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THE FARMER'S ADVOCATE

AND HOME MAGAZINE

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

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LONDON, ONTARIO, JANUARY 1, 1920.

LV.

No. 1423



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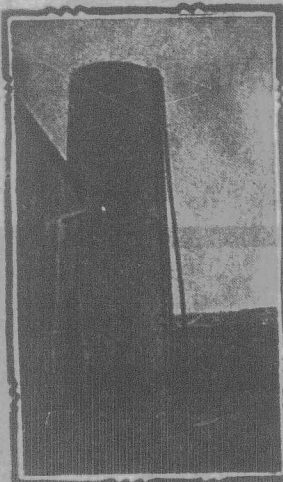
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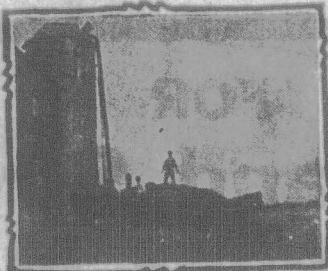
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The Farmer's Advocate and Home Magazine

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LV.

LONDON, ONTARIO, JANUARY 1, 1920.

1423

EDITORIAL.

Don't neglect to harvest sufficient ice for the dairy this winter. Read the article on ice harvesting in the dairy department of this issue.

Why not start now the practice of putting manure on the fields as fast as it is made. This practice saves fertility and labor on ordinary fields.

Plenty of good clean feed, exercise and comfortable quarters for the flock will go a long way to bring up the egg yield now that prices are high.

If that orchard is worth having on the farm it is worth taking care of. Plan now to prune, spray, manure and cultivate when the trees need it.

The live-stock industry in Canada will never thrive as it should until farmers can put greater trust in those who handle the product after it leaves their hands.

When the scrub bull campaign finally gets under way in Ontario, what county will be the first to co-operate with the Department of Agriculture for better live stock?

There are hundreds of young men, particularly in the dairy districts of Eastern Ontario, who should take advantage of the herdsman's short course being put on at the Kemptville Agricultural School this winter.

Success in herd testing is not dependent upon long years of experience. This has been instanced during the past few months by the fact that at least two comparatively young and inexperienced breeders have made outstanding world's records.

Don't neglect making use of the opportunity for reading during the long winter months. Nothing so broadens one as plenty of good reading, and books and magazines are too plentiful for any household to be without a liberal supply.

A summary of seed and crop conditions appearing in this issue indicates the advisability of saving any grain or other seed fit for use next spring. This applies particularly to oats and barley among the spring grains. It is gratifying to note that seed corn appears to be plentiful enough to meet the demand.

Plan now to attend the live-stock breeders' meetings held in Toronto during the first week of February. The Horticultural Convention and the Fairs and Exhibitions Convention are also on at the same time, so that a trip to Toronto should be well worth while for every farmer interested in good farming.

The maximum retail price of imported cheese in England was raised from 36 to 40 cents per pound on December 23, by authority of the British Ministry of Food. This should allow of four cents more to the Canadian producer on cheese purchased for Great Britain, unless it can be shown that the cost of handling has increased since early in the year.

We wonder how much of the demand on the part of the railways for an increased tariff for heated refrigerator cars is due to an increased demand for such cars. Not so long ago the Canadian packers were paying demurrage charges on refrigerator cars and using them for storage purposes. At the same time, when the Canadian National Railways had only six available cars on the entire Eastern Division, there were about 600 carloads of apples in Nova Scotia awaiting cars for shipment to Ontario and points West.

Radial Lines.

We are glad to note the recent expression of opinion by the United Farmers' convention regarding the proposed policy of Hydro-Radial expansion in Ontario. Everyone, we believe is agreed that radial lines are a distinct aid to transportation and should be encouraged when the need for them becomes apparent. Certainly, however, there has not yet arisen in Ontario the need for radial lines that will parallel existing steam roads. Canada has over \$3,000,000,000 invested in railways, a good share of which is in Ontario, and it must never be forgotten that every dollar invested in steam roads or in Hydro-Radial lines is a tax on the people. It naturally follows, therefore, that more roads should not be built until the need for them is clearly evidenced.

Not only is this true, but it seems evident to us that good roads are needed worse in Ontario than radial lines, and such being the case the general policy of the Provincial Government should be to take care of this problem first. The need for a better system of roads is clear to all, and it is equally apparent that a greater number of people will be served by an improved road system than by Hydro-Radial expansion. Premier Drury has stated that the finances of the Province are not in such shape as to stand needless drains upon the public treasury, and with this to remember it seems only logical to meet first the more urgent demand for improved country travel. With a system of good roads, automobiles and trucks will become more prevalent, so much so possibly as to render the need for radial service in certain districts less urgent. The extended use of trucks for freighting might conceivably render the radial lines less profitable also.

Undoubtedly certain parts of the Province need radials now, and need them badly enough to warrant the expenditure. If so let them be built, but under no circumstances should the policy of expansion be aggressive enough to prevent road improvement. Let the money spent now serve all of the people all the time, rather than some of the people some of the time.

Plant Pathologists Necessary.

A correspondent in this issue calls attention to the need for more thorough and extensive investigation into the cause and control of our harmful plant diseases. He points out that while a single plant disease, namely the Black Stem Rust of wheat caused in 1916 a loss in the Canadian wheat crop amounting to \$150,000,000, to say nothing of the serious diseases to grain and other crops, the question of disease control is receiving but meagre consideration. Undoubtedly this contention is right, and it is putting the case mildly, indeed, to say that very little research work is being done in Canada in this important matter. There is, of course, good work being done so far as limited funds and a limited number of men can accomplish it, but when it is realized that successful research and investigation requires long periods of close work on what seem comparatively minor details of a subject, it immediately becomes apparent that a few men can accomplish only a pitifully small amount of the great mass of work needing to be done.

Moreover, it should be realized by the people generally that a capable investigator or research student is worthy of his hire, and that at a liberal consideration. There are persons, of course, to whom science is a hobby and salaries a purely secondary consideration, but they are few. No man who is capable of solving some part of the big problem of disease control in our important crops should be forced to worry because salaries for this work are insufficient for the necessities of life. The penurious policy of trading on the scientist's love for his work has seen its best days, because good men in science are becoming fewer under its evil influence.

In Germany there may still be a goodly number of those who make a hobby of life, but experience in this country has shown that good work well rewarded is more useful than the pursuit of hobbies. In Germany a professorship is the scientist's alternative for a living wage, but here we tend toward a different standard—it has been proven better to live on an adequate salary than a titular distinction.

We need in Canada some carefully-planned policy of research work in order that we may not always need to endure the embarrassment of receiving fundamental truths about our agricultural industry from other than our own sources. Plant pathology, important as it is, in the study of farm problems, is only one of many lines of research that are badly needed. Let us outline a policy of careful study in agriculture that will draw the good men to research in larger numbers—and then let us keep them in this country with adequate salaries to do the good work for which we have trained them.

The Resolution Habit.

It has always been the habit at farmers' conventions to adopt long and numerous resolutions which were sometimes listened to by the powers that be, and sometimes not. Under such circumstances it did not seem to matter so much if the recommendations were extreme in spots, for they were not looked upon by the public as of any great significance; nevertheless they were, when faulty, sometimes used against the industry which fathered and endorsed them. The Dominion Grange was, perhaps, the most efficient organization we ever had so far as grinding out resolutions was concerned. The memorials were, in some cases, models of composition and rhetoric, and the claims made were, in most instances, just and reasonable, although they might have appeared at the time more radical than the same would today. The habit still lives, and the U. F. O. at their last annual convention started in to adopt resolutions at the rate of one per minute until the delegates found the pace too strenuous and asked that they be given more time to consider the recommendations they were being called upon to sanction. Twenty-three resolutions in all were presented to the Convention, and they were not given the discussion and consideration to which their importance entitled them. Such matters as a uniform rate for Hydro-Electric power throughout the Province of Ontario or the manner in which the National Railways should be managed and controlled ought not to be too hastily decided. They are questions of no little significance, and farmers, we are sure, will take the right stand when they are thoroughly conversant with the facts.

It is not the purpose of this discussion to point out where the convention acted wisely or otherwise in regard to all these resolutions, but to urge upon farmers generally the advisability of acting or endorsing resolutions only after sufficient deliberation has been given.

It was, in fact, a good move to arrange for the resolution committee to meet the first Tuesday in November to consider the resolutions to be presented at the annual meeting following. The clubs will be provided with copies of these resolutions in time to consider them and instruct their delegates how to vote. Even this system is not ideal, for expert advice is often necessary before one can view a question from all angles, and many a delegate might change his mind after coming to a convention if discussion were permitted there. The committee, however, ought to scan the resolutions very carefully and endeavor to limit the number as much as possible. Now that farmers are in a better position than formerly to demand consideration of their claims it behooves them to move cautiously and act wisely.

The Farmer's Advocate AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN THE
DOMINION.

Published weekly by
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Agents for "The Farmer's Advocate and Home Journal,"
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The Rate of Exchange.

We are told by bankers and financial experts that a discount on our currency in the United States money markets is a splendid thing for Canada. The argument is advanced that it will discourage purchasers in the neighboring Republic and conduce to a greater consumption of home manufactured commodities, which means greater industrial development and expansion. Furthermore, we shall be obliged to deal with Great Britain, where our currency is at a premium, and thus establish closer connections between ourselves and the Mother Country, with whom we should trade.

This is all very logical and, no doubt, the outcome will substantiate the arguments advanced. We hope it will. But is not the average citizen or consumer making a very considerable sacrifice for this industrial expansion which the currency problem may bring to pass? Willingly or unwillingly we have bonused and fostered our infant industries with a policy of protection which has made it possible for Canadian manufacturers to exact more for their wares than the same goods could otherwise be purchased for. Already paying from 25 to 40 per cent. as a so-called customs tax, consumers will look with alarm on this 8 or 10 per cent. discount on our money and implore the makers, wholesalers and retailers to be lenient with us and not take advantage of the situation created by an unfavorable balance of trade. An 8 per cent. discount on Canadian currency in United States markets means that a dollar's worth of goods across the line will cost us in the neighborhood of \$1.08 here, leaving customs out of consideration altogether. Will or will not the Canadian-made commodity worth \$1 sell for that amount or \$1.07½? If the latter price prevails the rank and file will be paying too much for the industrial expansion which has been presaged.

Practically everyone is willing to make some sacrifice for his country, but we have no sympathy with this doctrine which sets up a certain class as representing the country, when in numbers they are comparatively few. The present situation is unavoidable, no doubt, because we purchase so heavily in the United States and do not return goods enough to balance the national ledgers. However, we should look the matter squarely in the face and attempt by a smaller volume coming in and a larger volume going out, to balance our trade,

which as it now stands bears most heavily on the consumer or ultimate purchaser of goods.

Building a Nation.

BY ALLAN MCDIARMID.

We have heard a good deal lately about the Canada of the future, or at least, in the last number of years. As some nations build on their past and like to recount their glorious history, so we seem to be inclined to build on the future and to look forward to the great destiny that is in store for us. We have been told that it is better to look forward than back and if this is true we have the advantage of the greater part of the rest of the world. Our life is still to be lived, and lived in the light of the experience that the other nations of the earth have accumulated through the generations of men that have passed away. We can, if we will, build on the foundation laid by others, and begin, as it were, where they left off. In this way and by this process do we progress.

But it's not as easy as it looks. To a certain extent experience has to become a personal matter before we can profit by it, or so it would seem. Some of us even have to go through an experience the second time before we are able to get the meaning of the lesson that Nature, or some higher power, is trying to teach us.

But the point is, if Canada is to have the great future that we have been predicting for her, how is it to be brought about? What means can be used towards this end?

Evidently the question can be answered in two words. "Things" and "person". Through the coming in contact of these two, one with the other, all our material progress is made. Everything that we have been in the habit of calling our "resources" were lying idle and useless until man appeared on the scene and started in to make them serve their intended purpose in the universal scheme of things. And it is only as we continue to do this that we will live up to Nature's watchword, which is "Progress". Only as we do this will we fulfil our duty from the material point of view, which is of importance only secondary in nature, to the spiritual.

What are Canada's resources in this line? Simply her mines, her fisheries, her forests and her farms. These are what we draw on for every bodily need of the nation. Every man who works in this country is connected in some way with these four sources of production. The great majority of us are chiefly interested in the one last mentioned. Consequently our country's future is largely in the hands of the farmers. And anything that can be said, to impress them with the importance and responsibility of their calling, should be said and repeated until all have come to realize it. The future of Canada, from the worldly and material standpoint, depends on production. We produce that we may exchange our production for the other necessities and luxuries of life and the more we have of this means of exchange the more we get in return and the fuller and more progressive life we have the opportunity of living.

Money is not an evil thing, in itself, as some people seem to think. It's the love of it, to the exclusion of the other important things in life, that bring us harm. We must have things to use if we are to get anywhere or do anything in this world, and we cannot have them, as a rule, unless we have the money to buy them. The extremists are the ones that have given to money its bad name, as they have been responsible for most of our misconceptions. By abusing many useful things we have made of them an evil.

So the understanding farmer, who is the truest kind of a patriot, will continue to cultivate his land and develop his herds to the limit of his ability for the two reasons that, first, it provides him and also his family, with the means whereby they can attain a fuller physical, mental, and spiritual life than they otherwise could, and secondly, it increases, to a certain extent, the national prosperity and the standing of the country among the other nations of the world.

But in speaking of the mental and spiritual attainment that may come through the results of industry, we want to say now that these are the real, or ultimate, objects of labor, or increased production, which we have been emphasizing. The first and last purpose in putting man on this earth was that the spirit in him, which is the real man, might develop and grow into a maturity that will mean happiness and fulfilled endeavor, if not in this world, then in some future existence.

Tracing it backwards we make it plain that the growth of the spirit man depends on the mental progress of the individual, and the individual mind can be evolved only as it comes in contact with things of a material nature. And it can have these things only as it gets them through the results of industry. Which brings us back to our keynote, increased production. This is our task if we are to make the "Canada of tomorrow" an improvement on the Canada of to-day, and worthy of the opportunities she has been given.

We have every encouragement to go forward. The growth of our financial institutions and the general increase in prosperity is, we believe, being accompanied by better laws, more law-abiding citizens, a higher standard of living, less corruption in connection with political contests and better educational opportunities than there ever has been in the past. We do well to put emphasis on our commercial prosperity. But we will do better to remind ourselves continually of the connection between that and the higher and ultimate purpose of life on the earth.

Nature's Diary.

A. B. KLUGH, M.A.

In some respects this time of year is a favorable one for beginning the study of birds. There are now comparatively few species to be met with in our fields and woods, so that the beginner is not confused by a multiplicity of species, and has a chance to learn to know the few species which are present really well. Moreover, several of the northern birds which descend to these latitudes in winter are very tame, and the student can approach them closely and study them at leisure.

One of the commonest of our avian winter visitors is the Snowflake. These hardy little birds are veritable spirits of the storm, swirling over the fields uttering their musical trilling notes, alighting to feed in a weedy field, running hither and thither among the weed-stems, then suddenly arising and sweeping away to new feeding grounds.

The Snowflakes frequently arrive in larger flocks than is the case with most of our winter visitors, the flocks often containing a thousand or more birds. When a large flock is feeding they appear to roll like a wave across the field, this appearance being due to the hindmost birds continually rising and flying over the rest to the front of the flock.

The winter food of the Snowflake consists almost entirely of weed-seed, and chiefly of two species of weeds—pigweed and ragweed. The reason that these two species figure so largely in its winter menu is probably not due to any preference for these particular species, but to the fact that they are tall weeds which consequently protrude above the snow and also to the fact that the seeds remain on the stems over winter.

These birds breed in the far north, in Greenland, Labrador, around Hudson Bay and in Alaska. They build their nests out on the open arctic tundra, making them of grass and moss and lining them with feathers. In summer the plumage of this species is pure white with black wings and tail. In winter much of the white is clouded with chestnut brown.

Another winter visitor which is now with us is the Redpoll. This species is about five and a half inches in length. The upper parts are streaked with pale flaxen gray and dusky brown, the rump is either white, or white tinged with a rosy hue, and streaked with dusky brown. The under parts are white, streaked on the sides and flanks, and in the adult male the breast is tinged with rosy pink. The crown is crimson in both sexes, and it is from this characteristic that the species derives its name. Like all our winter visitors the Redpolls are irregular in their visits to any given locality, being abundant in some winters and rare or absent in others.

The Redpoll breeds in Labrador, Newfoundland, Greenland, the Mackenzie River region and Alaska. In the winter it goes as far south as Kansas and Oregon. In its northern home the Redpoll builds a nest of grass and moss in a low tree or bush, and deposits four or five bluish-white eggs speckled with reddish-brown.

The Redpoll, like the snowflake, feeds out in the open fields on the seeds of pigweed, ragweed and lamb's-quarters.

The Tree Sparrow is another common winter visitor. This species is six inches in length, and may be recognized by the chestnut crown and the dusky blotch in the middle of the plain gray breast. It breeds in Labrador, northern Quebec and about Hudson Bay, and in winter descends as far south as Kentucky and Kansas.

The Tree Sparrow is not as partial to open fields as the Snowflake and the Redpoll, but usually remains in the vicinity of shrubbery, and feeds on the seeds of the weeds about the margins of fields.

The song of this species, which is heard just before it leaves for the North in March or early April, is a bright tinkling ditty.

The Pine Siskin is an irregular winter visitor. In some seasons they arrive from the North very early, and are present in large flocks throughout the winter. This year, for instance, I saw this species in the Bruce Peninsula at the end of September. In other seasons they may be present only in small numbers in a given locality, or may be entirely absent.

This species is four and three-quarter inches in length, streaked above with olive-brown and dusky and streaked below with whitish and dusky. On a near view the bill is seen to be extremely acute, and the bases of the quills of wing and tail to be strongly tinged with sulphur yellow.

The Pine Siskin feeds very largely on the seeds of coniferous trees, often hanging upside down when picking them out of the cones. The notes of this species resemble those of the American Goldfinch very considerably, but are rather sharper, and one of the Siskin's characteristic call-notes "Sque-e-e" is not used at all by the Goldfinch. The song, which may be heard in the spring before the birds leave for the North, is also much like that of the Goldfinch, but is rather higher-pitched and is interspersed with the "Sque-e-e" notes.

This species breeds in the Maritime Provinces, in northern Quebec, northern Ontario, and in the Northwest and the Rockies. It sometimes nests south of its usual breeding-range, as was the case in central Ontario in 1905.

That the horse-breeding industry in the United States is not dead in spite of the great crop of tractors brought out during the last few years, is indicated by the sale of the Percheron filly Gloriana, Junior Champion and Reserve Grand Champion Percheron at Chicago recently, for the handsome price of \$2,300. She moves from Minnesota to Pennsylvania.

THE HORSE.

The Horse's Coat.

The comfort and general appearance of a horse is greatly influenced by his coat. A well-groomed horse, like a well-groomed man or woman, is "pleasant to look upon." The coat of a horse, to a great extent, gives evidence of care or neglect. While a nice, fine, silky, glossy coat adds much to the general appearance of a horse, it requires a great deal of attention to keep it thus, especially during the late fall and winter months. Some horses naturally have shorter and finer coats than others, and, while good-breeding has some influence in this respect, we frequently notice a vast difference in animals of the same breeding. Why this is we cannot determine, and simply are compelled to accept it as a fact. The age of an animal has an influence; we notice that it is usually not possible to keep the coats of quite young or very old animals in as fine a condition as those of animals between adult-hood and old age. Horses under five or over twenty years do not usually give the same returns for care and attention, as regards coat, as do those between these ages. In the former case it may be that the more or less general fevered state of the system consequent upon dentition has an influence upon the coat, and in the latter case, probably we are justified in assuming that the general vitality of the animal is more or less impaired, and the coat, as well as other parts of the anatomy, evidence the decrease of vitality.

We frequently hear people say that they do not like grey or white horses, because they are so hard to keep clean. A grey horse is no harder to keep clean than one of a dark color, but stains or dirt show more plainly, and it requires more attention to make him "look clean." We often notice, when a team consists of a grey and a dark-colored horse, and when care is taken to keep them looking well, that on close examination the grey is found to have a finer, shorter and cleaner coat than his mate, from the fact that stains, etc., show so plainly on him that he receives more grooming.

During the summer months there is little trouble experienced in keeping a horse's coat nice, but as the weather becomes colder in the fall nature demands that the horse be clothed accordingly, and there is a strong tendency to growth of hair, and we must say that the coat loses its gloss in proportion to the length of hair. In order, then, that we may retain the desired gloss, we must take what measures we can to prevent this growth. In order to do this we must, in addition to thorough and regular grooming, avoid unnecessary exposure, and when exposure is necessary provide artificial protection when the animal is not in motion. As regards grooming, a horse should be thoroughly groomed twice daily; not merely the external surface of the coat brushed and rubbed, but the hair thoroughly agitated to the roots by working the comb or brush both with and against the grain of the hair, in order to remove dust, dandruff, etc., and thereby tend to prevent any occlusion of the openings of the ducts of the sweat glands and keep the coat free from dust. Whenever a horse has been driven, ridden or worked hard enough to cause perspiration, it would be well to rub him until dry. This is the manner in which race horses are used, and a well-cared-for race horse certainly presents a perfect coat. This, however, is not practicable in the ordinary stable. It would require more help than the ordinary horse-owner can afford or is willing to provide.

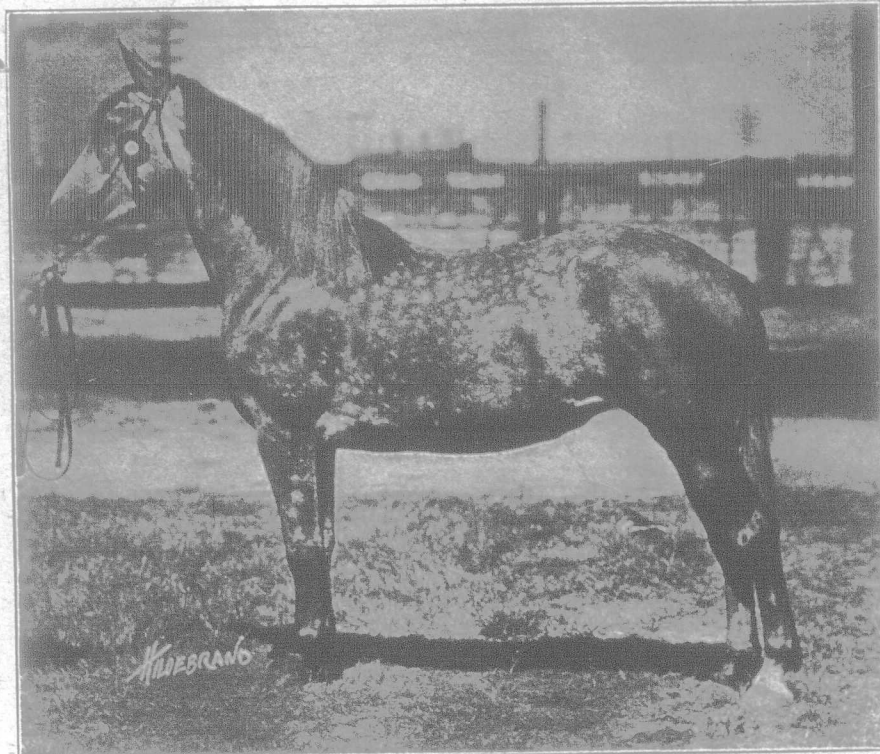
The next best thing to do is to clothe him warmly, place him in a comfortable stall free from drafts, and when the blanket has become moist with perspiration, remove it and supply a dry one. When he is thoroughly dry a good grooming will remove the dried perspiration, free the matted hair and remove all dust and dirt. Of course, horses must not be left out in the fields or paddocks during the nights when the weather is liable to be cold, if we wish to preserve short coats. The advisability of wearing clothing in the stable is open to discussion, but if the stable be not very comfortable we think that blankets should be worn, and even in warm stables light clothing should be provided, as it tends to prevent dust and dirt entering the coat. In all cases in cold weather, when the animal is not in action, whether standing in the stable or outside in harness, his body should be clothed sufficiently to protect him from the wind and cold, and when it is necessary to drive or work a horse in a rain or snow storm, it is better that he be clothed with a water-proof covering in order to keep the skin dry and warm. Cold and dampness stimulate the growth of hair, hence, when we are particular about the coat we must, as far as possible, avoid this stimulation. When horses are being used for slow work not demanding sufficient exertion to tend to

perspiration, in very cold, though dry, weather, it is wise to wear blankets under the harness to protect the skin.

In most cases, where reasonable care is exercised on the lines above mentioned, we will succeed in maintaining a short, sleek coat on our horses, but there are exceptions. As stated, "age has an influence," and there are some individuals that for some unaccountable reason or predisposition will grow a long coat, notwithstanding the most careful attention. The writer knew of a horse some years ago that during the summer seasons had an ordinary coat that each fall, despite all possible care and attention, would grow long and curl until it strongly resembled the coat of a well-cared-for water spaniel. Such cases are very rare, and all that can be done, if a short coat is insisted upon, is clip the animal. WHIP.

LIVE STOCK.

Charles McCurdy, Manager of the Live-Stock Department, of the U. F. O. Co-operative Co., speaking at the U. F. O. convention, believed that the cattle industry was one where production could be lessened, while at the same time the supply would be increased. He referred to the loss through the marketing of inferior stock. If farmers would "swat the scrub," their returns would be greatly increased, said Mr. McCurdy. An instance was cited where twenty-two cattle sold for more than another man's forty of the same age. This was due entirely to the poor quality of the latter. Mr. McCurdy stated that the Ontario cattle trade should net the farmers another million dollars, if the quality were improved. He advised selling the steers of the dairy breeds as veal, as they would return a better



First-prize Three-year-old General Purpose Filly and Champion at Toronto, 1919.

revenue that way than if held over as stockers or feeders. Dehorning of cattle was advised, as they would bring from 50 cents to a dollar more than horned cattle.

During the eleven months ending November 30 of the present year, Canada exported live stock valued at \$47,223,613. Exports of cattle were valued at \$43,103,311, exports of calves at \$1,542,634, exports of sheep at \$1,859,686, and exports of hogs at \$717,982. The revenue from this source during the eleven months, was \$23,193,757 in excess of the revenue from the same source during the entire calendar year 1918.

Watch the stock closely for lice. Grain is too high priced to feed vermin. One part hellebore to four parts cement dusted on the backs of cattle will smother the parasites. Once the pests get a start in a herd they are rather hard to control.

Many fall pigs do not winter well. If the pen is too warm they may cripple, and if it is too cold they may lose the use of their legs. Dryness and ventilation in the pens are two essentials for the raising of thrifty fall pigs.

Those ringworm spots on the cattle are not only unsightly, but the parasite is detrimental to the animals' thriftiness. Paint the spots with iodine. It may require several applications to secure a complete cure.

Don't forget that pigs require mineral matter. Ashes, charcoal, sods, sulphuric, etc., should be fed; in fact, the first three are necessary materials in the ration.

Those warts on the calves may be removed by applying caustic potash or butter of antimony. Be careful in applying these materials.

The average price of hogs at Toronto in 1918 was \$19.21 per cwt. The 1919 average was \$19.60, or 40 cents higher than the previous year.

Keep the pig pen dry. A damp bed tends to cause crippling and unthriftiness. Raising the bed off the cement floor is a good practice.

Make what feeds you have on hand as palatable as possible. A considerable quantity of cut straw can be fed with silage or roots.

The grain ration for brood sows and growing pigs can be kept at the minimum by feeding mangels and clover or alfalfa hay.

Start the New Year with a firm determination to improve the herds and flocks. The best are not beyond improvement.

Better sires mean better herds.

British Live-Stock Items.

To stimulate publicity propaganda in Canada the English Shire Horse Society has allocated £100 to the Canadian Shire Horse Society. The latter body has promised £30 towards the same scheme. Prizes of 10, 7 and 3 guineas are to be offered at three Canadian shows for mares and geldings sired by a registered Shire stallion. Medals will be offered for mares and stallions at Toronto (National), Calgary and Edmonton exhibitions. Similar awards are to be given at Illinois, Iowa, and the Chicago International shows. The English S. H. S. has allocated £2,755 for its next spring show at Islington, London, and £100 to the Royal Show at Darlington. It costs £2,000 to print and publish the annual Stud Book of this breed, which is in possession of the largest number of members composing any one breed society in the world—not even America excluded. It numbers close on 93,000 members!

There is a bit of rumpus in English Hackney horse breeding circles against the embargo put up by Washington against the import of geldings into America. The Hackney Society, England, are desirous of getting the ban lifted. It looks like coming off. It would be a serious blow to English Hackney breeding if the embargo remained.

To Canada 101 export certificates for Shorthorns have lately been granted by the English Shorthorn Society.

Hildebrand Harmsworth, at Freshwater, Shipley, Sussex, has a milking Shorthorn, Veracity, which has done 51,557 lbs. of milk in five years. She is milked twice a day only, and has never been "forced."

Hereford cattle are selling well in England. Some late sales made the following averages: Lawton Moore's 152 head, £120 apiece; W. H. Jones' 12 head, £109 each; Evesbatch 142 head, £81 8s.; Paunton 64 head, £76 11s.; and J. Prosser 101 head, £64 16s.

In the heart of Hereford a most successful Holstein sale has been held, E. W. Langford realizing £15,310 for 85 head, or an average of £180 apiece. A 27-months-old heifer made 600 guineas, and her dam realized 500 guineas. Twin heifer calves made 400 guineas each.

But Scotland—above all places—holds the record for Holstein sales. One was held there on November 4, on the farm of Hugh Brown, at Colton Mains, Dumfriesshire. For 96 head £53,072 5s. was realized. The 89 females made £551 each, and seven males £576 each. Some 33 heifers by the imported bull, Colton Vic Bram, fetched £763 6s. 4d. each, and 11 by another imported bull, Terling Vic Bertus, made £495 8s. 2d. each. Top price was 2,700 guineas, paid for an imported stock bull, Golf Botermijn. This is the greatest private sale ever held in Great Britain—Shorthorn boom days notwithstanding.

Not to be outdone, the milking Shorthorn of England continues to mark steady progress. Its prices are appreciating visibly month by month, and Canadians will find it bad to buy, i. e., if they want to do so. Robert L. Mond, the chemical magnate, keeps a herd at Seven Oaks, Kent, and 12 of his bulls sold recently averaged £225 15s. each, while 35 cows and heifers made £149 8s. 9d. each. His brother, Sir Alfred Mond, paid 1,000 guineas for the bull Coombe Bank Baron, a son of Barrington, out of Fair Rosamond, a cow with 11,725 lbs. of milk to her record at one lactation. She herself sold for 200 guineas, but she is now nine years old. Lord Wimborne secured Linda's Charm, a second-prize winner at the Royal Cardiff Show, for 260 guineas—a rare bargain. She also is nine years old. At a sale in Westmorland (C. J. Tongs) the two-year-old bull, Thornby Golden Rod, made 600 guineas, and Tong got £4,298 or £110 each, for his 39 sold. Turning to non-pedigreed cows, in a sale at Kendal they made such prices as £115, £113, £107 and so on. Milk recorded, non-pedigreed, Shorthorn-bred cows are readily making £100, and dairy-bred young bulls of Shorthorn character, fetch £80 and £90 in Cumberland markets and fairs.

To Canada and the United States, in 1919, some 690 Shropshire sheep have been exported. In 1918, the total was 878; in 1917, 471; in 1916, 296; in 1915, 80; in 1914, 277; in 1913, 427; in 1912, 61; in 1911, 733; and in 1910, 968. The breed seems to be "coming back!"

To Canadian light horse breeders—hunter-bred horses, I mean—the English National Light Horse Breeding Society will offer at certain shows three silver medals for the best Thoroughbred (flat racing) stallions and the best registered hunter sires, respectively.

During 1919, in Scottish sales, 1,746 Aberdeen-

Angus cattle have been sold for £62 10s. 4d. apiece, or a total of £109,156 14s. In 1918, the figures were 1,611 head sold for £55 1s. 6d., or £88,725 7s. 6d. In 1917, the average for 1,542 head was £48 13s. 10d.; as recently as 1908 it was down to £22; in 1895 the average value stood at £19, and 1887 at £17. Those were the real slump years.

American-bred Percherons have been selling in London at 370, 320 and 310 guineas each.

ALBION.

Birmingham Fat Stock Show—The King's Success.

EDITOR "THE FARMER'S ADVOCATE":

In the Bingley Hall the sixty-seventh annual show of the Birmingham Agricultural Exhibition Society was held from November 30 until December 4. Entries were down to 112, so far as the fat stock were concerned, that section being made up of sixty-nine cattle, twelve pens of sheep, and thirty-one pens of pigs.

The most astounding feature of the exhibition was the success of the King's Shorthorns. Only two animals were sent from the Royal herd at Windsor, and, while one, a young steer by Newton Count, bred on the Royal farm, could only earn second money—£5 in his class, the other, the red heifer, Windsor Calomel, went right through the several championships, securing the supreme title in the end and carried off three silver trophies worth 100 guineas each, and £30 in monetary awards. This heifer was bred by His Majesty, and is a daughter of Notlaw Boxer, out of Congalton Calyce II. At two years, seven months, three weeks, and six days she turned the scale at 13 cwt. 2 qrs. 10 lbs. Compact, naturally, her immense weight is deceptive, for she has a real quality-like look about her, and it is abundantly clear that she has been fed wisely and well, her flesh being most evenly distributed and it having just that correct "touch" which proves rapidly approaching ripeness. Calomel is a credit to her illustrious lineage—the Notlaw cattle are making great names for themselves in the beef-raising estancias of the Argentine—and His Majesty's herd-manager, W. S. McWilliam, received many congratulations. Below are enumerated the King's successes, earned by Windsor Calomel: Supreme championship, (Elkington Cup of 100 guineas); Thorley Challenge, (Shield of 100 guineas); Webb Challenge, (Cup of 100 guineas); extra prize of £20 for best Shorthorn in show; class first prize of £10 for best Shorthorn heifer or cow; second prize of £5 in Shorthorn steers with the red steer, Charlie.

The value of pedigree, perhaps, turned the scale in favor of the King's exhibit this year when it came to adjudicating for the three 100-guinea trophies enumerated above. The Royal heifer was "followed home" each time by the black cross-bred exhibited by J. Douglas Fletcher, Rosehaugh, Avoch, Ross-shire. This steer, at the age of two years, nine months, one week, and six days scaled 17 cwt. 27 lbs., and was one of the heaviest animals in the show. His sire was the Aberdeen-Angus bull, Black Ebro, and his dam the Shorthorn cow, Diamond Chloe.

Herefords made a select dozen, and best of them was Frank Bibby's Clive Coquette 4th, a daughter of Shucknall Prince. She was exceedingly well fed, carries a big spring of rib and has level lines.

Charley Morris had the honors in Devons to himself, and his breed champion heifer, Highfield China Cup 9th, enjoyed the distinction of winning at the Royal Cardiff Show in June. A. W. Bailey-Hawkins sent on the Norwich champion, his stylish Aberdeen-Angus heifer, Pride 5th of Stagenhoe, and she won her class, the breed special award of £20, and the medal given by the Argentine Association, a simple prize in its way but highly treasured by English raisers of these Scots cattle. Pride 5th of Stagenhoe is standing her journeyings very well, and she presents an ideal body-piece, with her flesh neatly laid on and in the right places. Lord Sheffield and R. M. Greaves took the spoils in the Welsh classes, while in the cross-breds the

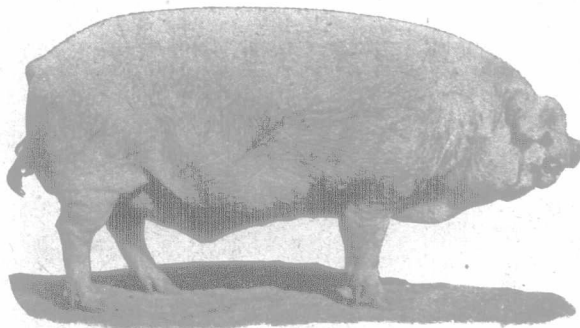
Duke of Portland's young heifer was considered next best to J. D. Fletcher's outstanding black steer.

Among the sheep there was nothing to come within hail of the well-finished pen of Hampshire Downs, sent by the Pendley Stock Farms. Mutton qualities highly developed were theirs. F. C. Fairweather's Southdowns carried all the grace of that ideal breed, so commendable for its early-maturity and small joints.

In the pig section, Arthur Hiscock, now at Manor France Farm, Blandford, won all before him, and took the championship with a pen of two Berkshires, pictures of careful feeding. Just to show you how "light" some of the stock were, I append you the weights of the premier animals:

CATTLE.		
Animal and Breed.	Age in months	Weight Lbs.
Windsor Calomel, Shorthorn.....	31	1,366
J. D. Fletcher's cross-bred.....	33	1,727
Pride 5th of Stagenhoe, A.-A.....	22	1,107
Welbeck Lass, Shorthorn.....	19	1,193
Blackbird of Maisemore, A.-A.....	12	1,037
Clive Coquette 4th, Hereford.....	31	1,370
Bounds Cider Boy, Hereford.....	21	1,192
Highfield China Cup 9th, Devon.....	34	1,553
Mynyddog, Welsh steer.....	35	1,551
SHEEP.		
Pendley Farms Hampshire Downs..	10	532
E. C. Fairweather's Southdowns.....	10½	365
PIGS.		
A. Hiscock's Berkshires.....	8	535
R. Ibbotson's Tamworths.....	8¾	482

ALBION.



Chester White.

Champion boar at Toronto for J. G. Annesser, Tilbury, Ont.

The Maritime Winter Fair.

The Maritime Winter Fair was held at Amherst, Nova Scotia, Dec. 15, 16, 17 and 18. As this is the first show for four years, the building having been used by the Military Department as a Barracks during the war, it was feared that exhibitors would not have their stock in show condition; however, the exhibitors surprised even the management in the number and quality of the stock shown. The showing of beef cattle, sheep and poultry was larger and of better quality than ever before, while the showing of dairy cows and hogs was not quite up to some former shows. The dairymen, however, were out in force with young stuff in the breeding classes.

The opening meeting was held on Monday evening and able and instructive addresses were delivered by Hon. W. M. Lea, Commissioner of Agriculture for P.E.I., Hon. J. F. Tweedale, Minister of Agriculture for N.B., and J. J. Sinclair, M.P. Hon. Mr. Lea emphasized the need of greater production, both of farm products and manufactured goods, and said this cannot be done by working shorter hours. He showed the need and possibilities of greater live-stock production to re-establish the European herds that have been depleted by the war; he urged more thorough organization of farmers, showing the advantages that have come from creameries and wool growers' associations and egg

circles. J. J. Sinclair, M.P., formally opened the Fair, and showed the advantages that come from live-stock exhibitions, working for the improvement of the live stock, which is the basis of better agricultural conditions in the Maritime Provinces.

Hon. Mr. Tweedale spoke of the work of the Department of Agriculture of New Brunswick in aiding stockmen to improve their herds, and in trying to interest boys in the improvement of live stock. He said the only cure for the present unsettled conditions is that everybody must work.

The exhibit of beef cattle was the outstanding feature of the Fair. J. M. Laird & Son, of P.E.I., showed over a thirty head of Shorthorns, every one of which was a show animal and brought out in show condition. Competent judges remarked that it is very seldom that such a herd is seen at Toronto or any other exhibition.

R. A. Snowball, of Chatham, N.B., was also out with a fine string of Shorthorns, many of which are of the very best. The Experimental Farm at Fredricton also showed a few Shorthorns of outstanding quality, and C. N. Black & Son, of Westmorland Point, N.B., are deserving of special notice, as their herd is small but some of their cattle are of exceptional quality. Other exhibitors of Shorthorns were Forrest Bros., Amherst Point; A. S. Etter, Amherst; Geo. M. Holmes, Amherst.

In the Hereford classes Wm. O'Brien, of Windsor, and Forrest Bros., Amherst Point, were the principal exhibitors; and their cattle were a credit to them, both in the quality of the animals and the finished condition in which they were brought out. Forrest Bros. had the largest exhibit in the building, numbering about forty head, eleven Herefords, two Shorthorns and 25 grades. The honors were pretty evenly divided between O'Briens and Forrests, with O'Briens taking rather more of the first prizes.

In the Angus classes Horne Bros., Winslow Station, P.E.I., had the only exhibit, showing fifteen head of really good, useful, beef-producing cattle, and they were brought out in good show condition.

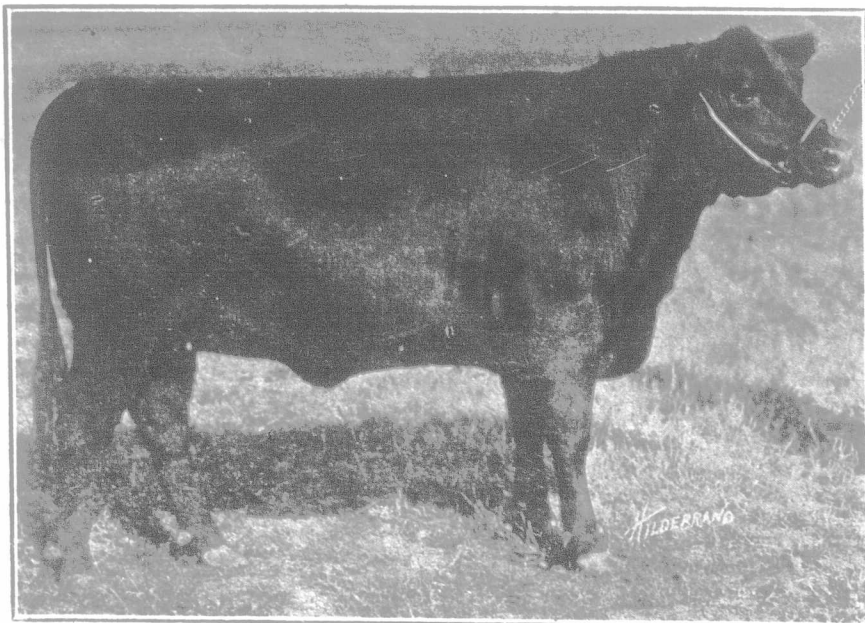
In the grade classes Forrests had the largest show, though good exhibits were shown by O'Briens, Lairds & Sons, Geo. Holmes, Arthur Etter, Edward Anderson, Sackville, N.B.; C. W. Pugsley & Son, Barronsfield, N.S., and by the Dominion Experimental Station, Fredricton.

