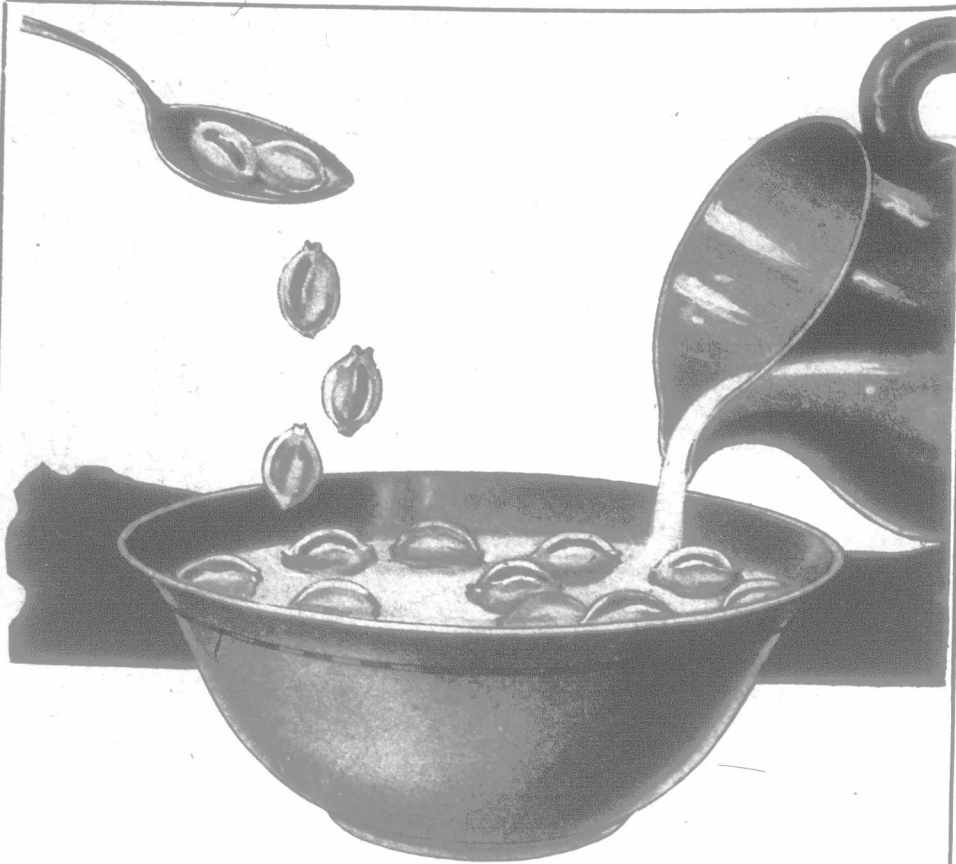
In 1888 when the above letters were first euphoniously assembled they meant nothing. To-day they mean protection for you in the purchase of photographic goods.

Arranged to spell "Kodak", they signify certain products of the Kodak Companies, such as Kodak Cameras, Kodak Tripods and Kodak Film Tanks.

Kodak is our registered and common law trade-mark and cannot be rightfully applied except to goods of our manufacture.

If it isn't an Eastman, it isn't a Kodak.

Canadian Kodak Co., Limited, Toronto, Canada



An Invention which has revolutionized July

Think how many new delights Prof. Anderson gave summer when he invented Puffed Grains.

The milk dish now has Puffed Wheat floating in it—thin, flimsy, toasted bubbles of whole wheat.

Breakfast brings the choice of two Puffed Grains, each with its own fascinations.

Puffed Rice now adds to berries what crust adds to a shortcake. Or a nut-like garnish to ice cream. And between meals hungry children get some Puffed Grain crisped and buttered.

Every day in summer, millions of people now enjoy these supreme food delights.



Now berries
Have Puffed Rice mixed in to form a delightful blend.



In afternoons
Children get Puffed Grains doused with melted butter to eat like confections.

But don't treat them like mere tidbits

These flaky, flavory bubble grains seem like food confections. But they are whole-grain foods, remember, and are scientific.

They are made by steam explosion. Every food cell is thus blasted so digestion is easy and complete.

They are the best-cooked cereals in existence—the only cereals so ideally fitted to digest.

They are all-hour foods. They make whole-grain foods tempting. Let children find them handy, morning, noon and night.



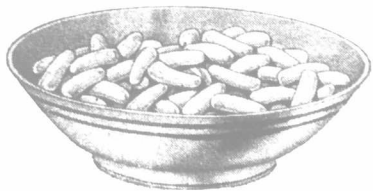
Now ice cream
Is garnished with these airy, nut-like bubbles.

Puffed Wheat

Puffed Rice

Both bubble grains
Puffed by steam explosion to 8 times normal size

The supreme morning dainties



Puffed Grains form the finest cereal dishes ever served at breakfast. No grain foods compare with them in texture or in taste. And never were grain foods so fitted to digest.

The Quaker Oats Company

Peterborough, Canada

Sole Makers

Saskatoon, Canada

3412

like Christ, and he chose the path of real greatness.

DORA FARNCOMB.

For the Sick and Needy.

I received, this week, a money order for thirty dollars, from Mr. Albert T. Half of this generous donation was for the Armenian Fund, and was at once sent to the Treasurer (Mr. D. A. Cameron, Bank of Commerce, Toronto.) The other fifteen dollars went into the Q. H. P., and a good slice has already gone out for the needy. Thanks!

DORA FARNCOMB,
6 West Ave., Toronto.

The Ingle Nook

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

In a little village in which I visited recently there are three churches—Presbyterian, Methodist and Anglican. The people who attend these churches are exactly the same kind of people; if you met them out anywhere and were not told what church they belonged to you could not guess—for the life of you, you could not! Moreover these people have exactly the same aims, religiously, viz. to live a good Christian life and go on after death as Christians expect to go. Nevertheless there are three rather sparse congregations, three struggling parsons doing the best they can to live on less money than many other men receive for similar services, and three sets of people who really find it a strain to keep up the three salaries and the three sets of running church expenses. . . . And the incongruity of the whole situation is aggravated by the fact that one of the whole three straggling congregations,—a bit tightly packed, perhaps, but what preacher is there who does not like to preach to a packed church? There is inspiration in numbers; as Emerson said, in a great audience all centered upon one great thought we rise "higher than we know."

The whole thing is illogical, unreasonable, inconvenient and extravagant. Nor is the situation isolated. It is duplicated in almost every village, town and city all over the country. Surely it is time that people stopped stumbling over hairs and mole-hills of paltry differences and gripped big issues! By uniting too, the people would be brought closer together, rivalries would cease, a more truly Christian spirit would arise, and united effort would produce more speedy and more effectual results.

Of course were all the churches in such places to unite at once there would be some inconvenience for a short time. A number of parsons would have to go further afield, a number of churches would be left vacant; but, after all, the rule really to be considered is "The greatest good to the greatest number." Before long the preachers would find a niche to fill, while a process of remodelling could easily transform the vacant churches into schools (consolidated or high), public libraries, hospitals, or community halls. It would not be difficult to remove the spires, square towers and other signs of ecclesiasticism.

Such an arrangement in the end must benefit both people and parsons, easing the burden of upkeep from the people, giving the parson more salary for comparatively little increase in work. Village preachers seldom receive enough salary to enable them to live as well as they should and educate a family of any size. The amount may, it is true, look large to a number of farmers who cannot see much actual cash for their own hard work during the year; but farmers seldom remember to estimate the value of the living they get off their farms. If that were suddenly cut away and, even with a parson's salary, they were obliged to buy every stick of wood they burned, every piece of meat they ate, every dozen of eggs and pound of butter, every quart of milk, every bushel of potatoes, perhaps practically every vegetable that appeared on their tables, they would speedily begin to understand.

I may be very stupid, but honestly I cannot see why church union needs be longer postponed. A few daring places in Canada have already "taken the leap" (is that slangy?) on their own account, and I have yet to hear that they have been sorry.

I heard a fairly good story yesterday: A desperate young woman who wanted to marry a man who seemed indifferent to her charms, sought a fortune-teller and asked for a philter, or at least for advice, that might help her to win his heart. The fortune-teller was a woman of wisdom. She listened attentively, considered, then wrote mysteriously on a paper, put it in an envelope, sealed the envelope and handed it to the young woman with the injunction that she was not to open it until she reached home.

In feverish haste the love-lorn maiden hastened on her way, flung open the door of the parental mansion and fled to her own room where, in sweet and quiet seclusion, she broke the seal of the mystic "charm." Here is what she read:

"Take a slice of thick, juicy beefsteak, rub it with a cut onion, sprinkle it with pepper and salt, then sear it on both sides very quickly on a very hot greased pan. When partly done add to the pan a few teaspoonfuls of finely minced celery. When done give it to your beloved and he will love you forever after."

Of course there are men who marry a dimple, or a curl, or a bewitching glance of the eye. But in that case—perhaps mother cooked the beefsteak.

Verily experience is the best teacher, and often it teaches us by our mistakes. We have had our troubles over finishing a floor. We got the materials all right—the filler, the second coat, the stain or "finishing varnish" for the top. But the latter was a disappointment. It "balked," as it were. It thickened up so fast as one worked that it "blobbed." It refused to be bland and agreeable. One felt that it was laughing at amateur efforts.

And, truly, afterwards we learned that *we*—and not the stain—were at fault. One friend told us that when applying the last coat one should go rapidly down one board at a time; combing the "finish" with an ordinary comb (better a wire comb) as one goes. Later another friend displayed a quite handsome floor and stated that it had been done as follows. After the filler and second coat had been applied and were thoroughly dry, a coat of burnt sienna powder mixed with water and vinegar was put on very evenly with a brush, all suggestion of blotching being removed by drawing a whisk broom evenly along the board. Afterwards floor varnish was put over as quickly and evenly as possible, the whisk being used if necessary.

So now I have warned you away from the pitfall into which we fell.

The other day I visited the girl of whom I have so often spoken, who "uses her head" more than anyone else that I know in bringing about economies and conveniences in her home. Whenever I go there I am always on the lookout for something new, and this time it proved to be an ingenious method for supporting a flower-box on a window sill too narrow for it. The flower box filled the sill. It was made of woven willow which effectually concealed the flower pots inside of it (flower pots are not very decorative, are they?) While looking at it, from the vantage-point of an armchair, I wondered why it didn't fall off. Then I investigated.—Instead of a clumsy shelf nailed to the window sill, such as one so often sees, the ingenious little lady had just put a row of clothes hooks along—quite sufficient in strength to keep the box from toppling over, and yet neat and unobtrusive.

"However did you think of it?" I asked.

"Oh," she said, "I just thought of it." And that's the way she gets through with so many things satisfactorily. She uses her "think tank."

—JUNIA.

Worth Thinking Over.

"A good cook can plan and produce a wholesome meal on just about half the money an indifferent one can."—Eloise.

JUNE 3, 1911
"It is should so all the qu able and fore tryi possesses Isobel Fish

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"It is unfortunate that woman should so often invest her hero with all the qualities she considers desirable and necessary in a husband before trying to discover if he really possesses these attributes."—Mary Isabel Fisk.

Cleaning Down Feathers.

For "E. B. F.," Nova Scotia. *Scientific American* gives the following method for cleaning bed and pillow feathers: Well mix 1 lb. quicklime in each gal. of water required, and let stand until all the undissolved lime is precipitated as a powder to the bottom of the tub or pan, then pour off the clear liquor for use. Put the feathers into a clean tub, pour the lime water on them and stir them in it until they all sink to the bottom. They should then be covered with the lime water to a depth of 3 inches. Let them stand in this for 3 or 4 days, then take them out, dry them in a sieve and afterwards wash and rinse them in clean water. Dry between two nets with a rather large mesh. Shake the net occasionally and the dry feathers will fall through into a large box beneath. It will take about 3 weeks, using the ordinary vessels one has, to clean and dry enough for a bed (Thank goodness feather beds are going out of fashion!—J.) This process was awarded the prize offered by the Society of Arts."

Crochet Cotton. Bed Spreads.

In vain have I looked for a pattern for a crochet quilt, asked for by Mrs. Owen Hill. But perhaps I can help her. The other day Lila McEvoy Robson, who has written a little book on crocheting called at my office with a whole club-bag full of the most exquisite filet crochet work. She says one of her ways of getting new patterns is to buy a bit of cheap square-meshed lace at Woolworth's, then copy the pattern in crochet. Perhaps Mrs. Hill might follow that plan. Mrs. Robson's book can be got directly from the T. Eaton Co., Toronto, for 25 cents. Its name is "Filet Crochet: By Lila McEvoy Robson." —Or you can get the book by sending directly to Mrs. Robson at her home, 23 Becher St., London, Ont.

By the way many people nowadays are making bed-spreads of white dimity. A white sheet is spread over the top of the bed the dimity goes on next and presto!—very dainty bed, with a spread that is very easily washed. Of course it should be removed at nights.

The Possibilities of Prunes

At this time of the year fruit jars are empty, rhubarb is not yet very plentiful, even the dried-apple bag threatens to give out. Now, more than at any other time of the year are dried prunes, peaches and apricots valued. They tide over the gap until strawberry and cherry time. Moreover (no small consideration this year) they require comparatively little sugar, and, if properly cooked, may be very delicious. There is only one way to cook any of these dried fruits to serve as "fruit," and that is, in a nutshell: Wash well, drop into enough fresh water to cover, soak over night and then cook, very slowly, in the same water, adding a little sugar.

There are, however, several other ways in which the dried fruits can be utilized. In the following dried peaches or apricots may be substituted for the prunes.

Prune Filling for Cake.—Cook large prunes as above and remove stones. To 1 cupful of the pulp add 1/2 cup orange marmalade, 1 teaspoon lemon juice and some chopped nuts.

Prune Pudding.—Take 2 cups cooked prunes and 1 cup juice; 1 cup boiling water; grated rind and juice of 1 orange and 1 lemon; scant half cup sugar; 3 tablespoons granulated gelatine; 2/3 cup cold water. Soak the gelatine in the water until soft. Cut the prunes in bits. Mix together the boiling water, sugar, prune juice, lemon and orange. Heat to boiling point and remove from the stove. Stir in the gelatine. When dissolved add the prunes. Pour into a wet mould and let stand for several hours or over night in a cool place. Serve with cream.

Another Prune Pudding.—Put 2 cups cooked prunes through a colander. Beat the whites of 4 eggs until very stiff, then

fold in 4 tablespoons sugar and the prune pulp. Pour into a greased pudding dish, set in a pan of hot water in the oven, cover and bake slowly until set. Serve with whipped cream. Chopped nut meats may be sprinkled over if desired.

Prune Pie.—Take 2 cups cooked prunes; 1 tablespoon each of butter and flour; 1/2 lemon, grated rind and juice. Cut the prunes in two. Line a deep pie plate with pastry. Fill with prunes. Mix the flour and sugar and sprinkle over, then add the lemon. Cut the butter in small bits over the top. Put on a top crust and bake in a hot oven.

Making a Little Meat go a Long Way.

Shepherd Pie.—Minced roast beef, mashed potatoes, salt and pepper, butter or butter substitute (mashed with potatoes), roast beef gravy.

Put beef and potatoes in layers in a greased baking dish, having potatoes at the bottom. Moisten meat layers generously with gravy. Season to taste. Have top layer potatoes; dot over with bits of savory fat and brown. This dish requires rich gravy.

Savory Meat.—(Use meat left from a soup.) One pound soup meat, 1 cup stock, 1 teaspoon celery salt, 1/4 teaspoon savory, 1/2 teaspoon grated onion, 1/2 teaspoon salt 1/4 teaspoon white pepper, nutmeg, paprika.

Chop the meat fine, removing all gristle. Season, moisten with the stock, and press into a small bread pan. Put into the oven for a few minutes. When cold slice.

Pot of Mutton and Barley.—One pound mutton, 1/2 cup pearly barley, 1 tablespoon salt, 4 potatoes, 3 onions, celery roots or other seasoning herbs.

Cut the mutton in small pieces, and brown with the onion in fat cut from meat. This will help make the meat tender and improve the flavor. Pour this into a covered saucepan. Add two quarts of water and the barley. Simmer for 1 1/2 hours. Then add the potatoes cut in quarters, seasoning herbs and seasoning, and cook for one-half hour longer.

Savory Stew.—One pound meat, 2 tablespoons fat from the meat, 4 medium potatoes or 1 cup of rice or hominy, parsley or soup herbs, 1 teaspoon salt, onions, carrots, green peas, or beans, turnips or cabbage—any two or more of these.

Cut the meat in small pieces and brown it in the fat. Add the cereal, the seasoning, and 1 1/2 quarts of water. Simmer till the cereal is nearly done, then add the vegetable, and continue cooking till they are tender, adding more water if needed. The fireless cooker may be used.

This stew may be made into a savory meat pie by omitting the potato in it, and instead lining a baking dish with mashed potatoes, pouring in the stew, covering it with mashed potato, and browning it in the oven.—SEL.

The Scrap Bag.

Painting Furniture.

Paint will not adhere to furniture that has been covered with enamel or varnish, therefore the old coats must be thoroughly removed before putting it on. To remove them use paint and varnish remover which can be bought at any good hardware store. Next sandpaper the surface to make the surface perfectly smooth. After that clean thoroughly with coal oil or gasoline and when dry apply the paint. Two or three thin coats are better than two heavy ones. If blisters appear sandpaper them off after each coat dries. Finally finish with the enamel.

Cut-worm on Sweet Peas.

If cut-worms begin to nip off your sweet-pea shoots or cabbage plants work some soot into the top soil and sprinkle it over the young plants.

Sewing Hints.

When hemming a circular piece of material insert the needle in the usual way but when drawing it out pull the needle towards the right. This will make the little fullness even and avoid ugly pleats. When making a lace-edged handkerchief do not fold the hem. Roll it, as near the edge as possible so that it will be so small as to be almost imperceptible. When putting on the lace place

WRIGLEYS

The children love Wrigley's—and it's good for them.

Made under conditions of absolute cleanliness and brought to them in Wrigley's sealed sanitary package.

Satisfies the craving for sweets, aids digestion, sweetens breath, allays thirst and helps keep teeth clean.

Costs little, benefits much.



THE FLAVOR LASTS



Cuts grease - Saves Soap

A spoonful of Snowflake Ammonia softens a whole pan of dish water, dissolves the grease from the dishes—and saves its cost in soap.

Use it in kitchen, bathroom, laundry.

Snowflake Ammonia

THE STRENGTH

COLGATE'S RIBBON DENTAL CREAM

MADE IN CANADA



"Growing up with COLGATE'S!"

4c. for Trial Size

Send 4c. in stamps for sample of Colgate's Ribbon Dental Cream, or of Colgate's Talc.

For 2c. more we will send 3 tiny bottles of Colgate's Perfumes to make the famous perfume test.



Made in Canada

THE wise mother judges not only by height and weight, but by general health. That is why the regular use of Colgate's twice a day is so important—for the whole family. Brushing with Colgate's Ribbon Dental Cream is a treat, not a task.

COLGATE'S TALC

Colgate's Talc—as smooth and fine as silk—has just the right amount of Boric Acid. Your choice of eleven perfumes.

COLGATE & CO. Established 1806
Makers of Colgate's Talcs, Cold Cream, Toilet Waters and Perfumes.

Sales Office and Manufactory: Montreal.
Sole Agent for Canada: **W. G. M. SHEPHERD**
137 McGill St., Montreal.

Worth Every Cent of its Cost



"SALADA"

Black, Green or Mixed....

Sealed Packets Only. Never Sold in Bulk.

GENUINE ECONOMY IN TIRES

These Bargains Shipped to You on Approval



WHY pay the increased price for tires when you can get such big bargains as we offer?

These are the cheapest tires on sale anywhere, and you can examine them before buying. Order by mail or wire, and we will ship tires to you at any address East of Fort William, express paid, C.O.D. Give them a thorough examination and satisfy yourself you are getting a genuine bargain. If they do not please you just ship them back at our expense.

Could anything be fairer? Here are some of our phenomenal prices:—

Size	Plain Tread	Non-Skid Tread
30x3 1/2		\$16.50
32x3 1/2		17.00
31x4	\$18.00	26.00
33x4 1/2		30.00
34x4 1/2		33.00
35x4 1/2	28.00	

Other sizes in proportionately low prices. When ordering state size and style—whether "Clincher" or "Straight Wall," plain or non-skid.

TUBES! TUBES!! TUBES!!!
30x3 1/2—fully guaranteed—\$2.25.

Order Now. You'll never find a better opportunity to cut down your tire expense.

Security Tire Sales Co.

516 Yonge Street, Toronto

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

POULTRY AND EGGS

Condensed advertisements will be inserted under this heading at four 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 60 cents.

AT GREATLY REDUCED PRICES FOR remainder of season, White Leghorn baby chicks. Write today. Bradley Linscott, "Seven Acres" Brantford.

BABY CHICKS, HATCHING EGGS—BARRED Rocks, White Rocks, White Wyandottes, Silver Wyandottes, White Leghorns, Rhode Island Reds. Incubator capacity 9,000. Satisfaction guaranteed. Write for price-list. Tay Poultry Farm, Perth, Ont., Box 244.

BARRED ROCKS, MAMMOTH SIZE, AND extra good laying strain. ERRS—\$2 for 15; \$3.50 for 30. Mrs. W. B. Annesser, Tilbury, Ont.

EGGS FOR HATCHING, FROM BRED-TO-LAY Banded Rocks; two dollars per fifteen. Wm. L. Hills, Wheatley, Ont.

EGGS OFF MY GUELPH 1919 CHAMPIONS—Strong bone, fancy barring; exceptional all-year-round layers, \$3 per 15. John Fenn, Plattsville, Ont.

EGGS—WHITE AFRICAN GUINEA—MUSCOVEY duck, and Banded Rock. Mrs. John Annesser, Tilbury, Ont.

IMPROVE THE LAYING OF YOUR FLOCK with 264-egg strain. Single-comb White Leghorn cockerel, eight weeks old, for \$2. Harold Hebel, Kitchener, Ont.

Eggs and Poultry Wanted—We have a big demand for eggs and require large quantities, and pay the top market price every day in the week. We also have a big demand for live poultry, especially heavy live hens. We are paying special prices for May and June. If you can sell to

G. A. MANN & CO.
Phone 1777. 78 King St., London, Ont.

SUPERIOR BARRED PLYMOUTH ROCK EGGS FOR SALE

From 5 Best Bred-to-Lay Families in both Countries.

Pen No. 1.—Thompson's Imperial Ringlet hens imported in the eggs, headed by Mr. Coldham's (Kingston, Ont.), Pedigreed Ringlet Cockerels, sired by Parks' prize bird, U.S.A., first dam—hen No. 71 laid 70 eggs in 72 days in mid-winter, 200 brown eggs of standard weight in one year. Price, \$5.00.

Pen No. 2.—Parks' Superior Ringlet strain, imported in the eggs. Of all bred-to-lays, Ringlets are supreme. Price \$5.00.

Pen No. 3.—The large, dark bred-to-lay strain of Rileys, imported in the eggs. As show birds, they have won the highest awards in U.S.A. Price, \$4.00.

Pen No. 4.—Thompson's large bred-to-lay strain, imported in the eggs, medium light in color, with quality and utility. Price, \$3.00.

Pen No. 5.—The O.A.C. bred-to-lay strain of Guelph; a hardy handsome fowl, extra good winter layers. Price \$2.00.

15 per setting. Infertile eggs replaced at half price. Pullets or cockerel bred eggs as desired. Express prepaid.

A. H. CROZIER, Box 16, Meadowdale, Ont.

I WILL PAY YOU 30 CENTS

a pound for live hens, any kind, any size. No deduction for shrinkage. I pay express within 200 miles of Toronto. Ship C.O.D., or I will send you a post office money order. Crates loaned free.

ALBERT LEWIS
666 Dundas, West Toronto, Ontario

Working Housekeeper

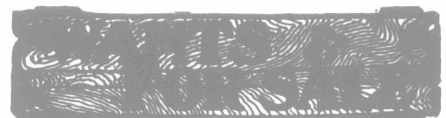
with two children, desires position, apply stating wages, etc. to

J. F. SOUTHALL,
16 ALBERT STREET - TORONTO

edge to edge and oversee from left to right, taking up as little as possible with the needle.

Arranging Flowers.