In the dairy stables the old exhibitors were nearly all in evidence, though we missed Harding Bros., Stanley A. Logan's Holsteins, and J. R. Semple's Jerseys. Two or three new young breeders were showing some good stock. Roy Stevens, of Sackville, N.B., had a few good Ayrshires, and W. R. Younker, of St. Catharines, also had some good young Ayrshires, and won the sweepstake for the best Ayrshire heifer in the breeding class. Other exhibitors of Ayrshires were A. McRae & Sons, of Charlottetown, who won first on a two-year-old cow and fourth on aged cow; also some prizes in the breeding classes, including the sweepstakes for best Ayrshire grade heifer any age. Geo. L. Boswell, Charlottetown, won first on three-year-old Ayrshire cow with a score of 182 points and a milk yield of 143.2 lbs.

John Retson, of Truro, showed some good Ayrshires winning second and fourth on two-year-old cows and sweepstakes for best bull any age. But R. Brown, Yorke, P.E.I., won first on one-year-old cow, second on two-year-old and third on aged cows, the aged cow had been in milk eight months and had now made over 11,000 lbs. of milk. Mr. Brown also won several prizes in the breeding classes. McIntyre Bros., Sussex, N.B., won fourth on aged cows, third and sixth on three-year-old cows, fifth on two-year-old cows, and second on one-year-old; also second on senior yearling, third and fourth on junior yearling, and third on bull calf. Fred. S. Black & Sons, Amherst, won first and sixth on aged cows, and second on two-year-old, and showed a fine string of young stuff in the breeding classes.

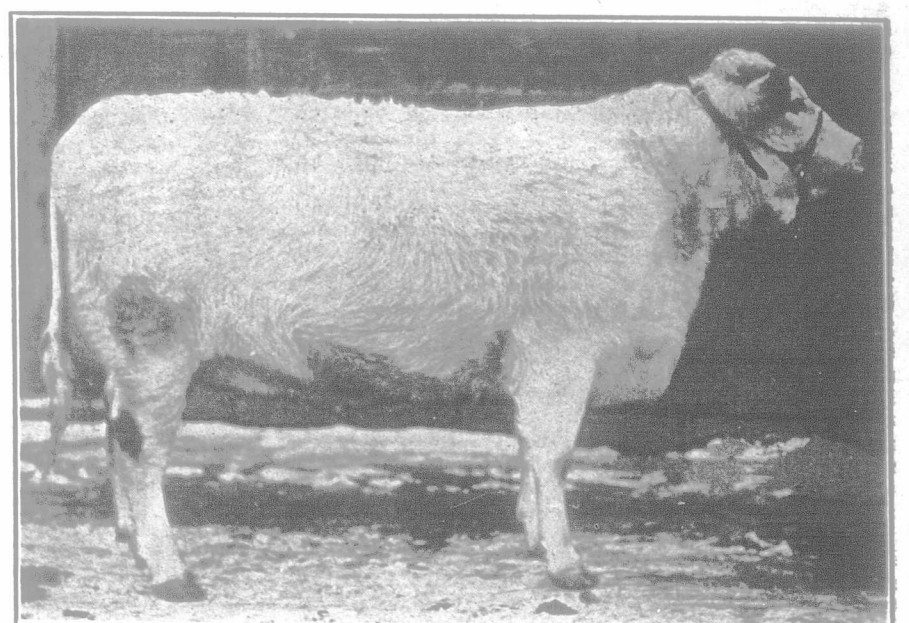
In Guernseys Roper Bros., of Charlottetown and D.G. McKay & Sons, of Scotsburn, N.S., were the principal exhibitors, and divided up the honors about evenly, both in the test and the breeders' herds.

In Holsteins Fowler Bros., of Amherst Point, won



Tiptop Lass of Shamrock.

Champion Angus female at Guelph for G. C. Channon, Oakwood, Ont.



Jubilee Gilt.

Champion Shorthorn heifer at Guelph, 1919.

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THE FARM.

The Dominion Grange holds Annual Meeting.

On Monday and Tuesday, December 15 and 16, the Dominion Grange held their forty-eighth annual convention in the Carls-Rite Hotel, Toronto. While this organization is not now as strong as it was at one time, it is still doing a work for agriculture. It was really at the bottom of the formation of the United Farmers' organization. J. C. Dixon, the Dominion Grand Master, was in the chair, and in his opening remarks emphasized the need of greater production on the farm and in the factory. The speaker said, "the forest, mines and fishing grounds must give up their wealth in order that our obligations may be honorably discharged, and that Canada remain solvent. Without labor, our great natural resources are useless, or potential only, and it is by industrious, honest toil that our great possibilities will be converted into tangible wealth and our prosperity assured. Any obstacle in the way of agricultural and industrial development may cripple Canada and make it impossible to compete in the world's markets." The chairman referred to the eight-hour day which has been agitated for throughout the country, and he claimed that there is not the slightest question but that the eight-hour day can be made universal on the farm as elsewhere, if the people are ready to pay the price. They pay it for manufactured products, and should be as ready to pay it for the products of the farm. The speaker went on to give some idea of what the prices of farm products would be were the farmer to work the same number of hours a day as the man in the factory. Capital is the most powerful agent that a nation or individual can possess, and when judiciously directed is a great blessing, but it is a curse when used to corner food products and control the price of the necessities of life. Mr. Dix

first on three-year-old cow with a score of 265.36, making 247.41 lbs. of milk, and being the highest-scoring Holstein in the show.

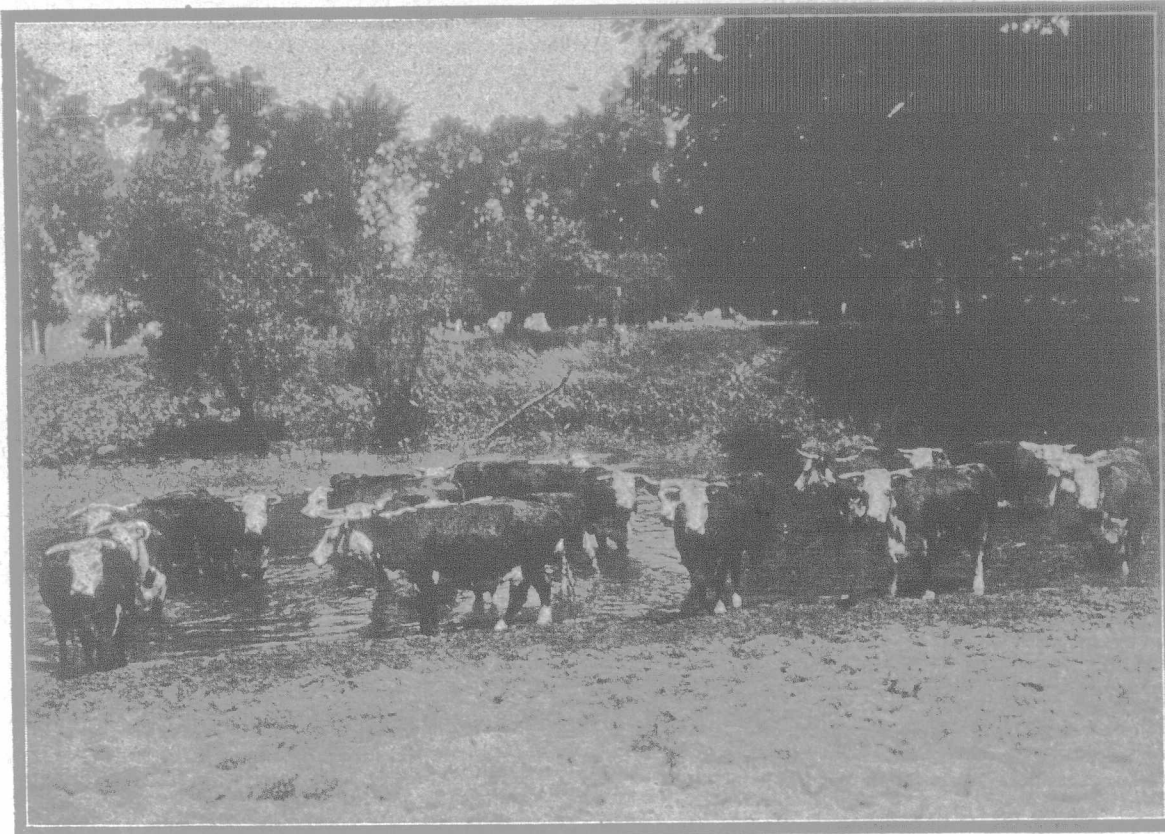
In aged cows A. E. Dickie, Truro, won first; James Bremner, Charlottetown, second; Fowlers, third, and Dickie Bros., Truro, fourth, and R. L. Hicks, fifth. Mr. Hick's cow had been 278 days in milk and had over 14,000 lbs. of milk and 700 lbs. of butter to her credit. In two-year-old Holsteins Dickie Bros. won first, second and fourth. A. E. Dickie third, and R. L. Hicks fifth. In yearling Holsteins in milk, A. E. Dickie won first.

In Jerseys H. S. Pipes & Son had things pretty much their own way, as the class was not large.

The grade class was not very well filled, and the scores not as high as at some former shows, the principal exhibitors were T. W. Keilor, Courtney Lusby, Charles Etter, Fowler Bros., and H. S. Pipes & Sons.

The sheep show was the best ever; over 400 entries and nearly all good. Shropshires were more numerous than any other breed. The principal exhibitors were Jas. I. Stewart, Amherst Point; Geo. Boswell, P.E.I., and John H. King & Son, P.E.I. Perhaps the best flock of sheep in the show was the Oxfords shown by Burder Goodwin, Baie Verte, N.B. Other exhibitors of Oxfords were F. S. Black & Sons, Amherst, and J. M. Laird & Son, Kelvin Grove, P.E.I. Hampshires were shown by Cephus Nunn, P.E.I.; Lincolns by C. W. Pugsley & Son, and Albert Boswell, P.E.I. Leicesters by S. L. Boswell and S. C. Stewart & Son. Cotswolds by Almon Boswell and Geo. Retson, Truro, N.S. Dorsets by G. L. Boswell. It seems that about every known breed of sheep except the Merino was represented, and one wonders whether a little of the standardization which is talked of in regard to agricultural implements might not well be practised in sheep, and certainly in poultry. One thing is evident, it would save Exhibition Commissions a lot of prize money.

Hogs were not up to former years in numbers, but the quality was as good from a breeder's and feeder's standpoint, if not from a bacon standpoint as ever. Yorkshires were out in larger numbers than other breeds,



A Favored Herd of Herefords.

but there were some exceptionally good Berkshires shown by Logan Bros., Amherst Point; Jas. I. Stewart, J. R. Semple, Truro; Geo. Holmes and H. S. Pipes, Amherst. Yorkshires were shown by Geo. Boswell, S. C. Stewart, E. J. Vasey, Roper Bros. and Bert. R. Brown, of P.E.I., and Hiram E. Black, of Westmorland Point, N.B. No Chesters, Poland Chinas or Durocs were shown, and it looks as if the swine breeders are standardizing their products.

The poultry show was the biggest ever, and included almost all the known breeds of chickens, turkeys, geese and ducks, also bantams and pigeons. The Barred Rocks and White Wyandottes were the largest show, with White Rocks and R. I. Reds also showing large classes.

The dressed-poultry show was one of the most successful features of the Fair, and the judging competition open to ladies was keen. The demonstrations of candling and packing eggs elicited considerable interest. Eggs were shown well packed having all uniform colors, while other lots showed mixed colors and different sizes in the same package, illustrating the greater attractiveness and consequently better price of those well packed.

The last two days of the Fair the weather was very cold, getting down twenty to twenty-four below, which probably affected the attendance, so that while the show was a great success from the exhibitors' viewpoint, it must have been disappointing to the management.

C. H. B.

of having one large school in a district, at a great distance from the homes of many of the children, that three or four adjacent sections should combine. Medical inspection in rural schools was advocated. The new officers are as follows: Worthy Master, J. C. Dixon, Moorefield; Worthy Overseer, W. F. Fisher, Burlington; Sec.-Treas., Miss H. Robinson, St. Thomas; Assistant Sec., Bertram Howard, Midhurst; Chaplain, W. McCrae, Guelph; Lecturer, J. G. Lethbridge, Glencoe; Steward, W. J. Orchard, Minesing; Assistant Steward, R. Donaldson, Gorrie; Gatekeeper, C. Barnett, Highwater, P.O.; Ceres, Miss W. Okes, Whitby; Pomona, Miss M. Murdock, Palmerston; Flora, Miss Thomson, Harriston; Stewardess, Miss Hill, St. Thomas; Executive Committee: Judson Austin, Simcoe; W. E. Wardell, St. Thomas. Representatives on the National and Western Fair Boards, W. E. Wardell and Wm. McCrae, Guelph.

Summer Seed and Crop Conditions.

The following summary of the crop and seed conditions is compiled from two reports submitted to a recent meeting of the Ontario Seed Growers' Association, by L. D. Hankinson, Toronto, for Western Ontario, and T. G. Raynor, Ottawa, for Eastern and Northern Ontario. Both these gentlemen are officers of the Seed Branch of the Federal Department of Agriculture, at Ottawa.

WESTERN ONTARIO.

The yields of the various crops are stated to be as follows, the percentages given being the percentage of a normal crop which was secured: Fall wheat, 65 per cent.; normal; spring wheat, 65 per cent.; oats, 50 per cent.; barley, 45 per cent.; rye, 75 per cent.; buckwheat, 65 per cent.; red clover, for seed, 20 per cent.; alsike for seed, 45 per cent.; timothy for seed, 85 per cent.; hay, 95 per cent.; corn for feeding, 95 per cent.; corn for seed, 85 per cent.; mangels, 50 per cent.; turnips, 80 per cent.; potatoes, 80 per cent. The low crop of mangels is said to have been due to unfavorable spring conditions. Due to a lack of local markets, at least 50 per cent. of the winter wheat crop was still in the farmers' hands on December 1. This condition is also partly due to the fact that wheat has been thought by farmers to be as cheap a feed at prevailing prices as any other grain. Fall seedings of wheat appear to be in excellent condition everywhere, but entomologists state that the Hessian fly is extremely prevalent in Western Ontario, and that much of the acreage will have to be plowed up next spring if wheat growing is to be continued.

In most counties the supply of oats and barley is not sufficient for the local demands. Ontario will need to buy largely, and the chief source of supply will probably be Prince Edward Island. Good seed barley will be available in Brant and Wentworth Counties, and in parts of Huron and Bruce, while, on the other hand, Lambton, Essex and Kent, owing to the general low yield and inferior quality of their crop, will necessarily be importers of oats for seed. While the general shortage in these crops is not sufficient to cause anxiety from a seed standpoint, farmers having oats or barley that would make good seed should save it or sell it for seed and buy others for feeding purposes.

Corn is the strongest crop in Western Ontario this season. Most places report well-filled silos with exceptionally good quality corn. The supply of good seed corn will not be as large as last season, but there is sufficient being saved in the corn district to meet the demand for Ontario-grown seed. The quality of this seed should be good, the corn itself being exceptionally well matured and showing a low moisture content.

Brant, Haldimand and Norfolk Counties will produce more red clover seed than will be required for local consumption. Generally speaking, however, most counties are short on clover seed, and there is little if any red clover seed being offered the trade or local dealers. The condition of this year's seeding is fair, but the acreage is much below normal. Seed prices, therefore, will be correspondingly high. Alsike yields throughout Western Ontario are only fair. In strong alsike sections, such as North Middlesex and Lambton, very little is being offered; but in Haldimand and Brant considerable has been shipped for export. The yield and quality of sweet clover have been good, and this crop is growing in favor. Huron, Bruce, Grey and Simcoe have considerable quantities to offer. A considerable quantity of root seed is being produced in Western Ontario.

EASTERN AND NORTHERN ONTARIO.

Hay was a good crop in nearly every district, and never has the all-round quality of the hay been so good. Pressed hay is moving in certain localities at from \$15 to \$24 per ton in Eastern Ontario, and \$30 to \$35 per ton in Northern Ontario. The yield of spring grains varied from fifty to seventy-five per cent. of normal, the quality of the crop being further affected in many localities with rust. The mixed grain crops were on a par with oats and barley, but fortunately the seed situation will be solved, at least to some extent, by the fact that a number of farmers still hold a quantity of old oats from their bumper crop of last year. There should be a considerable quantity of this seed available next spring in Eastern Ontario. In spite of this, however, 100 to 150 cars of oats will be needed next spring, as well as some cars of barley.

In small seed prospects, Eastern and Northern Ontario show up very well indeed. The alsike crop and yield was normal in Central Ontario, and above normal in the Kenora District and Northern Ontario. The first crop of red clover was a splendid one, and the second growth came along fine in many parts. A considerable



amount of seed will be made available in Eastern Ontario this year as a result of the campaign to save the second growth for seed.

A great many farmers saved some timothy for seed, and there should be sufficient for local needs with possibly some surplus for the trade. The Kenora District promises a yield of something like 1,000 bushels of red clover, 2,000 bushels of alsike, and a considerable quantity of mixed seed. The late crops of buckwheat and corn were good in Eastern Ontario so that the silos are well filled, and buckwheat will supply some of the demands for coarse grain.

The pea crop was a variable one, yielding low averages generally, so that fields of only 10 bushels per acre were quite common. However, the supplies of both fancy and mixed peas will be adequate because of the fact that a quantity of old seed is on hand. Not more than sixty per cent. of the normal potato and root crop prevailed, but in some districts such as the Timiskaming, Sudbury and Dryden districts there were some splendid yields. A grower near Dryden is reported to have had at the rate of 1,020 bushels of potatoes on a quarter acre. General opinion lends strength to the statement that production was 25 per cent. less than it would have been had the supply of labor been adequate.

Canada's Need for Plant Pathologists.

By PROF. B. T. DICKSON, MACDONALD COLLEGE, QUE.

It is now becoming somewhat trite to say that we are living in a period of "Post-war Reconstruction". Nevertheless it is true and the Present is already laying the foundation for building the heritage of the Future. It is an unavoidable result of such a war, as has just been brought to a culmination, that the heritage to be passed to succeeding generations is loaded with taxation, since no one generation can hope to pay so formidable a debt. This is not pessimism it is simply facing facts as they are.

Is this load of taxation to be a dead load, disheartening in its effects, or may it possess elements of hope to relieve the burden? Our legislators must visualize the Canada of fifty years hence and in developing vision they will realize that there is urgent need for a greater development along certain lines of technical agriculture.

It is well known to economists, to statisticians, and to those of us who have pursued the study of scientific agriculture in its manifold phases that the Dominion of Canada loses each year millions of dollars through diseases of crop plants. It is not so well known to farmers generally because they, as a rule, are so busy that they can consider only their own troubles or those of their immediate neighbors. They realize individual losses, or county losses, but it is not so easy to visualize Provincial or Dominion losses. Consequently our legislators do not know generally to what extent such crop depreciation may affect the financial status of the crop. Occasionally one hears the voice in the wilderness but it is soon, all too soon, forgotten, and the nation continues losing its millions annually with no concerted effort to prevent this huge loss. I say no concerted effort, but one must not forget the faithful few who are working to alleviate the situation either under the Government or in our colleges. But their numerical strength needs to be trebled or more in order to make a good fight and show sufficiently tangible results.

Let us consider a few diseases and the resultant losses. Their name is legion and therefore it is only necessary to consider some of the most important.

Every grain grower knows that cereal crops suffer from rust and smuts. How many realize that this Dominion in 1916 lost approximately one hundred million bushels of wheat principally because of the Black Stem Rust? Yet this is the case. Suppose we reckon the wheat as being No. 4 and worth, say, \$1.50 per bushel; there is a loss of roughly \$150,000,000, in one year from one crop alone.

In 1910 there was a loss of \$16,000,000, to Canada from smut of cereal crops and in 1911 this financial loss amounted to \$17,000,000. Whilst it may be argued that these were bad years no one will contend for a moment that the loss has been of no account.

In Eastern Canada frequently from 30 per cent to 50 per cent of the potato crop is unsaleable because of the prevalence of the four most important diseases of potatoes. A conservative estimate will place this loss at \$4,250,000 per annum.

The Niagara Peninsula is a great fruit growing district and in 1911 the fruit growers were obliged to take out 60,000 diseased trees thereby losing not only the crop but fruit trees as well.

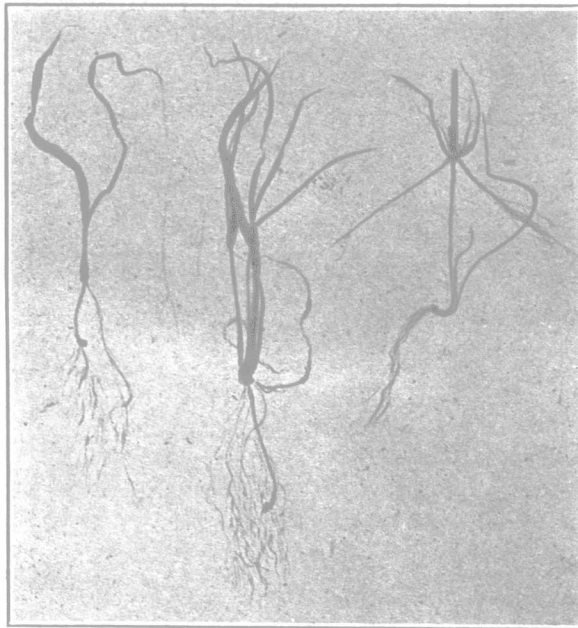
It is easy to count up thirty fruit and fruit-tree diseases and yet how many experts are there available to supervise these diseases in Ontario? There is one laboratory at St. Catharines with an expert in charge. He has one or two junior assistants. Is it possible adequately to supervise the crops of Ontario and at the same time to do research work regarding these diseases with so limited a staff? Overworked and underpaid college professors do their share to help out for the good of the country, but many more experts putting in full time are needed.

To watch potato diseases in the Dominion there are two experts again helped by one or two others. To work on rust and smuts there is one expert aided by one or two assistants. Is this situation just to the Dominion and to its greatest industry? Would such a state be tolerated for a year in a great industrial concern?

Consider for a space what the losses above quoted would pay for in the way of expert investigation. Take the loss of one year, the year 1916 from the rust of wheat. Put it at half its actual total and that would give \$75,000,000. Equip ten laboratories at \$5,000 each; pay ten expert investigators \$4,000 per annum for thirty years and after all that the Government would have spent only one-sixtieth of the amount.

This loss has been continuing for generations with greater or lesser intensity, totalling an amount impossible to conceive. In this respect Canada is far behind the United States and we are in the position of the poor man at the rich man's table. But it is not necessary here to make contrasts, it is definitely our job in our country and we have to face our own problems in our own climate. If this country is to do its share of investigation in plant diseases many more experts are needed and the young men in our agricultural colleges are the ones to whom the country must look for its future experts. That brings into the light of day the fact that, whilst there are many enthusiastic and well-trained students who would be willing to enter the profession of Plant Pathology, they do not so enter. Why is this? Simply because as a carpenter, plumber, or roadmender they could make more money.

Let us consider the requirements of a trained plant pathologist. I do not pretend that this is a complete list of subjects, nor, do I on the other hand mean to imply that a plant pathologist must know everything there is to know about each. First and foremost he must possess a good general education and he must be blessed by nature with sound commonsense and with the personality necessary to mix with men. Then properly to discharge his duties he must be trained in the following subjects: General agriculture, botany, plant physiology, histology, cytology both normal and abnormal, plant breeding for resistance, bacteriology, entomology, general chemistry, soil chemistry, biochemistry, general physics, soil physics, and last but not least mycology and plant pathology. In addition to this extensive list he must be able to keep in touch with all the latest work being done in other lands and for this he must possess a reading knowledge of French and German. Even then all this would not benefit the farmer were he not able to disseminate his knowledge. That he may be able to give out the results



Infested Fall-Wheat Plants.

The small black spots at the base of each plant represent the "flax seed" stage of the insect.

of his work he must certainly be able to write and edit to a certain extent, and to speak in public.

It is obvious that such a training would require from six to seven years in college. Put it at six and every father with a son at college will be able to reckon out his expenses.

Suppose it cost \$4,000, there is also to be considered a further \$8,000 which would have been earned by that student had he not attended college. This makes a total of \$12,000. Now what salary is offered him in order to induce him to give his services for his country's good? As a rule it is around \$1,500. At such a salary he would be working eight years before being able to recoup himself of the original expense and after all he would not be receiving anything like the salary commensurate with his training. He would be far better off as an engineer, or lawyer or doctor. Is it any wonder that the plant pathologist is a "rare bird?"

Let me in the conclusion urge two points of fundamental importance. First: That there is crying need for a greater number of expert investigators to study methods of control of plant diseases in this great country. The farmer should demand them, they become in part an insurance. Think of the future—what is to be the total financial loss in 75 years, and is no strong concerted effort to be made to redeem this loss? It will not mean immediate increased income but it will most assuredly mean future greater prosperity for agriculture. And second, that it is very necessary that the experts who are working for the benefit of their country and for mankind should be adequately remunerated. A salary commensurate with their technical qualifications would enable men to face their work with hope and high ambition rather than with dogged patience in face of discouragement and financial disability.

Hessian Fly in Western Ontario.

The Hessian fly is one of the most destructive insects known to attack wheat. It is some years since we have had such an extensive and serious outbreak in Western Ontario as was the case in 1919. From recent observations made in Essex and Middlesex Counties it would appear that the wisest recommendation that can be made is to plow badly-infested wheat fields as early next spring as possible, the plowing to be at least five inches deep, the ground firmly rolled, and the land planted to some other crop, such as potatoes or corn. The object of the deep plowing is to bury the immature fly and prevent its escape.

In the interest of the farmer himself every effort should be made to make a careful survey of his wheat fields, and all badly-infested wheat fields should be deeply plowed at the earliest opportunity and afterwards firmly rolled.

If infested plants are examined they will be found to be entirely dead or the central shoot will be killed or aborted. Infested plants, too, are of a light green color and the finding of "flax-seed" at or near the base of the plant is a sure indication of the presence of the insect. The drawing made from infested plants in Essex County shows the exact position of the "flax-seed" stage at this time of year.

Nothing can be done when once a plant is infested. A dressing of artificial fertilizer or barnyard manure may help to stimulate the plant and thus slightly increase the yield, but where a field is badly infested this measure is not recommended.

Unless badly-infested fields are plowed under deeply early in the spring and the ground firmly rolled, the late-planted fields which are free from "fly" this year will be seriously injured in the spring by the flies emerging from the early-planted fields. The spirit of co-operation is imperative. Unless a farmer plows under his badly-infested fields, he is not only helping to increase the spread of the insect, but is thus a direct menace to his neighbor.

Through the medium of this paper late fall planting was strongly urged last year. Where this was followed and wheat sowing delayed until the 20th of September in Middlesex County such fields appeared to be free from the fly, but this condition does not obtain in Essex County where fields planted on September 19 were, in some cases, completely ruined.

In our experimental wheat plots at Strathroy, wheat sown between September 25 and the 30th were the most promising. Although it did not make the same amount of growth as that sown early it was nevertheless free from the fly which is not the case with the earlier-planted plots. Furthermore, the late-planted wheat is a much darker green and more vigorous looking; it has been the frequent comment of farmers that the late-planted wheat is the best. This coincides with our observations in the field. In the vicinity of the plots are two wheat fields planted between September 1st and the 10th, both of these are generally infested but possibly not to the extent of recommending the plowing under of the crop.

The situation is thus a comparatively simple one. If the recommendations made, are carefully followed we confidently believe the pest can be largely controlled. Co-operation amongst farmers is of vital importance. We unhesitatingly recommend the deep plowing under of badly-infested fields; we know of no other remedy, and unless these precautions are followed we feel that wheat growing in Western Ontario is very likely to be very uncertain. The Entomological Branch of the Dominion Department of Agriculture is desirous of rendering every possible assistance to farmers in the present situation, and those who have any doubt as to the condition of their wheat fields are requested to communicate with the undersigned.

H. F. HUDSON.

Dominion Entomological Laboratory, Strathroy, Ont.

Agriculture in New York State.

EDITOR "THE FARMER'S ADVOCATE":

The part of New York State in which I had the pleasure of spending a couple of weeks lately, visiting relatives and school-boy acquaintances, is what has come to be known as "The Finger Lakes" District. The four principal lakes of this part of the State, 40 to 60 miles southeast of Rochester, resemble the fingers of the hand in that they lie parallel to each other, and are long and narrow. The smallest and the first one counting from the west is Canandaigua Lake, nine miles long and averaging one and a half miles in width. Seneca Lake, the third in order, is the largest, being forty miles in length and about three miles wide. Lying between these two but projecting farther south is Keuka Lake, in shape something like the letter Y, the peninsula which lies between the two northern arms being known as Bluff Point. The easternmost of the four is Cayuga Lake, at whose southern end is the town of Ithaca, and on the heights above the town the famous Cornell University. The average distance between lakes is about eight miles.

The ends of these lakes seem to have been chosen as the sites of towns. Canandaigua is at the foot or northern end of the lake of the same name. Geneva, where the New York Experiment Station is situated, is at the north end of Seneca Lake, and the town which occupies a similar position in relation to Keuka Lake is Penn Yan, the peculiar name said to be an abbreviation of Pennsylvania Yankee.

These four mentioned lakes are not at all the only ones in the district. The range of parallel lakes, all with outlets to the north and emptying into Lake Ontario, continues eastward, but the lakes are much

ern Ontario.

the most destructive. It is some years since a serious outbreak of the case in 1919. From Essex and Middlesex the wisest recommendation was to badly-infested wheat fields, the plowing of the ground firmly rolled, the crop, such as potatoes, plowing is to bury the

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s are not at all the only e of parallel lakes, all and emptying into Lake but the lakes are much

smaller than those named, and diminish in size the further east they are situated. At the foot of the one next east of Cayuga Lake is the town of Auburn, of Auburn States Prison fame. It might be added that this whole region is a very popular resort of week-end automobilists who drive here on Saturday afternoons from as far west as Buffalo, 100 miles, as also from as great distances in other directions. Returning Sunday evenings the leading roads are so blocked with their numbers that local autoists find them a great annoyance.

No one who has ever visited that region can wonder at its being a popular resort. The country which at the northern end of the lakes is quite level, gradually rises in height as one proceeds south until hills of 200, 300 and up to 700 feet in height heave their rounded tops into the blue above. The rock which is but thinly covered with soil throughout the whole region is of a soft character, and in consequence the southern part abounds in deep glens cut by little streams which braw and leap in numberless swirls and waterfalls. Watkin's Glen, at the south end of Seneca Lake, is the most famous of these, but it is only the deepest and most spectacular of many such.

The writer's privilege was to have a good time among old friends, being feasted and toted around, the locality visited being that between Lakes Canandaigua and Seneca. And the purpose of this article, as becomes a farmers' magazine, was to tell about agricultural conditions there as compared with those in our own country, but how far afield the preliminary digression has led us.

The first thing over there that strikes a farmer from Ontario is the size of the straw stacks. With us straw is a precious article (this season particularly), and stacks of it outside have become scarce. Over there a good deal of winter wheat is grown of course, but the main cause of the difference is that but very little live stock is kept by the average farmer. One extreme case may be cited. On a little farm of 22 acres two horses are the only live stock. But, it may be asked, how is the land kept fertile? By the use of commercial fertilizers. Practically every kind of crop has its quota of fertilizer sown with the seed. The cost is pretty serious but, as they say, it won't pay to grow them without it. Some of the more thoughtful believe that a mistake is being made, that without live stock the soil does deteriorate, no matter how liberal the applications of fertilizer. One of the reasons given for this fashion in farming is that the farmers do not like to work in winter.

Another noticeable difference is in the vastly greater area devoted to fruit growing. Quite considerable pear orchards are seen and some cherry orchards as well, but speaking generally, it is apples and grapes that are grown. Large apple orchards are seen everywhere on ordinary lying farms and on the uplands among the hills, and the slopes of the hills bordering the lakes are given over to vineyards. Not only acres and fields of vines but miles of them. Of all the lake districts this is true, but the heart of this grape-growing region and the one which is claimed to grow the best grapes is that around Keuka Lake. Grape juice has become a very important product, more especially since wineries have been barred. The only alcoholic drink that can be lawfully manufactured now is cider. The grape-juice manufacturers bought 60 per cent. of the crop last fall. They paid the extreme high price of \$110.00 per ton. The apple trade is also immense, and they are still planting. The crop of 1919 is very light, but some fortunate ones have apples. One case was heard mentioned several times. A farmer bought a sixty-acre place two or three years ago for \$10,000. It seemed a big price, but this past season, so the story goes, he had two thousand barrels of apples, for which he received \$8.00 per barrel.

When first visited and up till twenty years ago, the farm crops raised were such as are raised with us, wheat, oats, barley, hay and corn, but since that time beans and cabbage have become a very important source of income. Beans are still generally raised, but cabbage growing has taken the lead of late. Some farmers have store-houses of their own, but most sell to dealers who buy by the ton, store them, and ship to the large cities as the markets demand. A few years ago a further boost had been given to this industry by the erection of a great "sour-kraut" factory at a village in this neighborhood by one of the Chicago meat packing firms. The first building was burned down—by the Germans it is believed—but a larger one, the main building being 470x125 feet, is now in use. They can receive and slice, chew up, 100 to 125 tons of cabbages daily. The sliced cabbage is tramped into vats like silos, 52 of them, each containing 60 to 70 tons. Some "kraut" isn't it?

It may be remarked that the soil of the region referred to is naturally very rich and easily worked. West and North of Geneva has for years been noted as one of the very best districts in America for the growing of nursery stock. T. B.

CANADA'S YOUNG FARMERS AND FUTURE LEADERS.

Good Ideas for Literary Societies.

EDITOR "THE FARMER'S ADVOCATE":

In reading the department of "Canada's Young Farmers and Future Leaders," which, by the way, is in my consideration one of the most important sections of this valuable farm paper, I was much interested to see a number of topics which the Editor asks us to write upon.

One of the subjects suggested, and one in which I am

greatly interested, was the forming of a rural literary society. The reason of my interest in this subject is partly because we have recently formed such a society, or club, as we call it, in our neighborhood, and I think that if we who are members of clubs would write of our experience and suggestions we would all be greatly benefited in this way. So I will try and give a few of the experiences we have had so far.

We are, in this neighborhood, about like the average community, there being about twenty young people belonging to the section. We had all thought in a vague and indefinite way of forming an organization of some sort, but it was not until a young person, with more energy than the rest of us, began talking of getting together and organizing that anything definite was accomplished. So the young people of the community were notified that a meeting was to be held on a certain evening, in the schoolhouse. This was in October, when the fall work was being finished and the evenings were getting longer.

The majority of those asked attended. A chairman for the evening was appointed, in this case being the person who first suggested getting together, and she explained the object of the gathering and what we aim to do. Most of those present were very enthusiastic and thought the idea an excellent one, and expressed their willingness to do their utmost to make the Club successful. A president was elected, in this case being the writer, then a vice-president, secretary and a treasurer. The offices were divided between the girls and boys; the president and secretary are young men, and the vice-president and treasurer are young women. In this way both the men and women were represented and the work would fall evenly on both sexes; also, of course it makes it more interesting for all concerned to have the young men and women together.



Oscar Lerch, Preston, and the Cups He Has Won at Plowing Matches.

How many of us can show even one cup?

We decided to have our meetings in the form of literaries, with debates, speeches, readings, songs, etc., and a social evening about every fourth meeting, when we would entertain ourselves with games, contests, etc., and in this way keep the members more interested than if the meetings were all the same. In regard to providing the programs, it was decided to appoint at each meeting a committee of about four members who were to be responsible for the next meeting. By having it in this way, rather than a regular program committee, it was suggested that we would have better programs, as a spirit of competition would be created and each committee would try and provide a better program than the previous one. Then, too, the work would be more evenly distributed among the members than if there was a standing committee.

Other points of business settled were that a fee of twenty-five cents monthly be imposed to meet current expenses, the fee to be paid at the first of each month; the meetings to be held semi-monthly, on the second and last Fridays of each month. There were several other small items of business dealt with, and then we proceeded to prepare the program for the next meeting, deciding to hold it in the form of both literary and social, having a debate and short program, followed by games. We then closed our meeting and went home, each feeling that we were sure of a successful Club, and I do not think any society was ever organized by more enthusiastic members.

On the night of our first meeting we had a very good attendance, all those being present who were in a position to be, and having a few more than were at the organization meeting. After the business of the meeting was attended to, and the president made his address, which, by the way, was not nearly so easy to

give as when thinking of it when alone, we were favored by an excellent debate, followed by a reading, a solo and a chorus or two. Then we called on a few members for "stump" speeches. After this the program was given in charge of the Social Committee when we had a very enjoyable time, closing with an excellent lunch which the ladies provided as a surprise for the first meeting, as we had decided previously to dispense with the "eats" on the grounds that it would be too much trouble for the girls, they being considerably in the minority.

Since then we have had several very successful meetings, and have our Club going quite successfully. As President, I might state some of the problems which have come up before us in the course of the meetings and in preparing our programs. One thing especially I notice is that the work will be left for those who will do it. There are always a few who are willing to work, and the rest are willing to let them, but if all are asked to do something and made responsible for some part of the program, I find that they generally do their best. We generally call on a few for speeches, the topic being suggested a few minutes previously, but this is not altogether successful and is rather hard on those not used to that sort of thing. We are trying the method now of suggesting a subject a few days ahead, and letting them prepare an address in that way.

We might go on suggesting ideas on this subject, but the Editor asked for short letters, so I think I have taken up enough space already. I hope to see some letters from other club members, giving experiences and ideas of this nature, in this column soon. This is a favorite subject with me, and one which will, I think, have a great deal to do with settling the rural problem. I might add also that since the farmers are now in power in this Province, and likely to be in the Dominion, in the near future, we young farmers and "future leaders" are in need of a chance to practice platform speaking and office holding.

Middlesex Co., Ontario.

SEDAC.

AUTOMOBILES, FARM MACHINERY AND FARM MOTORS.

Tractor Troubles.

EDITOR "THE FARMER'S ADVOCATE":

I have not had much experience with tractors, but, by stating a few of my experiences, I may be able to help somebody having the same trouble.

I have found in the majority of cases when a tractor is giving trouble there is very little wrong, and if it is properly understood it is very easily adjusted. When the engine is hard to start, examine the wiring on the ignition system, the binding posts on the spark plugs and the magneto, and see that the spark plugs are clean and give a good hot spark. Also, examine the impulse starter on the magneto (if equipped with one). The spring may be stuck up with grease, or, in cold weather, frozen up. Try pouring some gasoline on it and if that does not remedy it, lay the end of a wrench on the lever and it will serve as a spring, or hold the lever down with one hand while you crank the engine with the other hand.

See that the timing is all right, although it is not likely to go wrong unless the magneto shaft or coupling is broken. Now examine the fuel line. See that all the fuel pipes are clean and that the needle valve is properly adjusted. I have known the needle valve to shake itself closed or wide open while operating the motor. If the engine will not start yet, the trouble must be either with the fuel or the compression.

Place some fuel in the lid of a can and light it. If it does not blaze up immediately, the trouble must be with the fuel. I know of a case where there was a leak between the gasoline and the kerosene partition in the fuel tank, thus making the fuel so inferior that it would not start the motor. If the compression is leaking, it will most likely be caused by a valve being struck open. Pour some kerosene on the stem; if that does not loosen it, turn the valve with a wrench. After I have stopped the motor I always turn it over by hand till the valves are all closed.

If the carburetor gets flooded it is generally caused by the float or valve being stuck open. By tapping the sides of it with a small wrench or pliers, the valve or float may be loosened and the overflow stopped. If the motor does not speed up after it is started, advance the spark. If that does not help, see if the dog on the impulse had been hooked up. If not, hook it up with your fingers and the motor will speed up.

Trouble may be saved when switching from gasoline to kerosene by opening the needle valve on the coal-oil carburetor. A lot of fuel may also be saved by opening the priming cups, and by feeding water with the fuel. Water helps to keep the cylinder and valves cool, and also to keep carbon out of the cylinder.

Grey Co.

A READER.

THE DAIRY.

Cuba and the Republic of Columbia appear to be taking a few Ayrshires from the U. S., 10 head having gone to the former country, and a young bull to the latter recently.

The Board of Directors of the American Jersey Cattle Club has recently decided to strike out the seven-day milk and butter-fat test. Information from the Secretary's office says that the seven-day test has not proven to be the poor man's test as claimed for it. Apparently the chief reason for striking it out is that this test has been but seldom used in recent years, there being 13,000 completed yearly Jersey records, averaging 7,932 lbs. milk and 424 lbs. fat. The tests of 4,500 mature Jerseys average 9,218 lbs. milk and 487 lbs. fat.

Lulu Alpha of Ashburn, an Oregon Jersey, has the distinction of having produced 13,668.7 lbs. milk and 800.08 pounds of fat in one year, a record, it is said, that

no other yearling of any breed has ever come within 100 pounds of equalling. The displaced champion is Silver Chimes Gwendola, with a record of 10,799 lbs. milk and 643 lbs. fat. The owner of Lulu Alpha of Ashburn has only been in the Jersey business for two years, and she was only given ordinary farm care. Her feed was as follows:

Millrun.....	2,448 lbs.	Roots.....	635 lbs.
Molasses.....	622 lbs.	Silage.....	8,103 lbs.
Oat chop.....	1,553 lbs.	Green feed.....	450 lbs.
Oilmeal.....	706 lbs.	Kale.....	4,136 lbs.
		Hay.....	2,608 lbs.

The last Dairy Produce Market Report of the season to be issued by the Dairy Division, Ottawa, contains the following for the week ending December 20, 1919:

"During the week at Montreal some of the best fresh creamery butter was sold by dealers to the British Government at 63 cents on spot; best grass creamery in pound blocks was sold to retailers at 67 to 68 cents. From May 1 to December 20, receipts were 453,838 packages, against 464,345 packages for the same period last year, a decrease of 10,507. Lower prices in New

York for everything below extras has been responsible for the return to the Toronto market of some Ontario butter that had been held in New York in bond. Trade in undergrades of butter on the New York market did not assume large proportions with most holders anxious to sell and willing to make reasonable concessions in price. In the week ending December 13, 404,663 lbs. of butter were shipped to France from New York, and 10,980 lbs. from Philadelphia. Seventy carloads of U.S. butter from Chicago were loaded at West St. Johns, last week, for Great Britain consigned to the British Ministry of Food.

"There is nothing new to report regarding the cheese market. From May 1 to December 20 receipts of cheese at Montreal were 1,551,018 boxes, against 1,704,703 boxes for the same period last year, a decrease of 153,685 boxes. A New York cheese exporting house sold for export thirty tons of white Canadian Cheddar, in half sizes, at 28½ cents f.o.b. Montreal, in American funds. In the week ending December 13, 747,311 lbs. of cheese were shipped from New York to Belgium; 9,000 lbs. to France; 15,178 lbs. to Scandinavia, and 67,332 lbs. to the United Kingdom. We are informed to-day by cable that the retail price of imported cheese in Great Britain will be raised from 1 shilling and 6 pence (36 cents) to 1 shilling 8 pence (40 cents) on the 23rd of December.

Provide Ice Now for Hot Weather Next Summer.

During the hot summer months one hears on every hand the wish that ice had been stored in more liberal quantities during the winter and complaints as to the difficulty of keeping milk and cream sufficiently cool to avoid souring. Now is the season of the year to render unnecessary any such complaint next year. During the month of January the opportunities for harvesting ice are usually more plentiful than at other times and farmers generally, but particularly dairymen, should avail themselves of the chance to gather ice for the summer. Not every district is supplied with plenty of good cold water and on the majority of farms running water for the milk and cream is not possible because there is no system of waterworks aside from pumping machinery to fill the tank occasionally. Dairy farmers who are shipping whole milk any distance or who are supplying condenseries or powder factories know that milk must be delivered in a fresh condition, because processing cannot take place if there is any appreciable degree of acidity. From time to time we have had the opportunity of looking over the records of milk receiving stations and have been amazed at the quantities of milk that have been turned back as sour, particularly on Monday mornings. Just recently the courts have decided that milk companies may receive milk in their factories on Sundays because of the difficulty of keeping it cool until Monday in hot weather. During the investigation into the Sunday milk question officials of one company stated that not over 50 or 60 per cent. of their patrons had ice to use during the summer months and they used this as an argument for Sunday delivery. In most dairy districts and in most winter seasons there is very little excuse for not gathering a supply of ice, since the cooling of milk and cream is so important financially to the farmer that the cost and trouble of getting the ice is usually not very large. Moreover ice is a great source of convenience about the farmhouse in the summer time, aside from the dairy. A little time and trouble in the winter time would make it easier many times for the housewife.

A PLACE TO STORE THE ICE.

No elaborate ice house is needed in which to store the ice. A part of the driving shed can be partitioned off with rough lumber, or a lean-to can be built up against the barn or shed, or a rough ice house can be built by driving a few posts into the ground somewhere near the milk house and boards nailed either inside or outside of these posts to form a shed, the top being covered over well enough to keep out the rain and the sun. It is well, of course, where a considerable quantity of ice will be needed, to construct a durable ice house in such a way as to keep the ice in the best condition during the summer and where this is done it is often most

convenient to build a combined milk and ice house. Even this kind of a structure need not cost a great deal of money, although the milk house must be built for sanitation and cleanliness. The size of the storage house depends, of course, upon the quantity needed. For the dairy herd this will be about two tons per cow, if ice is fairly easy to obtain, otherwise a ton per cow will do, but one should not have less than this amount. It does not require a very large area of ice nor a very large store house to take care of thirty or forty tons of ice, since a cubic foot of ice weighs 57 pounds and ten cakes of ice a foot thick and 22 inches square will make a ton.

Space must be left for packing, because considerable must be lost if the sun and air are not kept from the ice. One foot on the bottom, a foot on each side of the building and two feet or more on top of the ice must be allowed for insulation from the outside and for ventilation. Drainage is essential since more or less melting will occur during the hot weather and the resulting water must be allowed to get away or it will cause further melting. A row of tile or a few rails laid down will provide sufficient drainage if it is necessary to provide it artificially. Care must also be taken to guard against a circulation of air under the ice because the warm air will increase the melting but the warm air on top of the ice pile must be allowed to get away by some method of air circulation. Openings beneath the eaves and in the gables will be sufficient to allow of some circulation. As intimated above, insulating material must be provided. Usually, in the ordinary rough ice house, sawdust or planer shavings are put to very satisfactory use, although in carefully built ice houses it is customary to build specially insulated walls which do away with the necessity of so much insulating material inside. If sawdust is used it should not be too green because green sawdust has a tendency to heat. Space should be provided for a foot of sawdust packing on the bottom, and on each side and for two feet on top.

GETTING THE ICE.

In some localities close to large towns it may be possible to get artificial ice, but usually one has to depend on some good pond nearby or on some stream that freezes over. Care should be taken to see that the ice is good. Where it must be brought into contact with foodstuffs and particularly where it may be used for household purposes it should be clear and clean. Old

ponds of stagnant water covered constantly with a clean scum are not satisfactory sources of ice for the dairy. Freezing does not necessarily destroy disease germs. If the ice is twelve inches thick a space thirty-five by forty feet will supply forty tons of ice. Very often one sees ice being put into storage that is more or less encrusted with snow. This is not desirable and the snow should always be cleaned well off before the cutting is done, since close packing is necessary for the ice to keep well and this is made impossible if there is much snow on the ice. Considerable snow over the ice will delay freezing so that if the snow is cleared off several days before the cutting is to be done, the cold weather may thicken the ice considerably in the meantime.

The equipment necessary for ice harvesting is not extensive unless very large quantities are to be cut. All that is necessary is a cross-cut saw with one handle removed and a plank to use as a straight edge, in addition to one or more pairs of ice tongs and an ice hook. The work could be made much easier and quicker if the members of a farmer's club were to co-operate in harvesting the ice crop. In such a case an ice plow might be a good investment and would save a great deal of labor. A simple derrick could also be constructed that would make loading very much easier. A strong upright or a base that will slide readily over the ice is all that is necessary, except for a long pole fastened at the top of the upright to act as a lever. A pair of tongs fastened by a chain to the short end of this lever and a rope on the long end will provide all the machinery necessary to swing the heavy blocks to the sleighs. One man can handle the tongs and another man the lever.

STORING THE ICE.

The advantage of cutting the blocks of ice as nearly square as possible will be readily seen when it comes to storing or packing them. To keep well, the ice must be packed solidly together and this is very greatly facilitated by square uniform blocks. After a foot of sawdust has been laid down on the floor of the ice house, the blocks are merely placed as closely together as possible, so as to prevent a circulation of air between them. Any unavoidable cracks or crevices should be filled in with small pieces. If the weather is cold, a little water poured into fill up will not do any harm except to make it more difficult to get out the blocks. Each layer of blocks, when completed, should show a level surface and if necessary an axe or edge can be used to level it up, the chips being used to fill the cracks. Continue filling in, layer upon layer, until the required quantity is stored, allowing about three or four tons for the requirements of the house. When finished one should have practically a solid block of ice, which,



Where Several Co-operate Ice Harvesting Can be Made Much Easier.



It Does Not Take a Large Area to Furnish Ice in Large Quantities.

has been responsible for some Ontario market in bond. Trade New York market did most holders anxious for concessions in number 13, 404,663 lbs. from New York, a. Seventy carloads loaded at West St. main consigned to the

regarding the cheese number 20 receipts of 018 boxes, against period last year, a de- York cheese exporting of white Canadian cents f.o.b. Montreal, ending December 13, from New York to 78 lbs. to Scandinavia, kingdom. We are in- tail price of imported raised from 1 shilling 8 pence (40 cents)

ext

constantly with a clean of ice for the dairy. destroy disease germs. a space thirty-five by ice. Very often one at is more or less en- desirable and the show before the cutting is necessary for the ice to sible if there is much now over the ice will is cleared off several one, the cold weather in the meantime. ice harvesting is not ities are to be cut. saw with one handle straight edge, in ad- tongs and an ice hook- sler and quicker if the vere to co-operate in a case an ice plow d also be constructed ch easier. A strong ready over the ice long pole fastened at ever. A pair of tongs and of this lever and a de all the machinery blocks to the sleighs. and another man the

CE. blocks of ice as nearly seen when it comes to keep well, the ice and this is very greatly icks. After a foot of floor of the ice house, s closely together as lation of air between or crevices should be ne weather is cold, e will not do any harm to get out the blocks. eleted, should show a axe or edge can be used to fill the cracks. ver, until the required t three or four tons use. When finished d block of ice, which,



Large Quantities.

when insulated with sawdust, will keep well during the summer. If it is impossible to get sawdust, straw or hay may be used although these materials are not nearly so satisfactory as sawdust or shavings.

Do not neglect this important winter's job. If you get in an adequate supply of ice now you will be glad next summer that you did.

Handling Cows on Yearly Tests.

In a recent bulletin of the Michigan Agricultural College, J. E. Burnett, of the Dairy Husbandry Section has written the following paragraphs on the handling of dairy cows on yearly test work. We pass them on for the benefit of readers.

"The yearly test of dairy cows is to be strongly recommended both as a basis of selection in breeding operations and for the effect upon the cow herself.

It is the production for the entire year that the dairyman is interested in. He needs a record that is an index of the cow's productiveness throughout the year, even though she will not produce the same amount under herd conditions that she did in the test.

"The increased production of the cow that is on test throughout the year will more than pay for the extra feed and labor required, and the effect upon the cow alone is oftentimes worth the time and trouble necessary to complete the test. The cow will deepen, have more capacity in her middle and show development in her udder as a result of the heavy production while on test. As a basis of selection, it is the best measure we have of the cow's ability, because while the cow is in all probability not under the same conditions as the rest of the herd, yet the length of time that she is under test corresponds more closely to the normal lactation period and enables the breeder to weed out the cows that only produce well at the fore part of their periods. There is a marked tendency on the part of many of the leading breeders of the country to do more of the long-time testing, and there are more and more men of recognized ability as breeders of producing cows that are demanding that their herd sires be from cows with yearly records. Like the short-time test, however, the year's record of the cow should not be taken as the normal herd production, as most cows will produce nearly half as much more than under herd conditions.

"In the feeding and handling of test cows for yearly production it is necessary to use more thought than in feeding for any other kind of record or in feeding for ordinary herd production. The test extends over a long period of time and the cow cannot balance her ration from her body fat. The best and oftentimes the most expensive of the ingredients to be found in the ration is the thought that the man responsible puts into it. Good records cannot be made consistently unless the feeder puts his best effort into the work. The cow should be in good condition before freshening and should be fitted with just as much care as the cow that is intended for the short-time record.

"A cow should have a rest of two months or more before starting her year's work to insure the best results. A cow that is not accustomed to grain in liberal amounts before the conditioning period, will respond to the fitting ration much more quickly than one fed grain the year around. A good fitting ration should have a fairly wide nutritive ratio. One composed of equal parts by weight of ground oats, bran, oilmeal and corn, is fairly satisfactory. Hominy may well replace the corn if it is available. As with the cow on the short-time test, it is well to change this to bran and oats, or bran alone, a short time before freshening as a help to proper calving.

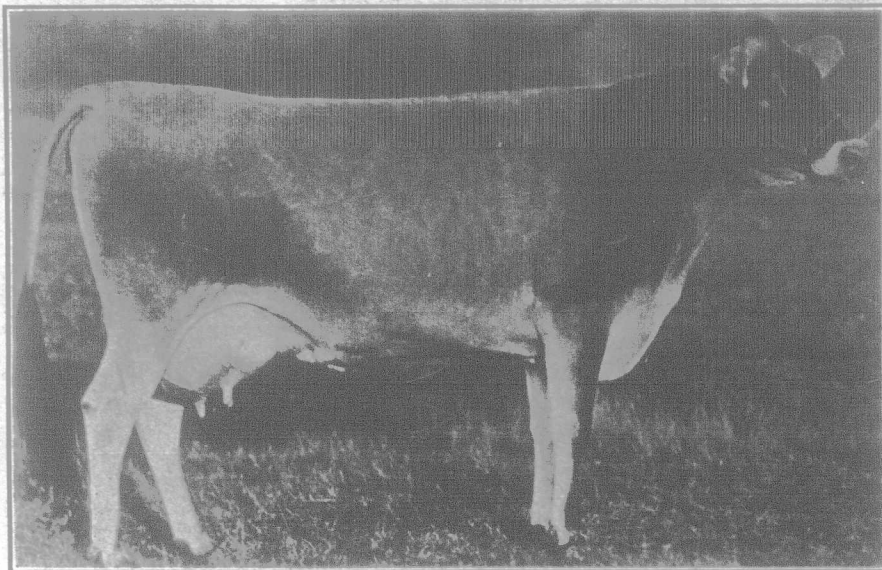
"After the cow has freshened properly she may be gradually started on her test-ration. It is a good plan to make this a rather scant allowance of grain at first. I believe in not trying to get the cow to her greatest flow of milk until at least a month after she freshens. Consequently, it is best to start her at about one pound of grain to seven pounds of milk, or even less than this. If it is desired to give the cow a seven-day or other short-time test, it is, of course, necessary to change this plan to suit the conditions.

"With the long-time test it is necessary to feed a wider ration and one that meets the nutrient requirements of the cow. It should also be one that the cow likes and that stimulates her appetite. It is a good plan to start in with a rather wide nutritive ratio, about 1:5 for the grain, exclusive of the hay, silage and roots, which will, of course, widen it considerably. As the test proceeds, it is well to narrow the ration but to keep the strong stimulating feeds such as cotton-seed meal and other heavy protein grains until the later part of the period when it is desired to keep the cow up to her flow. When the cow is well on her feed, the nutritive ratio may be 1:5 inclusive of the roughage. As with the short-time test, everything in the grain

ration should be measured or weighed accurately. This is probably the most important part of the feeding.

"The manger should be kept scrupulously clean and all feed that is not eaten should be removed. Anything that the feeder or milker can do for the comfort of the cow will be well repaid. A good bed of straw in a comfortable stall is a good investment. It is not always possible to have a drinking fountain in the stall with the cow, but it is possible to keep a pail of water in one corner where she can get it. This will often increase a cow's production several pounds a day at very little cost. Water is the cheapest feed that we have, and the one that is often supplied in limited quantity. A cow needs from 300 to 500 pounds of water to produce 100 pounds of milk. A part of this she gets in her feed, but the greater part comes as water she drinks. When a cow is turned out in a bleak, windy yard to go to the creek to break the ice with her nose it is no wonder that she refuses to drink enough to satisfy her requirements. Water should at least have the chill taken off and if the cow will drink warm water it may pay to warm it.

"The ration should be palatable to the cow as this stimulates a greater flow of the digestive juices, which result in more complete digestion of the food. The ration should be fairly bulky, as such a ration is more thoroughly digested. It should contain as many feeds as possible as the cow will stay on it and relish it longer. A ration that has worked very well with us is as follows: 300 lbs. ground oats, 400 lbs. bran, 200 lbs. cotton-seed meal, 300 lbs. gluten feed and 300 lbs. of oilmeal. If the cow is getting thin it may be well to increase the amount of gluten or to add cornmeal or some other carbonaceous feed. If the cow is dropping in her milk flow it may be well to add a little cotton-seed meal or oil meal or to increase the root allowance. Another ration that has given very good satisfaction is as follows: 200 lbs. bran, 200 lbs. ground oats, 100 lbs. corn flakes or cornmeal, 150 lbs. gluten feed. In addition to an allowance of this mixture the cow should be given 1 to 2 pounds of cottonseed and 1 to 2 pounds of oi



Lulu Alpha of Ashburn.

An Oregon Jersey recently declared world's champion yearling over all breeds. Her record is 13,668 lbs. milk and 800 lbs. fat at the age of 22 months.

meal daily. This ration should also be varied to suit the needs of the cow.

"Care should be taken when feeding cotton-seed meal not to feed too heavily, as it is a very constipating feed and one that has marked effects on the cow. It is very stimulating, however, and may be fed in small amounts to very good advantage. A good way to feed it is to mix it with equal parts of oil meal. Cows fed heavily on cotton-seed meal are liable to sudden changes and marked variations.

"Sometimes when a cow is going down in her milk flow and there is no apparent reason for the decrease, she may be brought back to normal by reducing the feed. There seems to be a maximum point in the feeding of a cow beyond which the feed allowance cannot pass with beneficial results. When more grain is fed, the cow is unable to get good from it and simply becomes a machine for the handling of grain. A decrease of the grain may not be followed by an immediate increase of milk. It takes some time for the cow to become adjusted to the new ration. For instance, there was last fall on test at the College, a Guernsey cow fairly well along in her lactation period whose milk flow dropped from 35 lbs. per day to 30 lbs. per day in a two-week period in spite of changes in grain mixture. Her grain ration was reduced from 21 lbs. per day to 18 lbs., and she climbed back up to 35 lbs., but it took her ten days to do it.

"If a cow is fluctuating greatly from day to day in her milk flow, watch out for overfeeding. This is frequently one of the first signs of this trouble. A reduction in the feed when this is first noticed is sometimes the means of saving the cow from going off feed.

"The question is frequently asked, 'how can I feed my cow so as to increase her test?' There is no way that this may be done for any length of time. Dairymen have tried to accomplish this since the Babcock test was invented and have not yet succeeded. When the percentage of fat goes up, the milk flow usually goes down so that any effort to tamper with the test is liable to result disastrously. Moreover, if a breeder is convicted of tampering with the cow by drugs or other

nostrums, he is liable to expulsion from the Association and loss of all his privileges as a member."

The Professor's Harrow.

EDITOR "THE FARMER'S ADVOCATE":

On the way home from morning service in a little country church, Deacon Jones questioned Deacon Smith as to what he thought of the discourse. "Wa'al," replied the other sermon taster, "Brother L—harrowed over a lot of ground but he didn't go deep enough." The general epistle of Prof. H. H. Dean, in December 4 issue, on the declining cheese industry would not exactly fit into that classification, for his harrow probably dipped down sufficiently in spots to stir up some lumps. The regretted wane in Ontario cheese factory business he attributes in brief to Government-supported officialdom or patronage. The factory inspection system, which he specifies, may have outgrown the needs of cheesemakers, but the real cause of the transfer of milk from cheesemaking to other channels of consumption is surely not far to seek. It lies on the surface—a case of demand and returns. Whole milk and cream for the rapidly growing population of cities and towns, and the spurt taken during the war period by condensed and powdered milk, giving the farmer more money for his raw material, has cut into the cheese business. As a farmer correspondent in these columns pointed out, the branch of dairying that does not "level up" in prices is going to take a back seat, Government "pap" or no "pap." In Ireland an investigation recently closed found that since the beginning of the war, milk supplies there had been diverted to the manufacture of cheese and condensed milk, which gave better returns than other lines for feeds and labor. So here when the producer has a choice of nearly \$1.00 per cwt. more for his milk it soon flows in that direction. The suggestion is offered that the time of officials might be better employed going to the farms and helping dairymen to produce more and better milk. Possibly so, for help is scarce and the gospel of "Breed, feed and wean," though not yet forgotten is always applicable. However, we have heard highbrows on convention platforms telling dairy farmers again and again that they could do little in controlling the selling end of their business, and that their certain hope lay in producing greater quantities of milk more economically. In one locality with which I am directly familiar, where cheesemaking has been crowded out chiefly by a strong corporation, three local Milk Producers' Associations were lately organized just as they have been elsewhere in Ontario, and I believe throughout Quebec. Millmen or dealers fix the price to be paid for milk feeds, and so by concerted action dairy farmers propose to have something to say as to what they shall receive for their milk. They have grown weary of the old nursery rhyme: "Open your mouth and shut your eyes and I'll give you something that will make you wise." There are other ways of "getting wise."

The cheese industry may be taking a nap in Ontario; it is not dead, by a jugful. "Farmer's Advocate" readers need not come to the conclusion that there is little left for the historic Dairy Associations to do but decently give up the ghost. Revivals and forward movements are the order of the day, and doubtless there will be a going in the tops of the mulberry trees before the big annual meetings. Like Israel's King, in coping with invaders, someone will get a hustle on in respect to cheese. The market quotations are about all we hear of Canada's "finest" dairy product, Cheddar cheese. The promoters of some of the newer products are not asleep on their job. A glance over the big newspapers and other periodicals circulating in centres of population reveals a surprising display of their advertising. The huge bill-boards are utilized in the same way, and it is not likely these concerns are spending their money in such a campaign without returns. They think they have a good thing and make it known. Having excited interest and enquiries, they follow up prospective customers with personal letters and most attractive leaflets, telling how well their product is made and handled from cow to customer. Scores of ways in which to use it are alluringly described. In a representative retail city grocery house I found new Cheddar cheese cut from the ordinary large size of make selling at 38 cents per pound, and from a 13-lb. size at 40 cents; and old cheese at 45 cents. A brand of cream cheese sold at 15 cents per 1/4-lb. package, or 60 cents per pound. A brand of powdered milk sold at 45 cents per 1-lb. tin, and a condensed milk of a fluid consistency at 8 cents for 1/2-lb. tin (gross), and 20 cents for the 1-lb. for the 1-lb. size. The grocer said the regular Canadian factory cheese was, in his judgment, the cheapest food on the market, and, when people were clamoring about the cost of living, more of it should be used. A pound of well-made cheese was credited with being equal in nourishment to three pounds of beefsteak. There was a demand for an old, tasty sort of cheese, but a far greater call for a milk-flavored, softer brand. There was too much waste in the big 80-lb. Cheddar, and it often too hard. Pointing to a 13-lb. style, 9 inches high and 6 inches in diameter, he said they would sell as fast as he could get them. Instead of a pound slice, people would order a half or a whole cheese at once. His supply came from a Western Ontario factory which put up four of such cheese in an ordinary round elm box. People would willingly pay more for it too. No use sticking in old ruts, he declared. His trade was among working people, and also with the more well-to-do.

From the testimony of this fairly representative dealer, it was apparent that people will readily buy and pay the price for what they want, and nine times out

of ten they want what they see and hear about. In these days of hot competition, cheese, no matter how good, won't sell itself. Why not have its advantages, uses and economy set forth in attractive style and the product itself put forward in a way to cultivate demand as far as the local Canadian trade is concerned? The export trade to Great Britain and Europe is another story.

Middlesex Co., Ontario.

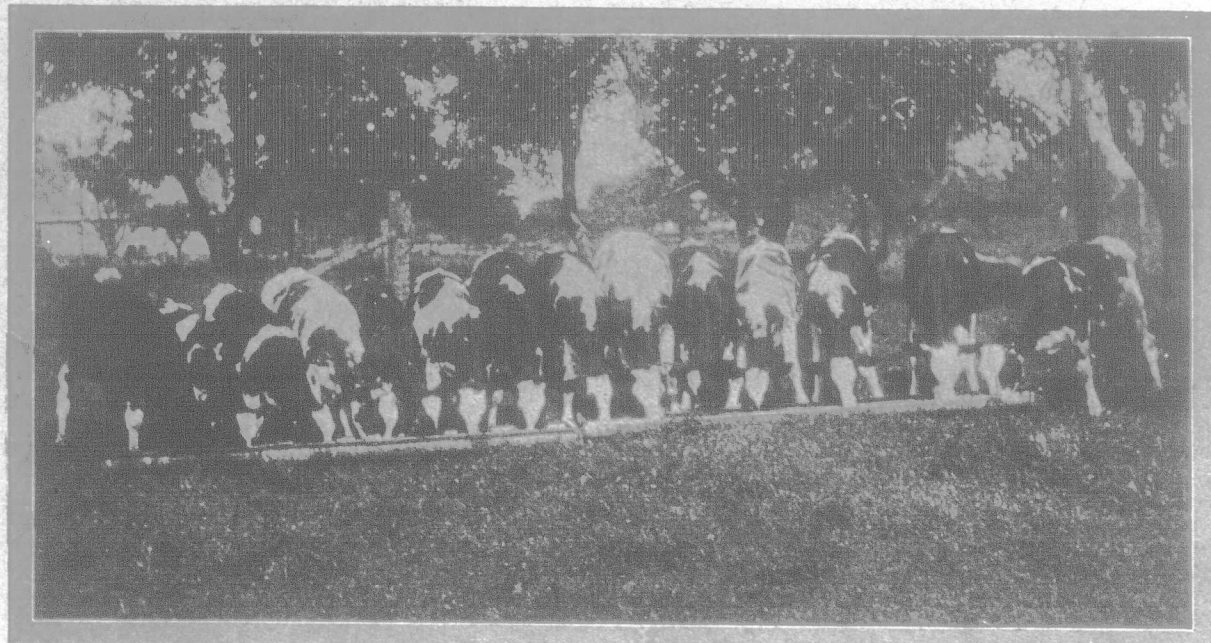
COWBOY.

The National Dairy Industry.

At the recent U. F. O. convention, held in Toronto, the dairy industry and the National Dairy Council were brought to the attention of the delegates by E. H. Stonehouse, Weston, President of the great organization, which he explained to them. In introducing his subject, he took occasion to comment on the phenomenal growth of the U. F. O. as well as the great change in public opinion, and predicted that the movement will spread until every part of this Dominion shall have felt its influence for good.

Coming closer to his subject, Mr. Stonehouse endeavored to give his hearers some idea of the magnitude of the dairy industry, and said that in one factory district alone, comprising rather less than one county in Eastern Ontario, 63,530,000 pounds of milk, valued at \$1,685,000, were manufactured into cheese. Whey butter, whey cream, and a considerable quantity of whole milk for city consumption would bring the total value of milk in that district up to 1 3/4 millions of dollars.

In 1918, 93 3/4 million pounds of creamery butter valued at 4 1/4 million dollars were manufactured in Canada. At the same time 174 3/4 million pounds of cheese, valued at 30 1/2 million dollars, were made. On top of that, condensed milk manufactured added another 7 1/2 million dollars, and milk powder, 1 3/4 million dollars.



Feed Expended in Developing Young Holsteins is a Profitable Investment.

The speaker endeavored to estimate the total number of gallons of whole milk consumed in Canada, and said that it was in the neighborhood of 19 millions, valued at \$8,600,000. The City of Toronto alone uses some 12 million gallons per year. In all it would appear that between 7 and 8 billion pounds of milk were produced in Canada in 1918. These figures appear very large, he said, but when we come to estimate our own domestic consumption we are startled to find that our people in Canada are using only about three-quarters of a pint of milk per capita per day, and our consumption of cheese is less than one pound per capita per annum.

After thus describing the extent of the industry, and the need for development, especially in the direction of consumption, the speaker explained how the Milk and Cream Producers' Associations have sprung up all over the Dominion, and have done much to obtain a fair price to the producer, as well as to convey the need for efficiency and economy in production. The long-felt need has been for an organization which will harmonize and co-ordinate the various branches of the dairy industry, as well as the contributory industries which depend more or less upon it for their business; which will protect the industry by closely studying legislation, both Dominion and Provincial, and which will see that transportation rates are not excessive or improperly applied. The organization will still further see to it that transportation facilities are provided together with cold storage; will protect the products in transit, and still further see that the product is properly graded and placed on the markets—both domestic and foreign—in the very best possible condition. Perhaps the greatest function of all will be to advertise so that home and abroad the value of dairy products as a food will be kept constantly before the public eye. To this end the National Dairy Council of Canada has been brought into being, and it is being developed to the point where it can render effective service. Mr. Stonehouse explained the workings of the new Council, and said that it did not act in restraint of trade, and, in conclusion, he pointed out that a great effort will be

made to bring the true value of milk and milk products before the consumers of this country, to the end that children and all classes may consume sufficient milk to ensure a virile manhood and womanhood in Canada.

United Dairymen Co-Operative, Limited.

A meeting of the Provisional Directors elected by dairymen of Peterboro, Prince Edward and Hastings Counties, to organize on a co-operative basis an amalgamation of many of the cheese factories and creameries of the Province, was held at the Carls-Rite Hotel, Toronto, on Friday, December 19. It was agreed that as much as possible the control of the central company should be retained in the hands of the local factory patrons, and after much discussion the Saskatchewan form of management was adopted. Capitalization will be at \$250,000 to be divided into 10,000 shares of \$25 each. It was also decided that the head office should be located at Peterboro, since this city is in the center of the district where the company will be formed. Later on, if necessary, the head office can be located in Toronto.

The directors later waited on Hon. Manning W. Doherty, Minister of Agriculture, Toronto. The Minister was asked for assistance by officers of the Department in addressing meetings to show the need for improvement in present methods of conducting the dairy industry, and the Department was also asked to appoint one arbitrator to act with the arbitrators appointed by each local and the central company to value the factory. This assistance was granted by the Minister, and later on, F. C. Hart, Director of the Co-operation and Markets Branch, assisted the directorate in making the necessary application for a charter. The Provisional Directors of the Company are as follows: T. J. Thompson, Springbrook; John McCaffery, Madoc; and Hugh Maloney, Marmora, all of Hastings County; R. W.

Ireland, Wellington; Walter Clark, Allisonville; both of Prince Edward County; J. E. Galvin, of Lakefield, and W. H. Crouch, Ennismore, both of Peterboro County; and J. J. Morrison, representing the United Farmers' Co-operative Company, Limited. H. B. Cowan, Peterboro, has been chairman of the committee so far, and will act as temporary secretary-treasurer. The name of the new company will be the United Dairymen Co-operative, Limited.

Brantford District Holstein Sale.

A satisfactory sale of Black and White cattle was pulled off on Thursday, December 18, by the Brantford District Holstein-Friesian Breeders' Club. This was the eighth semi-annual consignment sale of this Club, and compared with last year the average for the sale held at Brantford, on December 18, was higher. Bidding was not brisk, although the good stuff went at good prices but the attendance was only average, and there seemed very little demand for bulls of any age. Although, as a rule, the various lots were brought out in good condition, the weather was extremely cool, and some lots that were brought to the sale only the day before showed some effects of exposure. The high price of the sale was secured for Bessie Posch Diotime, consigned by E. C. Chambers, Hatchley, Ontario. This is a three-year-old cow, out of a 19-lb. four-year-old dam. Her dam, grandam and sister produced 330 lbs. of milk in one day, a record said to be unequalled in any other herd in Canada for three members of a family. Bessie Posch Diotime sold for \$850 to H. H. Bailey, Paris. Forty-six females and two males were sold in the sale, the total value of the animals passing under the hammer amounting to \$12,120, an average of a little better than \$250 each. The forty-six females sold for \$11,770, an average of \$255 each. There were fifteen mature cows, six four-year-old cows, sixteen three-year-old cows, and nine two-year-old heifers, in addition to a four-year-old bull that went for

\$200 and a \$150 bull calf. The following is a detailed list of the sales:

FEMALES.

Flossie Pietertje Bonheur, M. J. Brown, Norval.....	\$325
Myrtle Mercedes Posch, H. H. Bailey, Paris.....	350
Belle Mercedes Ormsby, A. H. Beven, Burford.....	250
Madam Dot Korndyke, A. H. Beven.....	325
Korndyke Pauline Posch, R. H. Shaver, Brantford..	200
Dina Posch, John Midland, Whitby.....	220
Fay De Kol Posch, Frank Daws, Harley.....	190
Canary Abbekerk Hartog, Frank Daws.....	175
Pauline Calamity Rooker, John Midland.....	165
Maud Posch Korndyke, A. H. Beven.....	235
Nellie Sarcastic Posch, Jas. Davis, Thorold.....	210
Lady Mercena Segis, W. J. Woodley, Copetown.....	235
Lady June Sarcastic, Wilson Bros., Hamilton.....	210
Pauline Crown 2nd, Jas. Davis.....	280
Hazel Bell Cano, Ross Swartout, Scotland.....	200
Greta Pontiac Korndyke, F. A. Fitch & Son, Norwich.....	240
Greta Mercena Korndyke, Wilson Bros.....	275
Lucy Orphan, F. W. Terhune, Brantford.....	300
Nellie Faforit, W. H. Cherry, Hagersville.....	250
Pauline Canary Alban, Wm. McDonagh, Port Robinson.....	280
Inka Sylvia Beets, F. A. Fitch & Son.....	180
Oak Lodge Bell Banks, John Midland.....	200
Tinie Butter Girl Fayne, John Midland.....	175
Perfection's Schuiling Lilly, A. H. Beven.....	400
Sky Mercedes Baroness, Fred Plant, Brantford.....	250
Lady Belle Posch De Kol, Ross Swartout.....	230
Flora Segis Fayne, M. J. Brown, Norval.....	200
Lady Abbekerk Mercena B., A. H. Beven.....	205
Bessie Posch Diotime, H. H. Bailey.....	850
Jean Cornucopia Posch, C. G. Gurney, Paris.....	500
Aaggie Calamity Francy, R. H. Shaver.....	225
Pearl Cornucopia Posch, J. E. Brethour, Burford....	310
Calamity De Kol Lass, John Midland.....	175
Bessie Posch Diotime, J. G. Wood, Scotland.....	270
Flora Bonheur De Kol, John Midland.....	145
Bouncing Abbekerk Mercena, John Midland.....	200
Betsy Posch Fayne, Wm. McDonagh.....	305
Royalton Korndyke Leone, A. H. Brown.....	180
Lady Pauline Grey, A. H. Brown.....	230
Lady Schuiling Pride, John Young, Brantford.....	125
Pontiac Calamity Mercedes, W. H. Cherry.....	220
Queen Faforit Dhu, H. T. Henderson, Paris.....	235
Belle Banforth, Roy Robb, Branchton.....	290
Ribbon Victoria, H. Plant.....	180
Fairview Lady, H. T. Henderson.....	275
Ourvilla Aaggie Korndyke, Howard Edmondson, Brantford.....	300

MALES.

King Korndyke Evergreen, M. B. Shaver, Canboro.	200
Count Baroness Banks, Walter Patton, St. George..	150

Southern Counties Ayrshire Sale.

The eighth consignment sale of the Southern Counties Ayrshire Breeders' Club was successfully held on Thursday, December 18, at Woodstock, Ontario. Forty-one head were disposed of for a total of \$5,850. Of the forty-one head, thirty-four were females, selling for \$4,907.50, an average of \$144. There were eleven mature cows, four four-year-olds, three three-year-olds, ten two-year-old heifers, three yearlings and three calves, while four bull calves and three yearlings made up the male offering. The high price of the sale was secured for Selwood Reliance, a May bull calf, consigned by J. L. Stansell, Stratfordville, and sold for \$350 to John A. Morrison, Mt. Elgin. The list of individual sales follows:

FEMALES.

Advance's Teena, Geo. Whitesell, King Lake.....	\$165.00
Daisy of Wardend, E. B. Stansell, Vienna.....	150.00
Hillhouse Gem, A. S. Turner, Ryckman's Corners.	150.00
Scotch Lassie 7th, W. C. Jack, Newton.....	215.00
Ellen Terry, W. T. Maharg, Tillsonburg.....	120.00
Humeshaugh Rose 2nd, Robt. Lee, Owen Sound..	200.00
Admiral's Red Wings, A. Sadler, Mossley.....	200.00
Garlaugh Miss Bartley, A. S. Turner & Son.....	210.00
Woodland Dora, A. E. Chown, Thamesford.....	170.00
Scottie's Brownie, E. B. Stansell.....	110.00
Betty, Joseph Barnett, Curries.....	120.00
Star, A. R. Taylor, Woodstock.....	145.00
Roma of Level Lea, E. B. Stansell.....	102.50
Acmelea Denty Beauty, R. Taylor.....	185.00
Selwood Bluebell, Geo. Whitesell.....	175.00
Selwood Queen, F. A. Wright, Thedford.....	135.00
Ivanhoe Daisy, E. Lazenby, Woodstock.....	155.00
Maple Jean, Duncan Bain, Woodstock.....	125.00
Daisy 2nd, John McLean, Owen Sound.....	145.00
Alice of Level Lea, Henry Fuhr, Shakespear.....	120.00
Grace of Fernbrook, P. S. Cairns, Brantford.....	235.00
Tiny 2nd, Chas. A. Hoyl, Ingersoll.....	135.00
Spot, Duncan Bain.....	130.00
Airmount Bessie, Wm. Thorn, Lynedoch.....	150.00
Christmas Belle 3rd, Duncan Bain.....	150.00
Grace of Fernbrook 5th, Geo. Whitesell.....	175.00
Snowball 3rd, E. B. Stansell.....	175.00
Christmas Bell 6th, A. S. Turner & Son.....	180.00
Brighton Brae Topsy, E. B. Stansell.....	135.00
Otterhill White Bess, R. Hallock, Woodstock.....	185.00

MALES.

Hillhouse Lucky Heather King, A. E. Sadler.....	115.00
Mac of Walnut Lodge, Anderson Bros., Woodstock.....	100.00
Bull, Duncan Bain.....	102.50
Selwood Reliance, John A. Morrison, Mt. Elgin.	350.00
Selwood Confidence, R. J. A. Smith, Hatchley Station.....	177.50

Following is a detailed

... Norval	325
... Paris	350
... Burford	250
... 325	
... Brantford	200
... 220	
... 190	
... 175	
... 165	
... 235	
... 210	
... 235	
... 210	
... 280	
... 200	
... Fitch & Son	240
... 275	
... 300	
... 250	
... McDonagh, Port	280
... 180	
... 200	
... 175	
... 400	
... Brantford	250
... 230	
... 200	
... 205	
... 850	
... 500	
... 225	
... 310	
... 175	
... 270	
... 145	
... 200	
... 305	
... 180	
... 230	
... 125	
... 220	
... 235	
... 290	
... 180	
... 275	
... 300	
... Shaver, Canboro	200
... St. George	150

Oxford Holstein Sale.

A total of \$15,515 for 62 head of Black and Whites characterized the Oxford Breeders' Consignment Sale of Holsteins, held at Woodstock on Wednesday, December 17. Included in the sale were 49 females and 13 males, the former averaging \$274. There were 19 mature cows, 7 four-year-olds, 4 three-year-olds, 12 two-year-olds, and 4 yearlings. Four bull calves, 4 yearlings and 3 bulls three years and over, constituted the male offering, which brought a total of \$2,235. The aged bull, Duke Wayne Aaggie, consigned by W. C. Prouse, Tillsonburg, brought the high price, and sold to R. M. White, Epping, for \$410. Among the females several individuals brought more than this figure, the leader being Helen Mercena Posch, consigned by McGhee Bros., Beachville, Ont., and going to F. J. Griffin, Burgessville for \$700. The following are the detailed results of the sales for \$100 or over:

FEMALES.	
Fairmont Dairy Alcartra, A. E. Hulet, Norwich	\$600
Mercedes Princess Acme, H. Campbell, Embro	275
Fairmont Bessie Alcartra, J. W. Innis	450
Fairmont Bessie Walker, G. E. Black, Guelph	270
Fairmont Pontiac Alcartra, R. Cooper, Welland	250
Lowlands Clarissa Korndyke, H. George, Putnam	165
Helen Mercena Posch, F. J. Griffin, Burgessville	700
Daisy Calamity Kistry, G. E. Black	280
Pauline De Kol Countess, R. Smith, Oxford Centre	300
Princess Bell Kent, W. C. Howard, Rockwood	340
Silver Stream Inka Darkness, G. H. Laird, Innerkip	250
Pearl Lyons Hengerveld, E. Neville, Princeton	230
Gertqui Hengerveld Keyes, Earl Grier, Woodstock	485
Princess Ormsby Walker, R. Cooper	280
Firth's Farm Daisy, R. S. Oliver, St. Mary's	250
Madam Banks Posch, F. H. Peer, Norwich	205
Lady Canary Francy, G. E. Black	410
Netherland De Kol Segis, G. E. Black	400
Lady Princess Dot, K. R. Edwards, Georgetown	220
Maple Lodge Inka De Kol, C. Frith, Jackson's Corners	110
Duchess Schillaard, W. H. Curry, Woodstock	290
Rose Aaggie Pietertje, J. Winer, Guelph	190
Vida Princess Veeman, F. J. Frith, Maidstone	200
Belle FINDERNE Ormsby, M. R. McArthur, Thamesford	175
Cherry Grove Spotty, E. Dyson	625
S. C. Butter Bess, G. E. Black	425
Princess Hengerveld Dixie, G. E. Black	290
Martha De Kol Pietertje, K. R. Edwards	245
Calamity Posch Netherland, E. Neville, Princeton	280
Nora Anne Inka, T. Dent, Woodstock	100
Queen Mary De Kol 2nd, G. F. Black	300
Hengerveld Beauty, E. Neville	210
Maggie Jean De Kol, W. McGee & W. D. Crawford	300
Pioneer Daisy De Kol Hartog, W. Wyndham, Guelph	355
Cedarbrae Bessie Mechthilde, T. H. Dent	210
Posch Butter Baroness, J. W. Parmer	190
Maple Lodge De Kol Queen, B. Sutherland, Embro	180
Queen Inka De Kol Posch, J. W. Atkinson	155
Bessie, Wietske De Kol, G. E. Black	200
Victoria Inka De Kol, Chas. Frith	210
Flossie Tehee Hengerveld, Geo. Franklin, Ingersoll	170
Betty Fayne Butter Baroness, G. E. Black	220
Rosa Colantha Posch, W. Wyndham	290
Colantha Jewel Hengerveld, Jas. Innis, Woodstock	235
May Wayne Inka, J. Winer, Guelph	125
Beauty Abbekerk Ormsby, F. H. Griffin	220
Blossom Aconeth, W. H. Chambers, Selford	110
Lakeview Winner, E. Dyson, Guelph	200
Fern Posch Inka, W. H. Chambers	110
MALES.	
Prince Snow Hartog, G. H. Cuthbert, Ingersoll	155
Baron Sylvius, Roy Chambers, Burgessville	160
Sylvius Lad, T. Sims, Thamesford	165
Silver Stream Paul Lyons, W. R. Edwards, Georgetown	170
Sir Rufus Segis, F. Lock, Innerkip	155
Duke Wayne Aaggie, R. M. White, Epping	410
Center View Tony, A. H. George, Putnam	160
Prince Colantha Abbekerk, D. Adams, Bright	190
Calamity Sylvius, H. B. Taylor, Mt. Elgin	200
Sir Maplecrest Abbekerk, Thos. Dutton, Woodstock	105
Sylvia Fayne Butter Boy, H. Fiddie, Burgessville	150
Prince Sylvia Posch, E. W. McMaster, Appin	150
Sir Ormsby Hartog Mercedes, W. Wilson	165

Holstein Records for November.