Glass or porcelain supports filled with holes, to be placed in the bottom of any vessel which is to be used for flowers make a loose, graceful arrangement easily possible. Also brass meshes to be placed over the top of the holder may be bought. If you have not either of these crochet tops for your flower holders, in a large square mesh, and tie tightly over the top by means of a drawing string, then put the stems through and arrange foliage about the edge to conceal the crochet work. Another plan useful for violets, pansies and other short-stemmed flowers is to throw a number of bottle corks into the water in the low broad vessel in which the flowers are to be placed. The corks will be almost entirely concealed by the leaves and flowers and the stems will be supported. Do not attempt to put too many flowers in any holder; a loose, graceful arrangement is always more artistic than a packed effect. A single rose in a "bud vase" is often more beautiful than a dozen in a larger vessel, especially if placed before a mirror on a mantel, so that every part of it can be seen at once—the back reflected in the mirror. Lilies call for tall, slender vases; branches of flowering shrubbery prefer stout jars; roses and nasturtiums love a rose bowl; violets and daisies never look well except in a low broad dish; morning-glories are at their best in a tall vase that flares out at the top as though copied from



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

TERMS—Four 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 60 cents.

FARM FOR SALE—150-ACRE FARM, SITUATED at the Village of Tyrone, Township of Darlington, County of West Durham, Ontario, being Lots 11 and 12, Seventh Concession. Approximately 120 acres under cultivation. Good grain farm; clay loam; well underdrained; running water; orchard; extensive farm buildings; grist mill on the corner of the lot. Post office, school and church within a few hundred yards of property. Farm being sold to wind up estate. Further particulars, kindly apply to Mrs. Ellen McLaughlin, 44 Brock Street East, Oshawa, Ont.

PURE-BRED SCOTCH COLLIE PUPPIES for sale, can be Registered. Apply to W. W. Irwin, Ripley, Ont.

WANTED—MARRIED MAN FOR LARGE Short-horn herd in the States, who knows how to raise calves and fit for show. A good place and permanent to qualified man. Furnished house, etc. provided. State wages and give references first letter. Box 29, Farmers' Advocate, London, Ont.

WONDERING ABOUT A SCOTCH COLLIE Puppy? We have them, marked just right, sable and white. Sire and dam very intelligent and good workers. Males \$10, females \$7. Ezra Crossman & Sons, New Hamburg, Ont.

Wanted—Second-hand Grain Separator Medium or large. Cash for a bargain. State age, size and make of machine. REPLY, BOX NO. 31

Farmer's Advocate, London, Ontario

Please mention Advocate.

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their own lovely salver-shaped blossoms. Try always to use flower-holders suitable to the flowers that are to be placed therein. Never use highly decorated vases or jars for flowers. Clear glass, dull green, brown or yellow pottery, without design, are usually best, although certain flowers look exceptionally well in highly glazed blue or yellow ware of fine quality and altogether or almost guiltless of design.

Current Events

The first session of the Legislature at Toronto was concluded on May 8th.

Forest fires have been raging in Ad-dington Co., Ont., near North Bay, and in Nova Scotia and New Brunswick.

A treaty for the protection of the salmon fisheries on the Pacific has been signed between Canada and the United States.

Lieut.-Col. A. K. Tylee of Toronto, has been appointed first air Commodore of the Canadian Air Force.

Owing to the strikes in the sugar refineries hundreds of carloads of raw sugar have been held up in Montreal, according to *La Presse*.

Huntsville, Muskoka, now has in its neighborhood a rural school board composed wholly of women—probably the first in Canada. The members are: Mrs. Thos. Martin, Chariman; Mrs. D. Cousins, and Mrs. Wesley McQuain. Mr. Jefferson Clarke retains the secretaryship.

Dr. F. W. Marlow, President of the Ontario Medical Association, which met in Toronto last week, severely scored the doctors who fail to keep up with the times in medicine, neither taking courses, attending meetings nor buying books. He thought there should be some body with power to expel or suspend, those who allow themselves to fossilize, or at least that they should be required to take further courses of study.

It appears that the decision to abolish the Faculty of Education in Ontario is not yet ultimate. The Minister of Education is, however, considering it.

The colors of the 114th Battalion, "Brock's Rangers" (Haldimand Co., Ont.), were deposited in St. Peter's church at Oshweken, on the Six Nations Reserve.

A monument to the memory of Joseph Scriven, author of the hymn "What a Friend We Have in Jesus," was unveiled by Premier Drury at the Pengeley Cemetery on Rice Lake near Millbrook.

Interest grows steadily in the region near Powassan, Ont., in which several valuable minerals besides radium have been discovered.

Sir Auckland Geddes, the new British Ambassador to Washington, has arrived and been received by President Wilson.

The U. S. Senate has rejected President Wilson's recommendation that the United States assume a mandate for Armenia.

Former President Carranza of Mexico, was assassinated on May 21st in the mountains to which he fled after being ousted from the Government by Generals Gonzales and Obregon. His body was brought to Mexico City.

The General Assembly of the Presbyterian Church at Edinburgh has appointed a special Commission to investigate supernatural psychic phenomena. The action has been taken upon request of the retired ministers of the church, who pointed out that it would be a mistake and unfair to condemn without inquiry.

Railwaymen in Ireland have refused to handle railway trucks with military supplies. In some places the tracks have been torn up.

Masiero Ferrarin, the Italian aviator, arrived on May 25th at Seoul, the Capital of Korea, on his flight from Rome to Tokio, Japan.

SARNIA

A Limited



FENCE

Tonnage

FOR PROMPT SHIPMENT

There is a great shortage in the supply of wire products available. Conditions are not improving. It is a question of being able to "deliver the goods" this season. Order quickly if you want any of this Fencing, Gates, Etc First come, first served.

HEAVY WEIGHT STYLES Made throughout of Full Government Gauge No. 9 Wire

STYLE	No. of line wires	Height in inches	Don't buy any fence weighing less per rod than does Sarnia Fence	Stays per rod	Weight per 100 rods in pounds	Price per rod (freight paid, in Old Ontario in lots of 300 lbs. or over)
4330	4	33	Spacing between line wires from bottom up in inches	9	550	39c
5400	5	40	10-11-12	9	650	50c
6400	6	40	7-7-8-9-9	9	750	57c
7400	7	40	5-6-6-7-7½-8½	9	850	64c
7480	7	48	5-6-7-9-10-11	9	900	67c
840	8	40	3-3¾-4¾-5½-7-8-8	12	1050	75c
840-S	8	40	5-5-6-6-6-6-6	12	1050	75c
848	8	48	4-5-6-7-8-9-9	12	1100	79c
9480	9	48	3-4-5-5-6-8-8-9	9	1100	79c
9480-S	9	48	6-6-6-6-6-6-6-6-6	9	1100	79c
948	9	48	3-4-5-5-6-8-8-9	12	1200	86c
948-S	9	48	6-6-6-6-6-6-6-6-6	12	1200	86c
1050	10	50	3-3¾-3½-4¾-5½- to 8	12	1325	94c

MEDIUM WEIGHT STYLES No. 9 Top and Bottom Wires. All other Wires No. 12

640	6	40	7-7-8-9-9	16	570	42c
726	7	26	3-3¾-3½-4¾-5½-6	16	580	45c
742	7	42	6-6-7-7-8-8	16	640	50c
834	8	34	3-3¾-3½-4¾-5½-6-8	16	670	51c
942	9	42	3-3¾-3½-4¾-5½-6-8-8	16	750	56c
1050	10	50	3-3¾-3½-4¾-5½- to 8	16	850	63c
1448	14	48	3 to 5½ inches	16	1060	84c

CLOSE WOVEN HOG AND POULTRY FENCES Made of Full Government Gauge Wire No. 9 Top and Bottom Wires, other Wires No. 13

0726	7	26	3-3¾-3½-4¾-5½-6	33	600	46c
1036	10	36	2-2-3-3½-4½-5-6-6	33	800	61c
1850	18	50	1½ to 5 inches	24	1225	94c
2060	20	60	1½ to 5 inches	24	1325	1.02

ACCESSORIES

Barb Wire, 2 pt. Weight 79 lbs. per 80 rod spool.....	\$5.75
Barb Wire, 4 pt., weight 86 lbs. per 80 rod spool.....	\$6.00
Staples, galvanized 1¾", 25 lb. sack.....	\$2.00
Brace Wire, galvanized, dead soft, No. 9, per coil of 25 lbs.....	\$2.00
Coil Spring Wire, in 100 lb. bundles.....	\$6.75
Stretcher, powerful single Draw 15 foot chain.....	\$9.00

FARM GATES

Walk Gate 3' x 48".....	\$3.75
Walk Gate 3½' x 48".....	\$4.00
Drive Gate 12' x 48".....	\$9.00
Drive Gate 13' x 48".....	\$9.40
Drive Gate 14' x 48".....	\$9.80
Drive Gate 16' x 48".....	\$10.50

LAWN FENCING AND GATES

Style C, Galvanized, 36" high.....	17 ft.
Style C, Galvanized, 42" high.....	18 ft.
Style B B, Galvanized 36" high.....	16 ft.
Style B B, Galvanized 42" high.....	17 ft.
Style C, Gates, 36" high, 3' or 3½.....	\$3.75
Style C, Gates, 42" high, 3' or 3½.....	\$4.00
Style BB gates, 36" high 3' or 3½.....	\$3.75
Style BB gates, 42" high 3' or 3½.....	\$4.00

(Add 75c for Scroll Tops on gates under 4 ft. wide, \$1.50, 4 ft. and over).

FLOWER BED BORDER

12 inch, per foot..... 10c

FREIGHT PAID PRICES

to your nearest station in Old Ontario (excepting electric or steamboat lines) on orders of 300 lbs. or over. For prices delivered in New Ontario, Quebec and Maritime Provinces add 4c per rod to the prices quoted above, 25c advance for gates and stretchers, 40c per

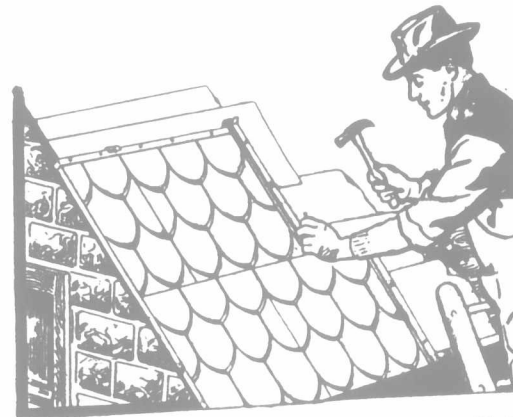


spool for barbed wire, 10c per sack of staples, 10c per coil of brace wire, and 50c per cwt. for coiled wire. Write our Winnipeg Office, 502 Keewayden Building, for prices in Western Canada.

For over a year now we have shipped the greatest majority of orders within two days of receipt of same

The Sarnia Fence Co., Limited, Sarnia, Ont.

"Galt" Galvanized Steel Shingles



The "GALT" Shingle locks together in such a way that there is no weak point in its entire construction, and it is ornamental as well. It is, therefore, the Ideal Shingle for Dwellings, Churches, Schools, Public Buildings, Barns, etc.

We also manufacture

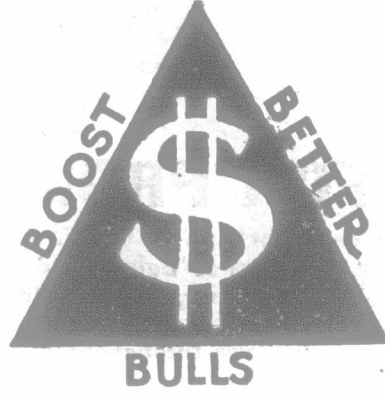
Corrugated Sheets Barn Ventilators
Silo Roofs Barn Roof Lights

THE GALT ART METAL COMPANY, LIMITED

Galt, Ontario

BETTER BULL BULLETIN No. 1

**Scrub Bulls
Produce
Poverty**



**Pure Breds
Produce
Wealth**

Ontario Cattle Breeders' Association
Toronto, Canada

**22 Million Dollars
Lost to Ontario
Last Year**

IN 1919, forty-three per cent. of the cattle sold from public stock yards in Canada were classed as common. This indicates a condition in the live stock industry that is deplorable, costly, and unnecessary.

It is estimated that better breeding would have increased the weight and quality of these beef cattle to such an extent that they would have brought twenty-three million more dollars on the market. As Toronto Union Stock Yards alone lose six million, the total loss to Ontario would be considerably over that figure.

And that's not all:—

In Ontario there are over a million dairy cows. At least half of them are from grade or inferior bulls. The increased milk production that would result if these half-million cows were replaced by well-bred cows would be \$33 per cow, as shown by the Farm Survey. A total loss to Ontario of sixteen million dollars, or twenty per cent. of Ontario's annual dairy production.

Adding the six million lost through scrub beef cattle to the sixteen million lost through scrub dairy cows, Ontario loses twenty-two million dollars every year, directly traceable to the use of twenty thousand scrub and inferior bulls. An average of over \$1,000 lost by each scrub and inferior bull.

**The Reason For
This Great Loss**

The reason for this enormous loss is because the scrub sire produces his defects in his progeny. Lacking breeding, he has not the power

to transmit the proper and desirable qualities. Such ability is inherited and can only be found in sires that are themselves the sons of well-bred, productive animals.

Here is an example of the power of transmitting good qualities by a well-bred sire.

At the 1918 Winter Fair, Guelph, the steer which was beaten in its class only by the steer that won the Grand Championship was out of a little scrubby cow of no particular breeding.

The reason that a scrubby little cow produced such a good steer was no accident. The sire of the steer was a well-bred bull.

**Get Rid of the
Scrub Sire**

The scrub bull is the most expensive and extravagant piece of cattle flesh on the farm. He does not stop at being inferior himself, but he goes on year after year producing inferior stock.

**Improved Beef Sire a
Profitable Investment**

Well-bred BEEF sires make more profit because the calves:—

(1) *Make gains more economically.*

The same quantity of feed fed to high-grade animals will produce more pounds of beef than when fed to scrubs.

(2) *Bring a higher price per pound when sold.*

The well-bred steers dress out a larger percentage of beef and a larger part of it is in the region of the expensive cuts.

**A Good Dairy Bull
Will Pay Handsomely**

Here is a record that shows the result of using a well-bred bull:—

- (1) Scrub Cow "No Improved Blood."—Production for one year 3,874.6 lbs. milk and 192.6 lbs. butter fat.
- (2) Fair Grade Cow "Half Improved Blood," Daughter of above Scrub and well-bred sire.—6,955.5 lbs. milk and 266.2 lbs. butter fat.
- (3) Good Grade Cow "Three-Quarter Improved Blood," Daughter of Number 2 and well-bred sire.—12,804.2 lbs. milk, 482.5 lbs. butter fat.

**Method of
Improvement**

To breed up from a herd of scrubs to a herd of good grade animals, the quickest, most economical and most profitable method is the successive use of good Pure Bred Bulls.

A good Bull increases the producing ability and selling value of his progeny. He gives to the herd size, vigor, uniformity, quality, increased production, all those characters desired by the successful stockman.

**Your Opportunity
What to Do**

Get a good bull. Consult your neighbor who breeds Pure Breds, or your Agricultural Representative will help you in locating one.

If you have only a few cows, make arrangements to use a good Pure Bred bull of your neighbors.

Write to R. W. Wade, Secretary, Ontario Cattle Breeders' Association, Live Stock Branch, Parliament Buildings, Toronto, for information on methods of grading up a herd and increasing your profits.

Use a Pure Bred Bull, and Build Up a Profitable Herd

Ring-Bone

There is no case so old or bad that we will not guarantee

Fleming's Spavin and Ringbone Paste

to remove the lameness and make the horse go sound. Money refunded if it ever fails. Easy to use and one to three 45-minute applications cure. Works just as well on Sidebone and Bone Spavin. Before ordering or buying any kind of a remedy for any kind of a blemish, write for a free copy of

Fleming's Vest Pocket Veterinary Adviser

Ninety-six pages of veterinary information, with special attention to the treatment of blemishes. Durably bound, indexed and illustrated. Make a right beginning by sending for this book.

FLEMING BROS., Chemists
75 Church St. Toronto, Ont.

Anti-Government demonstrations were held at Finnie on May 28th by Gabriele D'Annunzio's legion. "On to Rome!" was the demand of the soldiers.

Sale Dates.

June 3, 1920.—Hood Farm, Inc., Lowell, Mass.—Jerseys.

June 3, 4 and 5, 1920.—Holstein-Friesian Association of America, St. Paul, Minn.

June 9, 1920.—International Sale of Milking Shorthorns, Euclid, Minn., U. S. A., R. R. Wheaton and A. E. Palmer.

June 9, 1920.—Sunnybrook Farms.—Holsteins Dispersal, North Toronto, Ont.

June 16, 1920.—A. G. Farrow, Oakville, Ont.—Shorthorns.

June 15, 16, 17 and 18, 1920.—Live-Stock Breeders' Association of the District of Beauharnois, Limited, Ormstown, Quebec.

June 23, 1920.—MacVicar Bros., Belmont, Ont.—Ayrshires.

June 23, 1920.—J. Andrew Knox, Norwood, Ont.—Scotch Shorthorns.

June 24, 1920.—David A. Ashworth, Denfield, Ont.—Ayrshires, Horses, Yorkshires, etc.

June 25, 1920.—W. H. Shaw, Newmarket, Ont.—Holsteins.

AUCTION SALE

**REGISTERED JERSEY
COWS AND GRADES**

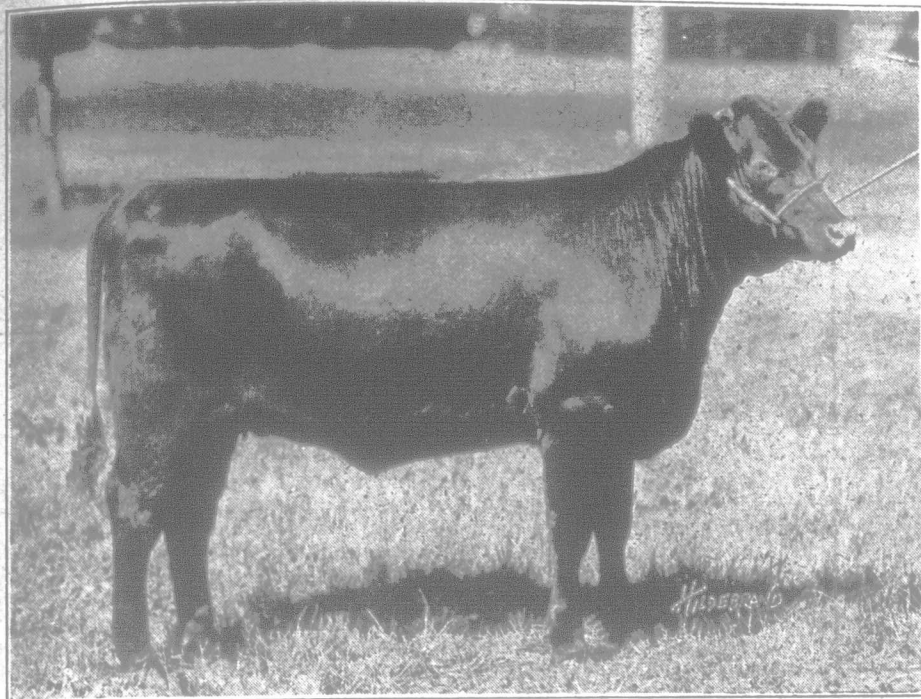
5 Cows, fresh. 1 imp. Cow 4 years old. 1 reg. Bull 9 months, from imp. stock. 1 two-year-old due to calve.

SALE, MONDAY, JUNE 7th,

AT 2 O'CLOCK

LOT 21, CON. 2, LONDON TOWNSHIP
2 miles west of London

B. Lawson, Proprietor, R.R. 7, London, Ontario



Rosewood 41st.

1st prize junior yearling heifer, Toronto Exhibition, 1919, and sold in the Dryden-Miller Sale in February, 1920, for \$3,200.00. This heifer was bred in our herd and her dam is only one of the many good cows catalogued.

PRESENTING THE FARROW OFFERING

OF

Scotch Shorthorns

(Imported and Canadian Bred)

FORTY HEAD

The most richly-bred Shorthorn offering ever catalogued for a Canadian sale ring—every one individually right. We are selling our entire breeding herd.

The sale will be held at the farm, one and one-half miles from

Oakville, Ontario, Wednesday, June 16th, 1920

JUST A LINE ON THE PEDIGREES:

PRIDE OF ESCANA —114559—

(For reference only) Dark roan, calved Jan. 3rd, 1917; bred by Mitchell Bros., Burlington, Ont.

Bred by	Dam	Sire	Bred by
A. T. Gordon	Novelty (imp.)	Right Sort (imp.) 86057	A. T. Gordon
W. E. Hutchison	Nellie 8th	Newton Crystal (92658)	A. M. Gordon
G. Roberts	Nellie 6th	Baron Lavender (85273)	Wm. Duthie
G. Roberts	Nellie 5th	Princely Archer (73287)	Wm. Duthie
J. Johnstone	Nellie	Gil Blas (65575)	J. Bruce
		Bravo (60397)	J. B. Mason

MARY ANN OF LANCASTER 34th —132780—

No Female. Roan, calved 4th April, 1916; bred by A. Crombie, Woodend, Newmachar, Scotland.

Bred by	Dam	Sire	Bred by
A. Crombie	Mary Anne of Lancaster 31st	Bertram (114284)	C. H. Jolliffe
A. Crombie	Mary Anne of Lancaster 27th	Golden Duke (111918)	J. Morrison
A. Crombie	Mary Anne of Lancaster 23rd	Golden Banner (105613)	J. Reid
A. Crombie	Lovely	King Robert (76962)	A. Crombie
A. Crombie	Snowcloud	Coldstream (60510)	A. Cruickshank
A. Crombie	Rubb	Onslow (54755)	A. Scott
N. Reid	Mary Anne of Lancaster 15th	Alliance (50746)	J. Black
N. Reid	Mary Anne of Lancaster 8th	Victory (48871)	A. Cruickshank
N. Reid	Mary Anne of Lancaster 4th	Achilles (40951)	A. Cruickshank
		Revenue (40591)	A. Cruickshank

No Female

VICTORIA PRINCESS 8th —130663—

Bred by S. H. Thompson & Sons, Victoria of Sunnyside —130657—

R. J. Johnston	Victoria of Sunnyside 7th	Superb —115314—	
Wm. Cummings & Son	Victoria of Glenwood 3rd	Royal Princess 7th	
Wm. Cummings & Son	Victoria 55th —79721—	King James —79922—	
J. W. Aldrich	Victoria 51st (imp.) 43797	Royal Duke of Pleasant Ridge —36889—	
A. Cruickshank	Victoria 47th	Earl of Richmond —29480—	
A. Cruickshank	Victoria 39th	Royal Duke of Pleasant Ridge —36889—	
A. Cruickshank	Victoria 29th	Royal Duke of Gloster (29864)	
		Royal Duke of Lansdowne (29128)	
		Champion of England (17526)	
		Red Knight (19770)	

GLEN BUELL CLIPPER 3rd —102160—

Bred by A. Russell, Glen Buell Clipper 2nd —86211—

W. C. Edwards	Pine Grove Clipper 2nd	Minto —74055—	
W. C. Edwards	Sityton Clipper 2nd (imp.) 24837	Magnet —48476—	
Wm. Duthie	Cluster Rose	Banker —23244—	
A. Cruickshank	Cybele	Knight of Lancaster (imp.) —17101—	
A. Cruickshank	Cochineal	William of Orange (50694)	
A. Cruickshank	Carmine Rose	Dondoller (52956)	
A. Cruickshank	Carmine	Cumberland (46144)	
		Bridesman (30586)	
		Champion of England (17526)	
		The Czar (20947)	

ATHELSTANE ROSEWOOD 5th —103584—

Red, calved March 18th, 1911; bred by Wm. Waldie, Stratford, Ont.

Bred by	Dam	Sire	Bred by
Wm. Waldie	Athelstane Rosewood 85705	Roan Chief (imp.) 60865	Earl of Roseberry
Wm. Duthie	Trout Creek Rosewood (imp.)	Star Prince 53900	H. Cargill & Son
J. Bruce	Collynie Rosewood 3rd	Beaufort Victor (82841)	Lord Lovah
J. Bruce	Rosewood 34th	Nonpareil Courtier (79488)	J. D. Willis
J. Bruce	Rosewood 24th	Clear the Way (47604)	A. Cruickshank
J. Bruce	Rosewood 3rd	Cap-a-pie (58591)	J. Bruce
J. Bruce	Rosewood 6th	Duke of Edinburgh (51114)	J. Bruce
J. Bruce	Rosewood 5th	Lord of the Isles (40218)	A. Cruickshank
		Grand Forth (24074)	A. Cruickshank

CLARINDA 17th (IMP.) —132575— FEMALE

Roan, calved February 13th, 1914; bred by John L. Reid, Aberdeenshire, Scotland.