Official records for Holstein-Friesian cows from November 1 to 30, 1919, show that official tests of thirty-three cows and heifers were received and accepted for entry in the Record of Merit. The only 30-lb. cow for November is Lawncrest May Echo 2nd., leader in the mature class with 30.40 lbs. butter from 587.7 lbs. milk. Katie Abbekerk Fayne is the best in the senior four-year-olds with 25.66 lbs., while Colony Sena Newman is highest among the junior four-year-olds with 28.04 lbs. Shontess Echo Alcartra, as a senior three-year-old, shows 26.45 lbs. There are only two junior three-year-olds, led by Pontiac Dorothy Hermas, while Colony Korndyke Newman is the only senior two-year-old with 13.5 lbs. Among the junior two-year-olds, Belle Model Pietje 3rd. leads with 22.34 lbs. from 435.1 lbs. milk. Zarilda Clothilde 3rd De Kol, the well-known Colony Farm cow, shows a record made eight months after calving of 18.69 lbs. butter from 453.6 lbs. milk.

The semi-official records report tests of fifteen cows and heifers in the yearly Record of Performance work concluded in November. There are no sensational records, although all except one two-year-old are above 400 lbs. butter. The best butter record is made by Evelyn Westport Welula, a British Columbia cow that made 673.75 lbs. from 16,066 lbs. milk. The best milk record is made by Lulu Pietertje 2nd., with 606.25 lbs. of butter from 16,172 lbs. milk. Only two animals each are found of the three-year and four-year-old class, the former being led by Lillian Hartog De Kol with 631.25 lbs. butter, from 14,094 lbs. milk. There are eight two-year-olds, headed by Hickory's Korndyke Sarcastic Toitilla, with 508.75 lbs. butter from 9,719 lbs. milk.

A CORRECTION.

We are asked by the University of British Columbia to make a correction regarding the last report of Ayrshire official tests which appeared in these columns in our issue of November 27. Springhill White Beauty, an Ayrshire cow, was credited with 12,691 lbs. milk and 490 lbs. fat. This should have been 590 lbs. of fat, we are informed.

HORTICULTURE.

Those who are thinking of planting out new orchards should get orders for trees in promptly. Last come, last served.

When doing the pruning provide yourself with a good pruning saw and clippers. The latter is indispensable in well-cared for orchards and a sharp saw saves many hours of hard work.

Now is the time to start pruning in large orchards if the weather is moderate enough to work. Waiting until March or April may be better in some respects, but it is better to make sure the pruning is done than to wait for some particular time when other work may crowd the weeks.

G. E. McIntosh, Fort Branch, Ottawa, notifies us that Canadian Railway companies have made application to increase by fifty per cent. the charge for the use of heated refrigerator cars. If interested growers will notify Mr. McIntosh he will inform them as to when all sittings of the Railway Board will take place.

Potato Growing in British Columbia.

EDITOR "THE FARMER'S ADVOCATE":

It is quite likely that because so many potatoes were frozen in the West both in B. C. and the Prairie Provinces that farmers will rush in to the growing of them next year with the very likely result of an over production. At any rate there is bound to be a greater acreage put in, and some things about potato growing will probably appeal to a great many at this time.

The potato, although it doesn't look like it to the casual observer, is closely related to the egg plant, and the tomato, but cultivation has widened the gap so much that the plants are not easily recognized as relatives. Originally the potato was bitter and unsuitable for food, and even yet we not infrequently find potatoes that have reverted to this original quality and show up a bitterness.

In the potatoes we eat the thickened part of the stem and by selection we have several shapes now grown, from the round through the oval to various long varieties and in color we can have from white to cream, yellow and purple. The skins vary too, from the smooth, glistening, or dull, to the very attractive netted varieties.

Much of the methods of cultivation need no comment, but a few cautions may be well to remember, and probably the chief of these is to avoid dirty seed. If it must be used treat the potatoes with dips of various kinds that are frequently given in the government bulletins. This is advisable not only in order that good-looking stock may be secured, but because the diseases carry over in the ground. In B. C. we are having considerable trouble on this account with the Orientals who neglect to treat the seed. Scab is troublesome in many places, and especially so where manure is plowed down and the tubers planted right away. It is better to put the potatoes on other land and avoid the scab.

The temptation to use small potatoes for seed is often discussed, and the practice is seemingly all right for one year, but if it is kept up the size of the potatoes will surely decrease.

Potatoes, like many other crops, are markedly affected by the date of seeding; too early planting will result in as great a reduction of the size of the yield as will late seeding. Experiments with both corn and roots have proven conclusively that the date of seeding affects those crops, and too early seeding is as bad as too late.

When cultivating potatoes it is well to remember that they are lovers of cool ground, and when a choice of land is possible avoid the lighter lands. Cultivation is also a matter that affects this side of potato life, and we should avoid excessive cultivation during hot spells, or at least avoid deep cultivation. They are shallow feeders and deep cultivation will break many of their feeding roots. One of the greatest helpers in potato growing is the harrow, and of the harrows, the tilting harrow is to be preferred. It may be used once or twice before the plants are up, but seldom more

than once after they are up. When harrowing after the leaves have come through—and it will materially lessen weed hoeing—wait till after 10 a.m. of a bright day and stop before 5 p.m.; the stalks will be soft in the heat at that time and not easily broken.

Breeding up of seed is something that pays very well but it takes a little inquiry on the growers part; yet when it is profitable growers should take some extra pains. Let the market settle the variety rather than your own preference, and if it is not fussy find out from the nearest experiment station which one of the varieties gives the best results. Here are some examples from actual tests that will show the force of this advice and also show the difference in yield and demonstrate the great difference in the yield of different varieties under similar conditions. A sport from the British Queen, which has been bred for a few years, yielded over 20 tons per acre while the British Queen yielded only 14.9 tons. One strain of Early Rose gave 16.9, while a Gold Coin gave only 13.6, so it is easily seen that variety and selection of that variety pays. Next year, with the probability of a great acreage being planted, will be a good year to start selection. There will not be any temptation to sell everything because of big prices.

Selecting the large potatoes or the smooth ones, or the even-sized ones from the storage bin isn't going to help you much. You must get down to hill selection and plant only one piece or one whole potato in the hill. Then dig by hand, reject the low-yielding hills and the poor-shaped ones. Aim for a shallow-eyed potato. Such ones save the consumer from the waste caused by digging out the eyes. Get them of a good shape and medium sized, or the size preferred by your best market. The best market is worth getting, and you can also sell many for seed at good prices.

British Columbia. WALTER M. WRIGHT.

POULTRY.

The Feathers of a Hen.

The feathers of a hen fall gradually every year under normal conditions. Where conditions are entirely natural, as in the case of flying birds, this molt takes place so gradually that the birds feel the loss of their feathers only slightly. This is obvious for the reason that if the molt were to take place suddenly the bird would be unable to fly, and would for a considerable time be unable to defend itself from the attacks of its enemies. With poultry the molting period can be hastened by means of a period of fasting followed by a period of heavy feeding to enable the birds to regain the flesh lost during their fast. This practice, however, is not considered advisable by good poultrymen, since during the period of fasting the birds lose weight and stamina very rapidly, and considerable heavy feeding is required afterwards before they can be brought back to normal condition. Moreover, they will not start laying until they have regained some of their lost flesh, and this takes time. The best practice is to feed the hens on a normal and well-balanced ration throughout the molting season and to allow the molt to take place naturally.

Nevertheless, the earliness or lateness of the molt is an indication of the ability of the bird to lay well. It has been proven by experiment that the late-molting bird in the majority of cases is the heaviest layer. On the other hand the hen that gets ready to molt early and assumes a fine new coat of feathers well in advance of the rest of the flock is not the one to breed from. Look out for the hen that keeps right on laying until the cool fall weather comes. She is usually the shabbiest looking one of the flock, but her shabbiness comes from hard work, and when she does start to molt she usually gets it over quickly and does a good job of it, so that she can start laying again in early winter. Thus it can be seen that the molt as it occurs with various members of the flock is a factor that can be put to very good use when trying to single out the persistent layers.

Apparently also it is possible to utilize the molt in determining the age of the hen. We are not ourselves skilled in this practice, but a bulletin of the Dominion Department of Agriculture issued some time ago explains the method in detail. It is argued that every molt brings regular changes in the wing by which the age of the bird can be told so accurately that "it may be positively declared that the bird carries in its wing a certificate of birth very easy to read for anyone who knows where to look for it. It is explained that the skeleton of the wing in a hen corresponds to the arm and hand in man, and that the feathers which cover the wing are of various shapes and lengths, and may be divided into three groups called the primaries, secondaries and thirddaries. The first-named are the ten large feathers set at the extremity of the wing and which are invisible when the wing is closed; being covered by the secondaries and the thumb feathers. The secondaries are the feathers which grow on the part of the wing corresponding to the forearm. These are also ten in number and are of various lengths. When the wing is opened in flight these feathers form a large convex surface, offering a great resistance to air, and they are the most important feathers for telling the age of the bird. The thirddaries are the closest to the body and forming the shoulder are set on that part of the wing corresponding to the human arm.

The author of the bulletin says that all the great secondaries are renewed every year but at each molt some of these feathers are modified but always in the same way so that these modifications are characteristic of different ages. The number of short secondaries

found in the wing indicates the number of molts that the bird has gone through, according to this author, and these secondaries can, therefore, be used to tell the age of the bird. These feathers are shorter than the rest, more rounded at the extremity, and end in a short, straight point. A comparison between birds of various breeds in which the same peculiarities were found showed that all of the birds were of the same age, and observation on a number of flocks as well as on exhibition birds has shown the same thing to be the case. Space does not permit us to go into the system of age determined completely, but, in general, it may be said that when the wing is spread wide open after the molt is over and all the feathers are fully developed, there are certain markings appearing on some of the secondary feathers which differ with birds of varying ages. Thus, in a fully-feathered pullet from six to fourteen months old, one characteristically marked secondary feather will be noticed. In a hen over eighteen months old, after the fall molt, two secondary feathers would present the characteristic marking, while in the three-year-old hen, and so on up to ten years, if the hen lives that long, an additional specially marked secondary feather will be noticed for each year of age.

FARM BULLETIN.

Farming in Great Britain After the War.

BY OUR ENGLISH CORRESPONDENT.

As I write London is celebrating its first anniversary of the Armistice, but so far as agriculture is concerned, we are practically "controlled" under much the same conditions as those existing during the full four years of war. Fixed prices are still only allowable for cereals and all farm produce. The War Agricultural Committees governing cultivation and the breaking up of land are still in existence, and the Wages Board, an institution created under the Corn Production Act, has not only fixed the hours of work, but the rates of wages for the country. Factory and shop hours never will, and never can, be properly applied to agriculture, and particularly to dairy farming.

Hours of labor on the farm, in summer, are now fixed at 50 per week, and in winter 48 hours. The order made by the Wages Board came into operation on October 6 despite a protest from the present President of the Board of Agriculture, Lord Lee of Fareham. That gentleman exercised the power conferred on him by Section 5 (5) of the Corn Production Act, and directed the Agricultural Wages Board to reconsider their decision. The Board, after full consideration, unanimously resolved to adhere to their decision.

The decision of the Wages Board does not impose any limit on the number of hours for which a farm laborer may contract with his employer to work, but there is an extensive movement on the part of organized farm workers for shorter hours. Resolutions in favor of the inclusion of agricultural labor in the proposed "Forty-Eight Hours Bill" continue to be passed at branch meetings of the Laborers' Union.

The development of the trade union movement in agriculture in recent years is proved by the fact that the membership of the Laborers' Union now stands at 100,000 as against 36,000 in 1918.

Under the Corn Production Act, the prices guaranteed by the Government for 1919 grain crops are: 1, wheat, 71s. 11d. per qr. of 480 lbs.; 2, barley, 61s. 6d. per qr. of 400 lbs.; 3, oats, 44s. 1d. per qr. of 312 lbs.; 4, rye, 71s. 11d. per qr. of 480 lbs.

CHANGING PHASES.

The 1920 policy of the Government, as represented by Lord Lee of Fareham as the head of the Board of Agriculture, will be that which makes for a future greater breadth of arable farming. Ways and means new to our systems of 1914 must also be found for rearing and feeding our commercial store, dairy and pedigree stocks. The situation for the dairy farmer is at the present time of writing most difficult. Hay is short, so is straw, roots are but a poor crop, and all prepared feeds are not only exceedingly dear but very scarce. Still the Government, through its Food Ministry, realizes the national importance of the milk industry.

Milk is one of the very few articles of food in which the population of Great Britain is dependent almost wholly upon home supplies. Even before the war supplies from foreign countries were entirely negligible, while those from Ireland, which in 1915 reached a maximum of 115,000 gallons, were also insignificant, and have disappeared in the last few years. During the war, in spite of the many difficulties to be faced, the dairy herd of Great Britain was maintained at a level above that of previous years, but notwithstanding this success there has been a serious reduction in the total supply of milk. The chief factor contributing to the decreased yield of milk per cent, has been the difficulty of obtaining feeding stuffs, and along with this there has been considerable local scarcity of skilled labor. In both these respects the general prospects for 1920 are brighter, but even if the estimate of not much less than 1,100 million gallons for the year proves correct, the yield per cent. will still be considerably below pre-war average. There are indications also that, apart from recent additions to the civilian population, there has been an increased demand for milk. On the other hand, the necessarily high retail price may cause a reduction in the effective demand, and so supplies probably will be adequate to meet it.

LONDON'S MILK SUPPLY.

The nine days railway strike at the end of Septem-

ber, 1919, showed the country how well milk can be collected and handled by motor-lorry transport. The areas from which our large towns draw their milk supplies are far apart, yet the motor lorry linked them up and children and invalids went but little short of their usual supplies. The case of London is very remarkable, for the home counties provide only about 17 per cent. of the city's milk, the remainder being contributed by almost every milk area in the country. Westmorland being the noteworthy exception. The case of Leeds is simple, 91.9 per cent. of the supplies coming from Yorkshire, with 1.1 per cent. from Cumberland, 6.5 per cent. from Lancashire, and .5 per cent. from Westmorland. Liverpool and Manchester, taken together, obtain about 60 per cent. of their supplies from Lancashire and Cheshire, and draw for the remainder on all the adjacent counties from Westmorland to Salop, including about 5 per cent. from Wales. These varying distances over which milk has to be carried are reflected in local retail prices, and data for an earlier year showed that the highest prices were found in large industrial areas dependent on distant supplies, and the lowest prices in districts such as the western counties of Wales, where transport difficulties restricted the demand to local consumption.

The conditions under which agriculture is carried on to-day make the feeding of all farm live stock a most difficult matter in Britain. The raising, rearing and fattening of farm animals is an important phase of our agricultural system, and at no period of the history of the industry has it been so essential as an adjunct to profitable cultivation of the soil as it is now. Even under "control," our home-produced meats command a much better price than imported, and in order to increase the annual output of this home-bred and fed fat stock, new departures in crop rotations and in the general management of the land are a vital necessity. It is well, however, to remember that what might prove a successful rotation in one area may prove a complete failure in another. Soil and climatic influences are beyond the farmers' control. All tillage lands ought to be so cropped that the exhausting effect of one crop should be repaired by the succeeding one. A well-devised system of cropping is the best and cheapest means of increasing the fertility of the soil.

FEEDING OF DAIRY CATTLE.

The feeding of dairy cattle, likewise becomes a more difficult matter, in these days of shortage. We still don't know what are economical rations for dairy cows. No precise amount of feed can be laid down as a ration suitable to all cows of any given age, or breed, or size, in milk or out of it. Some cows require much more feed than others, but the big eaters seldom make the most profitable return for it. Gluttonous and greedy cows eat, as a rule, too quickly, and too large a proportion of the feed goes to waste. The careful herdsman knows the peculiarity of each cow under his care in reference to appetite, and feeds her accordingly. He feeds each cow rather sparingly than otherwise. Lavish and indiscriminate feeding is a folly all round. Cattle make the best return for the feed they eat when they get just as much as they will eat up cleanly, and with a relish. If a man's cows are habitually poor he will, very deservedly, be poor himself. It is the careful man, who feeds his cattle liberally, to whom profit always comes. A scientific ration for cows in milk is all very well where the farmer understands the subject well, and has time and money to devote to it, but it cannot be left to servants, and the rank and file of dairy farmers can hardly be expected to take it much in hand. The farmer who feeds his cows liberally is usually on the right track for profit, and he knows that low-priced cake or corn is not the best of its kind to buy. The best is generally the cheapest in the end, and a variety of sorts is a good thing for milk. The most practical and important feature in the feeding of dairy cows is to give them just so much feed, whatever it may be, as they will eat up cleanly and with a relish. Under feeding is an evil, and so is over-feeding.

CATTLE AND MILK ON THE CONTINENT.

We hear a lot about the children of the Continent requiring milk. Happily for France and for the world, no comparison can be drawn between the conditions of the children of France and of the large towns of German-Austria. Even the tragic state of Lille after the withdrawal of the Germans, when 60 per cent. of the children were found to be undersized and 40 per cent. tuberculous, was not so terrible as that of Vienna now, a city of 2½ million inhabitants, where one never sees a normal child in the streets, and where practically rickets and tuberculosis are wide-spread. This ghastly state of affairs is the direct result of malnutrition, and above all the absence of milk. In Germany, which is much better off than German-Austria, milk is only allowed for serious invalids and for children up to 6. In practice there is next to none for children over 3.

According to the Brussels paper, "Soir," Belgium is in sore need of dairy cattle and says the "Soir": "In demanding from Germany only 50,000 milch cows and 40,000 heifers we are showing extreme generosity. As a matter of fact, Germany stole from us 322,850 cows, which corresponds to an annual loss of considerably more than two hundred million gallons of milk, or nearly 35,000 tons of butter."

HOW PRICES HAVE RISEN.

How much our live-stock and agricultural produce prices have risen of late years is proved by an official document issued by the Board of Agriculture. Generally speaking, those commodities have increased on the average in selling value some 153 per cent. above the price of 1906-8. The highest increase was in beans and peas, which went up 403 per cent. Fruit rose 353 per

cent., and vegetables 218 per cent. Farm products showing the lowest increases were potatoes 116 per cent., wool 108, sheep 103, hay 120, and butter 119 per cent.

It is necessary to go back to 1818 to find a higher average price for wheat than in 1917, and to 1812 for a higher average for barley, while for oats there is no previous instance during the period for which the records are available, namely, since 1771, of an average so high as 49s. 10d. in 1917, and 49s. 4d. in 1918, the previous record being 44s. 6d. in 1912. The prices of store cattle were generally higher in 1918 than in 1917, the average for first quality two-year-old Shorthorns being £27 8s., as compared with £26.

I regret to say that we have got a bad outbreak of Foot and Mouth Disease in England—NOT in Scotland. There are four serious centres of disease, and they are so far apart that there is no suggestion that one had produced the others. The districts affected are the Isle of Wight, Warwickshire, Lincolnshire and Huntingdon and Cambridgeshire.

The whole staff of the Animal Diseases Division of the Board is hard at work, and all animals found to be suffering from the disease, as well as those which have been in immediate contact with diseased animals, are slaughtered. The seriousness of the situation lies in the fact that the four centres of disease are spread over so comparatively large an area, and the present position in regard to the food and milk supplies of the country renders it more than ever necessary that every possible step should be taken to prevent its spread.

In the epizootic of the "eighties," in which it was not the policy to slaughter for foot-and-mouth disease, it was estimated that the loss to the nation was about £10,000,000. The mortality from foot-and-mouth disease is very low, but the animals go right out of condition, and therein lies the seriousness of the position at the present time.

The Middlesex Registrar Controversy.

A considerable stir was created locally and through the press by the appointment of Miss Minnie V. Walker as Registrar of Middlesex County. Apparently the Provincial Government made the appointment without consulting the members from Middlesex or the United Farmers' Clubs in that County. Harold Currie, Director of the U. F. O., has made himself the spokesman for those in whom the fires of the old patronage system seemingly slumber still and has been the means of continuing the controversy which never should have been started. Miss Walker was given the position because she served in the office during the term of the late Registrar, and has been in charge since the death of her superior officer last spring. No one has questioned her qualifications for the position, and the Government considered only her merits and competency. There has been some discussion locally as to just what is meant by patronage, but in a letter to Mr. Currie the Premier said: "I can see no half-way stopping-place between filling appointments with the sole object of efficiency and slumping back to the old patronage system, which we all oppose so strongly."

"As I see the matter, the facts are as follows: Miss Walker, of whose political past I know nothing, has been filling the position as Deputy Registrar very acceptably for some months. It would appear that if we adopted simple business sense in making appointments that as a matter of promotion she should have the office. I have investigated as to her qualifications and it appears that no one can urge anything against her on the ground of her not being able to fill the office efficiently. Then, if we turn her down, it must be simply because she is not of our political group. If we did that it seems to me that we have fastened upon ourselves with all its evils, the old system of 'to the victor belongs the spoils.'"

Wheat Board Orders Advance in Wheat Price.

The Canada Wheat Board has ordered that the price of Manitoba wheat to mills in Canada be raised from \$2.30 to \$2.80 per bushel, in store at public terminal elevators Fort William or Port Arthur. This ruling became effective at midnight, December 27. The Chairman of the Board, James Stewart, has also announced that in connection with the above advancement in the price of wheat, and the consequent increase in the price of flour, permits will be issued for the importation of American products, which will allow some of the cheaper flours produced in the United States to enter Canada.

Number 1, Alberta Red, winter, and No. 1 Northern Manitoba is now set at \$2.80 per bushel, including 5 cents per bushel carrying charges. The various grades lower in standard range down to \$2.25½ per bushel, including 5 cents per bushel carrying charges, for No. 1 British Columbia wheat, in store Canadian Government elevator, Vancouver.

The second regulation, No. 77, says that the maximum wholesale price of flour from midnight, December 27, 1919, will be

A. Government standard spring wheat flour, \$13.15 per barrel, basis 98 pounds net, jute bags.
B. Government standard winter wheat flour, \$10.10 per barrel, basis 98 pounds net, jute bags.

Ontario wheat is not directly affected by this order, but it is thought that the increased price for the Western product will have its effect upon Ontario wheat. At time of writing millers are studying the recent order and are not in a position to state what they will be willing to do in regard to Ontario wheat purchased locally.

Toronto, Montreal, Buffalo, and Other Leading Markets
Week Ending December 25. Receipts and Market Tops.

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

Table with columns for CATTLE, CALVES, HOGS, and SHEEP, including sub-columns for Receipts and Top Price Good Steers/Calves/Lambs. Rows list cities like Toronto, Montreal, Winnipeg, Calgary, and Edmonton with weekly ending data for 1918 and 1919.

Market Comments.

Toronto (Union Stock Yards.)

The market was very quiet during the week and only eleven hundred cattle were on sale. Despite the light offerings the supply was ample for the requirements of the trade, as it was, in some cases, hard to find an outlet for the quality of the stock offered. In fact, in order to effect a clearance it often became necessary to make a sacrifice. Most of the cattle were handled locally, but a few loads were shipped to Buffalo, which outlet is proving very advantageous on account of the present high rate of exchange. A few head of cattle were purchased by a local firm for shipment to France, two head averaging fourteen hundred and sixty pounds being purchased for export at \$15 per hundred, which figure was the top of the market. A number of baby-beef cattle were on sale, and of these one heifer weighing six hundred and sixty pounds sold for \$14 per hundred. The best loads of handy-weight steers and heifers on the market sold from \$12 to \$12.25, the weights ranging from ten hundred to ten hundred and fifty pounds. Common and light stock had a slow call at \$6 to \$8 per hundred. The demand for cows and bulls was barely steady, good cows being sold from \$9.75 to \$10.50, good bulls from \$9.50 to \$10.50, common quality of both from \$6 to \$7.50, and canners and cutters from \$5.25 to \$6.25 per hundred. Stocker and feeder trading was steady at unchanged prices, good feeders being priced from \$10 to \$11, and good stockers from \$8.50 to \$9.50 per hundred. The calf trade was steady; a few choice veal calves sold at \$21 per hundred, most of the best calves from \$16 to \$18 and heavy calves from \$8 to \$11.

The lamb and sheep market was about steady. The average quality of the lambs offered was poor, most of the supply being heavy, coarse lambs that had gone back in fleshing after being taken off the grass; in most cases this stock should have been marketed at an earlier date. For really choice lambs, well covered over the loin, as high as \$18.25 per hundred was paid, but for rough sorts, prices ranged from \$16.50 to \$17.75 per hundred, and for culls from \$12 to \$14. The sheep trade was about steady, light sheep selling up to \$8.50 per hundred.

Only five thousand two hundred hogs were on sale, and trading was very firm. On Monday, sales were made at an advance of 25 cents to 50 cents, selects selling from \$17.25 to \$17.50 per hundred fed and watered. On Tuesday \$17.50 was the general price, while on Wednesday trading seemed very irregular, as high as \$18.50 being paid for one deck of fed and watered hogs, while other sales were made from \$17.75 to \$18.

Of the disposition from the Yards for the week ending December 18, Canadian packing houses purchased 291 calves, 4,462 butcher cattle, 20,554 hogs and 3,561 lambs. Local butchers purchased 250 calves, 500 butcher cattle, 440 hogs and 1,600 lambs. Canadian shipments were made up of 43 calves, 283 stockers, and 319 feeders. Shipments to United States points consisted of

Table with columns for TORONTO and MONTREAL (Pt. St. Charles) showing classification, No., Avg. Price, Price Range, and Top Price for various livestock categories like Steers, Heifers, Cows, Bulls, Canners & Cutters, Oxen, Calves, Stockers, Feeders, Hogs, Lambs, and Sheep.

338 calves, 22 canners and cutters, 1,088 butcher cattle, 155 stockers, 29 feeders and 461 lambs.

The total receipts from January 1 to December 18, inclusive were: 369,531 cattle, 65,600 calves, 38,168 hogs and 290,202 sheep; compared with 295,502 cattle, 54,144 calves, 352,286 hogs and 162,240 sheep, received during the corresponding period of 1918.

Montreal.

The market during the week cannot be construed as having much bearing on trend of trading. Drivers were notified the week previous that stock would not be wanted during the Holiday Season, as the plants would be practically closed for about half of each week, as a consequence offerings were very light. Prices followed those of the previous week, although there was a lower tendency to the market for common cattle, sales of which were in some cases from 25 cents to 50 cents per hundred lower compared with values during the previous week. One load of big framed fat steers which averaged about twelve hundred and fifty pounds was sold for \$13.50, two loads of fairly good cows from the Toronto market were sold for \$10, common steers were weighed up within a range of \$8 to \$10, thin cows sold around \$6 to \$6.50, canners in most cases

\$5.25, and bulls mostly at \$6. Grass calves changed hands generally from \$7 to \$7.50, and a few good heavy calves sold up to \$8; the best veal stock brought \$18.

Lambs sold generally at \$16.50, good light ewes from \$9.50 to \$11, and common sheep from \$8 to \$9.

Hogs were in good demand from local butchers, and as receipts were light prices advanced to \$18 per hundred, off cars. One sale was reported at \$17.50. All hogs except light feeders and sows were sold at a cut of \$4 per hundred.

Pt. St. CHARLES.—Of the disposition from the Yards for the week ending December 18, Canadian packing houses and local butchers purchased 394 calves, 1,910 butcher cattle, 1,301 hogs and 887 lambs. There were no shipments to United States points during the week.

The total receipts from January 1 to December 18, inclusive, were: 66,666 cattle, 71,260 calves, 83,963 hogs and 103,287 sheep; compared with 61,447 cattle, 62,788 calves, 76,285 hogs and 66,019 sheep, received during the corresponding period of 1918.

East End.—Of the disposition from the Yards for the week ending December 18, Canadian packing houses and local butchers purchased 372 calves, 1,677 butcher cattle, 738 hogs and 1,254 lambs.

Shipments to United States points consisted of 32 calves, 146 butcher cattle and 180 lambs.

The total receipts from January 1 to December 18, inclusive, were 73,585 cattle, 57,265 calves, 59,955 hogs and 73,297 sheep; compared with 63,724 cattle, 48,687 calves, 52,104 hogs and 61,855 sheep, received during the corresponding period of 1918.

Winnipeg.

Fifty-six hundred and ninety-seven cattle, two hundred and fifty-two calves, five hundred and sixty-four sheep, and forty-five hundred and seventy-five hogs made up the offerings for the week. In addition, there were five hundred and sixty-four cattle, and twenty hogs, on through-billing. These figures indicate a sharp decrease in supplies compared with the previous week's offerings. Trading was dull throughout the week and all grades and classes of cattle sold at weak prices. Very little demand was noticeable for stocker and feeder cattle and heavy and light butcher steers were hard to move. Female butcher stock of respectable quality was the only class and grade for which there existed any active inquiry. Heavy steers sold from \$9 to \$12 per hundred while good quality butcher steers within the weights of ten hundred to twelve hundred pounds

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Registrar

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changed hands from \$9 to \$10.50 and common grades of similar weights from \$6 to \$8. Light butcher steers, mostly common, were weighed up within a range of \$5 to \$6.50. Good butcher heifers changed hands from \$8 to \$10 fair heifers from \$6.50 to \$8, and common stock from \$5.50 to \$6. Good butcher cows sold up to \$9, and generally from \$8 to \$8.50. Good stocker steers and heifers changed hands from \$6.50 to \$7.50 and the majority, which were of from medium to common grading, from \$5.50 to \$6.25. Good quality feeders were weighed up from \$9.25 to \$9.75, and fair feeders from \$7 to \$8.

Buffalo.

Cattle.—Christmas week is invariably a bad week for the cattle trade at all live stock markets and last week was no exception to the rule. Very little stuff of any class was wanted and the result was that prices showed a decline generally from 25 cents to a dollar, the heaviest take-off being on shipping steers, which sold mostly a dollar lower, butchering cattle generally showing a price decline of generally 25 to 50 cents. Best shipping steers sold from \$13.75 to \$15, best Canadians—which were not of a very good kind—running from \$12 to \$12.75. Best handy steers sold on a range of from \$13 to \$14, with best handy butchering heifers running from \$10.50 to \$11 generally, some extra good higher. Market was weak on stockers and feeders, very little trading being done. Bulls showed a quarter decline and only the better grades of milk cows and springers found satisfactory sale, medium kinds going for slaughter, with backward springers being almost unsalable. Receipts for the week totaled 3,250 head, which included around forty-two cars of Canadians, as against 5,125 head for the previous week and as compared with 3,475 head for the corresponding week a year ago. Quotations:

Shipping Steers—Natives—Very choice heavy, \$16.50 to \$17; best heavy over 1,300, \$15.50 to \$16; fair, over 1,300, \$13 to \$14; best, 1,200 to 1,300, \$15 to \$15.50; good, 1,200 to 1,300, \$14 to \$15; good, 1,100 to 1,200, \$13.50 to \$14.50; plain, \$11.50 to \$12.

Shipping Steers—Canadians—Best heavy, \$14.25 to \$14.75; fair to good, \$13 to \$13.50; medium weight, \$12.50 to \$13; common and plain, \$11 to \$11.50.

Butchering Steers—Yearlings, fair to prime, \$14 to \$15.50; choice heavy, \$13.50 to \$15.50; best handy, \$13.25 to \$14; fair to good, \$11 to \$12.50; light and common, \$9 to \$10.

Cows and Heifers—Best heavy heifers, \$11 to \$11.50; good butcher heifers, \$10.50 to \$11; fair butchering heifers, \$9.25 to \$9.75; light, common, \$6 to \$7; very fancy fat cows, \$10.25 to \$10.75; best heavy fat cows, \$9.50 to \$10; medium to good, \$7.50 to \$9; cutters, \$6 to \$6.50; canners, good, \$5 to \$5.25.

Bulls—Best heavy, \$10.25 to \$10.50; good butchering, \$9.75 to \$10; sausage, \$7.25 to \$7.75; light bulls, \$6 to \$8.

Stockers and Feeders—Best feeders, \$9.75 to \$10.25; common to fair, \$8 to \$9 best stockers, \$8 to \$8.50; fair to good, \$7.75 to \$8.25; common, \$6 to \$7.

Hogs.—Liberal receipts resulted in a sharp decline in hog values the first half of last week. Monday, when prices were declined 75 cents from the previous week's close, all grades sold on a basis of \$14.25. Tuesday the better weight grades had to take \$13.90 with pigs selling at \$14 and Wednesday pigs again sold at \$14, while packers bought their kinds from \$13.75 to \$13.90. Friday the demand was strong and prices were up 25 to 40 cents. Better weight grades sold largely at \$14.15 and lights and pigs ranged from \$14.25 to \$14.50. Roughs ranged from \$12 to \$12.50 and stags \$11 down. Receipts for the past week totaled 39,800 head, as compared with 26,573 head for the week before, and 51,000 head for the same week a year ago.

Sheep and Lambs.—Lamb values last week struck the highest level since April. Monday the best natives sold at \$19.25, and top Canadian lambs, for which there was an indifferent demand, had to sell around \$18.25. Tuesday natives sold at \$18.75, Wednesday the best sold at \$19, one deck made \$19.10, with Canadians bringing up to \$18.50, and Friday top native lambs jumped to \$19.75, while best Canadians were quoted around \$19 and \$19.25. Cull lambs reached up to \$16.50, and top yearling wethers

was \$15. Choice wether sheep were ranged up to \$13 and best ewes brought from \$10 to \$10.50, with a few on the desirable order up to \$11. Receipts for last week were 18,300 head, being against 19,783 head for the week preceding and 13,600 head for the same week a year ago.

Calves.—On the opening day of last week top veals sold largely at \$21. Tuesday prices were a dollar lower and Wednesday the price list remained the same as Tuesday, top being \$20. Friday, under a keen demand, choice native veals reached up to \$22 and a few top Canadian veals made \$21. Under grades were little changed all week, grassy kinds being very unsatisfactory sale. Best desirable culls ranged from \$15 to \$16 and few on the grassy order could be placed above \$7. The past week's receipts were 3,150 head, as against 3,333 head for the week before and as against 1,750 head for the same week a year ago.

Toronto Produce.

Receipts of live stock at the Union Stock Yards, West Toronto, on Monday, December 29, numbered 71 cars, 863 cattle, 103 calves, 1,719 hogs, 714 sheep and lambs. Strong, active market; tops, \$15 per hundred for four steers averaging 1,240 pounds each. Tops for straight loads, \$13 per hundred for 19 head averaging 950 pounds each. Cows, bulls and calves strong. Sheep higher; top, \$10 to \$10.50. Lambs higher; choice, \$18 to \$18.50. Hogs, fed and watered, \$18 per hundred.

Breadstuffs and Feeds.

The new ruling of the Canada Wheat Board will have its effect on breadstuffs, and at time of writing this effect in its entirety is not known. Prices quoted are for last week.

Manitoba Wheat.—No. 1 northern, \$2.30; No. 2 northern, \$2.27; No. 3 northern, \$2.23, in store Fort William.

Manitoba Oats.—No. 2 C. W., 90 $\frac{1}{2}$ ¢; No. 3 C. W., 86 $\frac{1}{2}$ ¢; extra No. 1 feed, 87 $\frac{1}{2}$ ¢; No. 1 feed, 84 $\frac{1}{2}$ ¢; No. 2 feed, 80 $\frac{1}{2}$ ¢, in store Fort William.

Manitoba Barley.—No. 3 C. W., \$1.65; No. 4 C. W., \$1.60; rejected, \$1.27 $\frac{1}{2}$; feed, \$1.27 $\frac{1}{4}$, in store Fort William.

American Corn.—No. 2 yellow, \$1.82; No. 3 yellow, \$1.79, track Toronto, prompt shipments.

Ontario Oats.—No. 3 white, 95c. to 98c., according to freights outside.

Ontario Wheat.—No. 1 winter, per car lot, \$2 to \$2.01; No. 2, \$1.97 to \$2.03; No. 3, \$1.93 to \$1.99, f.o.b., shipping points, according to freights.

Ontario wheat.—No. 1 spring, \$2.02 to \$2.08; No. 2 spring, \$1.99 to \$2.05; No. 3 spring, \$1.95 to \$2.01, f.o.b. shipping points, according to freights.

Peas.—No. 2, \$2.75.

Barley.—Malting, \$1.60 to \$1.65, according to freights outside.

Buckwheat.—\$1.32 to \$1.35, according to freights outside.

Rye.—No. 3, \$1.60 to \$1.65, according to freights outside.

Manitoba Flour.—Government standard, \$11, Toronto.

Ontario Flour.—Government standard, \$9.30 to \$9.45 Montreal and Toronto, in jute bags. Prompt shipment.

Millfeed.—Car lots—Delivered Montreal freights, bags included—Bran, per ton, \$45; shorts, per ton, \$50; good feed flour, \$3.15.

Hay.—No. 1, per ton, \$27; mixed, per ton \$25, track, Toronto.

Straw.—Car lots, per ton, \$14.50 to \$15.50, track, Toronto.

Farm Produce at Country Points.

City wholesalers were paying at country points the following:

Butter.—Dairy, tubs and rolls, 43c. to 44c.; prints, 48c. to 50c.; Creamery, fresh-made solids, 60c. to 61c.; prints, 62c. to 63c.

Eggs.—Held, 52c. to 54c.; new-laid, 80c. to 85c.

Dressed Poultry.—Spring chickens, 26c. to 30c.; roosters, 25c.; fowl, 20c. to 25c.; geese, 28c. to 30c.; ducklings, 30c. to 32c.; turkeys, 50c. to 53c.; squabs, dozen, \$4.50.

Live Poultry.—Spring chickens, 19c. to 20c.; roosters, 20c.; fowl, 18c. to 22c.; geese, 22c.; ducklings, 22c.; turkeys, 37c. to 40c.

Wholesalers are selling to the retail trade at the following prices:

Cheese.—New, large, 31 $\frac{1}{2}$ ¢ to 33c.; twins, 32c. to 32 $\frac{1}{2}$ ¢; triplets, 33c. to 33 $\frac{1}{2}$ ¢; Stilton, 34c. to 35c.

Butter.—Fresh dairy, choice, 55c. to 58c.; creamery prints, 68c. to 70c.

Eggs.—No. 1, 60c. to 61c.; selects, 66c. to 67c.; new-laid, 90c. to 95c.

Dressed Poultry.—Spring chickens, 33c. to 38c.; roosters, 23c. to 25c.; fowl, 30c. to 32c.; turkeys, 58c. to 60c.; ducklings, 35c. to 38c.; geese, 35c. to 37c.; squabs, doz., \$6.

Live Poultry.—Spring chickens, 22c. to 26c.; fowls, 23c. to 25c.; ducks, 24c. to 27c.; geese, 22c.

Beans.—Canadian, hand-picked, bushel, \$5.25 to \$5.75; primes, \$4.25 to \$4.75; Japans, \$5.50 to \$5.75; Limas, 17 $\frac{1}{2}$ ¢ to 18 $\frac{1}{2}$ ¢.

Honey.—Extracted clover, 5-lb. tins, 27c. to 28c.; 10-lb. tins, 25c. to 26c.; 60-lb. tins, 25c.; buckwheat, 60-lb. tins, 18c. to 20c.; comb, 16-oz., \$6 to \$6.50 doz.; 10-oz., \$4.25 to \$4.50 doz.

Maple Products.—Syrup, per Imperial gal., \$4.25; per 5 Imperial gals., \$4; sugar lb., 29c. to 30c.

Seeds.—Following are the prices that wholesalers are paying for alsike at country points:

Alsike. No. 1 fancy, \$28 to \$29; No. 1, bush., \$26 to \$27; No. 2, bush., \$24 to \$25; No. 3, bush., \$22 to \$23; rejected, bush., \$12 to \$18.

Fruits—Wholesale.

Apples (Canadian).—11-qt. basket, 40c. to 70c.; barrels, No. 1's, \$7 to \$8.50; No. 2's, \$6 to \$7; No. 3's, \$5 to \$6. Ontario Spys (boxed), \$2.75 to \$3.50. B. C. boxes, \$3.50 to \$4.

Vegetables (Canadian).—Beets, bag, \$1.75 to \$2; cabbage, bbl., \$4 to \$5; carrots, bag, \$1.50; celery, doz., 60c. to \$1.50; Thedford, 8 doz. cte., \$6 to \$8; small case, \$5. Cucumbers, hot-house, doz., \$3.50 to \$3.75; lettuce, leaf, doz., 40c. to 50c.; onions, Ont., 75-lb. bag, \$5 to \$5.50; B. C., 100-lb. sacks, \$6.75 to \$7. Shallots, doz. bchs., 90c. to \$1. Peppers, doz., 75c. to \$1; parsley, doz., 75c.; parsnips, bag, \$1.75 to \$2; potatoes, bag, \$2.60 to \$2.75; tomatoes, hot-house, lb., 25c. to 45c.; turnips, bag, 90c. to \$1.

Hides and Wool.

Wholesalers were offering the following prices for supplies f.o.b. country points:

City Hides.—Butcher hides, green, flat, 25c.; calf skins, cured, 65c.; kip, 45c.; horsehides, city take-off, \$10 to \$11; lamb skins and shearlings, \$2.50 to \$3.50.

Country Hides.—Beef hides, flats, cured, 25c. to 30c.; green, 23c. to 25c.; calf skins, 50c. to 60c.; bob calf, \$3 to \$3.50; horse hides, country take-off, No. 1, \$8.50 to \$10; No. 2, \$8 to \$9; lamb skins and shearlings, \$2.25 to \$3; horse hair, farmers' stock, 35c. to 37c.

Tallow.—City rendered, solids in barrels, 13c. to 14c.; country, solid, in barrels, No. 1, 12c. to 13c.; cakes, No. 1, 15c. to 16c.

Wool.—Unwashed fleece, fine, 55c.; medium, 50c.; coarse, 42c.; washed wool, fine, 75c.; medium, 70c.; coarse, 65c.; washed rejected, 50c.

Montreal.

Horses.—The public which used to make Xmas presents of horses has ceased to do so and is doubtless making presents of automobiles instead. Hence, there was no Xmas trade in horses. Demand was light but prices showed no change of consequence. Heavy draft horses, weighing 1,500 to 1,600 lbs., were quoted at \$250 to \$300 each; light draft, weighing 1,400 to 1,500 lbs. each, \$200 to \$250; light horses, \$125 to \$175 each; culls, \$75 to \$100 each, and saddle and carriage horses, \$200 to \$250 each.

Dressed Hogs and Provisions.—The market for dressed hogs was steady in spite of the advance in the price of live hogs. Sales of country dressed light hogs were made at 23 $\frac{1}{2}$ ¢ to 24c. per lb., heavy weights selling at 22 $\frac{1}{2}$ ¢ to 23c., and city abattoir dressed stock selling at 25c. to 25 $\frac{1}{2}$ ¢ per lb. Dealers report a rather easier tone in the market for smoked meats and ordinary breakfast bacon was quoted as low as 38c. per lb. Windsor select bacon was selling at 40c. to 41c. per lb. and Windsor boneless at 43c. Hams were about steady, prices being 34c. to 35c. per lb. for light hams, 31c. to 32c. for medium weights, weighing 12 to 15 lbs., and 30c. to 31c. for heavies. Lard was in good demand and sold at 29c. to 30c. per lb. for pure leaf.

Poultry.—Retail prices of fancy turkeys ran as high as 60c. per lb. Xmas week. Wholesale prices were from 53c. to 54c. for choice, 1c. to 2c. per lb. less for good with common around 50c. Choice chickens were 33c. to 35c., good being 30c.

to 32c., and common 25c. to 29c.; geese were 32c. to 34c., and ducks 38c. to 42c. per lb.

Potatoes.—The quality of the offerings has been mostly on the poor side and a good many potatoes have been frozen of late. Car lots of white Quebec potatoes were quoted at \$2.25 per bag of 90 lbs., ex-track, while smaller lots sold at 25c. more, ex-store.

Honey and Maple Syrup.—Dealers report that they did very little trade at Xmas, there being almost no syrup. The price was reported at \$1.30 to \$1.50 per gallon-tin, with sugar at 30c. per lb. Pound sections of white clover comb honey was quoted at 25c., strained being 22c., in 30-lb. pails. Buckwheat strained was 18c. to 20c.

Eggs.—It seems almost impossible to get really fresh laid eggs. Retailers were selling so-called fresh at \$1.20 per dozen and many of them were pretty poor. Wholesalers are quoting them at \$1 to \$1.10, with selects at 65c., No. 1 at 57c. to 58c. and No. 2 at 53c. to 55c.

Butter.—The quality of the butter offered recently is unusually poor and prices were unusually high, being 67c. to 67 $\frac{1}{2}$ ¢ for grass creamery, finest; 2c. less for fine, with current receipts at 62c. to 63c. and dairies at 68c. to 60c.

Grain.—Canadian Western oats were quoted at \$1.05 to \$1.06 per bushel for No. 2; \$1.03 to \$1.04 per bushel for No. 3, and extra No. 1 feed; \$1.01 to \$1.02 for No. 1 feed; and 99c. to \$1 for No. 2 feed.

Flour.—No change took place in the market for flour during the week and Manitoba spring wheat flour was still quoted at \$11 per bbl. in jute bags, ex-track, for shipment to country points, Montreal freights, or to city bakers, with 10c. off for spot cash. Ontario flour seems almost unobtainable in the retail stores and prices were quoted at \$10.20 to \$10.40 per bbl., in cotton bags, in small lots, ex-store. White corn flour was steady at \$10 to \$10.10 with rye flour at \$8.50 per bbl., in jute, delivered to the trade.

Millfeed.—The market for millfeed was steady and firm all round. Bran was quoted at \$45.25 and shorts at \$52.25 per ton, including bags, ex-track, with 25c. off for spot cash. Pure barley meal was \$74 to \$76 per ton, in broken lots, mixed grain mouille being \$70 and dairy feed \$58 per ton.

Baled Hay.—Carlots of good No. 2 Timothy hay were quoted at \$24 to \$25 per ton, No. 3 being \$22 to \$23 and clover and clover mixed \$21 to \$21.50 per ton, ex-track.

Hides and Skins.—The market was quite a little easier and prices were down to 28c. per lb. for steer and cow hides and 22c. for bulls. Kips were 30c. and calf skins 70 cents per lb. Lambskins were \$3.50 each, and horse hides \$8 each.

Chicago.

Hogs.—Heavy, \$14; medium, \$13.85 to \$14; light, \$13.75 to \$13.95; light lights, \$13.40 to \$13.60; heavy packing sows, smooth, \$13 to \$13.50; packing sows, rough, \$12.25 to \$13; pigs, \$12.40 to \$13.50.

Cattle.—Compared with a week ago, beef steers, unevenly 25c. to \$1 higher. She-stock, 25c. to 50c. higher; bulls, 50c. higher; calves, 50c. to 75c. higher; feeder steers, steady to 25c. higher.

Victory Bonds.

Following were the values of Victory Bonds on the Toronto market, Saturday, December 27: Victory Bonds maturing 1922, 98 $\frac{1}{2}$ ¢ to 99 $\frac{1}{2}$ ¢; Victory Bonds maturing 1923, 98 $\frac{1}{4}$ ¢ to 99 $\frac{1}{4}$ ¢; Victory Bonds maturing 1927, 101¢; Victory Bonds maturing 1933, 102 $\frac{1}{2}$ ¢ to 103 $\frac{1}{2}$ ¢; Victory Bonds maturing 1937, 103 to 103 $\frac{1}{2}$ ¢.

Sale Dates.

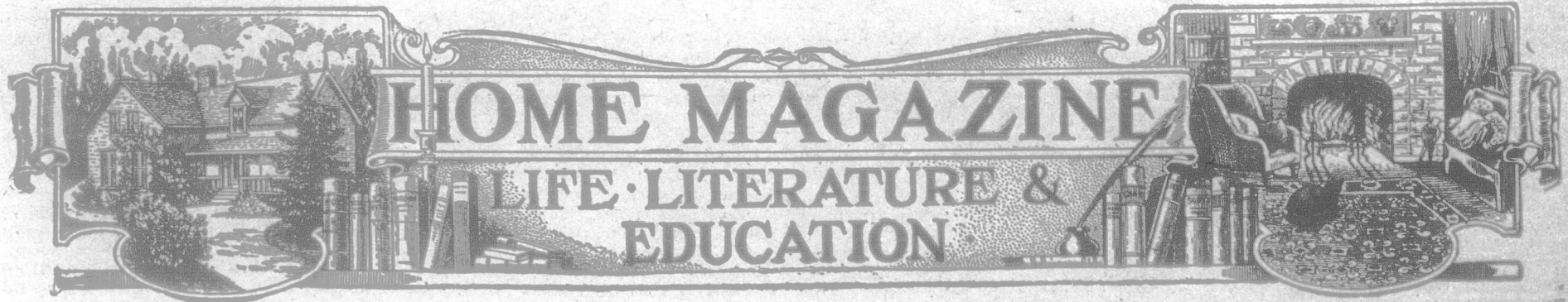
Jan. 8, 1920—North & South Bruce Shorthorn Breeders' Sale, Paisley, Ont. N. C. McKay, Walkerton, Ont., Sec'y.

Jan. 15, 1920—Ontario Duroc Jersey Breeders' Sale, Chatham, Ont. Jno. Noble, Essex, Sec'y.

Feb. 4, 1920—Miller & Dryden—Shorthorns.

Feb. 18, 1920—I. N. Howe, R. 2, Mossley, Ont.—Holsteins.

March 3, 1920—Guelph Fat Stock Club, Guelph, Ont. J. M. Duff, Sec'y.



The New Year.

A Flower unblown; a Book unread;
A Tree with fruit unharvested;
A Path untrod; a House whose rooms
Lock yet the heart's divine perfumes;
A Landscape whose wide border lies
In silent shade 'neath silent skies;
A wondrous Fountain yet unsealed;
A Casket with its gifts concealed—
This is the Year that for you waits,
Beyond To-morrow's mystic gates.
—H. N. POWERS.

Events of the Year.

THE year 1919 closes with fewer spectacular events in its record than the four preceding years. Unrest has been its outstanding characteristic. It closes with labor questions yet unsettled, peace with Germany not yet ratified by all nations, Central Europe and China dissatisfied with the clauses of the Treaty, the United States wrangling over Article X, Russia in the hands of the Bolsheviks, Japan and China at strained relationship, Fiume in possession of D'Annunzio, and the Sinn Feiners brewing trouble in Ireland; yet it may indeed prove that the year that has just closed shall have been but a melting pot out of which great settlements shall come.

Briefly, here is the retrospect:
January.—Elections in British Isles proved a sweeping triumph for Lloyd George, a snow-under for the Asquith Liberals, and the coming forward of the Labor Party as practically the only opposition. Sinn Feiners won 73 seats and Irish Nationalists only 7. On Jan. 21 Sinn Feiners met in Dublin for the first "Parliament" of the "Irish Republic".
The Paris Conference held its first formal sitting at Versailles on Jan. 18, and on Jan. 25 Pres. Wilson moved and Prem. Lloyd George seconded a motion favoring the adoption of a League of Nations, a committee being appointed to work out details. Peace Conference meeting with many problems. On Jan. 28 China put in an appeal for relinquishment of Kiao-Chau taken by the Japanese from Germany at beginning of war. Bolsheviks gaining in Russia. Fighting between Ebert's Moderates and Liebknecht's Reds in Berlin. Election in Prussia for the German National Assembly began Jan. 19, result a great victory for the Moderate Socialists. Liebknecht and Rosa Luxembourg killed in the streets. China began burning of opium stores in Shanghai, to amount of \$2,000,000 on first day. Towards end of month Kolchak met with some success in building up his Government at Omsk, Siberia. On Jan. 8th Theodore Roosevelt died at Oyster Bay, and on Jan. 4 former German Chancellor Count von Hertling, died in Berlin.

February.—Articles of the Constitution for League of Nations read by Pres. Wilson at a plenary session of the Peace Conference on Feb. 14 and unanimously subscribed to by delegates. Premier Ebert chosen as first President of the German Republic, and headquarters of Government temporarily fixed at Weimar.

March.—German delegates to the Peace Conference went to Weimar for consultation re proposed surrender of German merchant ships to Allies. Conference adopted some very progressive labor measures, including: an 8-hour working day with half holiday every Saturday; maternity insurance; women to have equal pay for equal work; unemployment insurance. Among the many problems of the Conference: the claims of many small nations for self-determination, some of which interfered with previous agreements among the powers; demarcation of boundaries; complication between Jugoslavs and Italy; claim of Jews to have disabilities removed in all countries.

During 2nd week of Feb. China, in the face of protest from Japan, laid on the table of the Conference certain secret treaties between the two countries, the Chinese claiming they had been forced to agree to concessions they were not willing to carry out. Peace Conference drew up measures for reduction of German fleet and army, and decided to give Poland the Valley of the Vistula including Dantzig. Japanese dissatisfied over Kiao Chau (including control of Shantung) and because they could not get the Asiatic exclusion laws lifted from the United States, Canada and Australia. In the United States Senators Lodge, Borah and others began an agitation against the League of Nations proposals, especially Art. X. In Canada, Grand Trunk Pacific Railway taken over by Government. Sir Wilfrid Laurier died in Ottawa, Feb. 17. Gen. Allenby arrived at Cairo with reinforcements to put down Arab uprisings. Hungary went over to the Bolsheviks and set up a Soviet Government, incited thereto by the dismemberment of the country through the action of the Conference in detaching Bohemia and other portions given to Czechs and Jugoslavs.

April.—Peace Conference Council of Ten subdivided and chief power given to the "Big Four", Lloyd George, Wilson, Clemenceau and Orlando. Japan offended because left out. Conference at a deadlock over Saar Valley, and finally arrangement made to give France output of mines for 15 years, the valley to remain under international control during that time, at end of which plebiscite to be taken by inhabitants; if they choose to go back to Germany latter must pay in gold for mines. Germany objected to Dantzig being given to Poland and it was settled that the city should be internationalized. Also a decision was reached at Conference re German pay-

ments to extend over 30 years, Germany required to pay \$2,800,000,000 for damage done during War. Lloyd George and Wilson standing for disarmament of all nations, but France objected. Lenin addressed a letter to the Conference asking for a fair trial of Bolshevism before the world and offering to suspend propaganda outside of Russia on condition that Allied troops are withdrawn from Russia. Canada to have a Dept. of Public Health at Ottawa. On April 11 a bill to provide for a referendum on the liquor question introduced into Ontario Legislature by Premier Hearst. Towards end of month Premier Orlando and Baron Sonnino left the Conference over the Dalmatian Coast question. By the last secret Pact of London, the islands along the shore had been given to Italy, but not Fiume, which all of the Big Four but Orlando held should go to Jugoslavs. Wilson standing firmly for open diplomacy and holding that secret pacts must come second. It was decided that no armies should be sent to Russia, but that Kolchak should be helped with munitions and supplies.

May.—Decided that affairs of League of Nations shall be entrusted to a Council of Nine, to meet as necessary at Geneva. Kiao-Chau difficulty thought to be settled, Germany to surrender her Shantung colony to Japan, Japan promising to transfer it back to China. On May 27th the reply of the Germans to the terms of the Peace Treaty was given at Versailles. Objected to severity, saying they concluded War on the basis of Wilson's 14 points, and that these had been changed to be practically different. Especially objected to loss of colonies. Fiume made a free city, Italy awarded Zara, Sebenica and a number of islands, and mandate over Albania. Atlantic conquered by airmen. Hawker and Grieve left Newfoundland on May 18 and were picked up by Danish steamer

800 miles from Ireland; U. S. Lieut. Com. Reid left Trespassey, Nfld. in the N C-4, arrived at the Azores, then went to Lisbon. On May 17 the big strike in Winnipeg began. On May 22 the Dominion House of Commons decided against hereditary titles, 'knight-hoods, etc., for Canadians.

June.—The German National Assembly at Weimar, by vote of 237 to 138 agreed to sign the Peace Treaty, and on June 28, in the Hall of Mirrors at Versailles, Herr Mueller and his associates placed their signatures to the Treaty. The Chinese delegates, on account of the Shantung settlement, absented themselves, and Gen. Smuts entered a written protest advising greater moderation, otherwise the event was marked by no special feature. On June 21 Admiral Reuter and his staff sank the German fleet interned at Scapa Flow. Allies recognized Kolchak's Government at Omsk and arranged to send munitions and supplies. Capt. Alcock and Lieut. Brown (Eng. airmen) crossed from St. John's to Clifden, Ire. in 16 hrs. 12 mins. Rioting in Winnipeg following arrest of strike leaders. Italian Government came to downfall.

July.—Downfall of Italian Government. Prof. Nitti became Premier. A new Council of Five assumed direction at Peace Conference.—Foreign Minister Balfour, Secretary Lansing, Foreign Minister Tittoni (It.), M. Pichon, and Baron Makino (Japan). On July 10 Pres. Wilson delivered Peace Treaty terms to U. S. Senate in open session, breaking all precedent. Big dirigible R 34 flew from East Fortune, near Edinburgh, to Mineola, N. Y., and back to Pelham, Norfolk, Eng., making return trip in 75 hours. Whole United States went "dry" on July 1st.

August.—British House of Commons Aug. 13, adopted amendment to profiteer



The snow had begun in the gloaming,
And busily all the night
Had been heaping field and highway
With a silence deep and white.

Every pine and fir and hemlock
Wore ermine too dear for an earl,
And the poorest twig on the elm tree
Was ridged inch deep with pearl.
—From *The First Snow Fall*, Lowell.

on 25c. to 29c.; geese
and ducks 38c. to 42c.

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smaller lots sold at 25c.

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Buckwheat strained

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ash. Pure barley meal
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Carlots of good No. 2
re quoted at \$24 to \$25
ng \$22 to \$23 and clover
\$21 to \$21.50 per ton,

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or steer and cow hides
s. Kips were 30c. and
ants per lb. Lambskins
and horse hides \$8 each.

Chicago.
\$14; medium, \$13.85
\$13.75 to \$13.95; light
\$13.60; heavy packing
13 to \$13.50; packing
.25 to \$13; pigs, \$12.40

le Dates.
—North & South Bruce
lers' Sale, Paisley, Ont.
Walkerton, Ont., Sec'y.
—Ontario Duroc Jersey
Chatham, Ont. Jno.
c'y.
—Miller & Dryden.—
D.—I. N. Howe, R. 2,
Holsteins.
20.—Guelph Fat Stock
Ont. J. M. Duff, Sec'y.

ing bill, empowering Board of Trade, after investigation, to fix wholesale and retail prices. On Aug. 8 Pres. Wilson gave suggestions before Congress to reduce exorbitant prices. Sec. of Canadian Board of Commerce stated co-operation established between Boards in Canada and United States for a campaign against profiteering. U. S. House of Representatives fixed on \$5,000, or 2 years imprisonment as punishment for profiteering. On Aug. 20 Pres. Wilson began tour of U. S. to explain and defend League of Nations. . . Shah of Persia signed agreement giving Great Britain protectorate over Persia. . . Regular air service established between London and Paris. . . Gen. Botha, Premier of South Africa, died at Pretoria, Aug. 28. . . Hon. Mackenzie King was elected Liberal leader for the Dominion. Prince of Wales arrived in Canada at first of month.

September.—British Government proclaimed suppression of Sinn Fein League and Irish Parliament. . . D'Annunzio took possession of Fiume. A compromise agreed to by the powers by which Jugoslavia would be principle gainer, Fiume to be a separate state and its harbor a free harbor, Italy to be given mandate over all Albania except the South which would come under control of Greece. . . Viscount Grey arrived at Washington as British Ambassador to the U. S. . . Capt. Bradley, Eng., aviator, flew over Alps.

October.—President Wilson's tour cut short by illness. Half a million miners in the U. S. went on strike. On Oct. 22 organized labor delegates withdrew from the National Industrial Conference at Washington, which had been in session since Oct. 6 trying to establish a relationship between Capital and Labor. . . Peace Conference decided to leave settlement of Fiume question to direct negotiations between Italy and Jugoslavs. In the meantime the National Council of Fiume decided that city and surrounding district shall be governed by a President and Cabinet. . . Belvin Maynard won in international air race from New York to San Francisco and back. . . Earl Curzon appointed Foreign Secretary of Great Britain in succession to A. J. Balfour. . . On Oct. 29 Sinn Fein Parliament met in Dublin in defiance of the Government's proclamation.

November.—United States Senate refused to adopt League of Nations without modification of Art. X, also refused to accept Shantung clause. . . An 8-year naval program of \$824,000,000 decided upon by Japanese Government. . . Kolchak forced to withdraw to Tomsk. . . Paderewski's Government in Poland defeated by Socialists and Peasants. . . Drury Cabinet sworn in at Toronto Nov. 14.

December.—An Afghan Embassy appeared at Moscow. . . Soft coal strike in U. S. ended Dec. 15, the men accepting 14 per cent. increase and Wilson's offer of investigation. Many Sinn Feiners including Thomas Kelly, M. P. arrested in Ireland. Pres. Wilson, in his message to Congress, asked for new tariff laws based on the nations changed relations to the rest of the world.

The Children's Story.

An Uncommercial Salesman.

The sign "Rabbits for Sale," tacked on a post of the run, seemed an answer to the vexing question of what I should give my little nephew for a birthday present. I stopped, and a small boy in a white and blue sailor suit got up from a box under the China tree, spilling a couple of rabbits from his lap, and came forward with a very business-like air.

"Do you want to buy a rabbit?" he asked and, without waiting for an answer, he added, "If you'll come around by the drive I'll let you in and you can see them better." He ran swiftly along by the fence, motioning me to keep up with him on the road.

He met me at the gate. Evidently he did not intend any customers to escape.

"Papa says I have too many rabbits," he explained as he escorted me between the rose hedges. "I'm going to sell some and get some skates. Or, maybe, if I sell enough, I can get a bicycle. Which would you get?"

"A bicycle," I said.

"But I would have to wait so long," objected the small boy.

"Why, no," I said cheerfully. "If they're nice I will take one, and I'll tell my friends about them."

The small boy smiled up at me. "That would be dandy," he said as he opened the gate. "I'll get a girl's wheel so Little Sister can ride too. Now, you pick out the one you want."

"I'll take the big black and white one," I said.

There was a pause before the small boy answered.

"That's Spotty," he said. "I think I had better keep him."

"Then I'll take that gray one."

There was a still longer pause.

"That's Molly," he said at last. "I—I don't want to sell Molly."

My eye fell on a couple of half-grown ones. Possibly, I thought, there had not been time for their master's affections to become twined about them, and I pointed them out.

"Those are the twins," said the small boy in a voice of woe. "I could not let the twins go."

"You pick out one," I suggested.

The little boy looked from one to another of his pets for a long time. A tear gathered on his eyelashes. It rolled down his cheek.

"I believe," I said, "that I don't want to buy any rabbits."

The small boy beamed on me. "All right," he said with great relief. "You can come and play with them any time," he offered.

As I looked back from the corner he was tearing down the sign.

NELLIE S. COWLEY.



After Christmas.

Photo by Boyd.

The U.F.W.O. Convention Toronto.

NOTHING if not practical was the Convention of the U.F.W.O. which met in the Forester's Hall, Toronto, Dec. 17 and 18, with the President, Mrs. Brodie, Newmarket, in the Chair. About 100 ladies were present, a decided advance from the first meeting a year ago, when 30 were registered. At that time the Association was in its infancy, with 3 clubs to its credit; to-day there are 50 clubs, ranging from Manitoulin to Gengarry, and Essex to Bruce, with Oxford and Grey the banner counties, so far, in number of organizations.

At the 1918 meeting the following planks, to show the aims of the new organization, were drawn up and adopted:

1. Improvement of rural homes and schools.
2. Removal of the disqualifications of women as rural school trustees.
3. Special attention to the Educational system.
4. To ascertain the views of the members of the Provincial Legislature on questions directly affecting farm women.
5. Appointment of county police matrons.
6. That labor-saving devices for the home be placed on the free list.

These were read from the minutes of that meeting by the Secretary, Miss Griesback of Collingwood.

That the aims and possibilities of the organizations have been greatly extended during the year may be judged from the Reports of the Resolutions and Platform Committees submitted at the close of the recent Convention.

The Platform Committee's Report, read by Mrs. Glenn, Perth Co., embodied the following planks:

1. That the U. F. W. O. endorse unreservedly the platform of the U. F. O. embodying absolute equality of the sexes, politically, socially, and economically.
2. To interest all farm women in the organization.

3. To educate the farm women as to her personal responsibility as a citizen of Canada and the Empire.

4. To co-operate with all organizations of similar aims. The Platform Committee consisted of Mrs. Glenn, Perth; Mrs. H. Wilson, Halton; Mrs. Laws, Haldimand; Mrs. Matthews, Dufferin; and Mrs. Terry, Northumberland.

The Resolutions Committee consisted of: Mrs. M. R. Baker, Grey; Mrs. Harold Currie, Middlesex; Mrs. D. C. McKinnon, Bruce; Mrs. Webster, Simcoe; Mrs. Annis, Oxford; and the Resolutions which they drew up and which were subsequently adopted covered:

1. That such change be made in the law as will permit anyone domiciled in Canada to become a naturalized citizen on personal request for the same. (b) That the laws be amended regarding women's status in regard to the muni-

In regard to the former the President, Mrs. Brodie, said, "I see a vision in the near future of the Consolidated School with a resident teacher." This, it was thought, would remove practically all of the disadvantages of the present rural school system. The subject of having women on School Boards also proved most "alive"; the Secretary, Miss Griesback, was of the opinion that our rural schools would be very different if women were on the School Boards and even made them up entirely. Incidentally the President remarked that the Minister of Education intends putting on a program throwing more responsibility on parents, trustees, and the Community in general in regard to school affairs.

Considerable time was devoted to consideration of what to do with young people of the "teen age," a series of three minute speeches giving opportunity to many to express an opinion. Mrs. Foote thought staying on the farm must be made worth while from a financial standpoint if the young people are to be kept in the country. Mrs. MacKinnon, Bruce, emphasized the necessity of making the farm homes pleasant and getting the young people to help themselves by doing things. Mrs. Amos, Oxford, thought educational recreation very important. Homes must be provided with good literature, music, pictures, etc., but not until agriculture gives sufficient returns for labor and capital invested can these things be obtained. Parents must not make farm work a drudgery but an opportunity for dignified service. The young people are Canada's greatest asset; they must be trained for leadership, and they will stay on the farms when they find they have a big place in a big country to fill. Mrs. Hutchinson, Oxford, held modern appliances help greatly to make farm life attractive. Give the child a little calf or pig to rear, she said, so he will have pin-money. Make the home attractive and artistic in a simple way. Create an atmosphere of refinement. Get up a Literary Society for the winter, and a Golf or Tennis Club in the summer.

Miss Jean Kemp, Grey, thought it is no wonder young people do not stay on the farm when there is too much hard work, little spending money, lack of recreation, literature, music, etc. The one thing to check the trouble is raising the standard of farm life, and the only thing that will raise it is organization of the farm folk and better education of the young people, including scientific education in regard to agriculture. When the boy can speak good English and talk about agriculture in a clever way he will respect his profession. . . Mrs. Buckingham, Simcoe, stressed high ideals and making constant companions of one's children, getting them to help with everything. In passing, she objected to immodest clothing for girls; waists are too thin and too low. . . Several other spoke emphasizing or elaborating upon these and other ideas. In general it was advocated that something definite should be done to keep the young people progressive, interested, and so glad to stay on the farms.

In introducing the program for the afternoon session, Dec. 17th, the President emphasized the necessity that the farm women work in conjunction with the farm men to accomplish things for the rural districts. Through the ballot laws may be made and changed. As long as we refuse to accept responsibility we will get nowhere. We have allowed the newspapers to caricature the farmers; it is up to us to maintain and raise the dignity of our position.

An incident of the afternoon was the presentation, by Mrs. English, of St. Catharines, of greetings from the Women's Branch of the Independent Labor Party. She dwelt upon the unity of aims of the I. L. P. and U.F.W.O.—to promote the political, social and other advancement of those who live by labor, either manual or mental. Enemies, she said will try to divide the two parties by scattering falsehoods; the I. L. P. will be represented to the farmers as Bolsheviks, the farmers to the labor party as responsible for the high cost of living; but these must not be listened to. The demand of the laborites for the 8-hour day had really originated to give more men more work—two shifts instead of one—an explanation she thought necessary to gain farmers' sympathy.

During the discussions the economic

former the President. "I see a vision in the Consolidated School teacher." This, it was remove practically all of the present rural. The subject of having Boards also proved Secretary, Miss Griesbach opinion that our rural very different if women Boards and even made. Incidentally the President the Minister of putting on a program responsibility on parents, Community in general affairs.

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conditions of farm-folk was given considerable attention. Mrs. H. Wilson said the farmer really does not receive enough for his labor to instal modern water-system, bath, electricity etc. Nor have they time to enjoy themselves. "Pay the farmers as others are paid," she concluded, "and all these things will be added to them."

Mrs. Annis, of Woodville, spoke on "What is the Height of Farm Women's Aspirations." She began by comparing the aims and conditions of 50 years ago with those of to-day. We have come to a new era, but many farm women, she thought, are still in a comatose state. We should mobilize for reconstruction, and seek to release our country from profiteers and bankruptcy. The mother in the home must not think she is living in obscurity, but aspire to the greatest height of citizenship in the nation. The average farm woman has not appliances enough to help her, even when there is a placard on the gate, "We use a Fairbanks-Morse engine here." The farm woman should aim at more of such help and more time for mental development. Mrs. Annis thought community laundries and kitchens an idea worth attention. Also that the farm women should become informed on questions of Tariff, Taxation and Transportation, all of which affect the home. They should pay attention to the laws of our land, especially those concerning child welfare, laws that concern women, etc., and should look into the criminal code and conditions concerning cigarettes, liquor and tobacco.

The educational question is important, also property rights of possession, for women, democratic reforms (even to the abolishing of the Senate, Governor-General and Lieutenant-Governor, the navy, patronage system, and orders-in-council), proportional representations, the referendum and recall, and opening Parliament to women on the same terms as to men.

Miss Ada B. Currie, Guelph, gave a heart-felt address on the need of caring for neglected children, and giving affection and loving guidance to the little ones in the Shelters. She expressed great confidence in the work of Mr. J. J. Kelso, Toronto, and made a strong plea for regular financial aid to the shelters. "This work is constructive," she said, "It prevents crime and idleness." There should be trained workers in every Shelter, and the places should be made homelike. An idea worth attention was that 5 or 6 small farms, be established on which the children might work.

Mrs. F. Webster, Creemore, spoke on "Dying Organizations." "To keep life in an organization," she said, "is the test of real statesmanship." Many organizations had passed out, including the I. O. G. T. At present, speaking for her own vicinity, the Women's Institute domestic topics are worn threadbare. She thought, however, that there is plenty of work for every organization, in building up economic advancement, community laundries and kitchens—for which better economic conditions and better roads must pave the way—and many other things. Her opinion was that the greatest thing at present is to get electricity on the farms, and she spoke of new inventions which will cheapen the cost of telephone and hydro. The foundation for all, however, is making farming pay.

Mrs. Wilson spoke on character-building. Character depends greatly on habits. Thought is the force underlying all. Every conscious act is preceded by a thought. We have all this greatly under our own control. Mrs. Wilson thought the young mothers do more towards building character than anyone else, and put in a "plea for the unborn child"—parental influence. In conclusion she told of a mother whose fretfulness became manifest in a fretful, troublesome child, but whose children, after she understood parental influence, were very different. "As you want your child to be, be yourself." Keep connection with the Divine open, and so keep better fitted for the strenuous life, better fitted for eternity..

(To be continued.)

"Those women have been setting there for an hour or more."

"You shouldn't say 'setting,' my dear. It is 'sitting.'"

"No, 'setting' is what I meant. I think they're detaching out trouble for somebody."—Detroit Free Press.

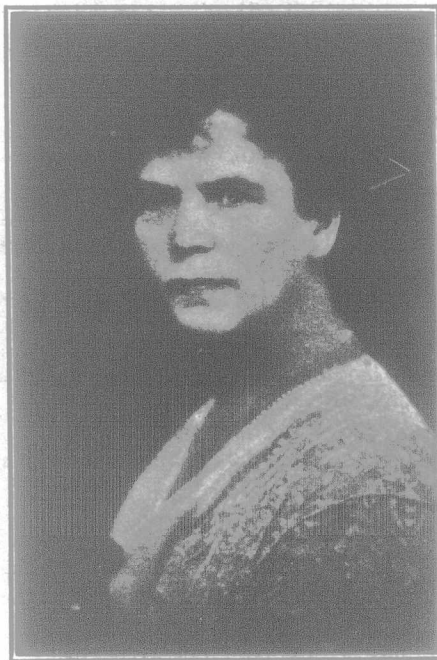
Hope's Quiet Hour.

The Court of King Jesus.

Pilate therefore said unto Him, art Thou a king then? Jesus answered, Thou sayest it, because I am a king.—St. John XVIII, 37. (R. V. margin).

Ye call me Master and Lord; and ye say well; for so I am.—St. John XIII, 13. Jesus, Master, King of Glory, Still to Thee we turn for life; Conqu'ror when the battle's sorest, O sustain us in the strife. Canon Knox Little.

Each of the four evangelists records the strange question of Pilate and the calm answer of his Prisoner. But in the first three Gospels the question seems to



Only Woman School Inspector in Ontario.

Miss A. E. Marty, M. A., LL. D., a graduate of Queen's University, Kingston.



Executive Council of the U. F. W. O.

From left to right they are: Mrs. Henry Wilson, Georgetown; Mrs. J. Foote, Collingwood; Mrs. G. A. Broad (Pres.), Newmarket; Miss Emma Griesbach (Sec.-Treas.), Collingwood; Mrs. H. L. Laws, Cayuga.

refer only to His royal station among His own countrymen: "Art Thou the King of the Jews?" and the answer recorded is simply: "Thou sayest it." St. John tells us how his Master claimed to be Ruler of a kingdom greater than any world-empire. Untroubled by the road of agony and death that led to His royal state, He accepted the Cross as a means of drawing all men unto Him. Pilate's question may have expressed puzzled wonderment or mocking scorn, yet we may be thankful that he asked it; for it brought forth the clear declaration of Royalty from Him Who is "The Truth." And St. John

afterwards saw the crucified One as a Conqueror, leading the armies of heaven, and on His vesture and on His thigh a name written: "KING OF KINGS."

An ancient writer spoke of "The Court of King Jesus," and the very title is suggestive. It reminds us that we must come with reverent humility into the presence of our King. St. John, His Kinsman and friend, saw the Son of Man in His glory and "fell at His feet as dead." No longer did he dare to lean familiarly on the breast of his Lord. He was overwhelmed, as the prophet Daniel had been many years before by the same great vision of the Man clothed in linen. Daniel could face earthly kings fearlessly; but in the presence of this King he fell on his face, and afterward, "stood trembling."

We love to sing hymns expressing our love for our Saviour and Friend, but we must never allow love to lead us into irreverent familiarity. Even before the heavenly glory was resumed, while Jesus was a Man in the circle of His closest earthly friends, He warned them of the difference that lay between them: "Ye call Me Master and Lord," He said with great dignity, "and ye say well; for so I am." Yet He had just before amazed them by washing their hot and dusty feet!

After the Resurrection, when those officers of His army tried to find out their Captain's plans, they were told that they—like the privates—must accept their daily orders unquestioningly. "It is not for you to know."—Acts I, 7—was all the answer their question received.

All who are weary and heavy-laden are invited to bring their burdens to Him Who loves to the uttermost, and who has all power in heaven and earth. He wants to help, and He is able to help. If we put our case into His hands He will deal with it in infinite wisdom and with un-failing care. If a sick person consults a specialist his orders are obeyed unquestioningly. The patient does not tell the doctor what treatment and medicines are necessary. It is a matter of course that the specialist knows more about that particular disease than the person consulting him. If you have no faith in the doctor why did you ask him to help you? It is the same way if you seek the help of a lawyer or a plumber, or anyone who

to do. We forget that the petition: "Thy Will be done," is in the heart of the great prayer—clasping hands with all the other petitions—and we venture to add: "Thy will be done!" to every request we make. While we say with our lips:

"I wish to have no wishes left But to leave all to Thee!"

our secret hearts are whispering rebelliously:

"And yet I wish that Thou shouldst will The things I wish to be."

And so—when God, in loving wisdom, refuses to give what we have asked, or allows us to wait a long time for the fulfilment of our heart's desire—we lose faith in prayer and absent ourselves day after day from the court of our King. We say that we used to have faith and now we have none. In such a case it is very evident that the faith we used to have was not faith in God, was not confidence in His wisdom, but was only faith in our own wisdom. If we really had faith in Him we should be satisfied if His answer to our prayer was, "Wait!" or even, "No!" If we are sure we know best it is only mockery to ask Him for help.

Many years ago the Israelites demanded flesh to eat. They despised the food which God gave them each day, and murmured against His providence. He saw fit to teach them a stern lesson—the danger of wilful prayer. They were given exactly what they wanted. I suppose they delightedly said that God had answered their prayers, and determined to trust Him in the future, when "He rained flesh also upon them as dust, and feathered fowls like as the sand of the sea; and He let it fall in the midst of their camp." But they soon learned the folly of telling God what was best for them. In that hot climate over-indulgence in meat soon resulted in a plague, which struck down their healthiest men—who recklessly indulged their appetites. Then they discovered that God's provision for their needs had been the best possible. If they had really trusted in Him all would have been well with them.

When we enter the Court of King Jesus let us offer worth-while petitions. With our eyes on Him, and with His great prayers ringing in our ears, we grow ashamed of our trifling and selfish requests. Listen to the King as He draws near to a terrible death. Reaching out, in amazing self-forgetfulness, He draws into His embrace the friends around Him and pleads that they may be kept undefiled in the midst of an evil world. And then He gathers into His arms all believers in every age, and holds them up to the Father; pleading that they may be united in a glorious bond of love—united to God and to each other. Let us link our desires with His. In this day of earnest purpose, when those who are trying to follow Christ are clasping hands and ignoring their differing opinions in a great "Forward Movement," let us forget our petty needs in the need of the world. If we are too busy to spend much time in the Court of the King, let us make the best use of the time. We must lay our private requests before Him, of course, asking Him to deal with them as He sees to be best; but our progress—like His—should not be narrow and selfish, but should embrace the world and help to uplift it. Instead of mournfully talking about the wickedness of our times, let us carry the burden of the world's sin—not forgetting our own share of the guilt—to Him Who came to save sinners and died for the sins of the whole world.

He who has said: "Yet have I set My King upon My holy hill of Zion," said also: "Ask of Me, and I shall give Thee the heathen for Thine inheritance, and the uttermost parts of the earth for Thy possession." That is His great prayer. Is the same mind in us? Is that also our heart's desire?

"For their sakes I sanctify myself," said the King; let us keep our hearts undefiled so that we may help forward His Kingdom:

"Each soul that strips it of one evil thing Lifts all the world towards God's good purposing."

DORA FARNCOMB.

For the Sick and Needy.

Christmas gifts "for the needy" have come this week from three of our readers.

M. H., Ravenna, Ont., sent \$5.00; "Mayflower" (for kiddies or aged people) \$2.00, and N. L. J. ("Constant Reader of Quiet Hour") sent \$1.00. Many parcels of papers for the "shut-in" have also reached me. As the hospitals are shut to visitors at present, the papers are piling up—though I have sent some by post to parties in the hospital. This is a busy season, but I will try to pass on your gifts in good time for Christmas.

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.

The Cook as a Public Health Factor.

DEAR Ingle Nook Friends.—Last day I mentioned the very strong realization that came to me during Dr. Crane's lectures of the great part that food plays in the "good" health, or otherwise, of us all. You may have noticed yourself that one of the first things the doctor does, in case of illness, is to give instructions in regard to diet. If, then, the kind of food plays such a vast part in the recovery of an ill person, does it not stand to reason that, to some extent at least, it must bear a part in keeping a well person well, or making him more or less ill if it prove to be the wrong kind of food for his especial needs? After all, we are but animals—at least the animal part of us forms the whole medium through which the mental part of us must work. We know that a little pig or calf if not fed properly, becomes weak and "runty" if it survives; similarly a little child that is not properly fed is likely to develop rickets, or some other distressful thing, if it chances to survive. We know, too, that a pig or calf that does not get a good start, never becomes the fine, straight-backed, well-proportioned animal it might otherwise have become: the very same thing is true of human beings.

Is it not easy to see, then, the very important part, not only in the life of the individual child, but in the welfare of the whole nation, that is taken—whether she realizes her responsibility or not—by the woman who works "over the cookstove"? If she knows her business, understands food-values, and how to prepare the raw material so that those food-values shall not be lost but shall be made the most of, she is likely to turn out from her home fine, well-set-up, healthy boys and girls, and men and women who are ready for and capable of taking their full share in the world's work. If she does not understand her business, and either stints and starves, or, on the other hand, clogs digestion by over-rich cookery and ill-balanced menus, she is just as likely to send forth weak, disease-susceptible, or else dyspeptic and grouchy mortals, who die an early death or else go through life contributing much less than their quota in the field of human endeavor and accomplishment.

Indeed, looking into every nook and corner of the question, is it too much to expect that the thoroughly wide-awake and capable woman shall, in the near future, require herself to know, not only how to feed and care for the babies so that they shall be healthy and grow on without "hitch," not only how to prepare attractive and nutritious meals for her family, but also that she shall be so well-informed that she shall know something of what should be done towards change of diet at the first symptom of ailment? Always she should be intelligent enough to insist on finding out from the physician the exact foods necessary, and well enough trained to know how to cook them properly.—Take, for instance, a case in which a member of the family has contracted diabetes. Is it too much to expect that the woman who prepares the food shall understand the danger of giving too much starch to that especial member, and that she shall understand the foods that are listed as starchy? Is it not vastly to her credit if she fully understands the danger, knows the substitute foods in such a case, and is willing to take the trouble to prepare

attractive dishes of them to suit the especial case of the one in need of such care?—Please put especial emphasis on that word "attractive." One of the points touched upon by our lecturer was the "psychic" influence of attractive serving. Not only are we tempted to eat more by attractive food, nicely seasoned and prettily served: the digestive fluids actually respond to such stimulus. "Making one's mouth water" is not only a fact but a help to digestion, because the stomach waters too. In other words, attractive serving is one of the best aids to digestion.

It may be interesting here to note that every stomach contains hydrochloric acid, varying in amount from 0.2 to 0.5 per cent. This acid performs several useful functions. It helps digestion, stimulates peristalsis (the involuntary movement, or "churning" of the stomach) and is also an antiseptic killing germs, for example, typhoid and tuberculosis. However, at times, there is altogether too much of it in the stomach and in the body. Protein foods produce this acid, hence the more meat you eat the more hydrochloric acid you form. Too much acid may cause such diseases as hyperchlorhydria, or "heart-burn," hence the advisability in such cases of being very moderate in eating meat and other protein foods.

Fruit, on the other hand, although apparently "acid," turns to alkali in the body, and alkali, as you know, neutralizes acid; hence the usefulness of the free use of fruit for the great majority of people. . . . Water, it is now said, causes the stomach to secrete more hydrochloric acid, enabling more food to be digested; hence the practice of drinking much water (tea, of course, is water) at meals tends to make thin people fat and fat people fatter. So drink and grow fat.

In large doses soda neutralizes acid, hence the practice, in cases of very sour stomach, of giving half a teaspoonful to a teaspoonful of soda at a dose. . . . As remarked in a previous article, fats decrease the amount of hydrochloric acid in the stomach, hence the use of olive oil in case of irritated or ulcerous stomach.

Now, after this little digression, let us come back to the woman in the kitchen and in the home.

Our lecturer gave us many points in regard to the feeding of children, but, merely pausing to remark how imperative it is that every mother should know, not only how to feed the child from the beginning, but also that she should be quick to recognize when it is not thriving and ready to consult a doctor about it at once, we shall here pass over those points. Instruction has been given, and will be given further in these papers.

In regard to this part of the subject I shall pause to touch upon but two or three of the many points dealt with by our lecturer.