Bred by	Dam	Sire	Bred by
J. L. Reid	Clarinda 10th, vol. 58, p. 872, E.	Golden Mint (105635)	S. Mitchell
J. L. Reid	Clarinda 6th	Mustu Roll (99752)	Wm. Duthie
J. L. Reid	Clarinda 2nd	Royal Crown (84598)	Wm. Duthie
S. Campbell	Clarinda	Belvedere (66696)	R. Reid
S. Campbell	Cleopatra	Gravesend (46461)	A. Cruickshank
S. Campbell	Claret 1st	British Flag (46009)	S. Campbell
S. Campbell	Claret	Duke (25342)	S. Campbell
S. Campbell	Barbara	Scarlet Velvet (10916)	A. Cruickshank
		Unrivalled (13926)	A. Cruickshank

Reproduced above are a few pedigrees, all of which were picked at random as they were being set in type for the catalogue. Taken as a whole, we believe no richer lot were ever attached to a Canadian offering. As regards their individuality, too, we believe they are the sort that will be appreciated by every good breeder of Shorthorn cattle. Of the 40 lots listed, it will be noted that 37 are females, and all are either well forward in calf or safely settled in service to good sires. There are, for instance, two heifers guaranteed to the service of the newly-imported \$34,000 Clipper-bred sire, Millshills Comet; several to Maxwalton Manager, son of Carpenter and Ross' Great Revolution, and a great many to our own great, young herd sire, Pride of Escanna. All are in good breeding condition only, and they sell fully guaranteed. If you appreciate good cattle you should attend this sale.

Sale at 12.30 p.m.

For Catalogues, address:

A. G. FARROW :: **Oakville, Ontario**
CAPT. T. E. ROBSON, Auctioneer

Imperial Bank of Canada

Forty-fifth Annual Meeting of the Shareholders

The forty-fifth Annual General Meeting of the Imperial Bank of Canada was held in pursuance of the terms of the Charter at the Head Office in Toronto on Wednesday, 26th May, 1920, at 12 noon.

THE REPORT.

The Directors have pleasure in presenting to the Shareholders the forty-fifth Annual Report and Balance Sheet of the affairs of the Bank as on 30th April, 1920, together with Statement of Profit and Loss Account, showing the result of the operations for the year.

The balance at credit of Profit and Loss Account brought forward from last year was \$ 865,459.66
 Net profits for the year, after deducting charges of management, auditors' fees and interest due depositors, and after making provision for bad and doubtful debts and for rebate on bills under discount, amounted to 1,379,318.38

Making a total at credit of Profit and Loss Account.....	\$2,244,778.04
This amount has been appropriated as follows:	
Dividends at the rate of 12% per annum.....	\$ 840,000.00
Special bonus of 1% for the year.....	70,000.00
Annual contribution to Officers' Pension and Guarantee Funds.....	42,500.00
Special contribution to Pension Fund.....	100,000.00
Contribution to Repatriation Campaign.....	5,000.00
Dominion Government Taxes.....	125,000.00
Balance of Account carried forward.....	1,062,278.04
	<u>\$2,244,778.04</u>

During the year Branches of the Bank have been opened at the following points, in addition to those referred to in last year's Report:

IN ALBERTA—Benalto, Bittern Lake, Cherhill; Edmonton: 124th Street, Norwood Boulevard; Griffin Creek, Gwynne, Lousana, Robinson's Crossing, Trochu, Westlock.

IN BRITISH COLUMBIA—Creston, Michel.

IN MANITOBA—MacGregor; Winnipeg—Portage and Colony Street.

IN ONTARIO—Toronto: Kingston Road and Balsam Avenue, Monarch Park Avenue and Danforth; Avon, Crampton, Hawkesbury, Hearst, Hilton, Mount Elgin; St. Thomas; Ross and Wellington Streets; Schomberg, Stamford, Sioux Lookout, Verschoyle, Walkerville.

IN SASKATCHEWAN—Cando, Edgeley, Foam Lake, Handel, Lebret, Phippen, Yorkton.

The following Branches have been closed:

IN ALBERTA—Robinson's Crossing, Rockfort.

IN BRITISH COLUMBIA—Kimberley.

IN ONTARIO—Mount Elgin.

It is with deep regret that your Directors have to record the death during the year of Mr. William Ramsay, who was one of the original founders of the Bank and a Director since its inception; also of Mr. Elias Rogers, who has been a Director since 1897 and Vice-President since 1914. The vacancy in the Vice-Presidency has been filled by the appointment of Dr. W. H. Merritt.

The vacancies on the Board have not been filled, and a By-law reducing the number of Directors to ten with power to increase the number to twelve will be submitted to you.

Mr. A. E. Phipps, who has been in the service of the Bank since 1891, and has until recently been Superintendent of Branches, has been appointed to the position of Assistant General Manager.

The Auditors appointed by you have made their examinations as required by the Bank Act, and their Report and Certificate is appended to the Balance Sheet. They offer themselves for reappointment. The Head Office and Branches have also been carefully inspected during the year in accordance with the usual custom.

The Directors again desire to testify to the satisfactory manner in which the Officers of the Bank have discharged their respective duties.

All of which is respectfully submitted.

PELEG ROWLAND,
President.

LIABILITIES.

Notes of the Bank in circulation.....	\$ 13,354,212.00
Deposits not bearing interest.....	\$25,107,537.14
Deposits bearing interest, including interest accrued to date of Statement.....	72,676,679.95
	97,784,217.09
Balances due to other Banks in Canada.....	\$ 469,348.67
Due to Banks and Banking Correspondents in the United Kingdom.....	5,192.78
Deposits by and Balances due to Banks elsewhere than in Canada and the United Kingdom.....	320,519.61
Acceptances under Letters of Credit (as per contra).....	498,400.00
	1,293,461.06
Total Liabilities to the public.....	\$112,431,890.15
Capital Stock paid in.....	7,000,000.00
Reserve Fund Account.....	\$ 7,500,000.00
Dividend No. 119 (payable 1st May, 1920) for three months, at the rate of 12% per annum.....	210,000.00
Bonus of 1% for the year, payable May 1st, 1920.....	70,000.00
Balance of Profit and Loss Account carried forward.....	1,062,278.04
	<u>8,842,278.04</u>

ASSETS.

Current Coin held by the Bank.....	\$ 2,647,154.62
Dominion Government Notes.....	7,928,326.25
	\$ 10,575,480.87
Deposit in the Central Gold Reserves.....	7,000,000.00
Deposit with the Minister for the purposes of the Circulation Fund.....	404,897.03
Notes of other Banks.....	876,388.00
Cheques on other Banks.....	5,875,348.18
Balances due by other Banks in Canada.....	530,015.89
Due from Banks and Banking Correspondents in the United Kingdom.....	1,218,911.99
Due from Banks and Banking Correspondents elsewhere than in Canada and the United Kingdom.....	3,689,940.38
	\$ 30,170,982.31
Dominion and Provincial Government Securities, not exceeding market value.....	\$ 6,436,659.57
Canadian Municipal Securities, and British, Foreign and Colonial Public Securities other than Canadian.....	11,304,227.15
Railway and other Bonds, Debentures and Stocks, not exceeding market value.....	412,046.82
	<u>18,152,933.54</u>

Brought forward.....	\$ 18,152,933.54
Loans to Provincial Governments.....	\$ 1,157,000.00
Loans to Cities, Towns, Municipalities and School Districts.....	5,279,714.11
Call and Short Loans (not exceeding thirty days) in Canada on Bonds, Debentures and Stocks.....	5,739,096.95
	<u>12,175,811.06</u>
Other Current Loans and Discounts in Canada (less rebate of interest).....	\$ 60,499,728.94
Liabilities of Customers under Letters of Credit (as per contra).....	60,452,943.43
Overdue Debts (estimated loss provided for).....	498,400.00
Real Estate (other than Bank premises).....	514,924.72
Mortgages on Real Estate sold by the Bank.....	576,769.57
Bank Premises, at not more than cost, less amounts written off.....	517,306.56
Other Assets, not included in the foregoing.....	4,655,304.11
	<u>558,792.86</u>
	<u>\$128,274,168.19</u>

PELEG HOWLAND,
President.

W. MOFFAT,
General Manager.

AUDITORS' REPORT TO SHAREHOLDERS.

We have compared the above Balance Sheet with the books and accounts at the Chief Office of Imperial Bank of Canada and with the certified returns received from its Branches, and after checking the cash and verifying the securities at the Chief office and certain of the principal Branches on 30th April, 1920, we certify that in our opinion such Balance Sheet exhibits a true and correct view of the Bank's affairs according to the best of our information, the explanations given to us and as shown by the Books of the Bank.

In addition to the examinations mentioned, the cash and securities at the Chief Office and certain of the principal Branches were checked and verified by us during the year and found to be in accord with the books of the Bank.

All information and explanations required have been given to us and all transactions of the Bank which have come under our notice have in our opinion been within the powers of the Bank.

G. T. CLARKSON, F.C.A.
R. J. DILWORTH, F.C.A.
of Clarkson, Gordon & Dilworth.

The customary motions were made and carried unanimously.

Mr. G. T. Clarkson, F.C.A., Toronto, and Mr. R. J. Dilworth, F.C.A., Toronto, were appointed Auditors of the Bank for the ensuing year.

The Scrutineers appointed at the meeting reported the following Shareholders duly elected Directors for the ensuing year: Mr. Peleg Howland, William Hamilton Merritt, M.D. (St. Catharines), Sir William Gage, Sir James Aikins, K.C. (Winnipeg), John Northway, J. F. Michie, Sir James Woods, E. Hay, Frank A. Rolph, R.S. Waldie.

At a subsequent meeting of the Directors, Mr. Peleg Howland was re-elected President, and Dr. W. H. Merritt Vice-President for the ensuing year.

PELEG HOWLAND,
Adv't. President.

W. MOFFAT,
General Manager.



PUT the children into Watson's and allow them to romp to their hearts' content. You need have no fear of them injuring their underwear. The elastic stitch will take care of that.

The garments are soft, warm, snug-fitting and always comfortable.

Watson's NEEDLE RIBBED
UNDERWEAR

The Watson Manufacturing Co., Limited, Brantford, Ontario.

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MOFFAT, General Manager.

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F.C.A. F.C.A. rdon & Dilworth

F.C.A., Toronto,

ving Shareholders William Hamilton K.C., (Winnipeg), lph, R.S. Waldie. nd was re-elected r. OFFAT, General Manager.

Have Famous Cattle

It pays to improve your stock. Though the initial cost of introducing a famous breed into your herd is considerable, there is money in the venture.

If you need backing for this, or for increasing your herds, consult the manager.

THE DOMINION BANK

784

War Bond Interest Coupons and Cheques Cashed Free.



The Merchants Bank will cash all War Loan coupons or interest cheques when due, on presentation, without making any charge whatever for the service.

If you have not a Savings Account, why not use your interest money to open one with This Bank?

61

THE MERCHANTS BANK

Head Office: Montreal. OF CANADA Established 1864.

With its 138 Branches in Ontario, 44 Branches in Quebec, 1 Branch in New Brunswick, 2 Branches in Nova Scotia, 36 Branches in Manitoba, 46 Branches in Saskatchewan, 86 Branches in Alberta, and 12 Branches in British Columbia, serves rural Canada most effectively.

WRITE OR CALL AT NEAREST BRANCH.

Just Put Clothes In—the Washer Does the Work

If you have a gasoline engine—if you have electric power—then no longer need you even work the lever of a hand-power washing machine. Let "power" help your work as it does your husband's!

Of course you realize that a washing machine, even run by hand, is quicker, easier, better than washing by muscle-power. But here's a washer that does everything—all you have to do is "turn on the juice."

Maxwell

Power Bench Washer

—will do the washing while you do other work! No need to watch it—it can't go wrong. It will do the wringing too. Easy to operate—simple and strong in construction—perfect in mechanism. Made in one-, two-, or three-tub size; operated equally well by 1/6 h.p. electric motor, or any gasoline engine. Write us to-day for full particulars—it will be time well-spent.

38 MAXWELLS LIMITED, Dept. W ST. MARYS, Ont.

Control of Swarming.

(Experimental Farms Note.)

Swarming is the bees' natural method of increase, and the instinct to swarm is particularly strong under the extremely favorable conditions for bee activity of the Canadian spring and summer.

The uncertainty of swarming, the loss of honey following the division of the working force of the colony, the possibility of swarms escaping, and the difficulty in preventing swarming in many parts of Canada without considerable labor, all make the control of swarming quite the greatest problem in bee management.

To encourage work in the hive and to discourage the desire to swarm, plenty of room, both in the brood chamber and in the super, and large entrances should be given to all colonies as soon as conditions are favorable, but these measures will not always be enough to prevent

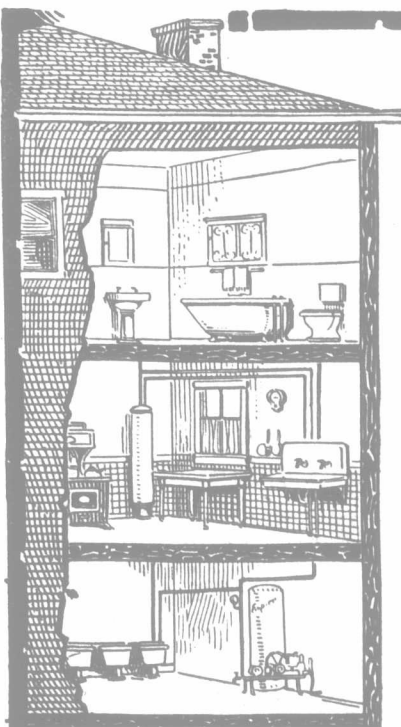
swarming in many places, especially in the north.

If the apiary can be watched all day, it is a good plan to clip the queen's wings at fruit bloom time. When the colony swarms, remove the hive to a new stand place on the old stand an empty hive, to which the swarm will return, the queen having been meanwhile picked up and placed in a cage in the new hive. The field bees will join the swarm and the parent colony will be so much weakened by their loss that it is not likely to swarm again.

Where the apiary cannot be watched, the plan of preventing swarming by examining every brood comb in every colony every week, and destroying all the queen cells is very laborious and not always effective. A simpler plan is to remove the queen at the beginning of the clover honey flow, and eight or nine days later, destroy all the queen cells except one, or destroy all and give a ripe cell of one, or destroy all and give a young select parentage. In this way a young

queen is obtained which will not swarm, and, besides, will be more prolific in the fall and next year than the old queen, and will be less likely to swarm next year. This plan, however, causes a certain amount of loafing until the new queen starts laying. This loafing can be much reduced by introducing a ripe queen cell at the time the queen is removed, and if this is done early enough before any preparations for swarming have been started, the bees are unlikely to build further queen cells. Where, however, one prefers to use the surer method, only those colonies that are actually preparing to swarm should be treated, and some means for quickly ascertaining if a colony is building queen-cells in preparation for swarming should be employed. One of the best of these is to have the brood nest occupy two chambers, and then by prying up the upper chamber, one can see at a glance if the queen cells are being built along the lower edge of the combs in this chamber.

Take the Drudgery Out of Your Wife's Work



YOU know she is over worked and tired each night. Overcome this by putting in an Empire Water Supply System which will fully modernize your home—giving you running hot or cold water in the kitchen for washing dishes, clothes, and cooking, also an up-to-date bathroom and toilet. The

Empire WATER SUPPLY System

will provide water for the stock in the barns and nearby paddocks. Contrast carrying water for all household needs and the stock to simply turning a tap and drawing it under pressure. This briefly is what our water supply system will do—you know you need it badly.

WRITE FOR FREE BOOKLET

This illustrated booklet will give you the information you want and we enclose an Information Blank which when filled out and returned will enable us to send you full particulars and cost of an Empire System suited to the needs of your home.

THE EMPIRE MANUFACTURING CO., LIMITED

Head Office and Factory, London, Ontario.

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Subscribers! You can have SIX MONTHS SUBSCRIPTION FREE, by securing the name of ONE NEW SUBSCRIBER, and sending his \$1.50 for one year's subscription to THE FARMER'S ADVOCATE AND HOME MAGAZINE, LONDON, ONT.

In many parts of southern Ontario, southern Quebec and similar regions the desire to swarm is strong only during the first two or three weeks of the honey flow from clover, and the separation of queen and brood by a queen excluder, the queen being put into a lower chamber containing only empty combs and foundation, may be enough to tide the colony over this period. Another good plan that may be enough to prevent swarming in this region is to use two brood chambers and confine the queen to the lower one early in the honey flow, at which time the combs in this chamber usually contain a large number of empty cells.

Apiarist. F. W. I. SLADEN.

Obituary for a Herring.—Fish Coster— "Fresh! W'y, mum, it breathed its last when it saw yer coming." Customer (sniffing)—"And wot a breath it had!"—London Blighty.

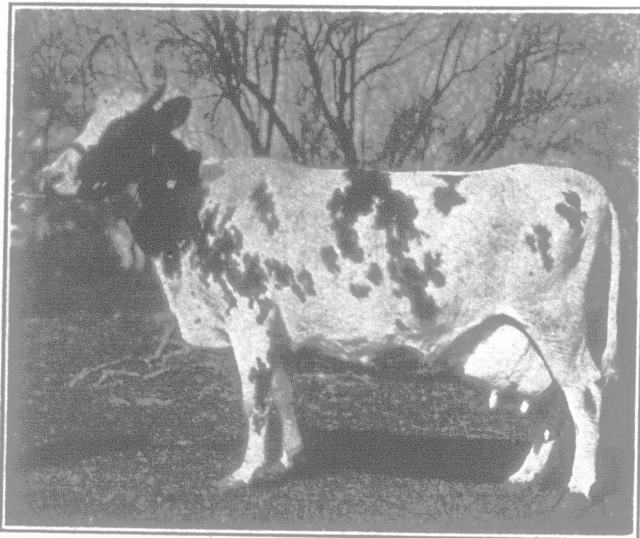
COMPLETE DISPERSION SALE

**TWENTY-FIVE HEAD
OF
Choice Record of Performance
AYRSHIRES**

Comprising the entire Westside herd and selling at the farm, Middlesex County, on

Thursday, June 24th, 1920

Motor conveyances will be at the Walper House until the arrival of morning trains from the east and west, to convey all parties to the farm.



Butter Alice, one of the Westside foundation cows—now milking 65 lbs. per day.

Although small, the Westside herd of Record of Performance Ayrshires is one of the most noted in Western Ontario. The foundation females are not only exceptionally large but all have a combination of type and production seldom excelled by any of the larger herds in the Dominion. In no case are the records high but all have been made on twice-a-day milking only, and all are safely bred to our great young sire St. Nicholas of Orkney. This bull is from Brighton Brae Blossom 4th, a 11,140-lb. 3-year-old, and his sire, Perfection of Orkney, is a son of Milkmaid 7th, the noted 14,872-lb. 4-year-old. The calves we have by this bull will please you. Every animal in the herd sells—there will be no reserve.

FOR CATALOGUES ADDRESS

DAVID A. ASHWORTH, - Denfield, Ont.
T. MERRIT-MOORE, Auctioneer JNO. McKEE, Sales Mgr.
This sale follows the Mac Vicar Sale at Belmont, June 23.

Closing Exercises at Ontario Veterinary College.

The closing exercises of the graduating class of the Ontario Veterinary College were held on April 29. Principal McGillvray occupied the chair, and in his opening address expressed the hope that the graduating class would maintain high ideals and inculcate in their future work the knowledge and training acquired during their college course. The preservation and fostering of live-stock interests are of national concern, as they constitute an important factor in economic conditions, said the speaker, and cannot be lightly sacrificed. Skilled service must be provided and maintained to reasonably safeguard the herds and flocks of the country from diseases which are preventable or are of such a nature as may be communicable and endanger large numbers. Principal McGillvray believed that the opportunity for rendering this service to the live-stock industry is open to the veterinary profession. Honorable Manning W. Doherty, Minister of Agriculture, exhorted each graduate to do everything in his power to carry on the good work and further raise the prestige and standard of the Ontario Veterinary College. He appealed to the class to keep abreast of the times by reading the best veterinary and other scientific journals. The Minister stated that the Department was deeply interested in the promotion and advancement of veterinary science in its relation to agriculture. The development of Canada is largely bound up in agriculture and our future will be greatly influenced by the further development of the live-stock industry. It was believed that veterinarians should not confine their energies to diseases of the horse, but become equally conversant with diseases of cattle, sheep and swine, and should also become reliable judges of live stock. Several members of the Legislature gave short addresses in which they alluded to the work done by graduates of the College. The class graduating this year, with the exception of two, have seen active service overseas during the war.

Prize Winners for Settlers' Letters.

Last November Hon. J. A. Calder, Minister of Immigration and Colonization, authorized a competition in which settlers in Canada were invited to tell their experiences in the form of a letter to the Director of Publicity of the Department. The conditions of the competition emphasized that neither literary style nor correct spelling were essential to winning a prize, but that letters should be written with a view to interesting new settlers who decide to locate in Canada.

Three cash prizes were offered for each Province, the first prize being \$75, the second \$50, and the third \$25.

The competition closed in February last and brought 1,076 entries. After nearly three months' careful study of the contributions the judges have announced the following as prize winners, to whom cheques for the amounts of their prizes have been mailed:

British Columbia: Donald Graham, Armstrong, B.C.; J. A. Edgecombe, Box 106, Peachland, B.C.; W. J. L. Hamilton, R. R. No. 1, Beaver Point, B.C. Alberta: W. Spindler, Berrymoor, Alta.; Mrs. William A. Sargeant, Banff, Alta.; Joseph H. B. Smith, Westholme, Wolfe Creek, Alta. Saskatchewan: Mary V. Rowland, Hoosier, Sask.; Ernest Booth, University of Sask., Saskatoon, Sask.; Mrs. F. E. Shepherd, Senate, Sask. Manitoba: W. W. Moloney, Kaleida, Man.; Sylvester T. Holden, R. R. No. 2, Deloraine, Man.; John P. Hameljik, Hodgson, Man. Ontario: James Grant, R. R. No. 5, Bellwood, Ont.; John B. Beaton, Bridgen, Ont.; Bruce M. Jones, Denfield, Ont. Quebec: Mrs. Amy Kirby, Cookshire, Que.; Dame Louis Touzin, St. Germain de Grantham, Que.; Louis Blais, St. Pierre de Bronghton, Que. New Brunswick: James T. Clinton, R. R. No. 1, Millstream, N.B.; George H. Lucas, R. R. No. 1, Sussex, N. B.; James Dykes, Hoyt Station, N. B. Nova Scotia: Joseph Milligan, Roy's Island, King's Head, N. S.; Joseph K. Owen, Hardwood Hill, N. S.; William MacOdrum, Silverdell Farm, Mineral Rock, N. S. Prince Edward Island: David Brooks, Abney, Lot 64, P. E. I.; Percy O. Frederick, West Devon, P. E. I.; Robert Rhynes, R. R. No. 3, Charlottetown, P. E. I.

The Royal Bank of Canada



Farmers' Sons and Daughters have great opportunities to-day.

They never had better chances to make and to save money. Now is the time to lay the foundation of future prosperity by cultivating the habit of thrift.

There is a Savings Department at every branch of this bank. The staff will be glad to show you how to make the first deposit.

CAPITAL AND RESERVES \$35,000,000
TOTAL RESOURCES - \$535,000,000
825 BRANCHES

Mutual Benefits Day by Day

Every working day the Mutual Life is paying in cash to its policyholders \$12,700.

—is increasing the policyholders' funds at the rate of over \$10,000.

—is assuming new risks at the rate of \$135,418.

—is receiving for all purposes \$28,611.

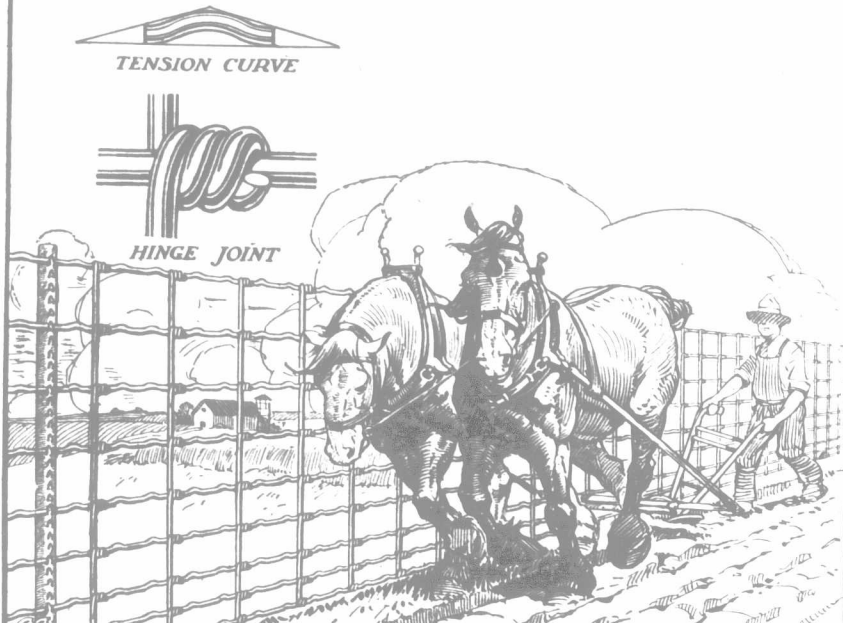
The net profits, credited entirely to policyholders, amount to \$4,341 for every working day.

The Mutual has \$170,706,000 of life insurance in force on the lives of 70,000 members, an average of \$2,400 each.

Be a Mutualist

The Mutual Life of Canada Waterloo-Ontario.

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Grow Grain—Not Weeds

Make every foot of land produce. Replace your old rail and stump fences with

"AMERICAN" FENCE

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"AMERICAN" STEEL FENCE POSTS

"AMERICAN" FENCE, woven throughout from heavy FULL GAUGE NO. 9 GALVANIZED WIRE, with the HINGE JOINT joining the horizontal and upright wires, giving the fence the maximum elasticity and with the TENSION CURVE, allowing for contraction and expansion, insures you a life-time of satisfactory service.

See this fence at your dealers.

Coiled Wire—Barb Wire—Staples

THE CANADIAN STEEL AND WIRE CO., LIMITED
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Only \$100 and After Trial

Keep the New Edison Amberola—Edison's great phonograph with the diamond stylus—and your choice of records, for only \$1.00. Pay balance at rate of only a few cents a day. Free trial in your own home before you decide. Nothing down. Write today for our New Edison Book and pictures free. F. H. BASSON, Edison Phonograph Distributors, 336 Portage Ave. Dept. A19 Winnipeg, Man.

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Males reach full...
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**Cord or
Fabric.**

*Chance never drew
a neat picture nor
built a fair house.*

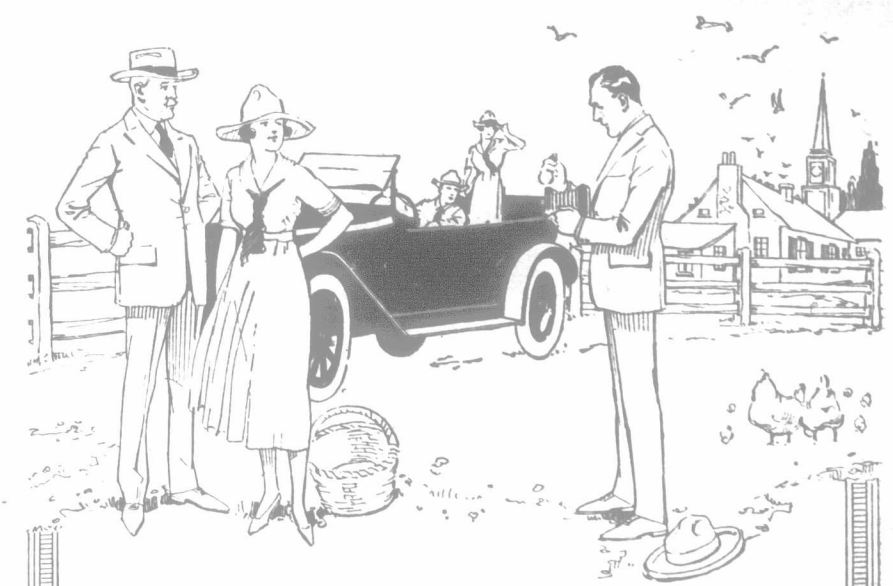
In the making of
Partridge Tires nothing
is left to chance—detail
perfection is secured by
craftmanship scientific-
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inspection insures out-
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are all that good
Tires can possi-
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Game as Their Name

118A



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Everywhere**

IN the country, as in the city, Fleet Foot
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Whether at work or play, Fleet Foot shoes
are ideal for warm weather, because of
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work, and white ones for rest and pleasure.
Ask your dealer to show you some of the
Fleet Foot Shoes for men, women and
children.



*Fleet Foot Shoes are
Dominion Rubber System
Products*

*The Best Shoe Stores
Sell Fleet Foot*

43

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

Care of Turkeys.
THE BREEDING STOCK.

How to Select.—Turkeys mature slowly. Males reach full growth at three years of age; females at two. Select hens from two to five years old for mating to two or three-year-old toms. The male is at his best in his third year. Old hens lay larger eggs and their young are not only larger but stronger than the young from immature stock. Never breed related birds for the production of market stock, as it is almost certain to result in a high death rate among the poults. For breeding for the market, select medium-sized birds, plump but not fat, fine in bone, active and vigorous, and not above standard weight. For breeding exhibition stock the largest-framed birds are generally chosen. Mate from ten to fifteen females to one male.

How to House.—A high shed affording protection on three sides but wholly open to the east and provided with high perches makes an ideal turkey's roost. If there is danger from coyotes or other wild animals, the open side should be securely covered with wire netting. Turkeys will not make good breeding stock if housed with hens in a damp, badly-ventilated, hen house. They are more liable to disease than hens. They will endure cold much better than foul air. They must be kept free from lice and mites, and should be occasionally dusted with a good lice powder and provided with a dust bath. Give them leaves or straw litter to scratch in for their grain and permit them as much range as is possible.

How to Feed.—Avoid over-feeding the breeding stock. Their ration should

**A Sure,
Hot Spark**

The real joy of motoring is only possible when your car is "hitting on all four." The sure, hot spark of the "M & S" ball-pointed plug will guarantee such performance because the ball point concentrates the current and intensifies the heat.

It is the plug with the hotter spark.

The three-in-one terminal of the "M & S" plug is adapted to any style ignition, except Chevrolet; for which we supply a special model ball terminal. The Overland "4" is equipped with our No. 500 1/2-inch standard.

Dealers—The "M & S" is the popular Made-in-Canada plug. Ask your jobber for it or write us direct.

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Commercial Dept.
Russell Motor Car Co., Ltd. 102
1209 King St. West
Toronto, Ont.

"The Plug with the Hotter Spark"

include less corn than oats, wheat, clover, or alfalfa. Oats are unquestionably the best grain to feed, and are better fed sprouted than dry. If a wet mash is used the following is good: One part by measure of cornmeal, two parts of bran, one part chopped onion or raw apples or cooked mashed carrots or potatoes, and one part meat scrap or clabbered milk; mix with boiling water and allow to steam before feeding. Many breeders feed only a dry mash of 8 parts of bran to 1 part of beef scrap. Where bugs are plentiful on the range, no mash is really needed. The birds should be kept active and ready to forage at all times.

HATCHING.

Nests.—In spite of attempted domestication, the turkey remains semi-wild. Instinct leads her to steal away to nest. The tom anticipates her absence while hatching, resents it and tries to keep her in his company by breaking up her nest. She, therefore, lays as far away from her roost as she can and in a secluded place, and tries to cover her eggs with grass or twigs whenever she leaves them. To tempt the hen to lay near home, provide nests of loose straw in empty barrels laid on the side, or in rough A-shaped cooped, or in dry weather, by merely putting a generous wisp of dry grass or a heap of leaves in a convenient hollow and screening the place loosely with branches. Turkey hens lay from 12 to 20 eggs in a clutch. One service from the tom fertilizes all the eggs of the clutch and he can safely be removed thereafter, if found an annoyance. Eggs should be gathered as fast as laid and a couple of china or hard-boiled hens' eggs used to replace them. Write upon each

egg with lead pencil the date when it was gathered and hold eggs for hatching not to exceed 10 days. Keep them on the side and turn daily. They are best held at a temperature of from 50 to 60 degrees.

Chicken Hens Versus Turkey Hens for Hatching.—It is a good plan to use chicken hens to hatch the first clutch of eggs a turkey lays because, if broken up, she will in a week or ten days be laying again. She may profitably be used as a mother, when she has laid out her second clutch, since she rarely lays a third. A chicken hen will cover 8 to 10 eggs; a turkey 18 to 20.

The advantages of the chicken hen as a mother are:

1. As a rule she is tamer than the turkey hen and stands handling and moving better.
2. She will not wander so far from home, tiring the poults out so that they are unable to make the return journey.
3. She generally seeks shelter from rain, and almost always brings the poults home to roost.
4. She will fight for her brood and watch for hawks or coyotes better than a turkey hen.

On the other hand the turkey mother has these advantages:

1. She seems to understand turkey nature better than a chicken hen.
2. She is slower in movement, more careful about stepping on the poults, and broods them more frequently than the chicken hen.
3. She does not wean the poults so young as does the hen and at an age when they generally most need a mother's care.

It is generally recommended that the earliest laid eggs be hatched under chicken hens, but that later some turkey mothers be used in order that, if possible, the poults when weaned by the chicken hens be added to the flocks with turkey mothers and taught to forage with them, thus

Can You Trust YOUR BARN?

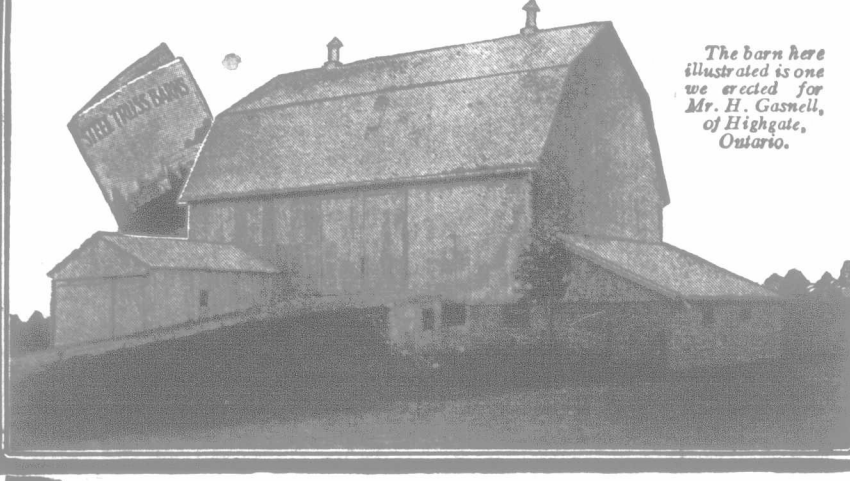
Can you depend on it not to catch fire from lightning or from sparks? Can you rely on it to protect your crops from rain and snow? Can you entrust to it your valuable stock with a feeling that they are safe from all danger? If you would have a barn that is dependable from every standpoint, investigate

PRESTON STEEL TRUSS BARN

The Preston method places the material on your farm all ready for the builders. The erection is a matter of a week to ten days—completed with no trouble to you, by a few expert mechanics. Result: a barn to be proud of, and one you can store all your crops in without a foot of space wasted.

Write for our free book. Address our Head Office at Preston, Ontario.

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METAL SHINGLE AND SIDING COMPANY
ASSOCIATED WITH THE A B DORRISBY CO. LIMITED
PRESTON—MONTREAL—TORONTO
WINNIPEG—SASKATOON—GALGARY



The barn here illustrated is one we erected for Mr. H. Gasmell, of Highgate, Ontario.

making fewer and larger bands for the turkey raisers to guard.

Incubation.—Turkey eggs require 28 to 30 days for hatching. The older the eggs the slower they are to hatch. The greatest care should be taken to keep the sitting hen free from lice or mites. Make nests in new boxes. Dust both nest and mother at least twice during the hatch with a good powder. Persian Insect Powder (Pyrethrum) is as effective as any. It can be purchased at any drug store; is not harmful to the eggs. Do not use sulphur around the nest. It is most essential that there be no lice on the young poults during the first week of their lives. A few lice may either kill them outright or so weaken them that they succumb to disease. Fresh drinking water and a dish of cracked corn and oats mixed with a little grit and charcoal should be kept where the sitting hen can help herself at will. Turkeys are very persistent sitters and often will refuse to leave their nests for days at a time. They should, therefore, be watched and if they fail to leave the nest every other day they should be gently removed and fed and watered before being allowed to return.

It is generally safest to remove the poults from the nest as they hatch because the mother will remain on the nest longer and often the last eggs do not hatch until from 24 to 30 hours later than the first ones. In very dry weather it is a good plan to build the nest out of grass or straw placed upon a sod turned root-side up, hollowed out bowl-shaped and thoroughly soaked with water. Also to sprinkle the eggs lightly with water at from 90 to 100 degrees about the 20th day of incubation.

CARE OF THE POULTS.

When the last egg has hatched remove all the poults to a warm, flannel-lined basket out of sight and sound of the mother hen. Feed and water her and let her move about for a short time.

Kopper King



For Tractors

The "Kopper King" is a heavy duty plug, suitable for use in automobile, truck or tractor.

For protection of the body of the plug, a heavy coating of copper eliminates rust trouble, preventing absolutely the temper trying exasperation of a spark plug rusted fast into the cylinder head.

The copper surface does more; it prevents carbon troubles; carbon under electrical heat will not adhere to copper.

"Kopper King" Spark Plugs are for sale by Dealers everywhere. Price \$1.50.

All C. G. E. Automobile Accessories are "Tested for Service"
Canadian General Electric Co.

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NELSON, VANCOUVER AND VICTORIA.



Come to Guelph. There's Food for Thought. Our Second Annual Fertility School.

Come

to the
Second Annual

Soil Fertility Conference

at GUELPH, June 16-17-18

All interested in Soil Fertility are invited to this three-day Soil Fertility School at the Ontario Agricultural College. Farmers and their sons, Truck Gardeners, Tobacco Growers, Teachers of Agriculture, Fertilizer Agents, Seedsmen, Horticulturists, etc., should be especially interested.

Prominent Speakers:

Hon. Manning Doberty,
Minister of Agriculture, Ontario.

Dr. G. C. Creelman,
President of Ontario Agricultural College.

Prof. H. O. Buckman,
Department of Soil Technology,
Cornell University, Ithaca, N.Y.

Prof. Geo. W. Cavanaugh,
Department of Chemistry,
Cornell University, Ithaca, N.Y.

President J. B. Reynolds,
Manitoba Agricultural College.

Members of the Faculty of Ontario Agricultural College and Specialists of Ontario Department of Agriculture.

Important Subjects:

Ontario Agriculture.
Changes and Losses that certain plant nutrients undergo in the soil.
The Fertilizer Law and its Interpretation.
Elements of Plant Food.

Farm Management Studies.
Lime in Agriculture.
Drainage and its relation to crop production.
Vegetable Growers' Problems in Soil Fertility.

Make a point of attending. Your time will be well spent. Farm Methods are changing. Know about them. Your questions on Agricultural matters will be answered too.

Don't Forget the Dates, June 16-17-18
and bring a friend, too!

Copy of programme will be mailed on request. Drop us a card that you will be present—We want to prepare for you.

Soil and Crop Improvement Bureau
of the Canadian Fertilizer Association
1111 Temple Building - Toronto
in co-operation with
ONTARIO AGRICULTURAL COLLEGE



HAMILTON
Toronto
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- Then remove clean, new coop way made of ground is cold have a board poults live upon start, but move fresh soil at least
- Feed the poults they are from 2 are many different mended by different there are many equally good res environment. Below, any one prove satisfactory directions all subscribe to:
1. Do not clean another. Select and stick to it.
 2. Feed very poults a little h
 3. Feed of in two hours.
 4. Give no s
 5. In a natu live upon flies grubs, snails, w with seeds and need more anim and hard-boiled substitutes for
 6. Dry corn crops; ferment cracked corn and poults are young feeding.
 7. Remember frame, big org plumage; theref
 8. As soon a inch boards al need exercise to never allow th on which many
 9. When th under the dire shade must be
 10. Lice, d

larger bands for the hard. Key eggs require 28 to 30 days to hatch. The older the eggs are to hatch. The birds should be taken to keep them from lice or mites. Use boxes. Dust both at least twice during the incubation period. Permethrin is as effective as DDT. It should be purchased at any drug store. It is not harmful to the eggs. It is not to be used around the nest. It is to be used on the first week of incubation. Lice may either kill the birds or weaken them that they may be purchased at any drug store. Fresh drinking water should be cracked corn and oats. Use grit and charcoal. The sitting hen can be removed and the nest gently removed and the birds are being allowed to

best to remove the nest as they hatch. The birds will remain on the nest for the last 30 hours later than the dry weather it is a nest out of grass in a sod turned root-out bowl-shaped and with water. Also to be kept with water at a distance of about the 20th

POULTS. When hatched remove to a clean, new coop with a small grass runway made of 12-inch boards. If the ground is cold and damp the coop should have a board floor; if not, let the little poults live upon the ground from the start, but move coop and runway upon fresh soil at least every other day.

Feed the poults for the first time when they are from 24 to 30 hours old. There are many different ways of feeding recommended by different breeders and probably there are many different rations that give equally good results under right care and environment. Several rations are given below, any one of which will doubtless prove satisfactory, but the following directions all successful turkey breeders subscribe to:

1. Do not change from one ration to another. Select your method of feeding and stick to it.

2. Feed very little, always leaving the poults a little hungry.

3. Feed often; the first ten days once in two hours.

4. Give no sloppy food.

5. In a natural state young turkeys live upon flies, spiders, grasshoppers, grubs, snails, worms, eggs, etc., together with seeds and berries. Little turkeys need more animal food than little chicks and hard-boiled egg and milk are the best substitutes for flies, bugs, etc.

6. Dry cornmeal will swell in their crops; ferment, and kill them. Use cracked corn and cornmeal sparingly while poults are young and always scald before feeding.

7. Remember you must build a large frame, big organs, much muscle, heavy plumage; therefore feed builders, not fats.

8. As soon as the poults jump over 12-inch boards allow them range. They need exercise to have healthy livers; but never allow them to range over ground on which many chickens have run.

9. When the poults begin to droop under the direct rays of a warm sun, shade must be provided.

10. Lice, dampness, filth and over-



883—Full split Gun pattern, four-inch imitation leather cuff.

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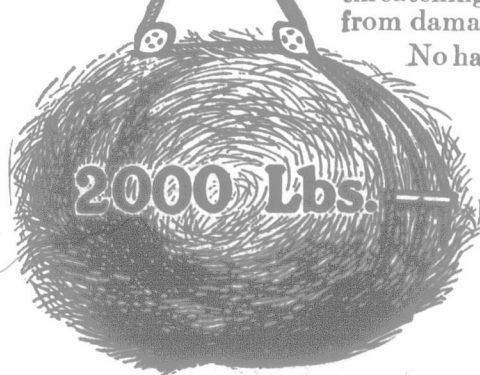
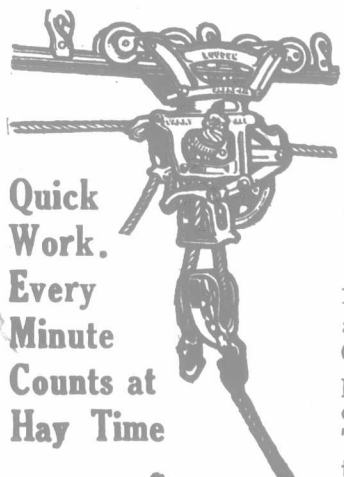
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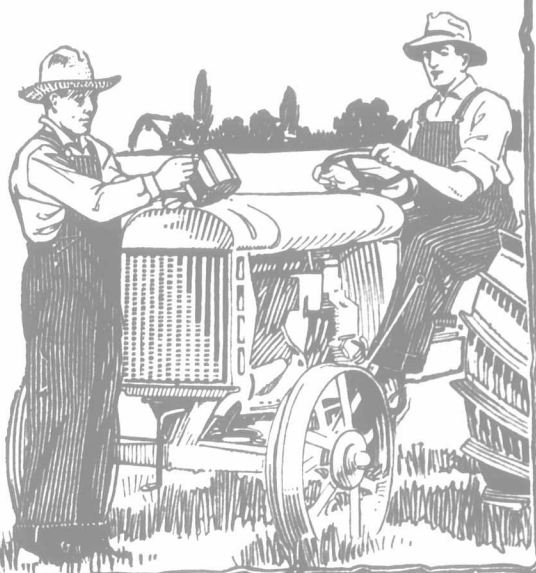
are known to farmers because they bear a name famous for the finest of material, design and handiwork. Sewn to make the seams like wire, they stand the heavy wear and tear like the stoutest corduroy. MADE ONLY BY

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feeding kill most of the poults that fail to live.

Ration 1. One hard-boiled egg for every eight poults added to stale (but not sour) wheat bread dipped in hot milk and squeezed very dry. Crumble egg, including shell, and bread together and season with black pepper sparingly. Feed this for two weeks or more, alternating the egg with cottage cheese or clabbered milk. After two weeks, replace the egg with best grade of beef scrap, and keep clabbered milk before them all the time; but if they can find insects and seeds on the range feed only the milk after the third week. When beef scrap is fed, it must be absolutely fresh and sweet. Sift and use only the finer portion.

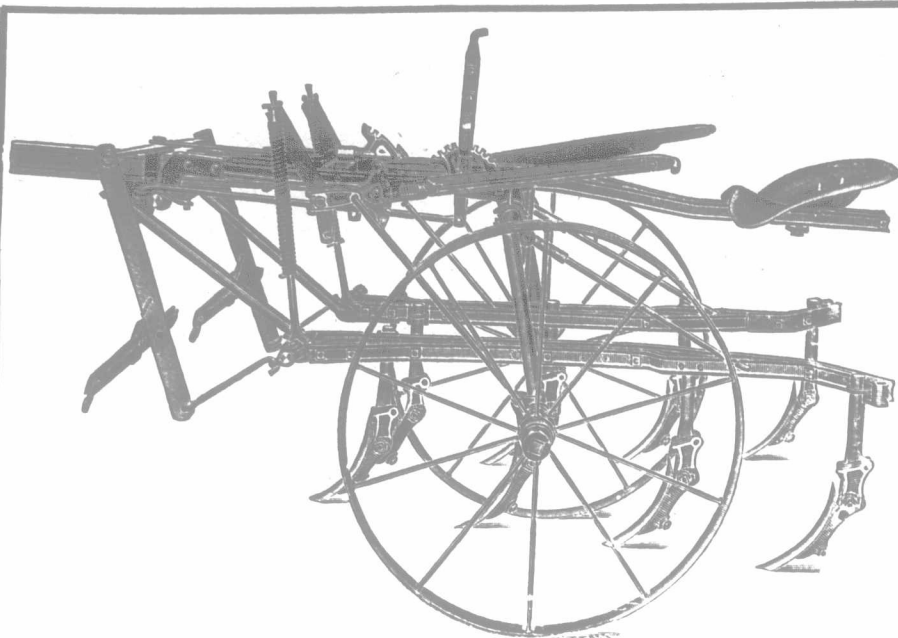
Ration 2. One raw egg for every eight poults added to a pint of bran and enough clabbered milk to mix rather dry. For the first fourteen days feed on a clean shingle once in two hours all they will clean up eagerly. Use pepper or ginger only in case of sickness. After the fourteenth day gradually replace the bran, etc., by chick food, using care that it is not mouldy or musty or tainted in any way.

Ration 3. Fresh, dry, steel-cut oat meal alternated with stale bread dipped in sweet milk and squeezed very dry, then mixed with hard-boiled egg. After two weeks replace the steel-cut oat meal by finely cracked wheat and finally by whole wheat. In place of the egg well-cooked, finely-chopped liver or lean meat may be fed occasionally.

With all these rations it is most important to feed fresh water, clean, sharp grit, granulated charcoal and plentifully of finely-chopped, tender grass or dandelion leaves, sting nettle, radish tops, onion tops, lettuce, etc. Some claim a range upon green oats will cause diarrhoea, but a grass range is ideal. Others claim that the feeding of both sweet and sour milk in the ration at the same time will cause bowel trouble. In many cases it does not do so, but the possibility should be noted.

TEN COMMANDMENTS FOR PREVENTION OF DISEASE.

1. Never feed on the ground where food may be left to ferment, sour or mould, and later be eaten.
2. Never over-feed, especially of egg or mash. Remember that in a wild state turkeys are more often hungry than not.
3. After two weeks of age in good weather, let the hens take the poults and go. They do not need coddling, but they do need protection from weather, beasts of prey, etc.
4. Keep the poults and their coops free from lice. Use Persian insect powder to dust them or a drop of olive oil on the head, at the quill of the wing feathers, and around the vent.
5. For a tendency toward bowel trouble feed boiled rice. Bowel trouble indicates improper feeding or exposure to dampness and cold, or both.
6. Do not permit poults to run over ground which chickens, pigs, ducks, geese, etc., have made filthy. Plow up such ground or keep the poults yarded away from it.
7. When the poults have been chilled or seem droopy and need a tonic, make it as follows: Boil a pint of milk, put in a shake of red pepper, add a tablespoonful of alcohol; then beat up a raw egg and add to the mixture. Use this to moisten the bran mash. A little finely-chopped lean meat may be added.
8. Use green food finely cut in quantity in all rations as an aid to digestion.
9. Be especially watchful of the poults when at about six weeks of age, they "shoot the red," that is, begin to grow the protuberances on the head and neck. The danger is of the blood flowing back upon the heart and becoming stagnant, the intestines become clogged and inflammation and diarrhoea follow. The following treatment will prove helpful: Mix one tablespoonful of red pepper and two tablespoonfuls of wheat middlings with water and make into four pills—bake hard. Give one pill three times a day to a full-grown turkey or a smaller pill in proportion to size of fowl. Follow with a tablespoon of castor oil for the old turkey or a teaspoonful for a young poults.
10. Call the turkeys home to roost by feeding them a little grain every night.