1. That he spoke highly of Dr. Emmett Holt's book on the "Feeding of Children," which some of you who are mothers already may own. 2. That teething must not be blamed for convulsions in babies, as they may occur at any time in an unhealthy child, especially in cases of rickets. 3. That excessive fat in a baby is not a good "sign." The fat is largely water, and the too-fat baby can't stand infections as well as the more normal one. Mothers, indeed, should be trained not to make babies extra large by "stuffing" them. 4. That it is never safe to let children of any age drink raw cow's milk. Cows that look perfectly well very often react to the tuberculin test, and the result of feeding their milk to children may result in enlarged glands, hip disease or other tuberculous trouble. Indeed the most up-to-date science recommends pasteurized milk for everyone. It used to be thought that the boiling killed the life-helping vitamins, but, after much experiment, this is not now asserted so confidently. If, however, there is any doubt on the subject, the remedy is, not to go back to raw milk, but to supply other foods rich in vitamins, in addition to the cooked milk. Among these orange juice is especially recommended for a baby. In general, for older folk, ripe fruits of all kinds are recommended, also raw vegetables. It used to be thought that cabbage and turnips were among the least desirable, because of this lack of starchy nutriment; it is now known that they are especially rich in vitamins, hence worthy of a place of honor on any table.

This brings us directly to the feeding of older children and adults, but, as our space has been already consumed, discussion of this very important subject must be left over for the present.

By the way, I want to forestall the usual questions about the new books that come to me about this time of the year. If you want to keep in touch with them subscribe for "The World of Books," a little magazine edited by Donald G. French, 23 Toronto St., Toronto. It is only 50 cents a year, prepaid; it comes every month and cannot fail to be very valuable to anyone who is helping to build up a home or community library.

A Happy New Year to you all.

JUNIA.

Worth Thinking Over.

"We should think of the world, not in terms of national life, but of humanity."—Canon G. F. Scott.

"Power and responsibility naturally go together. Power that is not balanced by a sense of responsibility is dangerous both to the possessor and to others."—L. W. Rogers.

Mid-Winter Cookery.

Celery Soup.—Nice for supper. Use the roots and tops of celery. Simmer with 1 pint water, a slice of onion, salt and pepper to taste, till all is a pulp. Strain and add a pint or more of rich milk; thicken slightly with flour, letting boil until the flour is thoroughly cooked. When serving add a little whipped cream to each plateful if you wish. Serve with toast or hot biscuit.

Chicken Patties.—Press good pie crust into ordinary gem-pans and bake. Fill with chopped cooked chicken, cover with cream sauce nicely seasoned, and set in the oven for a moment to become very hot.

Stuffed Onions.—Slightly cook, until just tender, some large onions. Scoop out the centers and fill with a good bread-crumbs stuffing. Brown in the oven and serve with fowl or meat. The scooped-out onion may be saved and mixed with a white sauce or with gravy for next day's dinner.

Spiced Apples.—Choose large, rather hard apples. Peel and quarter them; make a thick syrup of 1 pint cider vinegar and a heaping cup of sugar boiled down with a tablespoonful of whole spices. Put in the apple quarters and cook until tender, but remove before they break.

Drop Sponge Cakes.—Two eggs, $\frac{1}{2}$ cup sugar, $\frac{1}{2}$ cup flour, $\frac{1}{4}$ teaspoonful baking-powder, $\frac{1}{4}$ teaspoon grated lemon rind. Beat yolks of egg until thick, add sugar and lemon rind. Sift flour and baking-powder three times, add to first mixture, fold in the stiffly-beaten whites of the eggs. Drop a spoonful in each muffin ring and bake quickly.

Rye Bread.—One pint of boiling water, and $\frac{1}{4}$ teaspoonful of salt, 2 tablespoonfuls of sugar, 1 tablespoonful of fat, 1 yeast-cake and 3 cupfuls of rye flour. Add sugar, salt and fat to boiling water cool until tepid, and add yeast softened in a little warm water. Beat in the rye flour, then add enough rye flour to make soft dough. Let rise until double in size, knead again with little white flour until all bubbles are out of dough. Place in greased bread-tins, bake in moderate oven about 45 minutes.

Home-Made Sausage.

To every 14 lbs. lean and fat pork chopped very fine, mix together $\frac{1}{4}$ lb. salt, $1\frac{1}{2}$ oz. best black pepper, $\frac{1}{4}$ teaspoonful cayenne pepper, and as much powdered dried sage as liked. Work thoroughly through the meat. The meat may be put in crocks, packed in muslin bags dipped in melted lard, or in skins, for winter use. If put in crocks cover with 2 or 3 inches of boiling lard. If put in skins proceed as follows: Empty the intestines of the pig, turn inside out and wash well. Soak in salt water a day or more, wash again, cut in convenient lengths, and scrape on a board with a blunt knife, first on one side, then on the other until clean and clear. Rinse, tie up one end of each length, put a quill in the other end and blow up. If clear they are clean, but if there are thick spots scrape them off. Throw in clean salt water until used. Sprinkle the meat

lightly with water, work through it and stuff the skins. Tie in links as you go by pressing away the meat and crossing one skin around the other.

Sausage for summer use should be canned as follows. Make into small cakes and cook about two-thirds enough for use or until the water is out. Pack sizzling hot into sterilized jars, fill with boiling lard and seal at once. When used pour off the fat as soon as melted, and finish cooking.

Some mix beef and pork for making sausage.

The following recipe for sausage seasoning, with the sage left out, is given in *Scientific American*: Cayenne pepper, 1 oz.; cumin, 1 oz.; cassia, 1 oz.; nutmeg, 2 oz.; pigments, 6 oz.; black pepper, 6 oz.; salt, 8 oz.; mix.

Serial Story

"His Family."

BY ERNEST POOLE.

(Serial rights reserved by the Farmer's Advocate and Home Magazine.)

CHAPTER XIV.

A few hours later Roger awakened. His lower berth was still pitch dark. The train had stopped, and he had been aroused by a voice outside his window. Rough and slow and nasal, the leisurely drawl of a mountaineer, it came like balm to Roger's ears. He raised the curtain and looked out. A train hand with a lantern was listening to a dairy man, a tall young giant in top boots. High overhead loomed a shadowy mountain and over its rim came the glow of the dawn. With a violent lurch the train moved on. And Roger, lying back on his pillow, looked up at the misty mountain sides all mottled in the strange blue light with patches of firs and birches and spines. In the narrow valley up which the train was thundering, were small herds of grazing cattle, a lonely farmhouse here and there. From one a light was twinkling. And the city with its heat and noise, its nervous throb, its bedlam nights, all dropped like a fever from his soul.

Now, close by the railroad track, through a shallow rocky gorge a small river roared and foamed. Its cool breath came up to his nostrils and gratefully he breathed it in. For this was the Gale River, named after one of his forefathers, and in his mind's eye he followed the stream back up its course to the little station where he and Deborah were to get off. There the narrowing river bed turned and wound up through a cleft in the hills to the homestead several miles away. On the dark forest road beside it he pictured George, his grandson, at this moment driving down to meet them in a mountain wagon with one of the two hired men, a lantern swinging under the wheels. What an adventure for young George.

Presently he heard Deborah stirring in the berth next to his own.

At the station George was there, and from a thermos bottle which Edith had filled the night before he poured coffee piping hot, which steamed in the keen, frosty air.

"Oh, how good!" cried Deborah. "How thoughtful of your mother, George. How is she, dear?"

"Oh, she's all right, Aunt Deborah." His blunt freckled features flushed from his drive, George stood beaming on them both. He appeared, if anything, tougher and scrawnier than before. "Everything's all right," he said. "There ain't a sick animal on the whole farm."

As Roger sipped his coffee he was having a look at the horses. One of them was William, his cob.

"Do you see it?" inquired his grandson.

"What?"

"The boil," George answered proudly, "on William's rump. There it is—on the high side. Gee, but you ought to have seen it last week. It was a whale of a boil," said George, "but we policed him, me and Dave did—and now the swelling's nearly gone. You can ride him to-morrow if you like."

Luxuriously Roger lit a cigar and climbed to the front seat with George. Up the steep and crooked road the stout horses tugged their way, and the wagon creaked, and the Gale River, here only a

work through it and tie in links as you go the meat and crossing the other.

Summer use should be made. Make into small pieces about two-thirds enough water is out. Pack sterilized jars, fill with seal at once. When fat as soon as melted,

and pork for making

Recipe for sausage season- left out, is given in: Cayenne pepper, 1 cassia, 1 oz.; nutmeg, 1 oz.; black pepper, 6 oz.;

Story

Family."

BEST POOLE.
 served by the Farmer's Home Magazine.)

CHAPTER XIV.

Water Roger awakened. His still pitch dark. The bed, and he had been outside his window. And nasal, the leisurely antaineer, it came like ears. He raised the bed out. A train hand was listening to a dairy giant in top boots.loomed a shadowy over its rim came the. With a violent lurch on. And Roger, lying looked up at the misty mottled in the strange patches of firs and birches the narrow valley up was thundering, were razing cattle, a lonely and there. From one a ng. And the city with se, its nervous throb, all dropped like a fever

y the railroad track, w rocky gorge a small named. Its cool breath ostrils and gratefully he For this was the Gale or one of his forefathers, s eye he followed the its course to the little and Deborah were to e narrowing river bed d up through a cleft in omestead several miles rk forest road beside it e, his grandson, at this own to meet them in a with one of the two ern swinging under the a adventure for young

ard Deborah stirring in his own.

George was there, and bottle which Edith had before he poured coffee steamed in the keen,

od!" cried Deborah. of your mother, George.

right, Aunt Deborah." d features flushed from stood beaming on them ed, if anything, tougher n before. "Everything's l. "There ain't a sick ole farm."

bed his coffee he was t the horses. One of n, his cob.

?" inquired his grand-

George answered proudly, ump. There it is—on Gee, but you ought to week. It was a whale George, "but we poulticed ave did—and now the gone. You can ride you like."

oger lit a cigar and ront seat with George. crooked road the stout air way, and the wagon Gale River, here only a

brook, came gurgling, dashing to meet them—down from the mountains, from the farm, from Roger's youth to welcome him home. And the sun was flashing through the pines. As they drew near the farmhouse through a grove of sugar maples, he heard shrill cries of, "There they come!" And he glimpsed the flying figures of George's brothers, Bob and Tad. George whipped up the horses, the wagon gained upon the boys and reached the house but a few rods behind the little runners. Edith was waiting by the door, fresh and smiling, blooming with health. How well this suited her, Roger thought. Amid a gay chorus of greetings he climbed down heavily out of the wagon, looked about him and drew a deep breath. The long lazy days on the farm had begun.

From the mountain side the farm looked down on a wide sweeping valley of woods and fields. The old house straggled along the road, with addition after addition built on through generations by many men and women. Here lay the history, unread, of the family of Roger Gale. Inside there were steps up and down from one part to another, queer crooks in narrow passageways. The lower end was attached to the woodshed, and the woodshed to the barn. Above the house a pasture dotted with gray boulders extended up to a wood of firs, and out of this wood the small river which bore the name of the family came rushing down the field in a gully, went under the road, swept around to the right and along the edge of a birch copse just below the house. The little stream grew quieter there and widened into a mill pond. At the lower end was a broken dam and beside it a dismantled mill.

Here was peace for Roger's soul. The next day at dawn he awakened, and through the window close by his bed he saw no tall confining walls; his eye was carried as on wings out over a billowy blanket of mist, soft and white and cool and still, reaching over the valley. From underneath to his sensitive ears came the numberless voices of the awakening sleepers there, cheeps and tremulous warbles from the birch copse just below, cocks crowing in the valley, and ducks and geese, dogs, sheep and cattle faintly heard from distant farms. Just so it had been when he was a boy. How unchanged and yet how new were these fresh, hungry cries of life. From the other end of the house he heard Edith's tiny son lustily demanding his breakfast, as other wee boys before him had done for over a hundred years, as other babies still unborn would do in the many years to come. Soon the cry of the child was hushed. Quiet fell upon the house. And Roger sank again into deep happy slumber.

Here was nothing new and disturbing. Edith's children? Yes, they were new, but they were not disturbing. Their growth each summer was a joy, a renewal of life in the battered old house. Here was no huge tenement family crowding in with dirty faces, clamorous demands for aid, but only five delightful youngsters, clean and fresh, of his own blood. He loved the small excitements, the plans and plots and discoveries, the many adventures that filled their days. He spent hours with their mother, listening while she talked of them. Edith did so love this place and she ran the house so beautifully. It was so cool and fragrant so clean and so old-fashioned.

Deborah, too came under the spell. She grew as lazy as a cat and day by day renewed her strength from the hills and from Edith's little brood. Roger had feared trouble there, for he knew how Edith disapproved of her sister's new ideas. But although much with the children, Deborah apparently had no new ideas at all. She seemed to be only listening. One balmy day at sunset, Roger saw her lying on the grass with George sprawled by her side. Her head upon one arm, she appeared to be watching the cattle in the sloping pasture above. Slowly, as though each one of them was drawn by mysterious unseen chains, they were drifting down toward the barn where it was almost milking time. George was talking earnestly. She threw a glance at him from time to time, and Roger could see how intent were her eyes. Yes, Deborah knew how to study a boy.

Only once during the summer did she talk about her work. On a walk with her father one day she took him into a small forlorn building, a mere cabin of one room. The white paint had long been worn away, the windows were all broken,

half the old shingles had dropped from the roof and on the flagpole was no flag. It was the district schoolhouse where for nearly half his life Deborah's grandfather had taught a score of pupils. Inside were a blackboard, a rusty stove, a teacher's desk and a dozen forms, grown mouldy and worm-eaten now. A torn and faded picture of Lincoln was upon one wall, half hidden by a spider's web and by a few old dangling rags which once had been red, white and blue. Below, still clinging to the wall, was an old scrap of paper, on which in a large rugged hand there had been written long ago a speech, but it had been worn away until but three words were legible—"conceived and dedicated—"

"Tell me about your school," she said. "All you can remember." Seated at her grandfather's desk she asked Roger many questions. And his recollections, at first dim and hazy began to clear a little.

"By George!" he exclaimed. "Here are my initials!" He stooped over one of the benches.

"Oh, dearie! Where?" He pointed them out, and then while he sat on the rude old bench, for some time more she questioned him.

"But your school was not all here," she said musingly at last, "it was up on the farm, besides, where you learned to plough and sow and reap and take care of the animals in the barn, and mend things that were broken, and—oh, turn your hand to anything. But millions of children nowadays are growing up in cities, you see."

Half frowning and half smiling she began to talk of her work in town. "What is there about her?" Roger asked, "that reminds me so of my mother?" His mind strayed back into the past while the low quiet voice of his daughter went on, and a wistful expression crept over his face. What would she do with the family name? What life would she lead in those many years. "What a mother she would make." The words rose from within him, but in a voice which was not his own. It was Deborah's grandmother speaking, so clearly and distinctly that he gave a start almost of alarm.

"And if you don't believe they'll do it," Deborah was saying, "you don't know what's in children. Only we've got to help bring it out." What had she been talking about? He remembered the words "a new nation"—no more. "We've got to grope around in the dark and hunt for new ways and learn as we go. And when you've once got into the work and really felt the thrill of it all—well, then it seems rather foolish and small to bother about your own little life."

Roger spent much of his time alone. He took long rides on William along crooked, hilly roads. As the afternoon drew to its end, the shadows would creep up the mountain sides to their summits where glowed the last rays of the sun, painting the slate and granite crags in lovely pink and purple hues. And sometimes mighty banks of clouds would rear themselves high overhead, gigantic mountains of the air with billowy, misty caverns, cliffs and jagged peaks all shifting there before his eyes. And he would think of Judith his wife. And the old haunting certainty, that her soul had died with her body, was gone. There came to him the feeling that he and his wife would meet again. Why did this hope come back to him? Was it all from the glory of the sun? Or was it from the presence, silent and invisible, of those many other mortals, folk of his own flesh and blood, who at their deaths had gone to their graves to put on immortality? Or was this deepening faith in Roger simply a sign of his growing old age? He frowned at the thought and shook it off, and again started up at the light on the hills. "You will live on in our children's lives." Was there no other immortality?

He often thought of his boyhood here. On a ride one day he stopped for a drink at a spring in a grove of maples surrounding a desolate farmhouse not more than a mile away from his own. And through the trees as he turned to go he saw the stark figure of a woman, poorly clad and gaunt and gray. She stood motionless watching him with a look of sullen bitterness. She was the last of "the Elkinses," a mountain family run to seed. As he rode away he saw in the field a boy with a pitchfork in his hands, a meagre ragged little chap. He was staring into the valley at a wriggling, blue smoke

serpent made by the night express to New York. And something leaped in Roger, for he had once felt just like that! But the woman's harsh voice cut in on his dream, as she shouted to her son below, "Hey! Why the hell you standin' thar?" And the boy with a jump of alarm turned back quickly to his work.

At home a few days later, George with a mysterious air took his grandfather into the barn, and after a pledge of secrecy he said in swift and thrilling tones.

"You know young Bill Elkins? Yes, you do—the boy up on the Elkin's place who lives alone with his mother. Well, look here!" George swallowed hard. "Bill has cleared out—he's run away! I was up at five this morning and he came hiking down the road! He had a bundle on his back and he told me he was off for good! And was he scared? You bet he was scared! And I told him so and it made him mad! 'Aw, you're scared!' I said. 'I ain't neither!' he said. He could barely talk, but the kid had his nerve! 'Where you going?' I asked. 'To New York,' he said. 'Aw, what do you know of New York?' I said. And then, by golly, he busted right down. 'Gee! he said, 'Gee! Can't you lemme alone?' And then he beat it down the road! You could hear the kid breathe, he was hustling so! He's way off now, he's hustling the train! He wants to be a cabin boy on a big ocean liner!" For a moment there was silence. "Well?" the boy demanded, "What do you think of his chances?"

"I don't know," said Roger huskily. He felt a tightening at his throat. Abruptly he turned to his grandson. "George," he asked, "what do you want to be?" The boy flushed under his freckles.

"I don't know as I know. I'm thinking," he answered very slowly.

"Talk it over with your mother, son."

"Yes, sir," came the prompt reply.

"But he won't reflected Roger. "Or if you ever feel you want to, have a good long talk with me."

"Yes, sir," was the answer. Roger stood there waiting, then turned and walked slowly out of the barn. How these children grew up inside of themselves. Had boys always grown like that? Well, perhaps, but how strange it was. Always new lives, lives of their own, the old families scattering over the land. So the great life of the nation swept on. He kept noticing here deserted farms, and one afternoon in the deepening dusk he rode by a graveyard high up on a bare hillside. A horse and buggy were outside, and within he spied a lean young woman neatly dressed in a plain dark suit. With a lawn mower brought from home she was cutting the grass on her family lot. And she seemed to fit into the landscape. New England had grown very old.

Late one night toward the end of July, there came a loud-honk from down the hill, then another and another. And as George in his pajamas came rushing from his bedroom shouting radiantly, "Gee! It's dad!"—they heard the car thundering outside. Bruce had left New York at dawn and had made the run in a single day, three hundred and eleven miles. He was gray with dust all over and he was worn and hollow eyed, but his dark visage wore a look of solid satisfaction.

"I needed the trip to shake me down," he pleaded, when Edith scolded him well for this terrific manner of starting his vacation. "I had to have it to cut me off from the job I left behind me. Now watch me settle down on this farm."

But it appeared he could not settle down. For the first few days, in his motor, he was busy exploring the mountains. "We'll make 'em look foolish. Eh, son?" he said. And with George who mutely adored him, he ran all about them in a day. Genially he gave everyone rides. When he'd finished with the family, he took Dave Royce the farmer and his wife and children, and even both the hired men, for Bruce was an hospitable soul. But more than anyone else he took George. They spent hours working on the car, and at times when they came into the house be-greased and blackened from their work, Edith reproved them like bad boys—but Deborah smiled contentedly.

But at the end of another week Bruce grew plainly restless, and despite his wife's remonstrances made ready to return to town. When she spoke of his hay fever he bragged to her complacently of his newly discovered cure.

"Oh, bother your little blue bugs!" she cried.

"The bugs aren't blue," he explained to her in a mild and patient voice that drove Edith nearly wild. "They're so little they have no color at all. Poor friendly little devils—"

"Bruce!" his wife exploded.

"They've been almighty good to me. You ought to have heard my friend the Judge, the last night I was with him. He patted his bottle and said to me, 'Bruce, my boy, with all these simple animals right here as our companions why be a damn fool and run off to the cows?' And there's a good deal in what he says. You ought to be mighty thankful, too, that my summer pleasures are so mild. If you could see what some chaps do—"

And Bruce started back for the city. George rode with him the first few miles, then left him and came trudging home. His spirits were exceedingly low.

As August drew toward a close, Deborah, too, showed signs of unrest. With ever growing frequency Roger felt her eagerness to return to her work in New York.

"You're as bad as Bruce," he growled at her. "You don't have to be back," he argued. "School doesn't begin for nearly three weeks."

"There's the suffrage campaign," she answered. He gave her a look of exasperation.

"Now what the devil has suffrage to do with your schools?" he demanded.

"When the women get the vote, we'll spend more money on the children."

"Suppose the money isn't there," was Roger's grim rejoinder.

"Then we'll act like old-fashioned wives, I suppose," his daughter answered cheerfully, "and keep nagging till it is there. We'll keep up such a nagging," she added in sweet even tones, "that you'll get the money by hook or crook, to save yourselves from going insane."

After this he caught her reading in the New York papers the list of campaign meetings each night, meetings in hot stifling halls or out upon deafening corners. And as she read there came over her face a look like that of a man who has given up tobacco and suddenly sniffs it among his friends. She went down the last night of August.

Roger stayed on for another two weeks, on into the best time of the year. For now came the nights of the first snapping frosts when the dome of the heavens was steely blue, and clear sparkling mornings, the woods aflame with scarlet and gold. And across the small field below the house at sunset Roger would go down to the copse of birches there and find it filled with glints of light that took his glance far in among the slender, creamy stems of the trees, all slowly swaying to and fro, the leafage rich with autumn hues, warm orange, yellow and pale green. Lovely and silent and serene. So it had been when he was a boy and so it would be when he was dead. Countless trees had been cut down but others had risen in their stead. Now and then he could hear a bird warbling.

Long ago this spot had been his mother's favorite refuge from her busy day in the house. She had almost always come alone but sometimes Roger stealing down would watch her sitting motionless and staring in among the trees. Years later in his reading he had come upon the phrase, "sacred grove," and at once he had thought of the birches. And sitting here where she had been, he felt again that boundless faith in life resplendent, conquering death, and serenely sweeping him on—into what he did not fear. For this had been his mother's faith. Sometimes in the deepening dusk he could almost see her sitting here.

"This faith in you has come from me. This is my memory living on in you, my son, though you do not know. How many times have I held you back, how many times have I urged you on, roused you up or soothed you, made you hope or fear or dream, through memories of long ago. For you were once a part of me. I moulded you, my little son. And as I have been to you, so you will be to your children. In their lives, too, we shall be there—silent and invisible, the dim strong figures of the past. For this is the power of families, this is the mystery of birth."

Suddenly he started. What was it that had thrilled him so? Only a tall dark fir in the birches. But looming in there like a shadowy phantom it had recalled a memory of a dusk far back in his boy-

hood, when seeing a shadow just like this he had thought it a ghost in very truth and had run for the house like a rabbit! How terribly real that fright had been! The recollection suddenly became so vivid in his mind, that as though a veil had been lifted he felt the living presence here, close by his side, of a small barefoot mountain lad, clothed in sober homespun gray, but filled with warm desires, dreams and curiosities, exploring upon every hand, now marching boldly forward, now stealing up so cautiously, now galloping away like mad! "I was once a child." To most of us these are mere words. To few is it ever given to attain so much as even a glimpse into the warm and quivering soul of that little stranger of long ago. We do not know how we were made. "I moulded you, my little son. And as I have been to you, so you will be to our children. In their lives, too, we shall be there."

Darker, darker grew the copse and the chill of the night descended. But to Roger's eyes there was no gloom. For he had seen a vision.

CHAPTER XV.

On his return to the city, Roger found that Deborah's school had apparently swept all other interests out of her mind. Baird hardly ever came to the house, and she herself was seldom there except for a hasty dinner at night. The house had to run itself more or less; and though Annie the cook was doing her best, things did not run so smoothly. Roger missed little comforts, attentions, and he missed Deborah most of all. When he came down to his breakfast she had already left the house, and often she did not return until long after he was in bed. She felt the difference herself, and though she did not put it in words her manner at times seemed to beg his forbearance. But there were many evenings when her father found it difficult to hold to the resolve he had made, to go slowly with his daughter until he could be more sure of his ground. She was growing so intense again. From the school authorities she had secured a still wider range and freedom for her new experiment, and she was working day and night to put her ideas into effect.

"It's only too easy," she remarked, "to launch an idea in this town. The town will put it in headlines at once, and with it a picture of yourself in your best bib and tucker, looking as though you loved the whole world. And you can make a wonderful splurge, until they go on to the next new thing. The real trouble comes in working it out."

And this she had set out to do. Many nights in the autumn Roger went down to the school, to try to get some clear idea of this vision of hers for children, which in a vague way he could feel was so much larger than his own, for he had seen its driving force in the grip it had upon her life. At first he could make nothing of it at all; everywhere chaos met his eyes. But he found something formless, huge, that made to him a strong appeal.

The big building fairly hummed at night with numberless activities. Fathers, mothers and children came pouring in together and went skurrying off to their places. They learned to speak English, to read and write; grown men and women scowled and toiled over their arithmetic. They worked at trades in the various shops; they hammered and sawed and set up type; they cooked and sewed and gossiped. "The Young Galician Socialist Girls" debated on the question: "Resolved that woman suffrage has worked in Colorado." "The Caruso Pleasure Club" gave a dance to "The Garibaldi Whirlwinds." An orchestra rehearsed like mad. They searched their memories for the songs and all the folk tales they had heard in peasant huts in Italy, in hamlets along rocky coasts, in the dark old ghettos of crowded towns in Poland and in Russia. And some of these songs were sung in school, and some of these tales were dramatized here. Children and parents all took part. And speakers emerged from the neighborhood. It was at times appalling, the number of young Italians and Jews who had ideas to give forth to their friends on socialism, poverty, marriage and religion, and all the other questions that rose among these immigrants jammed into this tenement hive. But when there were too many of these self-appointed guides, the neighborhood shut down on them.

"We don't want," declared one in-

dignant old woman, "that every young loafer should shout in our face!"

Roger was slowly attracted into this enormous family life, and yielding to an impulse he took charge of a boys' club which met on Thursday evenings there. He knew well this job of fathering a small jovial group of lads; he had done it before, many years ago, in the mission school, to please his wife; he felt himself back on familiar ground. And from this point of vantage, with something definite he could do, he watched with an interest more clear the school form steadily closer ties with the tenements that hedged it 'round, gathering its big family. And this family by slow degrees began to make itself a part of the daily life of Roger's house. Committees held their meetings here, teachers dropped in frequently, and Roger invited the boys in his club to come up and see him whenever they liked.

His most frequent visitor was Johnny Geer, the cripple. He was working in Roger's office now, and the two had soon become close friends. John kept himself so neat and clean, he displayed such a keen interest in all the details of office work, and he showed such a beaming appreciation of anything that was done for him.

"That boy is getting a hold on me lately almost like a boy of my own." Roger said one evening when Allan Baird was at the house. "He's the pluckiest young un I ever met. I've put him to work in my private office, where he can use the sofa to rest, and I've made him my own stenographer—partly because he's so quick at dictation and partly to try to make him slow down. He has the mind of a race horse. He runs at night to libraries until I should think he'd go insane. And his body can't stand it, he's breaking down—though whenever I ask him how he feels, he always says, 'Fine, thank you.' Here Roger turned to Allan. "I wish you'd take the boy," he said, "to the finest specialist in town, and see what can be done for his spine. I'll pay any price."

"There won't be any price," said Allan, "but I'll see to it at once."

He had John examined the same week. "Well?" asked Roger when next they met.

"Well," said Baird, "it isn't good news." "You mean he's hopeless?" Allan nodded.

"It's Pott's disease, and it's gone too far. John is eighteen. He may live to be thirty."

"But I tell you, Baird, I'll do anything!" "There's almost nothing you can do. If he had been taken when he was a baby, he might have been cured and given a chance. But the same mother who dropped him then, when she was full of liquor, just went to the druggist on her block, and after listening to his advice she bought some patent medicine, a steel jacket and some crutches, and thought she'd done her duty."

"But there must be something we can do!" retorted Roger angrily.

"Yes," said Baird, "we can make him a little more comfortable. And meanwhile we can help Deborah here to get hold of other boys like John and give 'em a chance before it's too late—keep them from being crippled for life because their mothers were too blind and ignorant to act in time." Baird's voice had a ring of bitterness.

"Most of 'em love their children," Roger said uneasily. Baird turned on him a steady look.

"Love isn't enough," he retorted. "The time is coming very soon when we'll have the right to guard the child not only when it's a baby but even before it has been born."

Roger drew closer to John after this. Often behind the beaming smile he would feel the pain and loneliness, and the angry grit which was fighting it down. And so he would ask John home to supper on nights when nobody else was there. One day late in the afternoon they were walking home together along the west side of Madison Square. The big open space was studded with lights sparkling up at the frosty stars, in a city, a world, a universe that seemed filled with the zest and the vigor of life. Out of these lights a mighty tower loomed high up into the sky. And stopping on his crutches, a grim small crooked figure in all this rushing turmoil, John set his jaws, and

with his shrewd and twinkling eyes fixed on the top of the tower, he said.

"I meant to tell you, Mr. Gale. You was asking me once what I wanted to be. And I want to be an architect."

"Do, eh," grunted Roger. He, too, looked up at that thing in the stars, and there was a tightening at his throat. "All right," he added, presently, "why not start in and be one?"

"How?" asked John alertly.

"Well, my boy," said Roger, "I'd hate to lose you in the office—"

"Yes, sir, and I'd hate to go." Just then the big clock in the tower began to boom the hour, and a chill struck into Roger.

"You'd have to," he said gruffly. "You haven't any time to lose! I mean," he hastily added, "that for a job as big as that you'd need a lot of training. But if it's what you want to be, go right ahead. I'll back you. My son-in-law is a builder at present. I'll talk to him and get his advice. We may be able to arrange to have you go right into his office, begin at the bottom and work straight up." In silence for a moment John hobbled on by Roger's side.

"I'd hate to leave your place," he said.

"I know," was Roger's brusque reply, "and I'd hate to lose you. We'll have to think it over."

A few days later he talked with Bruce, who said he'd be glad to take the boy. And at dinner that night with Deborah, Roger asked abruptly,

"Why not let Johnny come here for a while and use one of our empty bedrooms?"



Sugar Crystals on the Fir Tree.

With a quick flush of pleased surprise, Deborah gave her father a look that embarrassed him tremendously.

"Well, why not?" he snapped at her. "Sensible, isn't it?"

"Perfectly."

And sensible it turned out to be. When John first heard about it, he was apparently quite overcome, and there followed a brief awkward pause while he rapidly blinked the joy from his eyes. But then he said, "Fine, thank you. That's mighty good of you, Mr. Gale." In as matter of fact a tone as you please. And he entered the household in much the same way, for John had a sense of the fitness of things. He had always kept himself neat and clean, but he became immaculate now. He dined with Roger the first night, but early the next morning he went down to the kitchen and breakfasted there; and from this time on, unless he were especially urged to come up to the dining room, John took all his meals downstairs. The maids were Irish—so was John. They were good Catholics—so was John. They loved the movies—so did John. In short, it worked out wonderfully. In less than a month John had made himself an unobtrusive and natural part of the life of Roger's sober old house. It had had to stretch just a little, no more.

To be continued.

A Sugar-Producing Tree.

BY FRANCIS DICKIE.

THE Douglas fir has long been the pride of the people of the Pacific Coast. It produces most excellent lumber; from it have been made two of the highest flagpoles in the world, and some staunch and mighty cargo carriers. But not even the most sanguine individual on the Pacific coast ever dreamed that the Douglas fir would add to its merits and abilities that of producing sugar—sugar from a coniferous tree seems indeed absurd! The idea was so ridiculous that it never entered any white man's mind. Yet, nevertheless, it is true. For centuries Douglas fir in certain regions have been producing a white sugar of the rarest kind, a sugar that contains a variety of pure and rare trisaccharide in greater abundance than any other plant to-day known to man. But though the white man has just recently learned of it, and examined this remarkable phenomenon, the Indians knew of it long before he came, and gathered it for food probably for hundreds of years. The bears, too, knew of it and broke down branches to get it. Strangely enough, in view of its unusualness, none of the early missionaries, explorers, or later surveyors, seem to have observed this phenomenon. As far as the compiler of this article knows no mention has been made in early writings of British Columbia, and he has examined a lot of them. The following facts here given are at last made possible as the result of the research and investigation of Professor John Davidson, F.L.S., F.B.S.E., Botanist in charge of the University of British Columbia, who, assisted by James Teit, a man with a life-time spent in the interior and intimately acquainted with the Indians and the country, travelled into the interior of British Columbia, and made the first complete botanical study of the Douglas sugar fir, and from his investigations learned how and why this sugar was produced. The result of his work is herewith made known for the first time outside of purely scientific treatises, and given in simple language understandable and interesting even to one not botanically inclined. The sugar-producing fir is chiefly found in the hottest part of the dry belt region of British Columbia between parallels 50 to 51 and longitude 121 to 122. It is also reported in the eastern portion of the State of Washington. The accompanying photo of a fir branch, gives an idea of how the sugar appears in irregular masses, ranging from a quarter of an inch to two inches in diameter and in small white flakes. The sugar is exceedingly sweet to the taste, giving a flavor like a very high grade of a refined commercial sugar. On first being taken into the mouth, it forms momentarily a sticky paste. This, however, quickly and entirely dissolves.

The investigator after much research and careful study and covering a wide range of territory in the dry belt in the interior of British Columbia, found that trees growing on northern and eastern slopes were the chief bearers of sugar. Trees on southern and western slopes, did not generally yield sugar. Neither did trees in the dense fir forests of the coastal regions. The explanation of the sugar's forming proved to be a phenomenon largely depending on certain atmospheric and soil conditions and excessive sun. The trees on the eastern and northern slopes were fairly well apart, so that a greater portion of their leaves received sun in much greater quantity and over wider area than did the closely-standing trees in the dense forests of the coast. There was also a better air circulation and the ground got just the right amount of warmth from the sun. It is part of the regular order of the workings of nature that trees exposed to a plentiful supply of sunlight gather on their leaves carbohydrates. Ordinarily these are at night taken into the plant to supply storage and tissue-growing cells. In the dry belt, however, an abnormal amount of carbohydrates accumulates on the leaves. At the same time the soil, warmed by the sun, increases the root activity so much that the root-pressure was greatly heightened, and the roots' work was carried on through the night, in this region where the nights are warm and dry and very short. As a result of greatly heightened root-pressure and cessation of transpiration, the leaves become gorged with water. This water exudes from the leaf tips in drops con-

Producing Tree.

Francis Dickie.

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taining a certain portion of sugar, result- ing from the reconversion of starch into sugar. As the water emerges into the hot, dry night air existing in this dry-belt region it was quickly evaporated, leaving the sugar in drops at the leaf tips, where they hung singly, or fell to form the masses as shown in the photograph, and smaller white flakes.

But the sugar, by reason of its depend- ing so very largely on certain atmos- pheric conditions for its production, is not a crop that can be relied on to yield a yearly harvest, for in the hot season the occurrence of a few dull days, or days of rain, enables the trees to use up much of the excess sugar or store it as starch as a food reserve. The cooling of the air also checks the activity of the sugar-forming cells in the leaves, and the cooling soil affects the roots, lowering the pressure.

Thus to-day the Indians accept the sugar yield as something to take ad- vantage of in the good years, but as something which they cannot look for- ward to with any degree of assurance, though they do get a good deal on the average. Analysis made both at the chemistry laboratory, Ottawa, Canada, and Washington, D.C., show the sugar to have a high degree of constancy of com- position. The fact that it yields a pure variety of the rare trisaccharide, formerly only obtained from a shrub in Persia and Turkestan, and that the fir sugar contains more than fifty per cent. of this in its make-up, much more than any other plant hitherto known to man, is of great interest. And though the sugar will never prove of use to the white man as a food supply, it may in all probability prove to be valuable in chemistry and the mixing of medicines.

When the Teacher Came to Tea.

BY CRAWF-C. SLACK.

They had hired a brand new Teacher, and Balinda said to me, "If you'll try and have some manners I will ask her in to tea." She allowed I once had manners and a very pleasing way, But lately, when her visitors came, I started to get gay, She said if I would promise, at the table not to swear, Take off my greasy over-alls, wash up and comb my hair, Put on a tie and collar, and not look a perfect fright, She would have our daughter Mary ask the Teacher in some night.

Since Balinda took to voting, it was very plain to see, She'd adopted reconstruction and was starting in on me, But to nip domestic friction why I bowed to her request, And I said I'd look the swellest and act the very best, That is, if she would promise, that she wouldn't start and greet, The teacher with excuses 'bout the stuff she'd have to eat, That she wouldn't foam and fury, and say everything was bad, That "sich" awful luck at cooking she was sure she never had.

Furthermore, I made her promise she would try and have a heart And not keep the Teacher lying 'bout our Mary being smart, That when Mary played the organ, that she wouldn't up and say, That she never had a lesson but learned herself to play, That she wouldn't say that Johnnie, who was ready with his jokes, Took his ready wit and manners from her father and her folks, She agreed that she would vary from the average woman's way, That about domestic matters she'd have nothing for to say.

Then I said it was a bargain, I would be a model man, So she started in to tidy up the house and cook and plan, She got a dress made over, and asked me how it hung, If it didn't make her figure look more maiden like and young? I said it was a dandy and also a perfect fit, But to be directly honest, I didn't fancy it,

It was frilled and tucked and pleated, with some tassels hanging 'round It was wanting at the shoulders and more wanting near the ground.

With Balinda's plans completed, and the prospects looking bright, Why the Teacher looking flashy, came home with Sis one night, The table it looked gaudy, there was fruit and cakes galore, And a lot of China dishes which I never saw before. Wife was all dolled up and powdered, she was looking like a belle; I had on my go-to-meetin's which Balinda said looked swell, I had polished up my manners and when we set down to tea, A more stylish-looking couple you will very seldom see.

As we talked of books and authors and the late election news, I discovered that the Teacher had some narrow party views, I see she was a stalwart of a deep-dyed party clan, And learned she was a daughter of a chap who also ran, But things were running smoothly until she up and said, "That the country would be ruined with the hay-seeds at the head." And she said, "They wasn't capable of handling the reins," Than told me plain and flatly that they didn't have the brains.

Here my manners all went winging, for I sure was boiling mad, And I hit back at the Teacher, giving her the best I had, Then I said, "You Kid persuader, do you for a moment think, That the brains of this great country are employed at slinging ink? Don't you ever get to thinking that the men behind the plow, Ain't got brains enough to legislate or even to learn how, If you do," said I "my lady, you're a consummated fool, And mentally unfitted for to teach a public school."

Then there was a verbal warfare for Balinda flew at me, And the Teacher got so nervous that she over-turned her tea, Right into her lap and napkin, and the tea was boiling hot, And I didn't care particular if it scalded her or not, Here our Mary burst out crying, and as she started for the door, Her chair caught in the tablecloth and dragged things to the floor, The Teacher made her exit, and a hurried one at that, Didn't stop to get her wardrobe, didn't even get her hat.

As I think the matter over I'm convinced no common man, Though assisted by a woman can make perfect any plan, We may scheme and plan with wisdom, yet our best is insecure, Though the bud may give us promise yet the rose may not mature, Though the dawn may bring us laughter yet with all as mid-day nears, May arise dark clouds of anguish turning twilight into tears, Though we use our best endeavors, strive to battle stealthy fate, Joys sometimes are drenched by sorrows, love sometimes is turned to hate.

She, Too?—William J. Burns, the noted detective, said in a Scranton lecture: "To a well-trained detective every incident is pregnant with significance—yes, every incident is as full of meaning as—well, I am reminded of a story: "A young man sat in a parlor alone. To him a beautiful girl entered. Thereupon the young man arose, took six cigars from his upper waistcoat-pocket, laid them carefully on the piano, and then advanced toward the girl passionately, his arms outstretched. "But the girl drew back. "You have loved before," she said."—Los Angeles Times.

Useless Words.—"I see it is now proposed to have the word 'obey' stricken from the marriage ceremony." "Yes, in the interest of economy. I've always held that in so far as that word was concerned the minister might just as well have saved his breath."

Co-operation on the Farm.

ED. TOR "THE FARMER'S ADVOCATE":

Ever since the days of the prodigal son; and perhaps earlier still in the history of the human family, the question of keeping the boy on the farm has been ever an unsolved problem. True, there have been many remedies advanced and splendid suggestions tendered. You'll find such in the issue of "The Farmer's Advocate" dated April 10th, 1919, but invariably these suggestions prove but a remedy rather than a cure, and perhaps after all a remedy is as near as we will ever get to solving of the problem.

Commenting on the various letters I have reviewed in the "Advocate" on this subject, I think one or two of your contributors have touched the keynote of the trouble that "all work and no play" is driving our boys and girls to the larger towns and cities. There are some men, (and women) in this country who never were boys or girls. You have met them so have I. Did you ever let your mind run back in imagination along their path- way of life? If you did you will remember "kids" who wouldn't play ball at school, who tattle-taled, who abused the littler ones, who tried to toadie the teacher, and who were in short, universally dis- liked and shunned by the rest of the school. To-day we see them tight fisted, slave-driving, fun-hating cranks whose household tremble in their presence or flee from the life of toil and bondage.

I remember one of these fellows who used to be a good customer of mine and how that every time he came to the store, especially in the evening, the boys lost no opportunity to play some little trick that would arouse their victim's ire, for thereby were they fully repaid. Upon one of these occasions when the boys had loaded his wagon box with an old tie post and a couple of dry-goods boxes he came into the store in a rage, demanding that I should go out and see the insult I was allowing the boys to inflict upon a good customer. Of course, I went out as soon as the opportunity came, but failed to see anything but the result of some over energy of some very energetic boys. "Look at that!" he exclaimed, "are you going to allow those Jack-an- apes to carry on like this with their devilment every time one's back is turned?" "Why don't you put a stop to it? Don't you know they'll drive away your business? People won't come here to be aggravated an' pestered by thoseimps of the old Nick. Why don't you take the law to 'em?" In spite of myself I smiled at his vehemence. "I couldn't do it," I replied, "because when I was a boy I was as bad as they are." "Likely worse," he snorted as he fumbled at the tie-ropes.

But I didn't lose that man's trade or the boys' either. The point I want to score is that too many of us forget that we were once boys and that boys and girls to-day are the same as those of our day; mischievous, fun loving, care free and light hearted, and as some one once said, the father or mother who tries to bottle up this surplus energy is living very near a live bomb which is very apt to explode some day, and not only wake up the parents' ideas but also land the boy or girl far away into the city.

The Hon. Dr. Tolmie, speaking at the directors' luncheon in connection with the Winter Fair at Guelph, recently declared that the boys and girls were leaving the farm to-day for the city because there they had shorter hours, more money and a better time. As a remedy he advocated fewer working hours, co-operation between father and son and better education.

That co-operation is an essential sadly lacking on most farms I heartily agree. Too often the father assumes the role of "boss," while the boy is ordered around as "the hired man." A little more of "equality" would certainly help some. But, as to Mr. Tolmie's suggestions regarding shorter hours and a better education for the boy I have my doubts. That "education" is needed I fully agree, but not "text-book stuff." It's dad that needs to learn that the "hum-drum" age is forever past, that the farm boy or girl is as deserving of fun and frolic as their city cousins, and that their ambitions aspire to more than the temporary owner- ship of the runt pig or the pet lamb. As for shorter hours? Well, I'm sorry Mr. Tolmie didn't outline a plan, for there's a lot of us who would like to cut out

four or five hours and get into the "eight-hour" system. But it cannot be done. Not if things are to be kept going right. To the man on the farm every season brings its preparations, every week its plans, and every day its work, and woe to the farmer who once gets behind. It's always a case of "make hay while the sun shines" on the farm, no matter if it is haying time or getting the fall plowing done.

I remember hearing two old neighbors talking at our threshing when I was a boy. The one had four boys, and he himself was big enough to do two men's work but they were always behind, their hay was always getting wet, their corn frozen, and little fall plowing was ever done. The other man, a little old Welch- man, slow as a snail, generally was ready for what came next and always ready for winter. "Tom," said his big neighbor, "how is it you always have your work up? My boys and me can do more in a day than you do in a week." Thomas finished picking the thistle out of his thumb and closed his jack knife with a snap.

"You's fellows works be fits an' starts, but I's always at it."

It was just another case of "the hare and the tortoise," and that is why the hare would make a poor farmer, or short hours be unapplicable to farm work.

We've had enough of the shorter hours system, they're fighting and wrang- ling over that across Canada under the name of Bolshevism, and to-day the only calm, unperturbed profession is that of farming, where the clamor for shorter hours is seldom heard, and each day's reward is:—

"Something attempted, something done, That has earned a night's repose."

And so I say keep up with the work, and in planning ahead "don't bite off more than can be chewed." If this is done there will be time for the annual picnics, time for the fall fairs, time for baseball, basket ball and all good clean fun going, and remember fathers and mothers, fun is the fountain of youth.

Did you ever take a fish out of the water and watch it as it gasped and floundered? There's many a boy and girl on some of our back concession farms gasping like that for a bit of fun and as soon as they are big and strong enough, mind you, they'll flop out of your clutches into the towns and cities where they can frisk in their native element.

Of course, as I previously said, there are some boys that shun recreation and sport just as there are birds that hate light and sunshine. Some of these have matured and are the dads of many of the boys that have gone away to town. Invariably these dads from boyhood up- were a "financial success," for such men are, I have noticed, pretty fair at money grabbing.

Every boy and girl, we know, has his or her own ambitions and aspirations, and it would be a sin and folly to wreck their "castles in the air." If they have built them with their foundations laid "within a city wall" encourage and help them to build upon a rock and assist to make the structure a reality, for only thereby will they find the fullest of life's success. How many of our "big men" and "wo- men" that are helping to make a greater Canada to-day had such dreams years ago as they drove the cows up the old zig- zag lane or splashed the dasher up and down in the old churn? Would it not have been a deplorable loss to have kept these people hoeing corn or washing dishes?

But, too, there are "born farmers," and these we want to keep on the farm. Like the others, give them a chance. Make them feel they are one of the company, and don't forget to give them a share of the "dividends," and make them see that they are to become a "director" as soon as they can handle the job.

Co-operation to-day has become the pass-word of the farmer, but it will not suffice to "carry on" alone from the buying and selling standpoint. It's got to be adopted on the farm, around the barn, around the house and mixed into both work and play, and when this is done, then, and only then shall the problem of keeping the boys and girls on the farms be forever solved.

W. A. EDWARDS.

Lambton Co., Ont.

Free Short Courses

FOR FARMERS AND FARM BOYS

AT THE

Ontario Agricultural College, Guelph

Stock and Seed Judging - Jan. 13th to Jan. 24th	Factory Dairy Course - Jan. 2nd to Mar. 19th
Poultry Raising - - - Jan. 13th to Feb. 7th	Farm Dairy Course - - - Jan. 26th to Feb. 20th
Fruit Growing - - - Jan. 26th to Feb. 7th	Bee-Keeping - - - Jan. 13th to Jan. 24th
Vegetable Growing - - Feb. 9th to Feb. 21st	Drainage and Surveying - Jan. 13th to Jan. 24th
Floriculture and Landscape Gardening - - - Feb. 23rd to Mar. 6th	Farm Power - - - Jan. 27th to Feb. 7th

These courses are free, the only expense involved is railway fare and board while in Guelph.

Write for the Short Course Calendar.

G. C. CREELMAN, President

B. C. Breeders Win at Oregon Fair.

The Pacific International Exposition was opened at North Portland, Oregon. At this show breeders from British Columbia made a creditable showing. The following paragraphs from Prof. J. A. McLean, University of British Columbia, gives the winnings of the Canadian breeders.

A total of a little under 2,500 animals were out for honors. Horses were out to the number of 236, beef cattle over 700, dairy cattle 513, hogs 577, and sheep and goats 450.

The affair was made truly international through the courage of a few British Columbia exhibitors who wished to measure blades with the best of the continent. The Canadian exhibit was small, but select and no exhibitor or onlooker at the Exposition is likely to forget that there are some good breeders in British Columbia. The Canadian exhibitors were: The Curtice Cattle Company of Alberta, W. S. Holland, James McCleave, The University of British Columbia, and Capt. Cates, all of British Columbia.

Captain Cates' bull won first in his class, and put up an exceedingly strong claim for senior and grand champion honors. Another year or two will make him a most formidable opponent in any show ring.

The University of British Columbia showed in Ayrshires a senior heifer calf, a junior heifer calf and a junior bull calf. On each of these the University won a first prize, on the latter two a junior championship, and on the junior bull a grand championship. Both of these Ayrshire champions were bred by the University from foundation stock selected by Professor McLean, when first he came to the Department of Animal Husbandry. The junior heifer U. B. C. Queen Ann is from Grandview Polly, that promises to break the Canadian 4-year-old Ayrshire R.O.P. record this year, and the bull U.B.C. Prince is from that grand old cow Springhill White Beauty, that at 9 years has a record of over 12,000 lbs. milk and 590 lbs. fat from three tests

and on twice a day milking. Both these calves are sired by Lessnessock Comet.

The University also exhibited the three-year-old Jersey full, Temisia's Owl's Rogue, that for two years has won the championship honors in Vancouver and New Westminster. At Portland he won fourth prize, though all ring-side talent according him either first or second place despite his handicap of short age. The fact that three other bulls could be found on the west coast to go above this phenomenal show bull furnishes one more piece of evidence that the west coast is no longer an outpost of the Jersey realm, but must be recognized as a very strong hold from the standpoint of type as well as production.

The Curtice Cattle Company masterfully contended for all the Hereford honors, making excellent winnings, while the horses from Vancouver and Victoria were the leading feature of the Horse Show Program.

Only One Reason for Living.

Now that farmers are obliged to worry over three blank forms covered with questions for purposes of Income Tax, they may be able to sympathize with the weary and almost ruined business man who wrote the following letter to the secretary of an association, explaining why he could not pay his annual dues:

"Dear Sir: For the following reasons I am unable to send you the check asked for:

"I have been held up, held down, sand-bagged, walked on, sat on, flattened out and squeezed.

"First, by the Government for war tax, the excess profit law, the Victory Bond loans, Thrift Stamps, capital stock, merchants' license, auto tax and every society and organization that the inventive mind of man can construct to extract what I may or may not have in my possession.

"From the Society of St. John the Baptist, the Grand Army, the Women's Relief, the Navy League, the Red Cross, the Black Cross, the Purple Cross, the

Double-Cross, the Children's Home, the Dorcas Society, the Young Women's Christian Association, the Young Men's Christian Association, the Boy Scouts, the Jewish Relief, the Belgian Relief and every hospital in town.

"The Government has so governed my business that I don't know who owns it. I am inspected, suspected, examined and re-examined, informed, required and commanded so I don't know who I am, where I am or why I am here. All I know is that I am supposed to be an inexhaustible supply of money for every known need, desire or hope of the human race and because I will not sell all I have and go out and beg, borrow or steal money to give away I am cursed, discussed, boycotted, talked to, talked about, lied to, lied about, held up, hung up, robbed and nearly ruined, and the only reason that I am clinging to life is to see what in hell is coming next."

Questions and Answers.

Miscellaneous.

Whitewash.

1. What is a good recipe for whitewash that will not rub off and can be used for outside work?

2. How are the cement floors in railway stations made? I mean the kind laid off in small squares of different colors.

Ans.—1. Slake a half bushel of lime and strain it through a sieve, then add a peck of salt, previously dissolved in warm water, 3 lbs. of ground rice boiled to a paste and stirred in hot, ½ lb. of Spanish whiting, and 1 lb. of glue dissolved over a slow fire. Add 5 gallons of hot water to the mixture and allow it to stand a few days before using. Coloring material may be added if so desired.

2. Each of the blocks seen in the kind of floor mentioned, are made separately and then polished. These are sometimes set in cement when constructing the floor.

Capacity of Silo.

1. How many head of cattle would a silo 15 feet across and 20 feet high feed for four months at one feed per day?

2. How many yards of gravel will it take to make the blocks for a silo of that size? How much cement would it require?

3. What size are the blocks usually made? A. M. I.

1. The amount of silage mentioned would feed about 30 head of cattle for four months at the rate of 30 lbs. per day.

2. A silo of that size would require about 1,000 blocks, 8 by 8 by 16. It will require 1½ yards sand and 2½ barrels of cement to make 100 blocks this size. If you wish to make a 12-inch wall, it would require about 2½ cubic yards of sand and 4 barrels of cement per 100 blocks.

3. The blocks are made 8 by 8 by 16, 8 by 10 by 16, and 8 by 12 by 16.

Shares of Stock.

1. Is it necessary by law when buying shares of stock in a manufacturing business to have them registered in registry office?

2. What course do you advise taking in order to get your money again. The agreement being six months' notice. But now they refuse to pay any attention, only say they have not got it. Is it necessary to be a written notice.

3. Also, can you demand at their expense the books audited over again, by one you choose. You not feeling at all satisfied with their statement, nor auditors they have chosen.

4. Are the books inspected and audited once a year by the Government of all manufacturing plants? Ontario. W. M.

Ans.—1. No; but they ought to be registered in your name in the Shares Register of the company.

2. You should place the matter in the hands of a solicitor. The notice should be in writing.

3. No.

4. No.

Questions and Answers. Miscellaneous.

Going to School.

I live seven miles from school and have two children that go. I would like to know if I could compel our trustee to furnish a teacher for elementary and model for seven scholars, or do they have to come and get them or furnish a teacher nearer. I have been driving them to school for four terms, and would like to know the school laws for the Province of Quebec.

Quebec. N. L.

Ans.—It will be necessary for you to consult a lawyer that Province personally.

Premature Birth.

What is the cause of a cow having a calf about five months gone? She was apparently all right at noon, when she had a drink of pure water; at milking time she had a calf, which was in a decomposed state and very small. Would think calf had been dead some time.

Ans.—It is possible that the premature birth was due to an accident. The decomposed condition would indicate this. Of course, it may be a case of contagious abortion, but we hardly think so. Flush the cow out with a mild disinfectant at frequent intervals and do not breed for a couple of months.

Locating Boundary.

1. A bought a farm, and cannot find out whether the line fence was ever properly surveyed or not. He wants to put a wire fence on his half, and would like to have it in right place. What steps should he take to find out?

2. Have the fence viewers anything to do with it?
3. Would A require to get a surveyor?
4. If so, how much would it cost?
5. Could A make B pay for half?

Ontario. N. C. C.

Ans.—1. He should arrange for a survey.

2. No.
3 and 5. A Provincial Land Surveyor should be employed, and the adjoining owner should join in engaging him and bear half the expense; but he cannot be compelled to do so.
4. We cannot say.

Mange.

How can I cure the disease called mange, which affects my cattle? The first symptoms are the appearance of little nodules on the skin. These break and discharge a watery fluid; the hair falls off, and the skin is hard and dry.

Ans.—There are several forms of mange, but none of them show any tendency to spontaneous recovery. It will require several treatments to destroy the parasite which causes the trouble. Wash the parts with soap and water, using a scrubbing brush if necessary to remove the scurf. A sulphur ointment, consisting of one part sulphur to three parts lard, sometimes proves effective. One-half ounce carbolic acid, one ounce oil of turpentine, one and a half ounces oil of tar, two ounces of sulphur, and linseed oil to make one pint is a liniment which has proved effective.

Automobile Collision.

A and B are both driving Ford cars. They are approaching a bridge. A is driving on left side of road, meeting B on same side of road. A turns out to right side of road, to let B pass. B's lights blind A, and A stops on centre of road thinking he is on right side of road. B crosses bridge and hits A's car 25 feet from bridge. A's car has dimmer lenses. B's car has bright lights and no dimmer. B did not have room to pass.

1. Should B have stopped before crossing bridge? A's car was stopped about 10 or 15 seconds.

2. Are Ford cars obliged to use dimmers?

3. Who is to blame for accident, A or B?

Ontario. B. B.

Ans.—1. He was under no legal obligation to do so.

2. No.

3. We think that, legally, A is.

Scratches.

I have an aged horse with scabs on his hind legs below the hocks. The leg is not swollen very much. What treatment would you advise?

Ans.—It is possible that the horse is

suffering from scratches, which, to a certain extent, is due to bad blood. Give a purgative of 8 drams aloe and 2 drams ginger, and follow up with 1½ ounces Fowler's solution of arsenic twice daily for a week. It might be advisable to poultice the legs for a couple of days and nights, then dress the parts three times daily with a lotion of 1 ounce each of acetate of lead and sulphate of zinc to a pint of water. Do not wash the legs.

Veterinary.

Apoplexy.

When some of my pigs commence to eat they apparently choke, fall, kick, squeal and lie as if dead. When they get up they shiver.

Ans.—This is a form of apoplexy due to too high feeding, eating too greedily and want of exercise. Purge each with 1 to 4 oz. Epsom salts, according to size. Feed lightly out of a trough with wide bottom, so that the pigs cannot get too much in their mouths at once, and see that they get plenty of regular exercise.

Teat Trouble.

Five or six of my cows have had teat trouble. In each one teat became hard, the point becoming so thick that it is almost impossible to get the milk out. They have been milking from 1 to 3 months, are highly fed, and bedded with shavings.

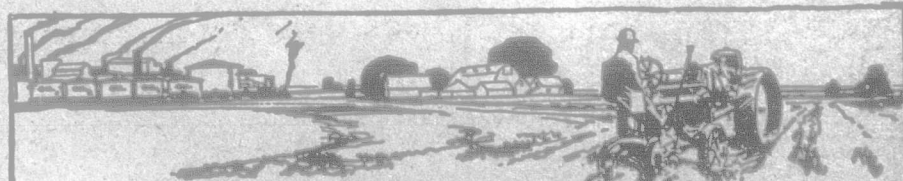
Ans.—This indicates an infectious form of mammitis. Bathe the teat and quarter well frequently with hot water, and after bathing rub well with hot camphorated oil and massage well and carefully. The person who milks an affected one must not milk a non-infected one until he has thoroughly washed and disinfected his hands. If necessary draw the milk by using a teat syphon, which has been thoroughly sterilized by immersing for a few minutes in boiling water before inserting. The trouble might be caused by repeated pressure, such as being pressed by the leg when lying, against the edge of the gutter. If this be the cause, of course, it must be removed, either by moving the cows to different stalls or rearranging the gutters.

Early - Ripening Field Beans.

While beans have long been grown and appreciated in certain parts of Canada for table use, both in the green state and in the form of the ripened seed, this crop has not been as extensively cultivated as would be desirable. One of the principal difficulties in the way of the more extended production of ripe beans is the sensitiveness of the plants to frost. Ordinary beans cannot be ripened in any district where the season is very short. There are, however, some sections of Canada where the cultivation of beans for the ripe seed is almost unknown at present and where, nevertheless, this crop would likely prove successful, provided suitable varieties were tried.

With a view to extending the use of ripe beans for human food, the Dominion Cerealists is distributing this winter, for the first time, samples of a productive and very early-ripening field bean. As this variety is brown in color and as it does not perhaps give as heavy a yield as some of the later-maturing white sorts, its cultivation is not recommended for districts where the more popular varieties can be grown. Farmers in almost any part of Canada where ordinary beans fail to ripen would do well to apply for a sample of the beans now offered. The variety in question is a selection from a sort obtained years ago from Norway. It is being introduced under the name "Norwegian, Ottawa 710." While the number of samples available is necessarily limited, it will be possible to send a few, at least, to almost every district where they are likely to be of use. Applications from farmers in localities where beans are already recognized as a successful crop will not be filled; but requests are invited from farmers who have not yet found a variety which ripens sufficiently early.

Although these beans are of a brown color, they are excellent when cooked, and there is no reason why they should not give complete satisfaction for table use, even though their color be not fashionable. They are not recommended for use in the green state.—Experimental Farms Note.



A Scientific Lubricant for all Farm Purposes

If you are going to get the most power out of your tractor, truck, automobile, stationary engine, or general farm machinery, you must have it running smoothly. The best lubricant you can buy is not too good, because it will save you money by lessening wear and tear, prolonging the life of your engine and increasing its power.

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is a scientifically made lubricant, refined by specially trained graduate workmen, which has passed the severest government tests. Thousands of gallons were used in government airplanes during the war. Use it for every lubrication purpose on your farm, and you will soon see the difference.

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They are made in the same scientific way as En-ar-co Motor Oil, and backed by 35 years' experience and scientific testing.

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A pure, dry, homogeneous fuel, that will give "pep" and extra power to your engine.

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gives a bright, clear light, and is best for all oil lamps, stoves, and heaters, as well as incubators and brooders. Finest fuel for kerosene powered tractors; every drop produces power.

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A fascinating game in which autos compete in a cross-country race will be sent free to any auto, tractor, motor boat or engine owner who will fill out the attached coupon and mail it to us.

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If ordered together we send both machines for only \$19.50 and we pay all freight and duty charges to any R. R. station in Canada. We have branch warehouses in Winnipeg, Man. and Toronto, Ont. Orders shipped from nearest warehouse to your R. R. station. Hot water, double walls, dead-air space between, double glass doors, copper tanks and boilers, self-regulating. Nursery under egg tray. Especially adapted to Canadian climate. Incubator and Brooder shipped complete with thermometers, lamps, egg testers—ready to use when you get them. Ten year guarantee—30 days trial. Incubators finished in natural colors showing the high grade California Redwood lumber used—not painted to cover inferior material. If you will compare our machines with others, we feel sure of your order. Don't buy until you do this—you'll save money—it pays to investigate before you buy. Remember our price of \$19.50 is for both Incubator and Brooder and covers freight and duty charges. Send for FREE catalog today, or send in your order and save time. Write us today. Don't delay. WISCONSIN INCUBATOR CO., Box 224 Racine, Wis., U. S. A.

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Richly-bred bulls of A1 quality, by Escana Ringleader -95963—. Cows with calves at foot by Escana Ringleader. Write your wants.

F. W. EWING R.R. 1, Elora, Ontario

For Sale—Three Reg. Holsteins For Sale—Cedar Posts and Telephone Poles, all sizes. For further particulars, apply to NORMAN HIPEL, Preston, Ont. "Phone Forest" A. WATSON & SON, Forest, Ont. "Phone 157" Box 27

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.

BARRED ROCK COCKERELS FOR SALE—with fine barring. Prices right. Clifford Woolcott, Bright, Ont.

BARRED ROCK SPECIALIST, TWENTY years—"Beauty and Utility." Choice cockerels \$3.50. Earl Bedal, Brighton, Ont.

CLARK'S BUFF ORPINGTONS—EXHIBITION and layers combined. Best general-purpose fowl. 10 yearling cocks \$5 to \$10, 50 hens \$3 to \$5, 50 cockerels \$4 to \$10, 50 pullets \$3 to \$5. Order a breeding pen properly mated. O.A.C. Barred Rocks from College best layers. 25 cockerels \$3 to \$5, 25 hens \$2.50, 50 pullets \$2.50 to \$3. J. W. Clark, Cedar Row Farm, Cainsville, Ont.

CHOICE BARRON S-C. W. LEGHORN cockerels, bred from best trap-nested egg-producers in Canada, \$4 each. C. Dickinson, Port Hope, Ont. R.R. 3.

INDIAN RUNNER, MUSCOVEY, WILD Mallard ducks, White Guinea, Barred Rock, Rhode Island Red cockerels. Mrs. John Anneser, Tilbury, Ont.

MAMMOTH BRONZE TURKEYS—PRIZE-WINNERS, Western Fair. Angus Beatty, R. 1, Wilton Grove, Ont.

PEDIGREED COCKERELS, BARRED ROCKS, \$5.00, from 260 and 254-egg hens. Ten pullets laid 2,094 eggs in eleven months. F. Coldham, Box 13, Kingston, Ont.

PURE BARRED ROCK COCKERELS, EIGHT months old One of the best egg-producing strains in Canada. Price \$3.50 each. J. A. Alexander, Hillier, Ont.

Crate-Fattened Poultry

We are open for shipments of crate-fattened poultry. Highest market prices paid, according to quality.

HENRY GATEHOUSE & SON
Fish, Oysters, Game, Poultry, Eggs and Vegetables.

244-250 West Dorchester Street, Montreal

WANTED Crate Fed Chickens

Dressed

Also

Large Hens Alive or Dressed

Write for price list.

WALLER'S 702 Spadina Ave. TORONTO

POULTRY WANTED

We have an unlimited demand for good poultry. Special prices for crate fattened chickens. It will pay you to sell to

C. A. MANN & CO. 78 King St. London, Ontario.



WANTS MILK SALE

ESTABLISHED MILK MANUFACTURING Company desire suitable community for condensed and powdered milk plant. Must be good milk district with good railway facilities. Would prefer site with good building and plenty water. Full particulars must be given as to present supply of dairy industries. The Malcolm Condensing Co., Ltd., St. George, Ont.

FOR SALE—20 ACRES MARKET GARDEN, excellent buildings, one mile south London market. H. Raison, 5 Duke St., London, Ont.

FOR SALE, 200 ACRE FARM, EIGHT MILES from London, soil gravel loam, 25 acres of hardwood timber, mostly sugar maple, new basement barn 40 x 108. This is a splendid dairy farm. Apply to Nathaniel Carrothers, Wilton Grove.

MALE COLLIE PUP BY IMPORTED Buccleuch Specialist \$15. Wild Mallard Ducks \$5-per pair. Robt. Kirk, R. R. 1, Glanworth

WANT TO HEAR FROM PARTY HAVING farm for sale. Give particulars and lowest price. John J. Black, Advocate St., Chippewa Falls, Wis.

One of the Best Farms

In the Eastern Township for sale, consisting of 300 acres of very fertile land, of which 90 acres is covered with very valuable timber. Brick house, cement cellar, sugar bush, large barns, silo and drilled well. Three miles from Lennoxville, Que. Price \$21,000.00. Apply to

F. M. Passow, Eustis, Que.

SEEDS

We are in the market for Alsike, Red Timothy and Sweet Clover, also all grain of good sample. Send samples, and we will quote our best price f.o.b. your station.

GEO. KEITH & SONS
Seed Merchants Since 1866
124 King St. East Toronto

Wanted to Buy—I will purchase all kinds of logs, either loaded on cars or teamed to Preston. For further particulars apply to

NORMAN HIPEL, Preston, Ont.
Phone 157 Box 27

Regard for Public Property

BY E. K. MARSHALL.

One of the most valuable lessons any boy or girl can learn, whether at home, in school, or in business, is a thoughtful regard for public property and a respect for the rights of other citizens. With the increasing extent of public ownership and management in our time, one can never be very far away from public property. Not only are large values represented in these common enterprises, but personal as well as public comfort and convenience are dependent upon the manner in which these concerns are conducted and considered. Hence, to-day there is needed careful training along this line of civic duty.

Usually property at home is guarded carefully enough, and young people soon learn the lessons of co-operate interests in family property and the interdependence of personal welfare. He soon realizes that what concerns all, concerns himself and that no one member of the family lives to himself, but that their happiness is strangely interwoven. If the boy breaks the electric light, all suffer the same inconvenience; and he learns that his care and thoughtfulness add much to the comfort and welfare of all the other members of the family, as theirs do to his.

When he gets away from home, however, he is in danger of losing sight of his inherent though indirect interest in other things; his rights, privileges and responsibilities are farther removed. When he throws a stone through a street light, or carves a school desk, or breaks a school window, or mutilates a church hymn book, or is careless with fire, he is not looking far enough ahead and does not see the grave duty that is his regarding public property. When he thoughtlessly destroys a shade tree, he is failing to see that he is subtracting from the sum-total of the beautiful and the useful things of life.

The child should be led early in life to realize that these public utilities are in a measure his, that he is a partner in the telephone system, the electric light, church building, school room; in the parks, streets and yards; in the roadways; in all those things we enjoy in common. He should be led to consider that as a young citizen he is vitally concerned in the use and the beauty of the things outside of his own home and apart from his own personal possessions.

That boys and girls are taught a measure of this is evidenced by the average respect paid to public property. Occasionally, however, we have regrettable outbreaks, when young fellows, driven by the exuberance of feeling and possessed by a surplus of energy and poorly trained and badly led, do find no better way of expressing these surging forces than in the destruction of church or other property.

Some time ago I was one of a committee whose duty it was to examine the hymn books in a certain Sunday school. To our astonishment and pain we found not only books ruthlessly destroyed, but marked and pictured with obscene matter to an extent that filled the church officials with alarm. Were our books of praise not respected? When our boys and girls went to Sunday school or church and received a book from which to sing praises to God, did we expect them to read bawdy-house rhymes? And yet so careless are we adults that such conditions do exist.

But this regard for public property should go farther than mere refraining from acts of destruction; we must have a constructive attitude. This interest must lead to civic pride and care. The general welfare of our community, the tidiness of our public buildings, and the safety from fire and other destructive agencies can be greatly increased by enlisting the co-operation of the young people of our community who are to be the future custodians of these properties. Their energy and ambition, their natural neatness and despatch can be made use of in a campaign that should make any community, large or small, the tidiest, cleanest and neatest in the land. During the past few years a certain carelessness has developed and many of our communities are losing the sense of civic pride. We find, at least, that an effort is necessary to divert the energies of these boys and girls along right lines and enlist their interest. But when this is done, and when we have a leadership

that understands boys and girls, the results are admirable.

At this time we look forward to a renewal of community, of civic pride and interest. We must have a campaign for cleaner and more beautiful communities, and in doing so we shall not only accomplish much for our own localities, but give our boys and girls an excellent training in that finest of all arts, the art of living together.

Trapping the Wily Fox, the Smartest of all Fur-Bearers.

When a man—and particularly a boy—traps a fox no one would blame him in the least if he gave himself two or three good pats on the back and said, "Well, I guess you're not so bad!"

For it is quite an achievement to get this sagacious prowler to walk into your trap, and it signifies that you have matched your wits successfully against an instinct thousands of years old—the fox's suspicion of man and all objects of man's world.

Most of the fox's secret service system is centered in his long, sharp nose, which can tell him more in one minute than the noses of lesser animals can tell them in a week. It communicates its messages to a brain that in addition to harboring a lot of mean thoughts about mankind, is in fine working order.

Therefore, the ordinary methods employed to catch the trusting skunk, the unwary muskrat, and the curious weasel will not suffice for the fox. A nice, juicy chicken laying right across his path he would look at a long time before springing to devour it, and indeed it is a question if he would even stop to look at it. You can almost imagine him saying, "Well, well, well, does old Henry Jones think I'm going to fall for that stunt again? He tried that on me in 1910 and I've got a scarred leg yet from the trap. Here is where I put one over on Henry"—and walk right by it.

So, for the fox, a sort of special performance must be put on.

There are several ways that the trapper may best him, but one employed by Adirondack trappers with great success is as follows:

If indications on the trail show that the cunning gentleman is about, get into your boots, and with the proper-sized trap—see that it's a good one—look for a spring or a stream.

In the stream itself, about eighteen inches or two feet from the bank, build a small mound. On this place the bait, making sure that all traces of human scent are kept from it by the use of rubber gloves on your hands.

Then build another mound between the first one and the bank, and there place the trap, covered over with grass or dirt that should show a little above the water. Use a jump trap, No. 2 size or larger, with a chain four or five feet long and grapple attached to it. These last should be secured to an underwater sapling or sunk deep in the mud. These operations should be begun only after the trapper has waded upstream for 400 or 500 feet. After they are completed he should return the same way.

The way the trap works is this: Brother Fox, jaunting along the shore line, sees the bait. The chances are that he thinks, "Well, there's another dinner, but it looks phoney to me. Still, it may not be—at any rate it won't hurt to investigate."

On his tour of inspection he steps on the first mound in order to sniff the bait, and then the trap springs upon a sadder but wiser fox. But if your trap isn't a good strong one he will get away, and then you may be sure that you will have to be just twice as shrewd and careful the next time you try to trap him.

Reciprocity in Sheep Registration.

R. W. Wade, of Toronto, Secretary of the Sheep Breeders' Association, sent us the following agreement made between the Canadian Sheep Breeders' Association and the American Shropshire Registry Association, by which there is mutual reciprocity in registration. This should be of interest to the Shropshire breeders.

1. Animals from the United States, American bred or imported from Great Britain, sold to a resident of Canada must be recorded in the American Shropshire Record in the name of the Canadian

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"Diamond Dyes" Make Shabby Apparel Just Like New—So Easy!

Don't worry about perfect results. Use "Diamond Dyes," guaranteed to give a new, rich, fadeless color to any fabric, whether wool, silk, linen, cotton or mixed goods,—dresses, blouses, stockings, skirts, children's coats, draperies,—everything!

A Direction Book is in package. To match any material, have dealer show you "Diamond Dye" Color Card.

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The saving habit
like all other good habits is the result of resolution and practice. By depositing regularly a portion of your earnings in THE MOLSONS BANK, the saving habit is soon acquired. Avoid careless spending by opening a savings account with us.

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2112 Farnum St., Davenport, Ia.—Teaches all branches. You learn at home. Students now selling in 17 States. Write to-day.

purchaser. American Certificate of Registration must give date of sale and delivery and, in the case of females, service certificate, if bred. It is understood that animals on entering Canada, must be recorded in the Canadian Sheep Breeders' Record.

2. Animals from Canada, Canadian bred or imported from Great Britain, sold to a resident of the United States must be recorded in the Canadian Sheep Breeders' Record in the name of the American purchaser. Canadian Certificate of Registration must give date of sale and delivery and, in the case of females, service certificate, if bred. It is understood that animals, on entering the United States, must be recorded in the American Shropshire Registry Record.

3. It is understood that the recording of ancestors to complete pedigrees is to be discontinued immediately by the American Shropshire Registry Association and the Canadian Sheep Breeders' Association, respectively.

4. It is further agreed that the Canadian Sheep Breeders' Association will not accept for record animals lambled in the United States, unless such animals are first recorded in the American Shropshire Record.

5. It is further agreed that the American Shropshire Association will not accept for record animals lambled in Canada, unless such animals are first recorded in the Canadian Sheep Breeders' Record.

Coming Events.

Jan. 8-9, 1920.—Eastern Ontario Dairymen's Convention, Brockville.

January 13-16, 1920.—Corn Show, Chatham, Ont.

Jan. 14-15, 1920.—Western Ontario Dairymen's Convention, London.

Jan. 13-16.—Ottawa Winter Fair, Ottawa.

Jan. 14-15.—Ontario Vegetable Growers' Association, annual meeting and convention, Ottawa.

Feb. 2.—Ontario Plowmen's Association meeting, Toronto.

Feb. 2-6.—Breeders' meeting, Toronto.

Feb. 3 and 4.—Quebec Breeders' meeting, Quebec.

Feb. 3 and 4.—Fairs and Exhibitions' Convention, Toronto.

Feb. 5 and 6.—Ontario Horticultural Convention, Toronto.

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"Notes on the Viability of Tobacco Seed."

For the past three years a number of germination tests have been run principally on Canadian-grown seed composed largely from varieties of the cigar, White Burley and Flue-cured types. These types have been grown in Canada with good success. The growing of varieties of the cigar type are confined principally to localities in the Province of Quebec; while varieties of both the White Burley and Flue-cured types have been successfully grown in certain sections of South-western Ontario.

The Tobacco Division has been growing seed of some of the varieties of all these types for distribution to the farmers. That is, the seed of the varieties that have proven best adapted to climatic conditions and trade requirements.

The Division through experiments that have been carried on during the past four years has shown that Canadian-grown seed that has become acclimatized gives better results than recently imported seed. The crop from acclimatized seed will mature from a week to ten days earlier than the same from imported seed. This means a great deal, especially where the climatic conditions are none too favorable and the growing period rather short. The difference in the period of maturity is even more striking with the imported and acclimatized seed of varieties from semi-tropic countries like Cuba and the Philippines. A difference in the time and vigor of germination in the seed-beds also much earlier maturity in the field, has been noted.

Quite a bit of difference has been noticed in the viability of the seed produced different years. The seed of 1916 and 1918 were very good, while for 1915 and 1917 the germination tests show a much smaller per cent. of germination. This variation from year to year is not wholly due to the length of the season, but apparently due in a large measure to the prevailing weather conditions during the period of pollination and fertilization of the flowers. In other words, a much higher percentage of viable seed are set during bright, warm weather than when cool, cloudy weather prevails.

Seed has been gathered at different stages of maturity, and germination tests show a higher percentage of germination when the capsules or seed pods are gathered when half brown than when wholly brown. The following tests were run on seed from green, half brown and totally brown pods.

Green pods—75%
Half brown—78%
Brown pods—65%

Further work is being carried on along this line.

Germination tests have shown that varieties of the Flue type require more time for germination than the varieties of White Burley and cigar types. This is apparently due to a latency of the germ or a possible difference in the physical construction of the seed coat, or testa.

The tobacco seed retains its vitality for a number of years as the following tests show:—

Seed 13 years old, 70%.
Seed 12 years old, 76%.
Seed 10 years old, 85%.
Seed 9 years old, 87%.
Seed 8 years old, 95%.

While these may be more or less exceptional cases, still it is safe to say that the seed will retain a high germination percentage for five or six years. In fact, the germination properties will even increase for the first year or so of age.

If tobacco seed will give a vigorous germination of 75 per cent. after 14 days, they should be practically as good for sowing as seed with higher germinating properties. Of course, no one would admit that seed corn with a 75 per cent. germination would give a good stand, as it is planted directly to the land, on the other hand, since tobacco seed is sown in the bed and only strong, healthy seedlings are transplanted, it is quite apparent that an abundance of seedlings can be had for transplanting from such seed.—G. C. Routh, Plant Breeder and Pathologist, Tobacco Division, Central Experimental Farm.

Mill Feeds versus Standard Meals.

(Experimental Farms Note.)

An old proverb runs to the effect that in a fruit famine the hawk is welcome. With oats touching the dollar mark; corn around \$1.70; bran at \$45.00; linseed meal at \$90.00; and so on ad infinitum, the stockman is prone to have his charges unwillingly investigate the proverbial law.

By "millfeeds" is meant mill, or commercial mixtures. Standard meals, for example, refers to such feeds as bran linseed meal, cottonseed meal, etc. While there are several excellent mixed meals on the market, the wise buyer should look upon the ready mixed and appetizingly-named feed or concentrate, with suspicion. It is guilty until proven innocent.

First, let it be understood, no purchaser need accept a foodstuff on the oral guarantee of the seller. The Commercial Feeding Stuffs Act specifically states that the vendor of any brand of feed must furnish a guarantee as to protein, fat and fibre. Unfortunately, the Act in question, aside from the question of rigid enforcement, has too much latitude. Then, too, many feeders have not a sufficiently keen appreciation of the meaning and significance of guaranteed analysis. Price is the all-too-important factor. There is too much tendency to purchase mixtures, the main virtue of which is an excellent advertising campaign, and a perfect delineation of the art of camouflage, and to lose sight of the fact that the component parts supposed to be present in such feeds may be purchased in standard quality, mixed at home, and obtained at frequently a lesser price than the ready-mixed article.

If one has not, then, the knowledge to interpret the significance of analysis, (for which there should be no excuse, nowadays), there is a word of advice,—stick to the standard product and mix at home.

There are three mechanical factors which the feed manufacturer may cleverly utilize on compounding a feed, so that it may appear that which it is not—fine grinding (super-fine nowadays), change of color and flavor, and thorough mixing. The first needs comment none other than congratulatory to the man who invented a machine capable of reducing hulls to dust; the second refers to the use of such supplements as low-grade molasses, salt, etc., additions to a ration, of which, will frequently cause delighted comment as to the manner in which it is cleaned up (the milk pail is no heavier); the third, to the thorough mechanical mixture of the finely-ground component parts,—like whitewash, covering a multitude of sins and sinners.

Aside from the basic or standard parts of the mixed feed, by which parts are meant for example, corn, oats, barley, peas, shorts, bran, etc., etc., what may be added to obtain bulk and profit? Answering in an Irish way—why do the manufacturers of rolled oats for example, in nearly all cases, market stock foods as well? Hulls, small oats and mill refuse,—the market for them in the straight form is limited. And the fact that the most reputable firms as mentioned, manufacture a side line of, in several cases, excellent merit for the sole purpose of unostentatiously palming off a troublesome by-product, is an indication of what may be expected from the fly-by-night concerns. When offered barley feed, or oat feed, or corn feed, or molasses feed, from any but a reliable firm, stop, look and listen. There is a reason.

Besides the addition of excess fibre in the form of hulls, there has been, more particularly of late, a more insidious form of adulterant to many commercial mixtures. The by-product of the Western elevators, known as screenings, has, where of standard content (re-cleaned screenings) a very high value in the feeding of certain kinds of stock. Such has been definitely and conclusively proven by Experimental Farms System. The latter institution together with many private individuals has, however, had proof, conclusive and unfortunate, that this product has not always been standard. Further, it would appear that the refuse by-product of this material to which the manufacturer may have access, with the upshot that there are mixtures on the market to-day which aside from merely including a percentage of screenings, actually make use of the by-product as a basis. The combination of screening offal, oat hulls, chaff, sweepings and

More Fertility— More Dollars!

Nothing will give you as steady, generous, sure and low-priced fertility as Gunns "SHUR-GAIN" Fertilizers. Just as with all other business men, every account and expense has to be paid before you get your profit.



"Making two blades grow where only one grew before."

Your real net profits are in the last few bushels. Use "SHUR-GAIN" for your OWN pocket's sake.

Your seed, your implements, your labor, your running expenses must all be paid before you can bank your own profits. Every pound of Gunns "SHUR-GAIN" you put on your land is thus actually putting money in your bank—\$3 or \$4 return for every dollar spent has been others' experience. Could be yours, too! We have a "SHUR-GAIN" mixture to suit any crop, compounded by chemists with actual field experience.

Order early. Take January or February deliveries. Delay will be dangerous this year. 1920 Supplies are Uncertain

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GUNNS LIMITED
WEST TORONTO

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Consider what it has cost you in the last few years for partial or complete failures of seeds to "catch". Clover seed is very dear and a failure this season would mean a lot to you, besides it would seriously interfere with your crop rotation.

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SYDNEY BASIC SLAG

Wherever you are seeding down this spring

Thousands of Ontario farmers would not want to go through a season without it. They realize its value to the grain crop as well as the hay crops following. You should know what Sydney Basic Slag will do for you. Let us send you our descriptive booklet, free for the asking. If we have no agent in your locality we will supply trial lots of one ton each at the regular price of \$23 per ton, freight paid to your station, cash with order. This would mean a loss to us, owing to the high freight rate on less carlot shipments, but we realize the benefit of getting the goods introduced. If you desire to take advantage of this liberal offer do not delay but write at once.

THE CROSS FERTILIZER CO. LIMITED,
SYDNEY :: :: NOVA SCOTIA

A. L. SMITH, Address to our General Sales Agent
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Renew the Soil Make Your Farm Pay Better

SOIL renewal as practised in Europe accounts for the very high yield per acre attained in European farms, and soil renewal simply means restoring plant food and humus.

This is done by applying ordinary stable manure and commercial fertilizers.

Harab-Davies Fertilizers
Harab-Davies Fertilizer is a scientific compound which contains Nitrogen or Ammonia, Phosphoric Acid and Potash in readily soluble form. Experience absolutely proves that it is more profitable to work 50

acres with a good fertilizer than 100 acres without it. Fertilizing means not only bigger crops, but better and stronger crops.