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Thorough Cultivation is easy with the John Deere "J.B." Level Lift Cultivator. You can work one or two rows as desired. On level land or hilly this implement will give perfect satisfaction. It is easily adjusted to cultivate rows 24 or 44 inches apart—has a handy spacing lever. Wheels are easily set for close or wide tread.

The shovels remain evenly spaced, face square and cut all soil and weeds between rows. Rigs are easily adjusted to any height and for hilly ground. No tracking or trailing. Close hitch and direct pull. It's a light draft cultivator. Easy to operate and doubles the cultivating capacity. Made of high-grade steel.

John Deere One Horse Steel Cultivator

Hoeing is not necessary when you use a John Deere Steel Cultivator. They are made especially for cultivating crops planted in rows far enough apart for a horse to pass.

All sizes from 5 to 14 teeth—shovel and straight tooth types. They are made of the best steel and can be equipped with any attachment.

Visit the John Deere dealer. Get into the seat of one of these machines. See how easily they operate, then you will use them on your farm. Ask for illustrated folder.

The JOHN



DEERE MANUFACTURING CO., Ltd.

WELLAND :: ONTARIO

FATTENING RATIANS.

Commence to feed turkeys early in the fall to get them ready for the Thanksgiving market. Feed night and morning only, and sparingly the first ten days. The principal food should be whole corn, the older the better, to avoid bowel trouble.

It is the belief that cold weather makes fat turkeys. The real reason is that in a warm fall the ground keeps soft, vegetation lingers and plenty of worms and bugs abound. As a result the turkeys make long forages, eating the worms and bugs. This excessive travel thins them, and walks all their soft and fine flesh into tough, stringy muscle. On the other hand, a cold fall, with early frosts and snows, freezes the ground and kills the bugs. The turkeys wander less, loaf around the barnyard, gorge an abundance of grain and put on flesh.

Turkeys allowed to run in a patch of field peas will finish off fairly well with a night feed of wheat or corn. If turkeys are fed on a grain ration of equal parts of oats, barley and corn, mixed with table scraps, boiled carrots, potatoes and milk, a meat is produced that is extremely plump and white. A little suet mixed toward the end of the season will materially aid, also. Another good fattening ration is ground oats moistened with skim-milk and a little mutton fat added every other day. Still another is equal parts of cornmeal and ground barley with boiled potatoes or boiled rutabagas.

All mashes should be mixed soft but not sticky and when fed, grit and charcoal should be supplied.

The kindergarten had been studying the wind all week—its power, effects, etc.—until the subject had been pretty well exhausted. To stimulate interest, the kindergartner said, in her most enthusiastic manner:

"Children, as I came to school to-day in the trolley car, the door opened and something came softly in and kissed me on the cheek. What do you think it was?"

And the children joyfully answered, "The conductor!"—Harper's Magazine.

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will carry on a

CO-OPERATIVE DRIVE

during the

WEEK OF JUNE 14th to 19th

The object of the DRIVE is to raise the subscribed capital stock of the company from

One Quarter of a Million to a Million Dollars

Business of the company during the last year has increased eight fold. This necessitates a large sum of money to finance the transactions, and thus a considerable increase in the capital stock. More capital will improve the service of the company to producer and consumer alike.

Every year the company has paid a seven per cent. dividend on its paid up capital out of profits earned. Prospects are good for it continuing to do this. The stock to be offered furnishes an attractive investment.

KEEP IN MIND

JUNE 14th to 19th

Headquarters: 130 King St. E, Toronto



Purina Calf Chow

Is Different

Yes, it's unlike any calf meal on the market.

- 1st. It's different because it's better.
- 2nd. Every ingredient is a pure feed of recognized value, no "phony" products of unknown worth. It does not contain anise, or any appetizer. Calves eat it as greedily as they do whole milk.
- 3rd. It does not scour; blood flour is one of the important ingredients, which insures freedom from scours.
- 4th. Easy to feed, no boiling, just mix with warm water.
- 5th. It is balanced just like whole milk. Calves thrive from the first on Purina Calf Chow and it keeps them making gains without sickly periods. It is used by many of the best dairy farms in the country to raise the finest calves.
- 6th. But it is cheap enough to use on any calf, costs less than half as much as milk feeding. So easy to feed that boys or girls are assured of success.



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Use good breeding stock now and be ready to meet the demand which is sure to exist. All horses have been Government inspected, and we guarantee them to be satisfactory, sure breeders; if they are not, you do not have to keep them.

We will sell on time to responsible parties. Look up our winnings at the Western Fair, Guelph Winter Fair and Ottawa Winter Fair. These will give you some idea as to the class of horses we are offering.

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A GROUP OF PERCHERON GELDINGS



Matters of Canadian Citizenship.

PUBLIC MORALS.

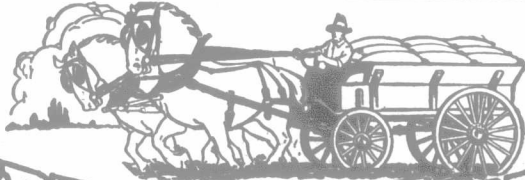
BY E. K. MARSHALL, M.A.

There is a strange contrast between the standards of private and public morality among us Canadians. In private life the Canadian is an exemplary man. He is helpful to the unfortunate, courteous toward the weak and self-respecting with the strong. In all pressing emergencies he acts cheerfully and quickly, with no trace of the mean or selfish. Daily we have evidence of self-sacrifice, devotion and thoughtfulness. But with public matters a somewhat different story is to be told.

A citizen's public attitude is revealed principally in his business activities and his political interests. A man, exemplary so far as the private code is concerned, will frequently over-reach his competitors for money, business advantage or office. He will cringe to a political power for the sake of personal advantage, when in private life he is a strong, manly citizen. In politics, too often, he places purely party or sectional advantage first, with little concern as to the possible effect of his affiliation; and, further, he not only misunderstands the independent man, but is prone to abuse him for a conscientious stand on a public question, preferring to abide in his own party camp until fairly frightened out of it.

When a great number of men do this, and when we have a widespread misuse of public trust, the fault is not theirs alone. It lies in the false standard of public morals, which we have allowed to grow up in our midst. Men who have done damage to the public in their business or party actions are still good husbands, loyal personal friends, and obliging citizens. For this strange double standard, this political and industrial engine, blame is on us average citizens as well as on those who have abused positions of trust.

A basic cause, it seems to me, is to be found in the fact that our private relations are clear and well defined, whilst our public relations, being more complex and often obscurely interdependent, are not. We have lived longer as private citizens than we have as public citizens in a democracy. We readily and strongly condemn private error, and the disapprobation is usually quite effective, but in



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business and politics we are slow to apply the same principles. I read some time ago of a bill passed in a certain legislature providing for severe penalties for commercial combination, providing, however, that nothing in the law would apply to cattlemen and their combination; that is, the law was one which worked against the stranger but in favor of the friends of the legislators. Too often our legislation looks no farther than the immediate constituency; and when we deal with public policy, we neglect to measure public action by standards found essential in private affairs. Too often our business men, whilst striving to win success for themselves, do not think of their fellows, but in substance excuse their actions by replying, "Am I my brother's keeper?" The moral and economic reply, of course, is, "You are."

The power that is effective in politics and in business, after all, is not so much statutes as it is public sentiment, not merely laws and regulations, but rather the opinion of men and women expressed bravely and publicly. We can make certain actions misdemeanors, but shrewd men can easily discover means of twisting the law or its interpretation. We must so shape their ambitions that they will not wish to do this. What the influential world condones, the ambitious man will practice; but what is generally regarded as dishonorable, he will hesitate to use, and is likely to reject, just as he would a private offence. Men seek the approval of their fellows. So, in addition to laws, we must have a strong public sentiment for right. This common sentiment, of which each and every one is a trustee, is really responsible for our business principles and practices and our political condition. If we find business men taking unjust advantage of times of national danger and stress, or scarcity of life's necessities, or see politicians abusing the positions of trust given them, it may be owing to lack of laws protecting the public domain, but is more likely owing to a careless code of public morals. The average man lives true to his own code of morals. Once let public sentiment be clear and pronounced on certain virtues in public life, and then something may be accomplished along the lines of public welfare.

Why is there this difference? One consideration is the fact that our experiences in private life are longer and more direct than that in public life. Centuries have taught us that personal purity, temperance, veracity and such virtues are essential in private life; but commerce and politics are more recent, and international life still more recent. Again, we are not so careful in choosing our public officials as we are in selecting those for our private concerns. To a very large degree public officials have been chosen for some special reason rather than for community service. We have not yet learned to think and act in terms of community life and thought, and until we do this we cannot expect any very great permanent advance. Further, in public morals the case is not always clear. Very complex relations enter in and obscure the issues, and actions are slow in showing their consequences. Our private code has become sacred, but there is no great body of public opinion giving a social sanction for social actions.

If we examine our public journals, we discover quite frequently the double standard. Often the editorial page will advocate public measures that are very different from the advertisements. Whilst on one hand we have the interests of the people ably considered, on the

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No. 6300	6 line wires, 30 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 5, 6, 7, 8. Per Rod	55c	58c	60c
No. 6400	6 line wires, 40 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 7, 7, 8, 9, 9. Per Rod	60c	63c	65c
No. 7400	7 line wires, 40 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 5, 6, 6, 7, 7½, 8½. Per Rod	67c	70c	72c
No. 7480	7 line wires, 48 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 5, 6½, 7½, 9, 10, 10. Per Rod	70c	73c	75c
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No. 948	9 line wires, 48 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 6, 6, 6, 6, 6, 6, 6. Per Rod	92c	96c	\$1.00
No. 9481	9 line wires, 48 inches high, uprights 13 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 3, 4, 5, 6, 7, 7, 8, 8. Per Rod	\$1.04	\$1.08	\$1.12
No. 9500	9 line wires, 50 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 4, 5, 6, 7, 8, 8, 8. Per Rod	85c	89c	92c
No. 950	9 line wires, 50 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 4, 5, 6, 7, 8, 8, 8. Per Rod	92c	96c	\$1.00
No. 1050	10 line wires, 50 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 3, 3, 3½, 4½, 5½, 6½, 8, 8, 8. Per Rod	\$1.00	\$1.04	\$1.09

MEDIUM HEAVY "IDEAL" Fence		Old Ontario south of North Bay	New Ontario and Quebec	Nova Scotia, New Brunswick, Prince Edward Island
Made throughout of Hard Steel Wire, evenly Galvanized. Carried in stock in 20, 30 and 40-rod rolls.				
No. 630	6 line wires, 30 inches high, uprights 16½ inches apart. All Hard Steel Wire, evenly galvanized. Spacing 4, 5, 6, 7, 8. Per Rod	41c	42c	43c
No. 641	6 line wires, 41 inches high, uprights 16½ inches apart. All Hard Steel Wire, evenly galvanized. Spacing 7, 7, 8, 9, 10. Per Rod	42c	43c	44c
No. 6410	Same as Style No. 641 with uprights 22 inches apart. Per Rod	40c	42c	43c
No. 726	7 line wires, 26 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 3, 3½, 4, 4½, 5, 6. Per Rod	45c	46c	48c
No. 7261	Same as Style No. 726, but with uprights 8 inches apart. Per Rod	53c	55c	57c
No. 7266	Same as Style No. 726, but with uprights 6 inches apart. Per Rod	59c	61c	63c
No. 742	7 line wires, 42 inches high, stays 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 6, 6, 7, 7, 8, 8. Per Rod	51c	54c	56c
No. 834	8 line wires, 34 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 3, 3½, 4, 4, 5, 6½, 8. Per Rod	54c	56c	57c
No. 936	9 line wires, 36 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 3, 3½, 4, 4½, 5, 5½, 6. Per Rod	56c	58c	61c
No. 949	9 line wires, 49 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 4, 4, 5, 6, 7, 7, 8, 8. Per Rod	62c	64c	66c
No. 1150	11 line wires, 50 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 3, 3, 3, 4, 4, 5, 6, 7, 7, 8. Per Rod	71c	73c	75c
No. 1448	14 line wires, 48 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 2½, 2½, 2½, 2½, 2½, 2½, 3, 3½, 4, 5, 5½, 5½, 6. Per Rod	83c	85c	88c

"IDEAL" Poultry Fence		Old Ontario south of North Bay	New Ontario and Quebec	Nova Scotia, New Brunswick, Prince Edward Island
Top and bottom wires No. 9, all others No. 13. Carried in stock in 10 and 20-rod rolls.				
No. 1848	18 bar, 48 inches high, cross-bars 8 inches apart. All Hard Steel Wire, evenly galvanized. Spacing, from bottom up, 1½, 1½, 1½, 1½, 2¼, 2¼, 2¼, 2¼, 3, 3, 3½, 3½, 4, 4½, 5. Per Rod	\$1.05	\$1.10	\$1.15
No. 2060	20 bar, 60 inches high, cross-bars 8 inches apart. All Hard Steel Wire, evenly galvanized. Spacing, from bottom up, 1½, 1½, 1½, 1½, 2¼, 2¼, 2¼, 2¼, 3, 3, 3½, 3½, 4, 4½, 5, 6. Per Rod	\$1.15	\$1.20	\$1.25

"IDEAL" Lawn Fence and Lawn Gates

Write for Price List and Catalogue.

Improved "IDEAL" Farm Gates

Horizontal wires all No. 9, only 6 inches apart. Uprights No. 12 wire, 6 inches apart. Diagonals No. 13, furnish a strong, close mesh chicken-proof and pig-proof. New patented brace tightener and latch—the biggest gate improvements in years.

Length, feet	Height, inches	Old Ontario south of North Bay	New Ontario and Quebec	Nova Scotia, New Brunswick, Prince Edward Island
3	36	\$4.00	\$4.20	\$4.40
3	42	4.25	4.45	4.70
3	48	4.50	4.75	4.95
3½	36	4.25	4.45	4.80
3½	42	4.50	4.75	4.95
3½	48	4.75	5.00	5.25
4	36	5.00	5.25	5.50
4	42	5.25	5.50	5.75
4	48	5.50	5.75	6.00
4½	36	5.75	6.00	6.25
4½	42	6.00	6.25	6.50
4½	48	6.25	6.50	6.75
5	36	6.50	6.75	7.00
5	42	6.75	7.00	7.25
5	48	7.00	7.25	7.50
5½	36	7.25	7.50	7.75
5½	42	7.50	7.75	8.00
5½	48	7.75	8.00	8.25
6	36	8.00	8.25	8.50
6	42	8.25	8.50	8.75
6	48	8.50	8.75	9.00
6½	36	8.75	9.00	9.25
6½	42	9.00	9.25	9.50
6½	48	9.25	9.50	9.75
7	36	9.50	9.75	10.00
7	42	9.75	10.00	10.25
7	48	10.00	10.25	10.50
7½	36	10.25	10.50	10.75
7½	42	10.50	10.75	11.00
7½	48	10.75	11.00	11.25

Improved "IDEAL" Stock Gates

Wire filling No. 9 throughout, same as Heavy "IDEAL" Fence. No fence filling used. Each wire put in by hand.

Carried in stock in following sizes only:

12 feet long, 51 inches high, each.....	\$9.00	\$9.45	\$9.90
13 feet long, 51 inches high, each.....	9.25	9.70	10.20
14 feet long, 51 inches high, each.....	9.50	10.00	10.45

Fence Supplies, Brace Wire and Barb Wire		Old Ontario south of North Bay	New Ontario and Quebec	Nova Scotia, New Brunswick, Prince Edward Island
Ideal Steel Posts, 1½x1½x7' long.....	\$0.60	\$0.65	\$0.68	
Ideal Fence Stretchers, each.....	12.50	13.75	14.20	
Hand Stretcher, each.....	1.50	1.65	1.75	
Universal Post Hole Digger, each.....	3.50	3.50	3.60	
Galv. Staples in 25-lb. boxes.....	2.20	2.30	2.40	
Galv. Staples in 100-lb. boxes.....	8.00	8.30	8.60	
No. 9 Brace Wire, per 25 lbs.....	2.10	2.40	2.50	
No. 9 Coiled Spring Wire, per 100 lbs.....	7.40	7.70	8.00	

Barb Wire

4-pt. 4" Galv. Cabled, per 100 lbs.....	\$8.00	\$8.25	\$8.50
4-pt. 6" Galv. Cabled, per 80-rod spool.....	6.70	6.95	7.20
2-pt. 5" Galv. Cabled, per 80-rod spool.....	6.40	6.65	6.90

Our Guarantee—"Ideal" Fence is guaranteed to be made as the best fence you are not satisfied with "Ideal," return it at our expense and get a new lot or your money back. This guarantee covers everything—no conditions—no loop-holes.

Reference—The Canadian Bank of Commerce.

Ideal Fence and Spring Company of Canada, Limited
1050 McDougall St. WINDSOR, ONTARIO 435 Coristine Bldg., Montreal, Que.

other we find corporations, etc., presenting their interests with little or no consideration for the public. The grain-dealer looks at business and political questions from his own interested standpoint; the creditor class from another; the manufacturer has in mind his own interests; the laborer and ordinary citizen, well, he looks on rather helplessly and hopelessly, feeling that somehow he is not getting justice, and knows not what to do. It all goes to show that chaos reigns that there is too little response to a public sanction.

To develop public spirit is a long process. Independent journals, especially during the past few years, have done very much in developing independence in thought. Teaching civics in our schools in all grades, especially the high school grades, will form a valuable basis for public sentiment later on. In this case, public opinion is dealt with historically and practically, and not "butt-end foremost." Briefly, during the last three centuries we have passed from a state of static or fixed social and economic position to that of liberty of opinion and opportunity; each one now serves society for better or for worse, and until there is a public sanction as powerful and responsive as the personal sanction, we shall have to a more or less degree, a continuance of unscrupulous actions in both business and politics.

Public law, to be effective, must have more than a mere majority to support it. It requires a general acquiescence. Our comparatively strict private standards must apply in public matters; Acts of Parliament will not be enough; their efficiency is largely dependent upon the support received at the hands of citizens generally. The man who in private life would never think of stealing, but who will evade the customs, make wrong taxation returns, or neglect to present his railway ticket if not asked for it, must be educated to his public responsibility. He must be led to see and feel that the law of righteousness is continuous with every part of life's activities. The man who would not support the ruffian on the street in the act of robbing a poor window, but who votes for and defends the political boss or corporation who has robbed the public treasury or public domain, needs to have an awakening to the fact that money thus indirectly misused is nothing else than private money set apart for public service and is, therefore, peculiarly sacred. He should trace the connection and see that taxes are simply moneys contributed to general welfare, of which his own personal welfare is a part. A long training with bitter experiences is often needed before people respond readily and intelligently to public responsibility.

Of recent years, thanks to the efforts of men of vision and the loyal support of public journals, much has been done to educate the public conscience. Such organizations as civic leagues, economic societies, grain growers, etc., have a fine opportunity to form public opinion along intelligent lines. Whilst the progress has been at times dreadfully slow and disheartening, there is every reason to believe that there is now in formation a body of public opinion, clear, brave and strong, which will drive into the outer darkness many of the things which have been a reproach to Canadian public life. In the formation of this public moral system every one of us from the least unto the greatest has a part to play, and no nobler work can be entrusted to any Canadian, than to have something to do with the moulding of a healthy public spirit.

A Soft Answer.—A salesman was traveling a country road when suddenly he saw a house burning. Running up, he pounded on the door lustily, till an old woman opened it.
"Madam, your house is on fire!" he exclaimed.
"Eh?"
"I say your house is on fire!"
She put her hand to her ear and leaned toward him. "What?"
"Your house is burning up!" he roared.
"Oh! Is that all?"
"That's all I can think of just now, madam," he gasped.—The American Legion Weekly.

Pat.—"Mike, what is a chiropodist?"
Mike.—"A chiropodist is a fellow that teaches canary birds how to sing."—Angwan.

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A Safe, Speedy
Cure, Splint,
Strained Toes,
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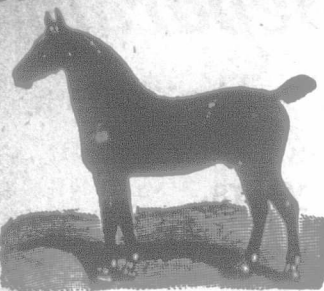
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Warranted to Give Satisfaction.
See Imitators But No Competitors.
 A Safe, Speedy and Positive Cure for
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 Strained Tendons, Founder, Wind
 Pull, and all lameness from Spavin,
 Ringbone and other bony tumors.
 Cures all skin diseases or Parasites,
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 Parasites from Horses or Cattle.
 As a Human Remedy for Rheumatism,
 Swelling, Sore Throat, etc., it is invaluable.
 Every bottle of Caustic Balsam sold is
 warranted to give satisfaction. Price \$1.75
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 press, charges paid, with full directions for
 its use. Send for descriptive circulars,
 testimonials, etc. Address
 The Lawrence-Williams Co., Toronto, Ont.

Tenant Farmers

Won many of the best prizes at the Shire Horse Show, London, Eng., including the Championship for mares. This mare was put up at auction and sold for over \$24,000, a record figure for Shires. Tenant farmers are notably shrewd breeders, and if they find Shire breeding profitable, why should not Canadians, who mostly own their farms, go and do likewise? The increasing popularity of Shires in England is shown by the high prices realized at sales, and also by the fact that so many tenant farmers are purchasing and breeding them at the present time.

G. DE W. GREEN, SECRETARY
Canadian Shire Horse Association
 58 Grenville St., - Toronto, Ontario

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from a Bone Spavin, Ring Bone, Splint, Curb, Side Bone, or similar troubles and gets horse going sound. It acts mildly but quickly and good results are lasting. Does not blister or remove the hair and horse can be worked. Page 17 in pamphlet with each bottle tells how \$2.50 a bottle delivered. Horse Book 9 R free. ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful Swellings, Enlarged Glands, Wens, Bruises, Varicose Veins; heals Sores. Allays Pain Will tell you more if you write. \$1.25 a bottle at dealers or delivered. Liberal trial bottle for 10c stamps. W.F. YOUNG, Inc., 258 Lyman Bldg., Montreal, Can.

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 10 Adelaide East - TORONTO

A Shortage of Heavy Draft Horses

No complete information is yet available regarding the decrease in horse population in Europe during the war. Recent information supplied by the International Institute of Agriculture however, shows that the number of horses in such countries as Bohemia, Slavokia, Moravia, and Silesia, has decreased 34.7 per cent. since pre-war days. The total horse population in these countries before the war was 719,423. Statistics obtained since the armistice was signed show a total horse population in these countries of only 469,362.

If these figures represent the condition of things generally in the countries of Europe directly affected by the war, the world's total horse population will show a decrease of a million or so, as compared with pre-war days.

So far as the situation on this side the Atlantic is concerned, the total horse population has remained about normal. During the past year or two however, both in Canada and the United States, breeding operations have materially decreased. Some authorities place the decrease at as high as twenty per cent. If, however, we place the decrease in breeding at ten per cent., which is a fair estimate, it will mean a marked shrinkage in the horse supply a year or two hence.

The most serious situation facing us at the present time is a shortage of heavy draft horses. The supply of good drafters to-day is not equal to the demand. This present shortage together with the reduction in supply in the next year or two, owing to the falling off in the breeding operations, may mean a famine in good, heavy draft horses in the near future.

And there is this feature of the situation to be considered also. The demand for heavy draft horses is on the increase. There is a place where the horse in city transport work, and also for work on the farms that cannot be economically filled by motor power. Transport companies are realizing this more and more, and are on the look out for good draft horses to supply their needs. Consequently, prices for good draft of weight and quality are advancing. Any draft gelding of weight and of reasonably good quality will sell for \$300 while choice quality, which is extremely hard to get, will command prices from \$350 up. Quite recently a well-matched pair of Clydesdale geldings four and five years old, changed hands at \$800. Only the other day an enquiry came east from a large Winnipeg transportation company for a choice pair of Clydesdale geldings of size and quality. Price was of secondary importance, so long as the horses came up to the standard required. These are only instances of demand that come to the writer at the moment. They could be multiplied many times over in the case of Clydesdales. There is not enough of the good kind to supply the demand. The demand is increasing while the supply is away below requirements. The farmer who has Clydesdale geldings of weight (1,700 lbs. and up) and quality to sell at the present time, can dispose of them at a handsome figure. And the farmer who will have similar types ready for market in a year or two's time will obtain higher prices still, and so on for the next half a dozen years at least.

Viewing the whole situation carefully, and allowing for all contingencies that may arise, the market for draft horses of weight and quality will remain at a high level for some years to come. Prices here may not reach up to the high level of \$1,300 and \$1,500 each for choice Clydesdale geldings of weight and quality now ruling in Scotland, though prices up to four figures may not be uncommon in a few years' time. Farmers with suitable mares will not go astray in breeding them to a good Clydesdale stallion this season. —J. W. Wheaton, Secretary the Clydesdale Horse Association of Canada.

He had had bad luck on his fishing trip, and on his way home entered the butcher shop and said to the dealer:
 "Just stand over there and throw me five of the biggest of those trout!"
 "Throw 'em? What for?" asked the amazed dealer.
 "So I can tell the family, I caught 'em. I may be a poor fisherman, but I'm no liar."

Barrett MONEY SAVERS for FARM and HOME

Barrett Products save money and give unflinching satisfaction. They are inexpensive to buy, easy to use and sure in results. This has been proved by thousands of Canadian farmers who have used these products for years. The Barrett Trade-mark means bigger value for your money.

Creonoid (Fly Oil) Lice Destroyer and Cow Spray

A wonderfully effective destroyer of flies, lice, mites and vermin of all kinds. When live stock and poultry are free from insects, horses are healthier, hogs fatten more quickly, cows give more milk and hens lay more eggs.



Creonoid is cheap enough to use freely—you'll find it produces big results. Give it a trial. Comes in 1, 5 and 10 gallon cans, 1/2 barrels and barrels.

Everlastic Liquid Roofing Cement —for Old Roofs

Everlastic Liquid Roofing Cement will add several more years of service to your old felt or "Rubber" roof. It comes ready for use; has the consistency of thick molasses, is easy to apply, dries quickly and forms a water-tight, long-wearing covering.

Packages of all sizes, from one pint cans to forty-gallon barrels.

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If you are to get the full value out of farm implements, (metal roofs and other exposed metal, keep them from rusting away.



Everjet Carbon Paint positively prevents rust. It gives a lustrous, black, durable finish that is proof against moisture, acids and alkalis. Put up in 1, 5 and 10 gallon cans, 1/2 barrels and barrels.

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Everlastic "Rubber" Roofing —for New Roofs

A popular-priced roll roofing of unusually high quality. Wears stubbornly under all conditions. Is now giving uniform satisfaction on thousands of farm and factory buildings in all parts of Canada.



Easy to lay and makes a staunch, durable, economical roof. Made in light (1-ply), medium (2-ply), heavy (3-ply), weights. Comes in rolls of 108 sq. ft. Nails and cement with each roll.

Elastigum Plastic Patching Cement

A tough, elastic, waterproof and acid-proof plastic cement for patching holes and leaks in all kinds of roofs; repairing flashings, re-lining gutters, etc. Sticks to either wet or dry surfaces and doesn't dry out like putty.

It is known as the "plastic cement of a thousand uses"—and it deserves the name. Don't be without it.

1, 5, 25 and 100 pound packages, 1/2 barrels and barrels.

LARKIN FARMS, QUEENSTON, ONT.

ABERDEEN - ANGUS CATTLE, SHROPSHIRE and SOUTHDOWN SHEEP
 CORRESPONDENCE and INSPECTION INVITED
 (Mention Farmer's Advocate)

PUSLINCH PLAINS SHORTHORNS

Five bulls for sale by Burnbrae Sultan -80325-

A. G. AULD, - - R. R. 2, - - GUELPH, ONT.

BLAIRGOWRIE SHORTHORNS

3 Imported bulls. 10 Imported females in calf or calf by side. 2 Scotch bred bulls. 5 Scotch bred cows with calves by side.

JNO. MILLER - (Myrtle C.P.R. and G.T.R.) - ASHBURN, ONT.

Pear Lawn Shorthorns, Hackneys and Yorkshires—One imported in dam Miss Ramsden bull, 14 months; one Secret bull, 12 months, imp. sire and dam; one Golden Rose bull, 6 months, imp. sire and dam; one bull, a Flatery, 12 months, imp. sire. A few young cows with calves at foot. One imported Hackney stallion, A 1; two Hackney stallions rising one year; one registered Clyde mare; also Yorkshires at weaning time. HERBERT J. MILLER, Keene P.O., Ont. Stations—Keene G.T.R., Indian River C.P.R. Peterborough County

SPRUCE GLEN SHORTHORNS

We have a few choice, well bred, thick, deep level, mellow young bulls of breeding age for sale; also heifers in calf to a right good sire. Write for particulars.

JAMES McPHERSON & SONS - Dundalk, Ontario

Imported Scotch Shorthorns For Sale—Three imported bulls, one yearling, one two-year-old and our three-year-old herd sire; also a choice two-year-old Orange Blossom of our own breeding, and three well-bred bull calves about a year old. Would consider exchanging an imported bull for Scotch females.
 R. M. MITCHELL, R.R. No. 1, Freeman, Ont.

Shorthorn Herd Sires Selling Quick—I have several young bulls left that must go out quick. All are of serviceable age—three are by Gainford King, a grandson of Gainford Marquis (imp.), and two others are Nonpareils. One of these is got by the same sire that sired the \$3,100 junior champion heifer, sold in the Dryden-Miller sale. Write quick if you want them.
 GEO. E. MORDEN, Oakville, Ontario

ECZEMA IN RASH CUTICURA HEALS

On Face and Head. Itched and Burned. Disfigured.

"Last year I became affected with eczema. It started on the cheeks in a rash, and the water spread and made my face sore all around the ear and partly on my head. The skin was very sore and red, and the breaking out itched and burned so that I could hardly help scratching. My face was very disfigured.

"Then I used a free sample of Cuticura. It helped so I bought three cakes of Soap and one box of Ointment, and my face was healed." (Signed) Miss Martha Berger, Spanaway, Wash., Feb. 11, 1919.

Give Cuticura Soap, Ointment and Talcum the care of your skin.

Soap 25c, Ointment 25 and 50c. Sold throughout the Dominion. Canadian Depot: Lyons, Limited, St. Paul St., Montreal. Cuticura Soap shaves without mug.

Aberdeen - Angus

Meadowdale Farm

Forest, Ontario

Alonzo Mathews Manager H. Fraleigh Proprietor

SUNNY ACRES

Aberdeen - Angus

Present offering—A few young bulls ready for service.

C. C. CHANNON, - Oakwood, Ont.
Telephone—Oakwood. Railway—Lindsay.
G. T. R. and C. P. R.

ALLOWAY LODGE STOCK FARM

Angus, Southdowns, Collies

Choice bred heifers. Bulls 8 to 15 months. Southdown ewes in lamb.

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

The Glengore Herd of Aberdeen - Angus

Have a few choice Angus Bulls for quick sale that would make most desirable herd headers. Write for particulars.

GEO. DAVIS & SONS
Erin, Ont. R. R. No. 1

Balmedie Aberdeen-Angus

Nine extra good young bulls for sale. Also females all ages. Show-ring quality.

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Blatchford's

CALF MEAL

(The Original Calf Meal)

Has raised more calves than all other Calf Meals combined

ASK YOUR DEALER

SCOTCH-TOPPED

SHORTHORNS

Three young bulls (red), for sale; thick, sappy fellows; also 6 thick heifers, 2 years old, bred to a Scotch Clementina bull. These will be priced right. Come and see, or address:

HENRY FISCHER,
Bell 'Phone R. No. 2, Mitchell, Ont.

Shorthorn Bulls

One straight-bred Claret, 2 yrs. old (red), also three roans, 13 months old, all in good condition, guaranteed breeders and priced to sell.

D. D. GRAY

Summerhill Farm - Rockwood, Ont.

Scotch Shorthorns—Herd headed by Master Marquis - 123326, by Gainford Marquis. Stock of either sex for sale. Also Oxford Down ewes.

GEO. D. FLETCHER, Erin, R.R. 1, Ont.

Questions and Answers. Veterinary.

Stallion Fails to Breed.

Four-year-old stallion was a good breeder and sire. I shipped him to Loudon, Man., in February. I am informed that since arriving he will tease a mare all right, but will not breed.

W. J. McC.

Ans.—This may be due to change in climate and general conditions, or to some injury received during transportation. In some cases such conditions appear without appreciable cause. It is very probable he will become normal in a few months. He should be kept in only moderate condition, given considerable daily exercise and attempts made to breed him to not more than one mare weekly until he becomes normal. The administration of 2 drams of nuxvomica 3 times daily may help, but the administration of active aphrodisiacs, as cantharides would be injurious. V.

Miscellaneous.

Silo Construction.

How many bags of cement will it take to build a silo 14 by 36 feet, with walls 11 inches thick, and mixing in the proportion of eight to one. What is the best thickness for a wall? Would red oak be good timber for doors? Which is preferable a square or round silo?

H. R. C.

Ans.—A silo of the dimensions given will require approximately 48 cubic yards of gravel and 168 bags of cement. An 8-inch wall is frequently used; in fact some build a 6-inch wall and it stands satisfactorily, if properly reinforced. In building a concrete silo, quarter-inch round iron, or heavy wire, should be used every two to two and a half feet. These are laid around about the centre of the wall and are hooked together where they join. Red oak should make very good doors, although they will be somewhat heavier to handle than if pine or tamarack were used. A round silo is preferable to a square one, as there will be less waste of silage.

Gossip.

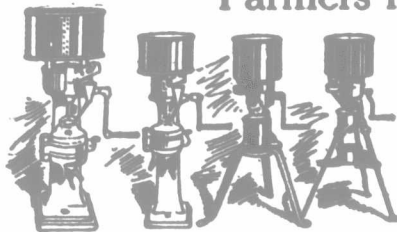
Fallis Holsteins at Millbrook.

Quite a number of Holstein breeders, who are readers of these columns have in the past year, purchased young herd sires from the herd of W. Fred Fallis of Millbrook, and these, as well as others interested in the breed, will be glad to learn that Mr. Fallis has made some splendid records during the past year. Lulu Pauline, a fine, big type of four-year-old cow, under very ordinary conditions almost reached the 24-lb. mark, producing 506.5 lbs. of milk in the seven days, and looks like a splendid prospect for a 30-lb. five-year-old. Jean Rauwerd, a smooth well grown heifer, sired by the present herd sire, Hillcrest Rauwerd Vale, has at one year and eleven months run close up to 50 lbs. of milk per day on official test, but had to be withdrawn from the test as Mr. Fallis contracted the Influenza the 5th day after her test had begun. Another cow that was withdrawn, although running better than 25 lbs. was Content Lulu Korndyke. Several more were in preparation for test at the time of our visit to the farm recently, among which was a three-year-old daughter of Mercena Calamity Posch, the great 26,000-lbs. foundation cow which is still in the herd. The exact production of this cow made under Record of Performance Rules in 1918 was 26,448 lbs. of milk and 1,041.2 lbs. of butter. Her highest day's milk while under test was 102 lbs. although she ran 707.1 for seven days. This is the sort of foundation material from which Mr. Fallis' herd was built up and the get of Hill-Crest Rauwerd Vale, when mated with these, is proving exceptionally pleasing. This bull is a son of Hill-Crest Ormsby De Kol and Hill-Crest Pontiac Vale, the latter, it will be remembered, was a former Canadian Champion R. O. P. four-year-old with 22,785 lbs. of milk and 986.25 lbs. of butter in the year, which places Mr. Fallis in the position to supply Canadian breeders with something choice in the way of yearly record bull calves.

MELOTTE

Cream Separator

There is only one "Melotte"—The "Melotte" that we have been selling to Canadian Farmers for 25 years.



FOUR MODELS—15 SIZES

Skims Cleanest
Turns Easiest
Lasts Longest

Everybody Knows It.
The Cream Separator with the Suspended Bowl

Think of it! A bowl hanging naturally on a ball-bearing spindle—a real self-balancing bowl.

Large stocks of the "Original Melotte" just received from England. Order now from nearest local agent.

R.A. LISTER & CO. (CANADA) LIMITED
TORONTO & WINNIPEG

The Salem Herd of Scotch Shorthorns

HERD HEADED BY GAINFORD MARQUIS, CANADA'S PREMIER SIRE

Write us about the get of Gainford Marquis. They have won more at Toronto and other large exhibitions than those of any other sire. We still have a few sons to offer, as well as females bred to Canada's greatest sire.

J. A. WATT, Elora, Ontario

Braeburn Scotch Shorthorns

150 Head 100 Breeding Females

Herd Headed by Nero of Cluny (Imp.)

I have at present twelve young bulls that are now nearing serviceable age. The majority are sired by my present imported herd sire, and we guarantee them as good individually as the get of any other one sire in Canada. They are nearly all roans, and are priced to sell. Can also spare some breeding cows in calf to Nero of Cluny (Imp.).

CHARLES McINTYRE, Scotland, Ontario
Brantford 7 miles. Oakland 1 mile. L.E.N. Electric R.R. Cars every hour.

WALNUT GROVE SCOTCH SHORTHORNS

We are offering choice young males and females from the best Scotch families and sired by Gainford Eclipse and Trout Creek Wonder Ind. If wanting something real good, write, or come and see us

DUNCAN BROWN & SONS, Sheddou, Ont., P.M., M.C.R.

HILLVIEW DUAL-PURPOSE SHORTHORNS

I have in my herd seven officially tested cows, some with R.O.P. record of 7,900 lbs. as a two-year-old and 11,500 lbs. in 4-year class. Herd headed by Kitchener 104066 a heavy, thick grandson of Dairymaid 86086. Four young bulls for sale. Government test tells what their dams have done at the pail, and if you are interested, come and see the individuals.

D. Z. GIBSON, Caledonia, Ont.

SHORTHORNS—CLYDESDALES

Just one bull left, 9 months old; sire, Lochiel (imp.); dam on the R.O.P. Pure Scotch. Stallion colt, sired by Baron's Stamp. Fillies rising 2, 3, 4 and 5-year-old. Come, see, and be satisfied.

Brooklin G.T.R. and C.N.R. Myrtle C.P.R. WM. D. DYER, COLUMBUS, ONTARIO

Scotch Shorthorn Bulls and Females

I have a nice offering of Scotch-bred females and one of two right. If you want one Shorthorn female or a carload, come to Markdale.

THOS. MERCER, Markdale, Ont.

Cedar Dale Scotch Shorthorns

Pleasing Cattle and Pleasing Pedigrees—Senior Sire, Excel-sior by Gainford Matchless, the \$12,000 son of Gainford Marquis (imp.). Junior sire, Matchless Duke by Gainford Matchless, the \$12,000 son of Gainford Marquis (imp.). I have a number of choice bred heifers, and must sell a few to make room. Also have a couple of Scotch-bred bulls. Prices right at all times.

FRED. J. CURRY, Markdale, Ont.

Shorthorn Bulls and Females

Herd headed by Ruby Marquis, a son of the great Gainford Marquis (imp.). Our calves now coming are all by this sire. We are also offering a few females in calf to him. Get our prices before buying elsewhere.

PRITCHARD BROS., - R. R. No. 1, - ELORA, ONT.

Shorthorn Bulls at Maple Hall

These five young bulls, from 5 to 18 months, are some of the best animals we ever raised—a roan Crimson Flower show bull calf (5 mos.); an extra good Duchess of Gloster (15 mos.); a red Crimson Flower (16 mos.); from a great milking family and a right good bull; a red Butterfly (10 mos.), a show bull; also a red Shepherd Rosemary (8 mos.). It will pay anyone looking for Shorthorn bulls to see these animals.

Claremont C.P.R. Greenburn C.N.R. Pickering G.T.R. D. BIRRELL & SON, Claremont, Ont.

Newcastle Herd of Shorthorns and Tamworths for Sale

3 nice bulls, 11 to 13 months old, and several yearling heifers and cows with calves at foot, both sexes, all splendid milking strain. Several Tamworth sows due to farrow in May, June, July.

Young stock, both sexes, at weaning up to six months old. All from prize-winning stock.

A. A. COLWILL, (Long-Distance Phone) - R. R. No. 2, Newcastle

WILLOW BANK STOCK FARM ESTABLISHED 1855

Shorthorn Cattle and Leicester Sheep. Bulls in service: Browndale - 80112, by Avondale, and Browndale Banner, Junior Champion at Toronto, 1919. A special good lot of young bulls and females to offer. Write for information or come and see.

JAMES DOUGLAS, CALEDONIA, ONT.

Spring Valley Shorthorns

Herd headed by Sea Gem's Pride 96365. We have a number of good bulls for sale, including the Champion Ivanhoe 122760, and his full brother also, an extra well-bred Rosewood and others. Write for particulars.

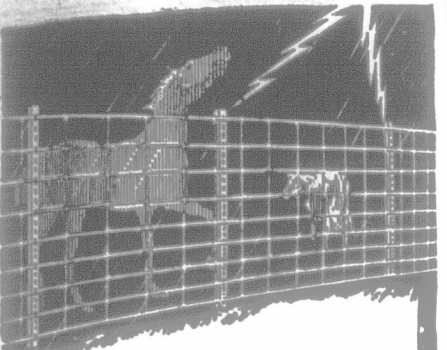
Telephone and telegraph by Ayr. KYLE BROS., Drumbo, Ont.

20 Bulls—SPRUCE LAWN—100 Females

Clydesdales, Shorthorns, Yorkshires, Herd headed by Imported Golden Challenger 122384, bred by L. De Rothchild. Special bargains in farmer's bulls. Cows and heifers in calf, yearling and heifer calves. Yorkshires either sex.

J. L. and T. W. McCAMUS, Cavan, C.P.R.; Millbrook, G.T.R. and P.O., Ont.

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on, Caledonia, Ont.
SALES
Scotch. Stallion colt,
and be satisfied.
UMBUS, ONTARIO
ice offering of Scotch-
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—and the prices are
Markdale, Ont.
—Senior Sire, Excel-
sire, Matchless Duke
number of choice bred
ulls. Prices right at
Y, Markdale, Ont.
by Marquis, a son of
Marquis (imp.). Our
call to him. Get our
LORA, ONT.
5 to 18 months, are
Crimson Flower show
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show bull; also a red
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May, June, July.
-winning stock.
No. 2, Newcastle
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CALEDONIA, ONT.
s Pride 96365. We
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Yorkshires. Herd
Challenger 122384,
Rothchild. Special
orkshires either sex.
nd P.O., Ont.



Fence Posts that act as Lightning Rods.

A single bolt of lightning flash along the fence wires may kill a dozen or more animals at a stroke. That cannot happen if your fence is strung on

PRESTON STEEL POSTS

Besides effectually "grounding" the wire, these posts are completely fire-proof and unbreakable. Write for our Folder which tells how to have a fence that requires no up-keep.

METAL SHINGLE & SIDING COMPANY, LIMITED
PRESTON, ONTARIO

Cream Wanted

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

ONTARIO CREAMERIES Limited LONDON ONTARIO

Maple Shade SHORTHORNS

A dozen young bulls imported and my own breeding at moderate prices.

W. A. DRYDEN

Brooklin - - - Ontario

English Dual Purpose Shorthorns

Begin the pasture season by the purchase of a sire which will add value to your calves—For milk and beef—From imported stock of choice breeding. We have a fine choice of bull calves and bulls.

Also English Large Black Pigs—A thrifty breed—Write or call.

LYNNORE STOCK FARM

F. W. Cockshutt, - Brantford, Ont.

Mardella Dual-Purpose Shorthorns

8 choice young bulls; 30 females, cows and heifers. All of good size, type and breeding. Herd headed by The Duke; dam gave 13,599 lbs. milk, 474 lbs. butter-fat. He is one of the greatest living combinations of beef, milk and Shorthorn character. All priced to sell. Write, call or phone.

THOMAS GRAHAM, Port Perry, R.R.3, Ont.

SHORTHORNS

Present offering: Six young bulls, Reds and Roans, also a number of females. They have size, quality and breeding from good milking dams. Prices moderate. Satisfaction guaranteed.

CHAS. GRAHAM - Port Perry, Ontario

SPRUCE LODGE STOCK FARM
Shorthorns and Leicesters For Sale
Two choice young bulls, 6 and 11 months old, also one and two-year-old heifers, all got by Roan Chief Imp. = 60865 =.
W. A. DOUGLAS,
Caledonia, - Ontario

Questions and Answers. Miscellaneous.

Leaky Teats.

I have a cow which freshened on the 2nd of April. She gave 12 quarts of milk night and morning, up to a couple of weeks ago when she began losing her milk. I milk her three times a day but yet there is a lot lost. Is there any cure for this?
B. M.

Ans.—Evidently the muscles in the teats have become weakened and little can be done to stop the leakage. When the cow is dry it is possible for a veterinarian to operate and possibly rectify the trouble, but it is not advisable to operate when the cow is in milk. Frequent milking, or allowing calves to run with the cow, is the only practical way of saving the milk, under the present conditions.

Administering an Estate.

A dies, leaves a will, and appoints two executors. A claim is made against the estate. The executors refuse to pay claim. It is taken to the County Judge, who allows part of claim. Executor No. 1 would pay claim as allowed by judge. Executor No. 2 refused. Without the knowledge or consent of executor No. 1 carries the case to appeal and loses it. If executor No. 1 refuses can the costs of said appeal be taken out of estate?
Ontario.

Ans.—Executor No. 2 could pay same out of estate moneys; but he might possibly be disallowed the payment when coming to pass his accounts before the surrogate judge upon the winding up of the estate, in which case he would have to refund the money.

Sheep.

What is the best breed of sheep to keep on an ordinary farm in Ontario? What is the price of pure-bred sheep? When is the best time to buy? Where could I get a book on sheep?
C. C.

Ans.—All the common breeds of sheep kept have their admirers. We cannot say that there is any best breed, as all are good and serve a purpose. It depends a good deal on a man's liking; some prefer the short-wooled and others the long-wooled sheep. Some prefer a clean-faced sheep and others a woolled-faced sheep. The price depends a good deal on the individuality of the animal and also on the breed. There are usually more for sale in the fall than at any other time of the year, but a person can sometimes pick up in-lamb ewes during the winter or early spring. "Sheep Farming," by Craig, is a very good book and may be purchased through this office for \$2.10.

Sweet Clover.

1. Can I use sweet clover as a pasture, and how much would four cows want?
2. I have a field I intended cutting for hay, can I pasture it first and then cut it after, or would the cattle trample it much?
3. Which is the best way to cure sweet clover, and when should it be cut?
4. Up to how late can I put turnips in; will hens eat them?
5. Are turnips good for milk cows?
6. Which kind of silo is the best wood or cement?
P. D. L.

Ans.—Sweet clover is used a good deal for pasture. The amount required will depend on the season and the size of cattle. In a good growing season, sweet clover will carry about one animal to the acre.

2. The cattle would tramp it a good deal. If you wish part for hay, it would be advisable to run a fence through the field.

3. Sweet clover should be cut about the middle of June, and cured in the coil.

4. Turnips may be put in up to the 20th of June or even the first of July. However, there is always danger of dry weather about that time, and the roots will not eat them as readily as they will mangels or beets.

5. Yes, but there is a danger of having the milk tainted unless care is taken in feeding.

6. Both wood and cement silos are giving good satisfaction. We have both on Weldwood Farm and the silage keeps as well in one as in the other.

You May Not Wisely Delay Ordering Your 1920 DE LAVAL CREAM SEPARATOR

There are a dozen reasons why this is so.

For three years it has not been possible to make enough De Laval machines to meet the demand. More than ever are being made this year, but the demand is still greater.



Cream Separators have advanced less in price than anything else used or produced by the farmer during the war years. If labor and material costs continue to advance so must separator prices.

Such an advance must very soon come from increased freight rates, if from no other cause.

Freights are still slow and uncertain. There may be unavoidable delay in getting a machine when you badly need it, from this reason.

The flush of milk and hot weather are near at hand, when a De Laval saves most, and an inferior or half-worn-out separator wastes most.

There are still other reasons, which a De Laval best demonstrates for itself. You will have no difficulty in observing them. Every local De Laval agent will be glad to afford you the opportunity to do so.

If you don't know the nearest agent simply address the nearest main office, as below.

THE DE LAVAL COMPANY, Ltd.
MONTREAL PETERBORO WINNIPEG EDMONTON VANCOUVER
50,000 Branches and Local Agencies the World Over

Burnbrae Shorthorns

Eighty-three years without change, we have been breeding Scotch Shorthorns. The foundations of many of the best herds in America were laid from our farms. I am in a position to furnish you with the best in either sex that can be found. High-class young bulls for the breeder and the farmer. Cows and heifers of the finest breeding to start you right, and you cannot afford to start wrong. Every animal that I have sold in two years has been satisfactory, the most of them sold by letter. I can satisfy you with the best in what you want at a price that will give you a chance, and I will pay the freight or express to your station, Augustus Sultan = 93092 = one of the greatest living sires at the head of my herd. Write and if possible come and see, it is worth while. Post Office, Telegraph, Telephone and Station is Stouffville, Ont. 30 miles from Toronto.

ROBERT MILLER :: Stouffville, Ont.

A NEW IMPORTATION OF 40 SCOTCH SHORTHORNS

arrived home Dec. 17th. From our herd of 125 head we can offer a large selection in choicely-bred bulls and females. Anyone in need of foundation stock may find it to their advantage to look over our offering before making any purchases.

J. A. & H. M. PETTIT :: FREEMAN, ONTARIO
Burlington Jct., G.T.R., only half mile from farm.

Reyburn Milking Shorthorns ANNUAL INTERNATIONAL SALE

JUNE 9th, 1920, AT EUCLID, MINNESOTA, U.S.A.

Sixty head of choice milking Shorthorn cows and heifers, and five outstanding bulls
Address all correspondence to Palmer Farm, Euclid, Minn.

R. R. WHEATON :: A. E. PALMER

MILKING SHORTHORNS Young stock from R.O.P. cows by imported sires.
BERKSHIRE PIGS Choicely bred sows and boars, all ages. Can supply pairs not akin.

J. B. PEARSON, Manager - Credit Grange Farm - Meadowvale, Ont.

DUAL-PURPOSE SHORTHORNS

Herd headed by Dominator 106224, whose two nearest dams average 12,112 pounds of milk in a year. Bulls from 1 to 6 months old for sale, also a cow or two. Inspection of herd solicited.

WELDWOOD FARM - Farmer's Advocate - LONDON, ONT.



PREVENT BLACKLEG LOSSES
by using
Scientifically Prepared Vaccines

Blackleg Vaccine
(Blacklegoids)

The reliable blackleg vaccine
in pill form.

Blackleg Aggressin
(GERM-FREE BLACKLEG VACCINE)

A natural aggressin.

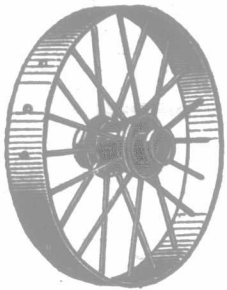
Blackleg Filtrate
(GERM-FREE BLACKLEG VACCINE)

An aggressin made from cultures.

WRITE FOR FREE INSTRUCTIVE BOOKLETS ON
BLACKLEG AND ITS PREVENTION.

Animal Industry Department of
PARKE, DAVIS & CO.
WALKERVILLE, ONT.

Tudhope-Anderson



Steel Wheels
are safest to own

IN the event of an accident requiring you to get new spokes—if you have Tudhope-Anderson Made-in-Canada wheels you can replace them promptly. But—

If you have imported wheels you may have to buy an entire new wheel, for the spokes are cast in the hub.

Write us now for order blanks and full particulars about wide-tire Steel Wheels to be used for work about the farm. Can be made to fit any skein or axle bearing.

Made in Diameters 20" to 60", Tire widths, 3" to 10".

We also manufacture Low-Down Wide Tire Steel Wheel Trucks.

Tudhope-Anderson Co., Ltd.
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PATENT SOLICITORS—Fetherstonhaugh & Co. The old-established firm. Patent everywhere. Head Office: Royal Bank Buildings, Toronto. Ottawa Office: 5 Elgin Street. Offices throughout Canada. Booklet free.

Why Sugar is Scarce.

Of all the varied industries whose importance has been accentuated by the war, probably none comes closer to the public at large than sugar. Almost everyone eats sugar and has had difficulty in getting enough of it. The shortage of this desirable and, for the most part, necessary commodity has aroused a keen and universal interest in every phase of the sugar industry.

At first sight it would seem as if the sugar industry had assumed a new and rather formidable status. All of us are at the mercy of the man who has sugar to sell. The newspapers are filled with tales of profiteering hunts. Wall Street is eager about sugar and candy stocks, old and new. But the industry has always been important. It has merely of late attracted a somewhat startled attention—chiefly because of the scarcity and high prices of its product, and partly because of the large profits of the sugar producers.

The statement that sugar has always been important is not literally true. It was scarce enough a hundred years ago, and used only by the rich. But the majority of us have taken it pretty much for granted most of our lives, somewhat as a manna from heaven. Naturally we are both interested and disturbed to find sugar no longer the absurdly cheap commodity that it used to be.

Curiously enough, however, while sugar has been a matter of course to the people who read this article, it is just becoming known to hundreds of millions of human beings. As the great masses of the East, in China, India and Japan, become more free and independent, there is almost certain to be an expanding consumption of sugar. For it must be remembered that these great masses have never had enough of the sweet stuff in anything like the sense in which we and many of the European peoples have enjoyed it.

The use of sugar has shown a fairly steady increase for fifty years, and it always goes up with prosperity and high wages. A very large part of all sugar is used indirectly—that is, for canning, preserving, candy, ice cream, powdered and malted milks, cakes, pies, pastry, and the like. Such articles are bound to be consumed, it would seem, to an increasing extent with the growth of population, congestion in cities, and high wages. Even before the war the production of sugar reached the enormous total of seventeen million tons a year, and the Food Administration ranked it close up to wheat and beef in importance as a food product.

Obviously the use of sugar will not diminish with prohibition. Indeed, there are many signs that consumption will increase as candy, rich pastries, soft drinks, and the like more and more take the place of alcohol. The effects in this direction are already apparent.

From whatever point one views sugar, whether from that of the enraged housewife, the investor in sugar and candy stocks, or the student of industrial tendencies in general, the first question which comes to mind has to do with the high price of sugar. Why have prices risen to such an extent, and will they continue high? From the consumer's point of view, and it concerns the investor also, the question of scarcity is just about as important and, of course, the two questions are closely related.

This article is in no sense a plea for anyone or a defense of the despicable quality of greed. But I am certain that any fair-minded person who studies the sugar question will thereafter be a little less positive on the subject of "robbers" and "profiteers." Normally the world's consumption of sugar increases about half a million tons a year; but the production of 1919 was about two million tons less than in the year before the war, although many forces had in the meantime enormously stimulated the demand even above the normal annual increase.

In plain language, the trouble with sugar is that the world's demand far exceeds the supply. People want more sugar than there is. This is not true of every particular spot in the world, but it is true as a whole. Prices are bound to rise, there is sure to be a scarcity here and

Important Announcement

FROM

"ROYCROFT"

We wish to announce here that we will
sell by public auction on

FRIDAY, JUNE 25TH,

at the

Canadian National Exhibition Grounds, Toronto

Forty-five of choicest breeding Holsteins. Only a few young things from each family will be retained. In all, we are cataloguing 45 head, and we believe they make up by far the greatest aggregation of breeding females ever catalogued for a public sale in Canada. We will tell you more about them in these columns later, but write now and get your name on the mailing list for catalogue. In every case the cattle will be sold regardless of prices bid.

Note—Mr. Ed. B. Purteile of Bloomfield, Ontario, who owns King Segis Alcartra Spofford, jointly with us, is enlarging the sale with daughters of "King," one of which is a 27.16-lb. heifer at 1 yr. 11 months and sells with her three months heifer calf which is sired by Champion Echo Sylvia Pontiac.

Roycroft Farm W. L. Shaw, Owner
S. H. Manhard, Supt. **Newmarket, Ont.**

HE PREFERS
SYDNEY BASIC SLAG FERTILIZER

A very prominent Ontario farmer and live-stock breeder, who just recently ordered a carload of SYDNEY BASIC SLAG for his own use, writes in part as follows: "I propose to use it liberally this year, it is a good farm that it will be used on and I know the results are assured, for I have used it before. Have used a lot of Basic Slag some years ago and after trying other fertilizers I believe it the most satisfactory of all for the effects are more lasting."

Don't think that because you have a lot of barnyard manure you cannot profitably use SYDNEY BASIC SLAG. Practically all of the very largest users are stockmen and dairymen whose barnyard manure supply is away above the average. There is good reason for this.

Let us send you our interesting literature, which is free.

THE CROSS FERTILIZER COMPANY, Limited
SYDNEY, - - - NOVA SCOTIA

Address our General Sales Agent,
A. L. SMITH, - 220 Alfred Street, - KINGSTON, ONT.
(Please mention this paper)

Willowbanks Holsteins Owing to being very short of help, I am offering a few young cows, good type and breeding, fresh and due soon; also a choice 7 months' bull, sired by my Walker Pride (17362). Write for extended pedigrees. His dam is a good record daughter of King C. V. ROBBINS, - WELLANDPORT P.O., ONTARIO

HOLSTEIN BULLS FROM 30-lb. DAMS

If you want 30-lb. bulls—good individuals—and priced right—you should see my present offering. I also have lower priced bulls and am offering females bred to Ormsby Jane Burke. Correspondence solicited. **R. M. HOLTBY, Manchester G.T.R.; Myrtle C.P.R.; PORT PERRY, ONT.**

"Premier" Holstein Bulls Ready for Service—I have several young bulls from dams with 7-day records up to 32.66 lbs. of butter, 755.9 lbs. of milk, with 110 lbs. of milk in one day—over 3,000 lbs. in 30 days. All are sired by present herd sire, which is a brother to May Echo Sylvia. Step lively if you want these calves.
H. H. BAILEY, - Oak Park Farm, - PARIS, ONT.

Holsteins, Cotswolds and Yorkshires for service. SOVEREIGN ALCARTRA **JOSEPH**
His dam one of three famous Cherry Grove full sisters. Her latest record is 24,087 lbs. milk and 1,016 lbs. butter one year. His sire's dam (Baroness Madoline) Canada's only 4 times 20,000-lb. cow. Fee \$25.00 for approved cows. For sale bull calves whose two nearest dams average over 20,000 lbs. milk in R.O.P. Also Yorkshires of both sex.
R. Honey & Sons, Dartford, Ontario.

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No building is
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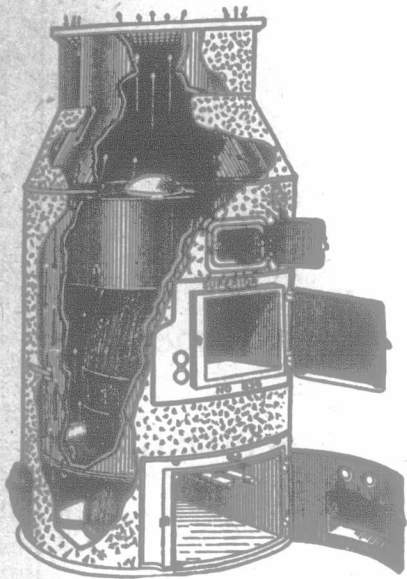
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**The Pilot Superior
Adaptability**



The Pilot Superior Pipeless Furnace is adapted to the widest variety of buildings. It is satisfactorily heating from one to eighteen rooms and as many as three stories, from its one register.

No building is too old for the Pilot Superior Pipeless Furnace. Installations have been made in houses constructed of rough hewn timbers which have been built for almost a century. The ease with which it has been installed has made it the most popular type of heating system for old buildings. A Pilot Superior Pipeless Furnace can be installed in six hours.

Manufactured by

The Hall Zryd Foundry Company, Ltd.
Hespeler, Ontario



**Good butter is
assured with**

Windsor Dairy Salt
THE CANADIAN SALT CO., LIMITED

**Another Good
Holstein Bull
For Sale**

A yearling son of a 27-lb. four-year-old "Lady Pietertje Van Dyke." His sire's dam is a 26-lb. three-year-old and is a full sister to Homestead Susie Colantha who won Championship at Toronto and London, 1919; later sold to John A. Bell, Jr., for \$7,500.00, and made 35 lbs. butter in 7 days. This young bull that I am offering is a good individual, dark in color, price \$300.00 delivered.

Will also sell a number of tested females.

R. N. WHITE
R. R. No. 4, - Meaford, Ont.

**PRIVATE SALE
28 HOLSTEIN**

females. Young cows and heifers all sired by Lewis Prilly Rouble Hartog or Baron Colantha Fayne. Many are 50 to 75-lb. per day cows.

ELI BARNUM, SPRINGFORD, ONT.

Please mention The Advocate when writing

there, and mistakes and irregularities of merchandising are certain to happen when there isn't enough to go around.

For sugar is a world crop like wheat and cotton, and prices at all times are intimately related to international conditions. Indeed, most of the important countries of the world normally possess either large surpluses or deficits of sugar, England and the United States usually having annual deficits of from two to three million tons. Before the war France and Italy were about the only western countries which did not have either an enormous surplus or deficit of sugar.

Under normal conditions, England, which up to the war had been relatively the greatest consumer in the world, buys 60 per cent. of her sugar supply from Germany and Austria. The war naturally stopped that. France had partly taken care of herself in the matter of sugar but, roughly speaking, two-thirds of her beet-sugar factories were in the war zone, and it is said that 85 per cent. of these were destroyed. The same was true of Belgium.

In Europe, as a whole, from 1914 to 1919 the production of sugar fell off 4,573,515 tons, or about the amount of the entire consumption in this country. The falling-off amounted to about a million tons each in Germany, Austria, and Russia. Two-thirds of the entire source of supply in Europe was within the battle lines.

Allowing for the normal yearly increase in consumption and the actual falling-off in production, the world is probably short some four or five million tons of what it might use in the way of sugar. Cuba and Java are the only countries which have increased production, but Java sugar is pretty well snapped up in the Far East. India is a very large sugar producer, but solely for domestic consumption, and its last year's crop was disappointingly small.

At first England turned to tropical islands including Java. But as the war went on, shipping became too scarce to bring sugar all the way from Java. More and more England had to draw upon Cuba. Formerly Cuba had marketed its entire crop in this country. Soon Cuba had two anxious purchasers, with a third—France—looking on eagerly, where before it had had one indifferent purchaser who had known that Cuban producers must come to it sooner or later. In 1918-19, Europe (chiefly England) took one-third of the Cuban crop, although before the war it had taken practically none.

Thus the whole weight of sugar production for this part of the world was thrown on Cuba, practically speaking; for while sugar is raised in the Hawaiian Islands, Porto Rico, and Louisiana, as well as from beets in our own West, the Cuban production so exceeds that of any other place as to dominate the world market since the closing of Russia and Germany. Furthermore, its ability to increase production in a period of extreme scarcity gave Cuba another powerful lever. It found itself almost with a monopoly.

During the war, producers, refiners, dealers—all the various factors in the industry—could be compelled to keep prices down. But control is now over, to all practical purposes, and the natural laws of supply and demand are asserting themselves. Prices in this country during the war were kept artificially low, lower than the world price, and this fact stimulated exports of all the available sugar not owned by the Government, and also tended to stimulate consumption.

To make matters worse, the increase in the consumption of sugar in the last year or so has been extraordinary. It has been estimated that the American people have used perhaps half a million more tons in 1919 than in 1918, or the normal increase of the entire world. How much they will use in 1920, with the rapid increase in candy-eating, is impossible to say. Prosperity, high wages, luxury spending, prohibition, all these help to account for the increase in consumption. No doubt also the war-time advertisement of the fact that at the same price sugar contains probably more food calories than any other eatable has had something to do with its wider use.

Then, of course, it must be remembered that England and France were on a severe and increasing sugar ration during the war. The potential demand due to a normal increase in consumption was held back. Now it is asserting itself, for,

Sunnybrook Farms' Quality Sale
(DISPERSAL)

BREEDING = MERIT = PRODUCTION = CONSTITUTION

Sixty-Five Head of Canada's Best

Containing more 20 to 29-lbs. three and four-year-olds than any other one herd in the Dominion. Selling without reserve at Sunnybrook Farms.

North Toronto, Ontario, Wed. June 9

(One and one-half miles east of Eglinton Ave. and Yonge Sts.)
SALE AT 10.30 SHARP

40 Fresh Cows—15 Choice Heifers—10 Young Bulls—65 Head

A positive sale of positive merit. Only five in the offering are up to six years of age—their lives of record-making and production are still before them, and nowhere has the quality and standard of individual merit been excelled. Combined with this, their breeding also illustrates their possibilities as an offering of 30-lb. material. Just here we would like to point out that of 65 selections catalogued only five are above five years of age, and we believe among them is a larger number of two, three and four-year-old heifers with records from 20 to 29 lbs. than can be found in any other one herd in the Dominion. Many of these heifers are sired by one or the other of two noted sires, Sir Lyons Hengerveld Segis or Sir Natoye Oakland. The former, it will be remembered, was a 33.31-lb. son of the great King Segis, while the latter was a brother on the sire's side to Retta De Kol Maida 31.43 lbs., and from Natoye De Kol 4th, 31.13 lbs. of butter, 704 lbs. of milk in 7 days, at 10 years of age. Count Faforit Segis, another sire used in the herd in the past, also has a dozen daughters listed. This bull was one of the strongest breeding sires ever used at Sunnybrook, and his sire was by a brother to Segis Fayne Johanna, the world's first 50-lb. cow. Among the more mature cows selling will be found such individuals as Inka Sylvia Maida, the 102-lb. per day cow and sister to the sire of the great May Echo Sylvia; Victoria Posch De Kol, 28.10 lbs. of butter, 599.20 lbs. of milk in 7 days; Sunnybrook Inka Mercedes, at present on test, with 27 lbs. completed and still gaining, and others, making in all forty young cows near fresh or in full flow of milk at sale time, among which are 14 two and three-year-old heifers with records from 17 to 21 lbs. The whole making an offering that for exceptional individual excellence and official world's record backing has as yet never been approached in any Canadian Holstein sale ring. Added to this the calves they will be carrying (or have by their side) will all be sons or daughters of our great, young 32-lb. sire Highland Pontiac Sylvia, grandson of the world's greatest cow, May Echo Sylvia. If this breeding appeals to you, you should be present.

For Catalogues, apply to
JOSEPH KILGOUR (Sunnybrook Farms) North Toronto, Ont.
Auctioneers, **KELLEY and HAEGER**. In the box, S. T. WOOD
Motor Transport from end of Yonge Street City Car Line

Hamilton House Holstein Herd Sires

Our highest record bull for sale at present is a 4 months' calf from Lulu Darkness, 30.33 lbs., and sired by a son of Lulu Keyes, 36.56 lbs. His two nearest dams, therefore, average 33.44 lbs., and both have over 100 lbs. of milk per day. We have several older bulls by the same sire and from two and three-year-old heifers with records up to 27.24 lbs. All are priced to sell.

D. B. TRACY, Hamilton House, Cobourg, Ontario

Hospital for the Insane, Hamilton, Ont.

HOLSTEIN BULLS, ONLY, FOR SALE

Senior sire is from one of the best sons of King Segis Alcartra Spofford. Junior is grandson of the noted May Echo Sylvia, by Champion Echo Sylvia Pontiac.

Write to the Superintendent for prices, etc.

Raymondale Holstein-Friesians

A herd sire of our breeding will improve your herd. We have sons of our present sire, Pontiac Korndyke of Het Loo (sire of \$12,750 Het Loo Pieterje), and also sons of our former sire, Avondale Pontiac Echo. Several of these are of serviceable age, and all are from good record dams. Quality considered, our prices are lower than anywhere else on the continent. Their youngsters should not remain long. Write to-day.

RAYMONDALE FARM, Vaudreuil, Que. D. RAYMOND, Owner, Queen's Hotel, Montreal

Cloverlea Dairy Farms Herd headed by King Pontiac Rauwerd who combines the blood of Canada's greatest sires and dams. His offspring are a choice lot. We have stock for sale, both male and female, 75 head to choose from. Consult us before buying elsewhere. Could book a few more cows for service to "King."
GRIESBACH BROS., - L.-D. 'phone - Collingwood, Ont.

Summer Hill Holsteins —We have the best bunch of Holstein bulls ever offered at our farm. Their dams have records up to over 34 lbs. of butter in 7 days. All are sired by a bull with a 34-lb. dam. One is a full brother to the Grand Champion bull at Toronto this year. Prices reasonable.
D. C. FLATT & SON, R.R. No. 2, Hamilton, Ont.

For Sale—Paul Rauwerd—Dam, Lulu Pauline, 23 lbs. butter in 7 days. Sire, Hill-Crest Rauwerd Vale, out of a 22,000-lb. four-year old. Price \$300.00 if taken before his dam makes another record.
W. FRED FALLIS, - R. R. 3, - Millbrook, Ont.

Evergreen Stock Farm Registered Holsteins

Our motto: Choice individuals—the profitable producing kind. Nothing for sale now, but get in line early for your next herd sire.
A. E. HULET, - Oxford Co., G.T.R. - NORWICH, ONTARIO

Two Young Holstein Herd Sires—I have only two young bulls of serviceable age left—both are sired by Lyons Hengerveld Champion, whose dam is the 25.83-lb. junior 3-year-old daughter of Baroness Madoline, 34.48 lbs. Both calves are 12-month youngsters, one from a full sister of a 29.95-lb. cow and the other is from an untested daughter of Baron Colantha Fayne. They are priced to sell.
T. W. McQUEEN (Oxford Co.) Tillsonburg, Ont.

High-Testing Holsteins—Present offering: Three young bulls, 10 months old; all splendid individuals, out of high-producing dams, backed by noted blood and big records. Our herd sire, Ormsby Jane Hengerveld King (by Ormsby Jane King), has been used on this herd for several seasons, and his get, both heifers and bulls, are exceptionally promising individuals. It will pay you to inspect these youngsters before buying.
L. C. SNOWDEN, R.R. 3, Bowmanville, Ont.

More Mileage from Tires

MANY tires which because of long, hard driving or accidents give only average mileage, could be made to give unusual mileage simply by the use of Goodyear Reliners. This Goodyear Reliner is a Tire Saver produced by Goodyear to help car-owners keep down tire costs.

They are complete new linings, of new fabric and rubber, shaped to fit the inside of the tire. Cemented in, they strengthen any tire weakened by road shocks or other injuries, often increasing the mileage 25% or more.

You can easily and quickly apply a Goodyear Reliner to your casing Or if you prefer, your repairman will apply it for you at little extra cost.

See any Goodyear Service Station Dealer or your tire repairman.



although England received one-third of the last Cuban crop, she is buying eagerly and largely of the present crop.

Sugar, after all, is a relatively small item of expense. The total amount which a family spends for sugar in a year is not enough, when wages are high and prosperous conditions prevail, to keep people from buying it if they can get it. By sugar I do not mean only that which is used in tea and coffee, in cooking, and on the breakfast cereal. I mean the sugar used indirectly, in candy, soft drinks, ice cream, sweet crackers, condensed milk, and the like. When we buy these things perhaps we do not realize how much we are adding to the consumption of sugar.

The prosperous worker will not stint his children on candy or sweet crackers, any more than he will stint himself on tobacco. It is an easy way to spend his increased wages. There is nothing apparently vicious about it, as there might be about a heavy increase in the use of whiskey and beer (if he could get them). It is a natural way of spending.

Furthermore, it must be remembered that until recently sugar was about the cheapest commodity we had. For more than a generation prior to the war it had not risen in price, although nearly all other commodities had gone up to some extent. It is interesting to note, by way of illustration, that in 1911 the retail price of sugar was exactly the same as in 1900. Even in 1915 it had risen only a trifle. One reason for the continued low price over a long period of years was the extreme sensitiveness of the consumer in that period to any considerable increase in sugar prices, and perhaps more to the fact that production could be increased from relatively low-cost cane sources, that is from tropical countries.

But the sensitiveness of the consumer, it must be said, was artificial. He had been taught that he could often buy sugar at less than it was worth. The bad habit had grown up by which wholesale and retail grocers used sugar to carry other products, such as coffee, tea, spices, canned goods, and the like, on which the margin of profit was higher. Sugar was for years sold by these wholesalers and retailers at prices less than the business

ORMSTOWN Live Stock Show

OPEN TO ALL CANADA

Ormstown, Que., June 15-16-17-18

\$17,000 offered in prizes

All judging done inside large covered steel Stadium. The Live Stock Dept., Ottawa, are offering large prizes for finished Beef, Sheep and Swine at this Show for the first time. Show opens Tuesday evening June 15th with judging of driving horses. Cattle men do not need to be ready to exhibit until Wednesday.

Neil Sangster, President W. G. McGerrigle, Sec. Treas.

BRAMPTON JERSEYS

THE LARGEST JERSEY HERD IN THE BRITISH EMPIRE

At Toronto Exhibition, 1919, we won twenty-five of twenty-seven first prizes. We now have for sale first-prize young bulls from R. O. P. dams, as well as females of all ages.

B. H. BULL & SONS :: **Brampton, Ontario**

Laurentian Producing Jerseys—The oldest bull we have at present is a year old youngster, sired by our herd sire, Broadview Bright Villa, No. 5630, and from Brampton Astoria, one of the best imported cows in the herd. We also have others younger of similar breeding, as well as a few bred heifers for sale. **FREDERICK G. TODD, Owner, 801 New Birk's Bldg., Montreal, P.Q.** **Farm at Morin Heights - F. J. WATSON, Manager**

Woodview Farm JERSEYS Herd headed by Imported Champion Rower, winner of first prize with five of his daughters on the Island of Jersey, 1914, second in 1916, and again first in 1917. We are now offering for sale some very choice bull calves, ready for service, sired by imported bulls and from Record of Performance imported prize-winning cows. Also some cows and heifers. Prices right. We work our show cows and show our work cows. **JNO. PRINGLE, Prop.**

Glenhurst Ayrshires headed by Mansfield Mains Sir Douglas Hague No. 16163 Imp. have been noted for their depth and size, good teats and smoothness of conformation. If you are looking for a combination of size, type and production—plus high butterfat—write me or visit the farm. Males and females of all ages for sale. **JAMES BENNING, Summertown Sta., G.T. R., Williamstown, C.P.R. Bell Telephone 78-3 Cornwall**

ALL BULLS OF SERVICEABLE AGE SOLD A few young bulls sired by Financial Raleigh King, son of the \$6,000.00 Financial Beauty King, for sale, from R.O.P. dams. **JAS. BAGG & SONS, Woodbridge, C.P.R., Concord, G.T.R. EDGELEY, ONT.**

could be carried on for, but they made it up on other articles. Other goods bore the expense of distributing the sugar, and sugar induced people to buy the other goods. Sugar for years reached the consumer at prices less than the service was worth.

But the conditions brought about by the war, together with increased consumption which I have already described in detail, changed the whole situation. From the point of view of the Cuban sugar producer, Providence has been more than gracious. As one sugar broker said to me, "the Cubans are eating from gold instead of silver plates"—a figurative expression which describes the placing of the Cuban producer in a strategic position, the like of which industry has rarely seen.

But let us not be unfair to the Cuban producer. He has seized his opportunity, of course. He is selling his crop much farther ahead than ever before, avoiding the former slumps in prices and getting a uniformly high price. He is making large profits, as anyone else would do in the same extraordinarily favorable circumstances. He is not, however, making quite the profits which some persons imagine.

The cost of producing sugar in Cuba in five years has probably at least doubled, and perhaps nearly trebled. Mill supplies cost three or four times as much. Bags are 65 cents instead of 15. Coal and ocean and railway freight rates have jumped, while labor has soared. A cane-cutter who used to get \$10.80 for a six-day week would now get \$30 a week if he had not reduced his working days to five and his hours to much less than before.

The United States Government last summer could have bought the entire Cuban sugar crop of this winter and spring (1920), if it had decided to do so, at a price of about 6½ cents a pound. But the purchase was not made; and foreign buying, together with the purchases direct by American manufacturers of candy and the like, shot the price up much higher. The Government has been criticized for its action, but, according to one of the leading men in the world's sugar trade who spoke very frankly on the

subject, it would have been "divine foresight" to have in advance just what those acting for the large surplus of sugar were afraid of heavy loss with which consumption also was not fully foreseen. Much annoyance is the apparent uneven distribution, but this has been a question of scarcity. The administrator and distributor of the country has been hoards and profiteering of such action has been. The hoards have not been proved to be important. The nature of the distribution of sugar as faulty as many surmise, especially faulty in conditions.

The scarcity has been doubted, by heavy buyers and manufacturers. But to keep sugar for the future it into candy and other products pushed out to the consumer who complains most about the sugar for his morning candy, ice cream, and other substances which are expensive.

Talking against high prices will not increase the price. High prices themselves ever, to stimulate production, a point will be reached when a surplus supply exists. The question of how soon it will reach its normal point may be two years; it is one really knows. Get the price back first. From the point of view of the transportation system, sugar has one great advantage in the tropics. It is competitive. Very little has been raised in place of it. It is blessed with favorable conditions and appears to have a serious potential competition. It will take Russia a long time to get to the best authorities which threatens Cuba's present Cuba has acres under sugar cultivation probably six million could be cultivated in demand should continue. The labor question of finding a cane-cutter.

The labor problem is whether more should be produced in other parts of the world. After all, the problem and many ways.—Albert American Review of

Farm Conditions Wellington

In renewing his subscription to the Farmer's Advocate and G. E. Reynolds of the Advocate writes thus on May 1920: "The Advocate" is certainly the best stockmen, as there is no information in it regarding

Seeding is pretty good in this locality and I can say it goes in any better, so if we only get warm weather, there is no grass work. The cattle are in fair condition, but farmers have no help in the best to produce, and the U. F. O. clubs, kickers will get out and blame the farmers for living."

GOSWICK

F. W. Darby, a breeder and Shorthorn, who has been very good for a month. He has a young breeding sow and parts of the Province Shorthorn heifer and Ferguson of Eloy.

subject, it would have taken "almost divine foresight" to have decided a year in advance just what action to pursue. Those acting for the Government feared a large surplus of sugar, in view of the increasing size of the Cuban crop, and were afraid of heavy losses. The rapidity with which consumption mounted in 1919 also was not fully foreseen.

Much annoyance has been caused by the apparent unevenness of retail distribution, but this has been primarily, a question of scarcity. Every food administrator and district attorney in the country has been trying to unearth hoards and profiteering, but the net result of such action has been almost nothing. The hoards have not been found, and the profiteers prove to be few, small, and unimportant. The natural inference is that the distribution of sugar has not been as faulty as many suppose, at least not especially faulty in view of world conditions.

The scarcity has been made worse, no doubt, by heavy buying on the part of manufacturers. But these people do not keep sugar for the fun of it. They make it into candy and other products which are pushed out to the public. The person who complains most bitterly of a lack of sugar for his morning coffee or cereal may be the very one who is eating more candy, ice cream, crackers, jelly, and other substances which absorb sugar.

Talking against high prices and calling everyone who handles sugar a profiteer will not increase the production of sugar. High prices themselves are bound, however, to stimulate production; and gradually a point will be reached where a surplus supply exists. One of the greatest gambles in the world to-day is the question of how soon Europe will again reach its normal point of production. It may be two years; it may be five. No one really knows. Germany will probably come back first. France has her factories to rebuild. Russia has to re-establish her transportation system.

Sugar has one great advantage as a crop in the tropics. It is largely non-competitive. Very little else can be raised in place of it. Cuba, of course, is blessed with favoring climate and soil, and appears to have only one really serious potential competitor, Russia. But it will take Russia a long time, according to the best authorities, to reach a position which threatens Cuba's supremacy. At present Cuba has about two million acres under sugar cultivation, and there are probably six million more acres which could be cultivated in the same way if the demand should continue. The only limitation is the labor problem and the question of finding a workable mechanical cane-cutter.

The labor problem in Cuba is serious, but whether more so than in other industries or other parts of the world is a question. After all, the climate simplifies the problem and makes life easier in many ways.—Albert W. Atwood, in American Review of Reviews, N.Y.

Farm Conditions Fair in Wellington County.

In renewing his subscription to The Farmer's Advocate and Home Magazine, G. E. Reynolds of Wellington County, writes thus on May 12: "The Farmer's Advocate" is certainly a great paper for stockmen, as there is so much valuable information in it regarding live stock.

Seeding is pretty well over in this locality and I can say that I never saw it go in any better, so prospects look good if we only get warm weather with showers. Feed is very scarce among stockmen and there is no grass worth speaking about. The cattle are in fair condition, but we want quick growth now. A great many farmers have no help but are doing their best to produce, and nearly all belong to the U. F. O. clubs. We all trust that the kickers will get out and work, and not blame the farmers for the cost high of living."

Gossip.

F. W. Darby, a breeder of Yorkshires and Shorthorns, writes that business has been very good during the past month. He has disposed of several young breeding sows to breeders in various parts of the Province, and a fine Scotch Shorthorn heifer was sold to George Ferguson of Elop.



Durable Tires for Country Driving

COUNTRY roads test the endurance of tires. Sharp stones that cut, round stones that bruise, and grinding ruts that scrape the surface, seem to have less effect on Gutta Percha Tires than on most others. This is because of extra strong, heavy fabric, thick rubber tread and a toughness that our rubber compounders know how to incorporate. Farmers, who drive big cars or little cars, will find that no tires will give a longer life of satisfactory service than

"GUTTA PERCHA" TIRES

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GUTTA PERCHA & RUBBER, LIMITED
Head Offices and Factory: Toronto
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Oxford Down Sheep, Pioneer Flock—We are offering this season a up-to-date lot of yearling and two-shear Rams, also imported two-shear Ram and a number of Yearling and two-shear Ewes, also Ram and Ewe Lambs. **HENRY ARKELL**, Office and Telegraph, 207 Sherman Ave. South, Hamilton, Ont. Shipping Station, Guelph and Corwhin

RENT OR ROMNEY MARSH SHEEP—The hardest and best grazing mutton and wool sheep of Great Britain. Successfully acclimated wherever they are required.

Annual Ram Show and Sale—350 specially selected Rams at ASHFORD, Kent, on September 23rd and 24th, 1920; also sales at SITTINGBOURNE, Kent, on October 13th, 1920, and MAIDSTONE, Kent, on October 15th, 1920. Descriptive pamphlet, list of breeders and all information from: **W. A. BALL**, 12 Hanover Square, LONDON, W. 1

ELMHURST LARGE ENGLISH BERKSHIRES—From our recent importation of sows, together with the stock boar, Sudden Torredor, we can supply select breeding stock, all ages. Satisfaction and safe delivery guaranteed. **H. M. VANDERLIP**, Breeder and Importer, Langford Station on Brantford and Hamilton Radial. **R. R. 1, BRANTFORD, ONTARIO**

Berkshires—Boars ready for service and boar pigs, rich in the blood of Lord Premier's Successor 161500, Grand Champion, 1914, Champion Sire of 1915, 1916, 1917. His descendants have won Grand Champion honors at the largest and strongest shows of 1918 International Champion Berkshire barrows of Lord Premier's Successor. We have shipped many Berkshires to Canada with satisfaction to customers. Prices on request. **HOOD FARM, INC., Lowell, Mass.**

TAMWORTHS—Young sows, bred for June and July farrow, and boars for sale. Write or phone. **JOHN W. TODD**, Corinth, Ontario

Shropshire Yearling Ewes bred to Bibby's ewe lambs sired by him. Two Shorthorn bulls. Two Clydesdale stallions. **W. H. PUGH**, Myrtle Station, Ont.

Prospect Hill Berkshires—Young stock, either sex, for sale, from our imported sows and boars; also some from our show herd headed by our stock boar, Ringleader. Terms and prices right. **JOHN WEIR & SON, R.R. 1, Paris, Ont.**

Chester Whites—Our sixth importation has just arrived. One litter farrowed in quarantine—sired by Champion boar Ohio State Fair—and a sow in pig to "Volunteer," Champion of Nebraska. Also ten litters sired by 1st and 2nd prize aged and champion boars at C. N. E. Unrelated pairs as a baby herd. Illustrated catalogue. **JOHN G. ANNESSER, Tilbury, Ont.**

Inverugie Tamworths—A choice lot of gilts bred for June and July farrow. Young boars from 50 pounds up. **Leslie Hadden, Box 264, Sunderland, Ont.**

YORKSHIRES

Pigs of different ages, both sexes, from large litters.

WELDWOOD FARM

Farmer's Advocate, London, Ontario

Meadow Brook Registered Yorkshires—Ten choice young boars fit service, from prizewinning stock. Prices reasonable for quick sale.

C. W. MINERS, R.R. No. 3, Exeter, Ontario

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

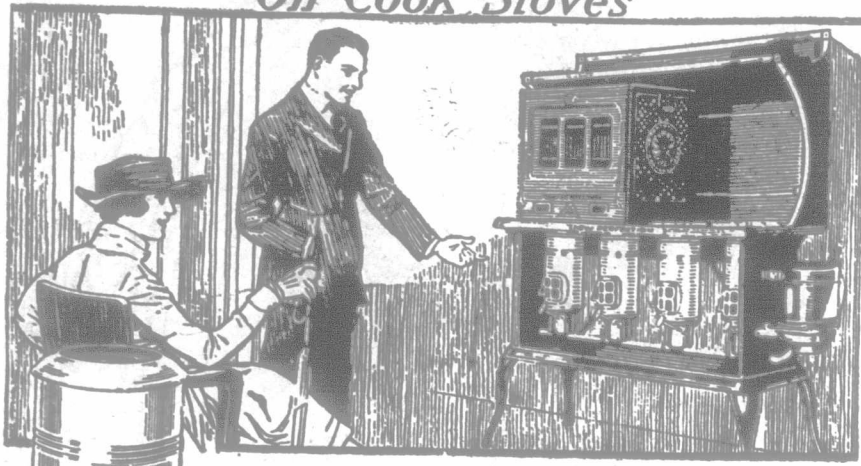
DUROC JERSEYS

My herd has won more firsts and championships in four years showing at Toronto than all other herds of Durocs combined. Write for prices. **CULBERT MALOTT, R. 3, Wheatley, Ont.**

A Distinction.—"Any fishing around here?"

"Some," answered the barefoot boy.
"What do you catch?"
"You said 'fishin',' not 'ketchin'!"—
Washington Star.

NEW PERFECTION Oil Cook Stoves



Here's The Reason

—the Long Blue Chimney which supplies cheap, instant, speedy, clean cooking heat whenever needed. It has won for the New Perfection Oil Cook Stove, the appreciation of hundreds of thousands of housewives.

The Long Blue Chimney which supplies the clean, white-tipped cooking flame.

With the Long Blue New Perfection Chimney, every drop of fuel goes into cooking heat—not into overheating the kitchen. The flame is applied directly under the utensils. There is no smoke or odors and pots and pans are not blackened. High, medium or low, the flame is always visible. It can be adjusted to give the heat desired and stays set.

A New Perfection Oil Cook Stove and a New Perfection Oven and Warming Cabinet form the best combination for year round cooking. The New Perfection gives you more satisfaction in the kitchen and more time out of it.

Sold by good dealers everywhere. Ask for demonstration of the Long Blue Chimney or write for New Perfection Booklet.

Made in Canada

THE PERFECTION STOVE COMPANY
LIMITED

HOME OFFICE AND FACTORY

SARNIA - - - ONTARIO

Wholesome, Nutritious, Economical.

McCormick's

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Sold fresh everywhere. In sealed packages.

Factory at LONDON, Canada.

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Winnipeg, Calgary, Port Arthur, St. John, N.B.

NORTHERN ONTARIO

A vast new land of promise and freedom now open for settlement to returned soldiers and sailors FREE; to others, 18 years and over, 50 cents per acre. Thousands of farmers have responded to the call of this fertile country, and are being made comfortable and rich. Here, right at the door of Old Ontario, a home awaits you. For full particulars as to terms, regulations, and settlers' rates, write

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PARLIAMENT BUILDINGS, TORONTO.

Our School Department.

A Lesson Plan on the Potato.

SUITABLE FOR FOURTH FORM PUPILS.

BY GEO. W. HOFFERD, M. A.

Aim.—To interest pupils in the appearance, production and life history of the potato.

Materials.—A potato for each pupil, a knife, the past observations of the pupils, and one or two marked potatoes like the accompanying illustration.

I INTRODUCTION.

In this lesson we shall study these potatoes which we have before us. What are potatoes grown for? What kind do you plant? Why? Discuss this point briefly with the class so as to emphasize the desirability of obtaining *quantity* and *quality* in the yield. (It will improve the lesson if the teacher has three or four of the common varieties of potatoes on hand to make comparisons as the lesson proceeds. The varieties should be familiar to the teacher.)

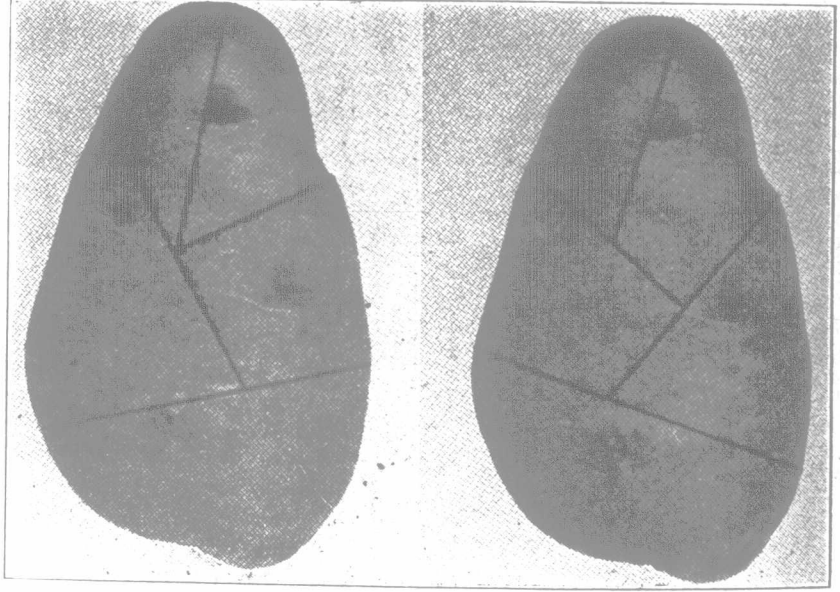
II INVESTIGATION.

1. Where did these potatoes grow on the plant? Here distinguish between the root of the plant and the underground stem.

Find the *stem end* of your potato?

lose about 20 per cent of their weight when peeled. This is far too much unless potatoes are cheap and the peelings are fed to farm stock. The bulky interior next to the cambium is called the *external medullary layer*; and the interior or centre, with radiating projections into the medullary layer, is called the *internal medullary layer*, pith or water-core. At this point, if the teacher has several varieties of potatoes, a comparison of the depth of the eyes and the thickness of the cambium layer can be made an interesting bit of investigation. Stress the fact that a food potato has a thick cambium layer, and consequently a smaller medullary portion; and that a poor potato has a narrow cambium layer and a comparatively thick medullary interior portion.

3. When are potatoes planted? How are they prepared for planting? Can you find any *potato scab* on your specimen? This scab is a disease. It injures the skin and prevents the full development of the potato. Scabby potatoes should not be planted without being soaked for two hours in a mixture of 1 pound of formalin with 30 gallons of water. The treatment will kill most of the spores of the scab so they will not grow scab on the young potatoes. Have a pupil show how he has seen *cuttings* made for planting. Usually his home observations have been wasteful and unscientific. Here is the teacher's opportunity to study why a potato should be made into cuttings after the manner of the accom-



How Potatoes are Cut for Seed.

The opposite end is called the *seed end*. How can you distinguish between the stem end and the seed end of your potato? Have each pupil give his answer. About how many times as many eyes do you find on the seed end of your potato as you find on the stem end? What do you see in the eyes? These little sprouts are the buds of the potato and are like the winter buds found on trees from which the leaves and blossoms have just come. What covers the potato? What color is the peeling of your potato? What color are the eyes? When the peeling or *skin* is removed do the eyes come with it? (Here emphasize that the color of the skin and the depth of the eyes help to distinguish one variety of potatoes from other varieties. For example, the White Elephant, of the accompanying cut, has a skin, nearly white with a rose tint, and eyes of medium depth, while the Green Mountain has a dull white skin and fairly shallow eyes). What is an advantage of shallow eyes?

2. Cut your potato across the middle so as to separate the stem and seed ends. You have now made a *cross section* or *transverse section* of your potato. About how thick is the skin? Does your potato look the same all the way across? Describe what you see. About how thick is that compact white layer covered by the skin? This is called the *cambium layer* and it has greater food value than the less compact and more watery interior part. Why then are deep eyes and the practice of thick peeling very wasteful? It has been estimated that raw potatoes

panying illustration. Lead pupils to see that the aim is to have two to three eyes on each cutting; that the cuttings should be of uniform size, compact, and a little more than 1 ounce in weight. Two to three ounces is wasteful. (The teacher should cut a medium sized potato before the pupils by taking the first set or cutting from the stem end, then the sets by cutting slantingly across the potato and finally cut so as to divide the seed end.)

Have two or three pupils describe how they have seen or helped to plant potatoes.

Stress the points, that in a field the cuttings should be planted in rows 3 feet apart, and that the cuttings be placed 15 inches apart in the row at a depth of 4 to 5 inches, if no hilling is to be done, which is desirable for a dry season; and at a depth of 2 to 3 inches, if hilling is to follow, which is usually desirable in a wet season. Why? Where garden planting is done with the hoe make the holes in rows about 3 feet apart and the holes in the row 15 to 18 inches apart and place *one* cutting in each hole and at a satisfactory depth.

4. Try several experiments with potatoes in the school garden, or as home projects which will answer definite problems. In conducting this work the chief aim should be to make it as highly educational as possible. The *result* next fall in the *quantity* and *quality* of the yield will be the answer to your problems of investigation. To the real teacher and the interested pupil investigations of this nature will be a source of delight.

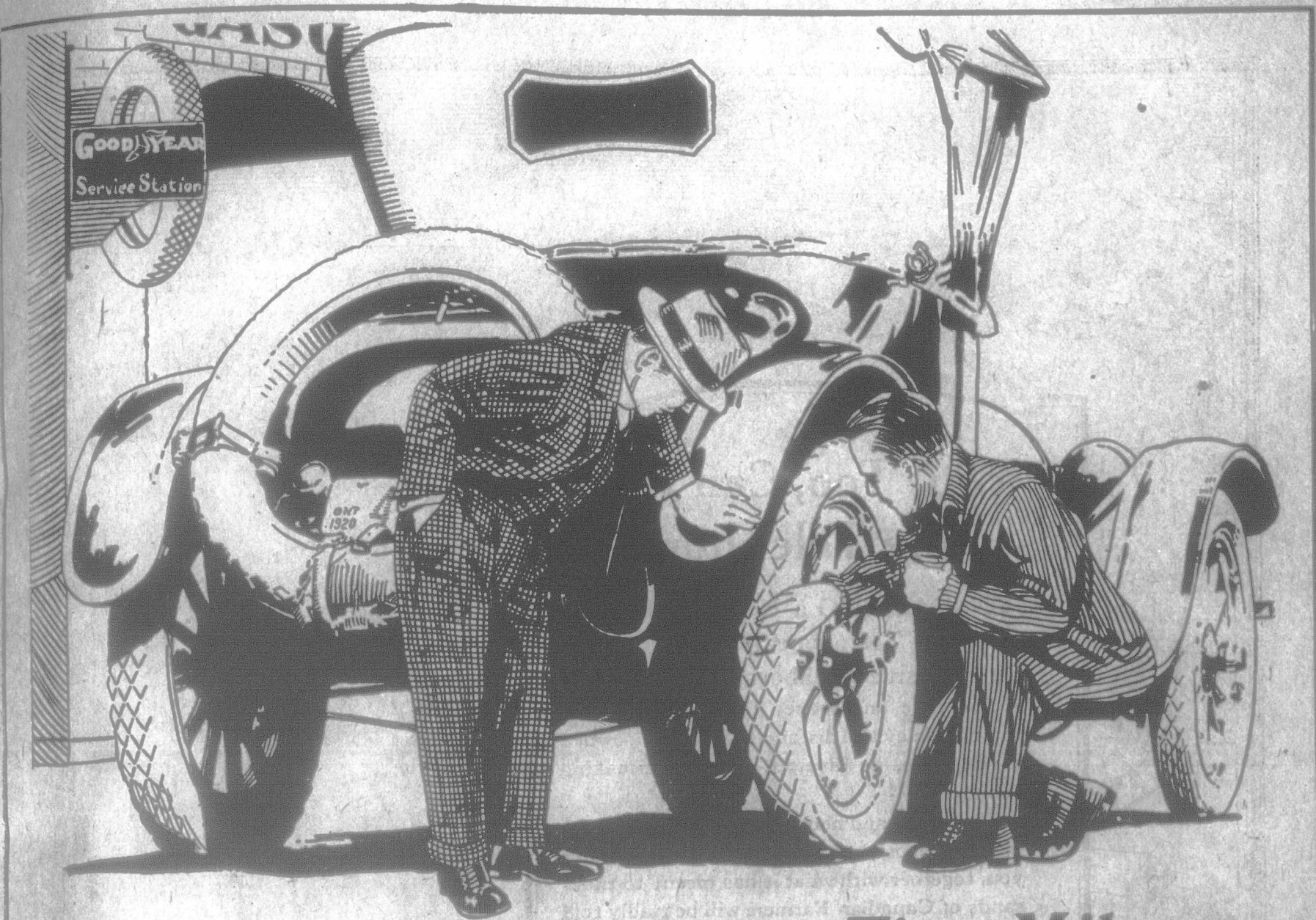
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