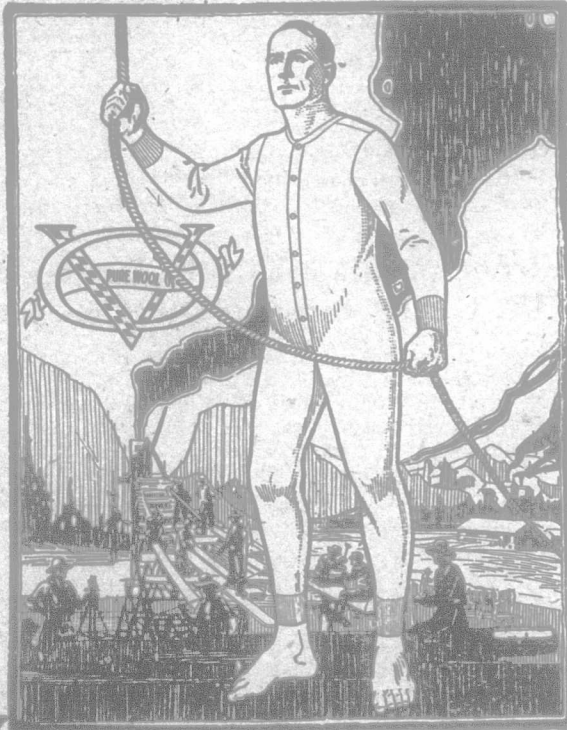
It is strictly a quality article. Pounded for pound it is positively the cheapest as well as the best fertilizer offered.

Write for our booklet, "Fertilizer Results by Satisfied Users"—sent free on request. Read what farmers in all parts of Canada have accomplished with Harab-Davies Fertilizer.

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O.V. (Ottawa Valley) brand has been worn for fifteen years by Canada's nation builders—on railroads, farms and the Empire's battlefields; in mines and in construction camps. Made for warmth and durability, in medium and heavy weights, in combinations and two piece suits. Guarantee with every garment. Moderate prices.

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molasses, with what the chemist terms, when in doubt, a "trace" of flour, bran, corn and flax, is a fearful and wonderful, though accomplished fact.

There can be no objection to the use of standard recleaned screenings in a commercial feed mixture, provided the price is equitable. It is good feed, though it may darken and, therefore, render less attractive, the finished product. Certain of the weed seeds contained in uncleaned screenings or in screening offal have been shown to be actually poisonous to stock. True, they may be bitter, but, then, molasses is a faithful corrective. To sum up,—the purchaser pays a stiff price for the possibility of a low-grade, non-productive feed that has the further potentialities of polluting his farm and injuring or destroying the health of his stock. The adoption of, and rigid adherence to, a high standard of elevator screenings will render procurable a most desirable feed,—comparable to the standard meals to which reference has already been made. The undesirable second by-product should be controlled absolutely and placed where it cannot be of temptation to the unscrupulous manufacturer in Canada.

Reject barley, frosted wheat, musty corn, damaged grain generally, may all find their way into the commercial mixture, attractively priced as compared with the standard meals. In fact, the third degree applied to the past-master of the art of commercial meal-mixing, would possibly reveal truths stranger than fiction.

When buying commercial mixtures then, deal with the reputable firm. They sell under inspection and analysis tell the truth,—if not necessarily all of it.

G. B. ROTHWELL.
Acting Dom. Animal Husbandman.

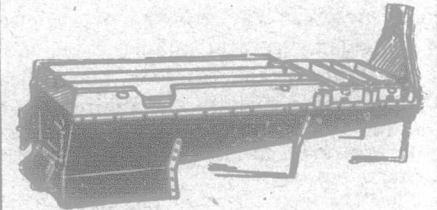
Gossip.

Practically every Shorthorn breeder who is a reader of these columns, is already familiar with the name of John T. Gibson, one of Canada's oldest breeders, and whose farm is at Denfield, Ont. Mr. Gibson's herd was among the first to be founded in the Province, and from the early days on there has gone out each year from the farm a large number of the choicest breeding bulls and females, to say nothing of a large number of noted show winners, which also included both sexes. Visiting the farm recently, we again found many good things, many of which are now included in the present offering. The younger things are all sired by the present herd sire, Meadowlawn Chief, a grandson of the noted bull, Ring Sort (imp.). Meadowlawn Chief, on the dam's side, is a Campbell-bred Claret, and one of the strongest individual sires ever used in the herd. His oldest calf in the stables at present is a nine-months' bull from the big, thick cow Martha 11th by Nonpareil Archer, although there are several that are younger and almost a score of cows were showing well forward in calf to his service. In addition to the youngsters got by the herd sire, there are several good young bulls which are sons of cows purchased during the past year, and these too, with one or two exceptions, are equally choice. The more outstanding among these include a year-old roan imported in dam calf by Chief Orator, and dam Spring Beauty (imp.), a Marr-Beauty cow got by Newton Jupiter. Still another roan calf, which has the ear marks of a real sire, is a year-old son of the great Gainford Marquis (imp.) and from a Charlotte Corday cow got by Chief Royal. This calf has size and thickness in fleshing aplenty, and carries all the characteristics of his illustrious sire. Next in line comes a January bull, sired by Missie Sultan and dam, Wonder of Walnut Grove, a choice breeding daughter of Trout Creek Wonder. This calf is one of the most rugged as well as one of the most promising in the stables. While these are the tops in the present offering of young bulls, they are by no means the only good things in the offering, which taken as a whole is by far the strongest line-up which was ever bred in the herd. Other families represented include mostly Wimple's, Mysie's and Mina's, all of which go to make up one of the strongest herds of imported and home-bred matrons that can be found to-day in Ontario.

In Lincoln's Mr. Gibson is advertising the usual offering. The flock comprises some forty breeding ewes, and the same imported ram in use for the past two seasons is still at the head of the flock.

Bill's Sugar and Syrup
Wasn't Up To Much

That's what his neighbors said, they were right too, but there were reasons, this sap was not fresh enough or clean enough, his boiling outfit was out-of-date and he scorched the whole batch. He did a lot of hard work with poor results. It is all a question of proper outfit. With a

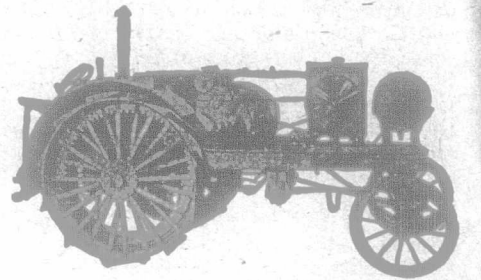


GRIMM CHAMPION
Outfit

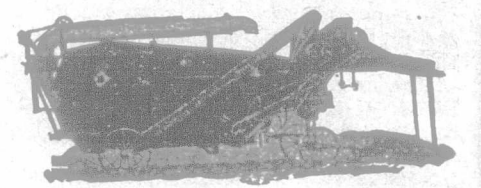
In your maple grove you are sure of making the best possible syrup and sugar. Do it cleanly and quickly and get more money out of it. Scrap your old outfit and make something worth while out of your sugar bush. We can help you a lot if you write us.

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The Simplest, most Accessible, most Powerful 8-plow Tractor on the market. Suitable for hauling 3 plows, Threshing, Silo Filling and General Farm Work.



Individual Farmers' Threshers, suitable size to be driven by small Tractors and Gasoline Engines. Do your own threshing. Keep your farm clean and save expense. Write for free catalogue, prices and any information wanted.

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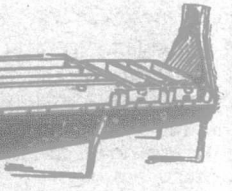
We are in the market to buy Alsike, Red Clover Timothy, White Blossom Sweet Clover. If any to offer send samples and we will quote you our best price F. O. B. your station.

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Stouffville, Ont.

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You can now learn Taxidermy, the wonderful art of mounting birds, mammals, tanning skins, etc. Learn at home, by mail. The free book tells how. Mount your own trophies. Decorate homes and den. Hunters, trappers, nature lovers, you need Taxidermy. Interesting, fascinating, big profits. Join our school. \$1.00 students. Success guaranteed. Get our free book without delay. Send right now—today.
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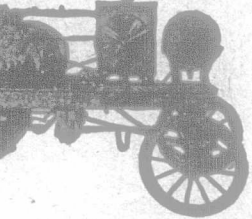


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reduces Painful, Swollen Veins, Wrens, Strains, Bruises,
stops pain and inflammation. Price, \$1.25 per bottle as
dealers or delivered. Will tell you more if you write.
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APPLICATIONS WANTED FOR
Secretary and Field Man
By The Canadian Aberdeen-Angus
Breeders' Association

Applications for the position of Secretary and
Field Man for the Canadian Aberdeen-Angus
Breeders' Association will be received by the
undersigned up to January 5th, 1920.
Applicants to state present occupation, quali-
fications and salary expected.

W. I SMALE, Secretary, Brandon, Man.
MESSRS. A. J. HICKMAN & CO.
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Exporters of all Breeds of
Pedigree Live Stock.

Send for an illustrated catalogue and see what we
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ing stock, buy direct from England and save money

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.

SUNNY ACRES
ABERDEEN-ANGUS
The present string of young bulls for sale includes
some classy herd bull prospects, winners them-
selves and sired by champions. If interested in
Angus write your wants. Visitors welcome.

G. C. CHANNON - Oakwood, Ontario
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Meadowdale Farm
Forest Ontario.

Alonzo Matthews **H. Fraleigh**
Manager Proprietor

**Aberdeen-
Angus Cattle**

Suffolk Down Sheep or Clydesdale Horses
Write **JAMES BOWMAN,**
ELM PARK, GUELPH, ONT

Sunny Side Herefords—Choice bulls
and heifer calves, young cows with
calves at foot. Reg. Shropshire rams
ewe and ewe lambs. Inspection in-
vited. All are priced to sell.
Arthur F. O'Neill & Sons, R.R. No. 2
Denfield, Ont.
Phone 27-12 Granton.

Kennelworth Farm Angus Bulls—The
strongest offering we
ever had, all are sired by Victor of Glencaira and
a number are ready for service. Prices reasonable.
Peter A. Thompson, Hillsburg, Ontario.

Balmedie Aberdeen-Angus
Nine extra good young bulls for sale. Also females
all ages. Show-ring quality.

THOS. B. BROADFOOT, FERGUS, ONT.

Two Good Jersey Bulls for Sale
Ready for service; one (imp.) son Combination
Premier; dam, daughter of Golden Fern's Noble.
IRA NICHOLS, Burgessville, Ontario

The Cot of Burnbrae Sultan—#90325—
Shorthorn Bulls For Sale
1. Successor = 127444 =, white, born March 29,
1918; dam Rosy Bud = 99834 =, by Waverley
= 72804 =.
2. Ravensraig = 12745 =, roan, twin, born
Nov. 19, 1918; dam Meadow Beauty 3rd (imp.)
by Ben. Lomond (80468).
3. Meadow Crown, white, twin with Ravensraig.
4. Royal Sultan, born 15 Feb., 1919, own
brother to Successor.
Females in calf and with calves at foot.

A. GORDON AULD
Arkell C.P.R. R. No. 2, Guelph, Ont.

DUAL-PURPOSE
Shorthorns

Present offering 6 young bulls, Red and Roans, also
a number of females. They have size, quality and
breeding from good milking dams. Prices Moder-
ate. Satisfaction guaranteed.
Chas. Graham, Port Perry, Ont.

Gossip.

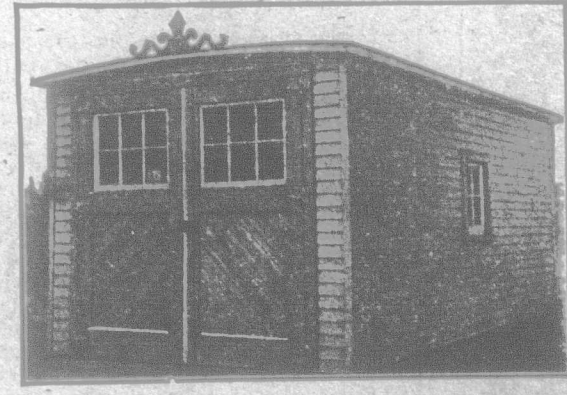
Fifty Shorthorn Dam's at Mercer's.

There is probably no Shorthorn breeder
in Canada more widely known than
Thomas Mercer, of Markdale, Ont. It
can hardly be said that Mr. Mercer is
known throughout Canada as a Short-
horn breeder only, as his importations in
Clydesdales, previous to 1910 and 1911,
were looked for yearly, and his numerous
shipments to Western Canada about this
time included almost as many horses as
cattle. Of late years, however, Mr.
Mercer has confined his activities to
Shorthorns only, and his present herd
comprises almost fifty breeding cows, the
majority of which have calves by their
side. These, as seen at the farm recently
by the representative of this paper, while
not showing in high condition, were an
excellent lot of choice matrons, and carry-
ing as strong pedigrees as can be found
in any herd of equal size in this part of
Ontario. The more noticeable among
them being such families as Marr-
Floras, Sheppard-Rosemarys, Cruikshank
Matchless, Nonpareils, Village Girls,
Clarets, Tulips, etc. In most instances,
imported cows come close up on the dam
side, and in practically every pedigree
one or two choice Scotch-bred sires are
found at the top. At present, the chief
sire in service is the good breeding bull,
Rosewood Champion, son of Nonpareil
Archer and dam, Collynie Rosewood 3rd
(imp.). Many of the best things ever
bred on the farm has been sired by Rose-
wood Champion, and although getting
somewhat past the desired age, he is still
considered by Mr. Mercer by far the most
profitable part of the herd. At present
there are several young bulls by Rosewood
Champion in the sales' list, the oldest
of which is a two-year-old Claret bull,
which has been used to some extent on
the younger females of the herd. He is
a low-down, thick, choice made bull, a
deep roan, and just the right stamp to
make choice buying for a strong herd.
Full particulars regarding the younger
calves, as well as the females in the offer-
ing, may be had by writing Mr. Mercer
and mentioning this paper.

The Curry Shorthorns.

Among the smaller herds in particular,
it is not often one finds in Canada to-
day two as well bred and noted bulls as
is now being used as herd sires in Mr.
Fred J. Curry's herd, of Markdale, Ont.
Excelsior, a six-year-old son of the great
Gainsford Marquis (imp.), is the senior
sire, and through his get he has gained
the well-earned title of being one of
Gainsford Marquis' best breeding sons.
That he is deserving, however, is readily
shown by the splendid breeding right at
the top of his pedigree. His second
dam, Emeline 9th, was imported and
bulls such as Marksman, Royal Heir,
and Border Chief, hold premier places at
the top of the second column. Match-
less Duke, the junior sire, is, on the sire's
side, of much the same breeding, being
got by a son of Gainsford Marquis (imp.).
This calf was a prominent winner at
many of the larger shows this past season,
and following the older sire he should
give a good account of himself in this
herd. A review of the pedigrees of the
breeding females in Mr. Curry's herd also
shows that there are plenty of choice-
bred things to mate with these sires.
The Sheppard-Rosemary's are repre-
sented by one or two thick, well-made
cows, tracing to Rosemary 127th (imp.);
the Crimson Flowers trace to Crimson
Flower 95th (imp.); the Village Girls are
direct descendants of Village Girl (imp.)
by Scotland's Pride, while other families
are strong-topped Stamfords, Lavenders,
Nonpareils, Secrets, etc. There is a
particularly nice, imported three-year-old
heifer belonging to the latter family
which had just dropped a nice heifer calf
by Excelsior a few days previous to our
visit, and several more cows were then
just due to freshen to the same sire. The
present offering in bulls included two or
three eight and ten-months calves only,
but in females the list is more varied, as
Mr. Curry informed us he was anxious to
reduce his stock considerably owing to
the scarcity of feed and beeding this year.

The Auto-Home Garage



is just what you need
for your car. It is built
in sections; any one
can erect it. It is
painted and glazed
complete. Built in four
sizes. Place your order
early; have a neat,
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Send for full particu-
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Aggressive, and of business experience.
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Give full particulars—Confidentially.

Box 6, Farmer's Advocate,
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ABERDEEN-ANGUS CATTLE, SHROPSHIRE and
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CORRESPONDENCE and INSPECTION INVITED
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Shorthorns and Clydesdales

—College Duke 4th in service. Three near-
est dams and sire's dam have milk records
averaging over 9,000 pounds. Six bulls of
serviceable age; also a few females. One extra choice yearling stallion by Imp. Dunure Beaulieu.
Write **STEWART M. GRAHAM, Lindsay, Ont.**

ROBERT, MILLER, Stouffville, Ont. Has EIGHT of the best young bulls that he
has owned at one time, good ages and beauti-
fully bred. Also several cows and heifers, some of them with calves at foot, others in calf to Rose-
mar's Sultan, the Grand Champion bull at head of the herd. Everything of Scotch breeding. The
prices are very reasonable, and though the freight is high, it will be paid.

SHORTHORNS SHROPSHIRE COTSWOLDS
Blairgowrie Stock Farm
Cows in calf and calf by side. Also heifers in calf and others ready to breed. Bulls of serviceable age.
JNO. MILLER (Myrtle Stations, C.P.R., G.T.R.) ASHBURN, ONTARIO

Irvin Scotch Shorthorns

—Herd Sire Marquis Su-
preme—by Gainsford Mar-
quis (imp.). We have at
present three young bulls of serviceable age and one younger, all sired by our herd sire and from Scotch
bred dams. Good individuals and the best of pedigrees. Also pricing a few females.
J. WATT & SON, ELORA, ONT.

SCOTCH BRED SHORTHORN FEMALES

I have a number of nicely-bred Scotch heifers (reds and roans), in nice condition, and a number are
safely bred. These are priced to sell. I also have a couple of ten-month bulls, thick, sappy youngsters.
—Just the herd sire sort. Inquiry invited.
George Ferguson, Elora, Ontario.

Dual-Purpose Shorthorns—Herd headed by Dominator 106224, whose two
nearest dams average 12,112 pounds of milk in a
year. Write for sales' list. Inspection of herd solicited.
WELWOOD FARM, Farmer's Advocate, London, Ont.

20 Bulls—SPRUCE LAWN—100 Females—Clydesdales, Shorthorns, Yorkshires, Herd
headed by Imported Golden Challenger 122384. A Rubyhill bred by Earl of Northbrook, by Ascott
Challenger, bred by L. De. Rothchild. Special bargains in farmers' bulls. Cows and heifers in calf,
yearling and heifer calves. Yorkshires either sex. **T. W. McCamus, Cavan, C.P.R., Millbrook,
G.T.R. and P. O. Ontario.**

MAPLE HALL SHORTHORNS We have on hand at present, four young
bulls ready for service (two reds, two roans),
that are just the herd sire sort; they are all got by that great sire Flower King No. 90447, and from
our Good Crimson Flower and Butterfly dams. Stations: **Claremont, G.P.R.,
D. BIRKELL & SON, CLAREMONT, ONT. Greenburn C.N.R., Pickering G.T.R.**

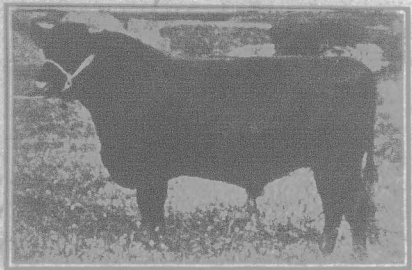
Glenhurst Shorthorns headed by Mansfield Mains Sir Douglas Mains
No. 16163 imp. have been noted for their depth and
size, good teats and smoothness of conformation. If
you are looking for a combination of size, type, and production—plus high butter fat—write me or
visit the farm. Males and females of all ages for sale.
JAMES BENNING, Summerstown Sta., G. T. R. Williamstown, C. P. R. Bell Telephone 78-3 Cornwall

NEWCASTLE HERD OF SHORTHORNS AND TAMWORTHS

For sale, several young bulls ready for service, several heifers bred to Primrose Duke = 10754 =
and several young things of nice quality and breeding. Two young cows with heifer calves at foot,
all of a good milking strain. A choice lot of Tamworths of both sex, and various ages, from noted
prize winning stock. Pair of registered Clydesdale Fillies rising 3.
A. A. COLWILL, Long distance Phone R. R. No. 2, Newcastle, Ont.

SHORTHORN BULLS BY KING DORA (IMP.)

We have several young bulls by the above sire and from good milking dams. Also a few females bred
to this sire. A choice lot throughout, and priced right. We have one Clyde mare, Lady Kialock
(imp.) 12248, safe in foal.
SOCKETT BROS., ROCKWOOD, ONT.



KELMSCOTT ACROBAT 4
Bred and Owned by R. W. Hobbs & Sons,
Champion Milking Shorthorn Bull at the
Royal Show, Manchester, 1916.

The KelmScott Herd of
PEDIGREE MILKING
Shorthorns, Flock of
Oxford Down Sheep and
Stud of Shire Horses

THE PROPERTY OF
Robert W. Hobbs & Sons
KelmScott, Lechlade, Gloucestershire,
England

SHORTHORN CATTLE
One of the oldest and largest pedigree herds in
existence. Milk, Flesh and Constitution studied.
Daily milk records kept. Numerous prizes won
for inspection, milking trials and in butter tests.
The Gold Medal, Spencer and Shirley Challenge
Cups were won at the London Dairy Show in
1914. The Fifty-Guinea Challenge Cup for the
best group of dairy Shorthorns at the Royal Show
was won for the third successive year at the last
exhibition at Manchester in 1916, also two firsts,
one second and one third prize. All cows in milk,
and the stock bulls have passed the tuberculin
test. Bulls and bull calves on sale at prices to
suit all buyers.

OXFORD DOWN SHEEP
The flock was established in 1868, and consists
of from 1,000 to 1,250 registered Oxfords.
Numerous prizes for many years have been won at
the principal shows. At the last Royal Show first
prize was taken for a single Ram Lamb and first
prize for pen of Ram Lambs. Rams, Ram Lambs
and Ewes always on sale.

R. W. Hobbs & Sons are breeders of high-class
Shires. Sound active colts and fillies
always on sale.

TELEGRAM HOBBS, LECHLADE
Inspection Cordially Invited

Dual-Purpose Shorthorns

This is rightly called the FARMERS'
BREED. There are two natural sources
of profit—Milk and Beef. No other breed
is so well qualified to supply both. We
have a fine group of young bulls of
distinctive English Dual-Purpose breed-
ing for sale—both calves and ready
for service. Head your herd with a good
one and prosper. We have also the hardy,
thrifty bacon type pigs—English Large
Blacks. Write for prices.

Lynnore Stock Farm
F. W. Cockshutt, Brantford, Ont.

Maple Shade SHORTHORNS

A dozen young bulls
imported and my own
breeding at moderate
prices.

W. A. DRYDEN

Brooklin - - - Ontario

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 com-
binations of beef, milk and Shorthorn character.
All priced to sell. Write, call or 'phone.
THOMAS GRAHAM, Port Perry, R. R. 3, Ont.

Woodburn Shorthorns

Two young bulls of serviceable ages.
Priced to sell.

W. S. BRAGG, Box 11, Bowmanville, Ont.

Shorthorns and Oxfords For Sale
Two young bulls, one a choice roan grandson of
Right Sort; also ewes and lambs, either sex.
GEO. D. FLETCHER, R.R. No. 1, Erin, Ont.

Painting and Finishing Wood Buildings In- side and Outside.

BY HENRY A. GARDNER, THE INSTITUTE OF
INDUSTRIAL RESEARCH, WASHING-
TON, D. C.

1.—GENERAL CONSIDERATIONS LUMBER AND ITS RELATION TO PAINT—

The proper choice and treatment of
lumber is one of the most important
problems which the builder as well as
the painter has to face. When about to
build a dwelling, barn, or other wood
structure, the question is sure to arise as
to what variety of lumber to select in
order to get the maximum service and
money value. The locality in which the
structure is to be built must often have a
bearing upon this question. While it
is true that the painting of each type of
wood demands the special consideration
of the painter, it is also true that the study
of paints for wood protection points
toward the production of a paint that will
give satisfactory results under all con-
ditions and on all grades of lumber. It
is the writer's opinion that a high grade
paint is perfectly well suited for the
preservation of every species of wood,
provided the paint is properly treated in
the hands of the skillful and intelligent
painter who can produce lasting results
on almost every type of lumber.

Prepared paints, contained in sealed
packages, are the most economical and
convenient. The brand selected should
be composed of pigments (solids) and
liquids; the pigments being white lead
and zinc oxide, with or without a small
amount of chemically inert pigments.
These pigments should be thoroughly
ground in the liquids which should be
composed of linseed oil with a small
amount of drier and thinner. Color
pigments are added to such mixtures if
the paint is to be tinted. These paints
are suitable for the exteriors of all wooden
structures.

If the painter desires to use a paint
mixed by hand, paste paints may be
obtained either in the form of white lead
ground in oil or zinc oxide ground in oil.
These may be mixed together, or they
may be purchased in the form of a pre-
pared paste paint made of these pigments.
It is customary to add to 100 pounds of a
paste paint, from 4 to 6 gallons of linseed
oil and a pint of liquid drier. The amount
of liquids added will, however, be deter-
mined by the consistency of the paste
and the character of the surface. The
mixture may then be thoroughly stirred
in a barrel or tub. Labor and time are
necessary to produce a smooth paste.
A gallon or more of turpentine may be
used to take the place of part of the oil
for first-coat work. If a colored paint
is desired, color ground in oil may be
added to produce the desired result.
The paint should then be stirred to get
the color worked thoroughly into the
mass.

COLOR.—The selection of the color for
a dwelling or other structure is a matter
that depends largely upon the good
judgment and taste of the owner, com-
bined with the advice of the painter.
One point, however, should be impressed
upon the mind of both, namely, that
practically all shades or tints made upon
a good white paint base, through the use
of permanent tinting colors, will better
withstand exposure to the atmosphere
than the white base used alone.

QUANTITY REQUIRED AND COST.—A paint
in prepared form, ready for application,
will have an average spreading rate
of about 900 square feet per gallon,
when figured for one coat on wooden
surfaces. In estimating the amount of
paint required for surface, the total
number of square feet should be calculated
by multiplying the width by the height,
of each side. The total area should then
be divided by 300, which will give ap-
proximately the number of gallons re-
quired to produce, if the total area for the
four sides of a house is 6,300 square feet, 21
gallons of paint will be required for the
work. The cost of the paint may be
figured by multiplying the number of
gallons required by the current market
price of the paint. The cost of skilled
labor employed for properly applying the
paint may be figured at double the cost
of the paint. To the total may be added
the cost of brushes, ladders, and incidentals.
It is readily seen, therefore, that the cost
of the paint is a small part of the cost of
painting, and for this reason only the
best paint should be used in order to

BRUCE COUNTY BREEDERS' CLUB

Fourth Semi-Annual Sale of
SCOTCH AND SCOTCH-TOPPED

Shorthorns

Paisley, Ont., Thursday, January 8th, 1920

THIRTY-FIVE HEAD

Consisting of cows with calves at foot, heifers bred and open,
and a choice lot of young bulls of popular Scotch breeding.

Write Secretary for Catalogues.

WM. MACKINTOSH,
Southampton, Ont., President

N. C. MACKAY
Walkerton, Ont., Secretary

A NEW IMPORTATION OF FORTY 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

Burlington Jct., G.T.R., only half mile from farm.

Freeman, Ontario

ELMGROVE SHORTHORNS, YORKSHIRES

Owing to pressure of other business I will not hold my annual sale of Shorthorns
this fall but am offering privately a limited number of young cows, several with
calves at foot, and also a few choice-bred heifers near calving. The most select
offering I ever had on the farm and all showing in good condition.

In Yorkshires I have several bred sows; a few boars of serviceable age and some
young litters. JAS. R. FALLIS, Elmgrove Farm, BRAMPTON, ONT.

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.

Cedar Dale Scotch Shorthorns—Pleasing Cattle and Pleasing Pedigrees—Senior
sire, Excelsior, by 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.

Scotch Shorthorn Bulls and Females—I have a nice offering of Scotch-
bred bulls still on hand. The pedigrees are choice, the individuality is good—and the prices are
right. If you want one Shorthorn female or a carload, come to Markdale.
THOS. MERCER, Markdale, Ont.

SHORTHORNS AT A SACRIFICE

3 bulls 16 to 25 months, must be sold. Shropshire ram lambs and one shearing. Prices reasonable.

Wm. D. Dyer, Columbus, Ont., Brooklin G. T. R., Myrtle, C. P. R.

1854 Maple Lodge Stock Farm Shorthorn 1919

1 red bull calf, dam and grandam R. O. P. cows, 13 months and two roan calves younger. For sale
now. Lucan Crossing 1 mile east of farm. Miss Charlotte Smith, Clandeboye, R. R. 1, Ont.

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, Shedden, Ont., P. M. M. C. R.

80 Spruce Glen Shorthorns—80—Eighty head to select from—twelve young bulls 8 to
14 months old, sired by Royal Red Blood = 77521 =
and Nonpareil Ramsden = 10108 = and out of Bruce Fames, Florences, Minas and Emilys. A few
choice heifers for sale. Come and see them, or write.
JAMES MCPHERSON & SONS, "Spruce Glen Farm," Dundalk, Ont.

GRAND VIEW FARM SHORTHORNS

Herd headed by Lord Rosewood = 121676 = and by Proud Lancer (Imp.). Have a few choice bull
calves and heifers left, sired by Escana Favorites, a son of the famous Right Sort (Imp.).
W. G. GERIE C.P.R. Station on farm. Bell 'Phone. BELLWOOD, ONTARIO

GLENGOW SHORTHORNS AND COTSWOLDS

Six-year-old Cotswold rams. These are big lusty fellows and in good condition. I also have four
Shorthorn bulls of serviceable age. Write for prices and particulars.
Stations: Brooklin, G.T.R.; Oshawa, C.N.R.; Myrtle, C.P.R. WM. SMITH, M.P., Columbus, Ont

Spring Valley Shorthorns

Herd headed by Sea Gem Pride = 96365 =. Present
offering includes two real herd headers. One im-
ported in dam, the other by Sea Gem's Pride and
from a show cow. A number of other good bulls and few females. Write for particulars.
Telephone and telegraph by Ayr.
KYLE BROS, R. 1, Drumbo, Ont.

SHORTHORN FEMALES—SHORTHORN BULLS

We are now offering a number of choice heifers, good families and good individuals. Many are well
forward in calf to our Roan Lady-bred sire, Meadow Lawn Laird. We also have bulls ready for
service. Prices right. Satisfaction guaranteed.
J. K. CAMPBELL & SONS, Palmerston, Ont.

Make Sure of Your DE LAVAL Cream Separator Early in 1920



There's no happier or better way of starting the New Year right than by making sure of a new DE LAVAL, if you are either without a cream separator or are using an inferior or half-worn-out machine that should be replaced.

For three years now, thousands of those who wanted a DE LAVAL have

had to wait weeks for it, and many have had to buy a second grade separator. The demand has simply exceeded the possible supply, though more DE LAVALS have been made each year than ever before.

More and better DE LAVALS will be made this year than ever before—as many as available plant additions and skilled workmen can produce—but the demand gives every indication of being even greater still.

Order your DE LAVAL now. Make sure of getting it. Let it save half its cost by Spring.

See the nearest De Laval local agent at once, or write the nearest De Laval office below for any information desired.

THE DE LAVAL COMPANY, Limited

MONTREAL PETERBORO WINNIPEG VANCOUVER

50,000 Branches and Local Agencies the World Over

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, 59 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

H. A. MAGDONELL,
Director of Colonization,

BENIAH BOWMAN,
Minister of Lands, Forests and Mines,
PARLIAMENT BUILDINGS, TORONTO.

Hospital for Insane, Hamilton

Holsteins Yes, all bulls of serviceable age are sold, but several of six months and younger, from one of the best sons of King Segis Alcartra Spofford, and our best dams will be sold at reasonable prices.
APPPY TO SUPERINTENDENT

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 36.66 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, ONT.

HOLSTEIN HERD AVERAGES 18,812 LBS. MILK

A herd of 13 pure-bred Holsteins last year averaged 18,812 lbs. milk and 638.57 lbs. fat. Do you realize the money there is in such cows? It is estimated that the average annual yield of all cows in this country is under 4,000 lbs. These 13 cows produce as much milk as 62 cows of the 4,000-lb. class.

Why feed, milk and shelter any more cows than you need to produce the milk you require? If interested in HOLSTEIN CATTLE send for booklets—they contain much valuable information.

HOLSTEIN-FRIESIAN ASSOCIATION OF CANADA
W. A. CLEMONS, Secretary, ST. GEORGE, ONT.

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

LAKEVIEW HOLSTEINS

Offer a son of DUTCHLAND COLANTHA SIR MONA out of LAKEVIEW WINNER 3rd, a 26.57-lb. daughter of COUNT HENGERVELD FAYNE DE KOL. This bull is eleven months old and a good one. For extended pedigree and price, write

E. F. OSLER, Bronte, Ontario

"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.

MONTROSE HOLSTEIN - FRIESIAN FARMS

(The Home of 20,000-lb. Cows)

Present offering (at right prices), four young bulls out of R.O.P. cows with records of 20,000 lbs. milk and over. See this herd and our young bulls in particular before buying elsewhere. Visitors always welcome.

R. J. GRAHAM, - Montrose House Farms, - BELLVILLE, ONTARIO

PIONEER FARM HOLSTEINS

My present sales' list includes only bull calves born after Jan. 1st, 1919. These are priced right.
WALBURN RIVERS & SONS, R.R. No. 2, Ingersoll, Ontario

FOUR HOLSTEIN BULLS FOR SALE

from 2 to 7 months old. Two grandsons of the 26,000-lb. cow. Two great-grandsons, one from a 23-lb. jr. 4-year-old. All sired by Hillcrest Rauwerd Vale, whose two nearest dams average almost 30 lbs. of butter in 7 days, and almost 26,000 lbs. milk in 12 months. Cheap considering quality.

W. FRED. FALLIS, 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

CHOICE HOLSTEIN FEMALES!!

I could spare ten or twelve two and three-year heifers, daughters of Baron Colantha Fayne and Louis Prilly Rouble Hartog. All are bred to freshen early to our 34-lb. sire. Also have a few young bulls, one from a 29.95-lb. cow that has milked 105 lbs. per day. Don't delay, this offering is priced right.
T. W. McQUEEN, Tillsonburg, Ont.

Glenuba Dairy Farms

Offers For Sale: Three choice young cows with R.O.M. and R.O.P. records, due to freshen in Jan. and Feb., and in calf to our herd sire whose dam made 34 lbs. butter in 7 days as a 4-year-old. Just the kind to start a good foundation. For price, etc. write—GRIESBACH BROS., - L. D. 'Phone - Collingwood, Ont.

Cedar Dale Farm—The Home of Lakeview Johanna LeStrange, the \$15,000 sire—He is the son of the 38.06-lb. cow, Lakeview LeStrange, and is our chief sire in service. We are offering a few females bred to him and also have a few bull calves sired by him at right prices. Other older bulls, sired by our former herd sire, Prince Segis Walker, son of King Segis Walker. A. J. TAMBLYN, Cedar Dale Holsteins (C. N. R. station one mile) Orono, Ontario.

Silver Stream Holsteins

Special offering—Four choice bulls fit for service, sired by King Lyons Colantha, the records of his six nearest dams average 30.10 lbs. butter in 7 days, and from R. O. P. tested dams. Individually as good as their breeding. Write at once for particulars and price, or better, come and see them.
JACOB MOGK & SON, R. R. 1, Tavistock, 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 Champion bull at Toronto this year. Prices reasonable
D. C. FLATT & SON, R.R. No. 2, Hamilton, Ont.

secure a job that will last for the longest time without repainting.

WHY GOOD PAINTS SAVE MONEY— The property owner should remember that it is a very good business proposition to keep buildings of all types, especially dwellings and farm buildings, well painted.

By so doing, the value of the property is increased at least 25 per cent. If wood structures are left bare and exposed, the surfaces become roughened and the wood is subjected to warping and cracking.

When dampness enters such exposed wood, conditions become favorable for the action of destructive fungi. Application of good paint will prevent such defects and if occasionally renewed will preserve wood almost indefinitely. Striking illustrations of the truth of this statement are afforded by the condition of those well painted, century-old buildings to be found throughout those states that were once known as "the thirteen original colonies."

Moreover, paints not only decorate and preserve wood, but they make it more resistant to fire. For instance, prepared paints contain 70 to 80 per cent. of non-combustible, metallic or mineral pigments, and may, therefore, be termed fire-resisting. When such paints are applied to shingles, a very waterproof, semi-metallic film results. The film smooths the rough, fuzzy surface of the wood and prevents warping at the edges.

2.—APPLICATION OF PAINTS AND FINISHES.

GENERAL DIRECTIONS— The paints, varnishes and finishing material referred to herein generally contain upon the labels full printed instructions for their application. The procedure outlined herein for the painting and finishing of wood may, however, be followed with assurance of most excellent results.

EXTERIOR PAINTING. No paint or other finishing material should be applied in damp weather.

—twelve young bulls 8 to 12 months old. One from Red Blood = 77521 = 100 lbs. and Emilys. A few more to be had.

Dundalk, Ont.

BULLS

Individuals. Many are well bred and have bulls ready for sale.

Palmerston, Ont.

—Present herd headers. One from Sea Gem's Pride and particulars.

1. Drumbo, Ont.

M.P., Columbus, Ont

—Present herd headers. One from Sea Gem's Pride and particulars.

1. Drumbo, Ont.

Individuals. Many are well bred and have bulls ready for sale.

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Palmerston, Ont.

Due Both to Nature and Human Skill

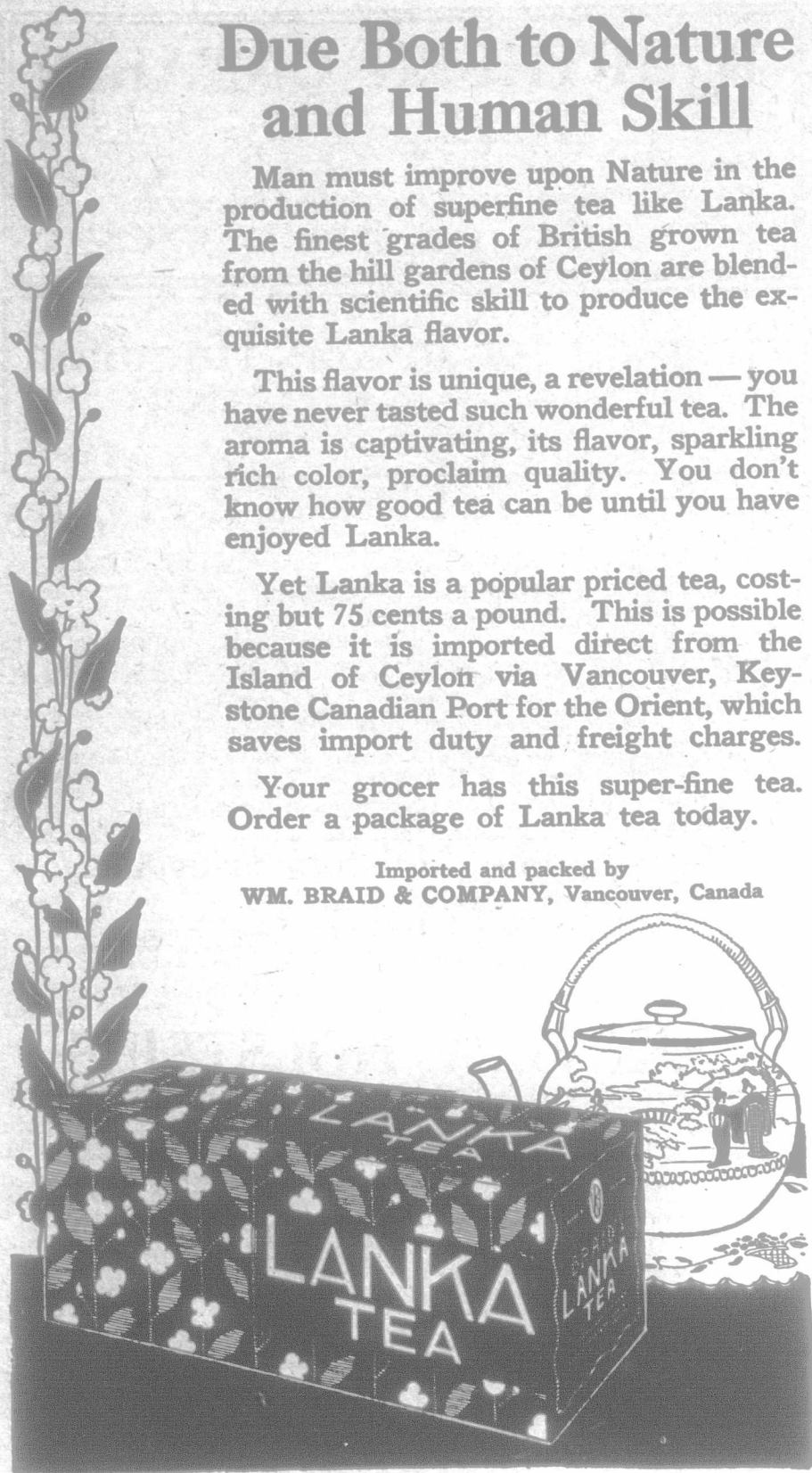
Man must improve upon Nature in the production of superfine tea like Lanka. The finest grades of British grown tea from the hill gardens of Ceylon are blended with scientific skill to produce the exquisite Lanka flavor.

This flavor is unique, a revelation — you have never tasted such wonderful tea. The aroma is captivating, its flavor, sparkling rich color, proclaim quality. You don't know how good tea can be until you have enjoyed Lanka.

Yet Lanka is a popular priced tea, costing but 75 cents a pound. This is possible because it is imported direct from the Island of Ceylon via Vancouver, Keystone Canadian Port for the Orient, which saves import duty and freight charges.

Your grocer has this super-fine tea. Order a package of Lanka tea today.

Imported and packed by
WM. BRAID & COMPANY, Vancouver, Canada



Prospect Farm Jerseys

We have choice cows and heifers for sale, registered and high grades. 125 head of Jerseys in the herd. If you have a growing family, it is your duty to provide them with nature's greatest food in abundance, good, clean, healthful, wholesome milk. There are no substitutes for Jersey milk. Buy one and be convinced. Get the "Milk Habit." We have also for sale a fine lot of bull calves. Correspondence answered promptly. If possible, come and see them.

R. & A. H. BAIRD, R.R. 1, New Hamburg, Ontario

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 Birks Bldg. Montreal, P. Q. Farm at Morin Heights, F. J. Watson, Mgr.

Edgeley Bright Prince—a son of Sunbeam of Edgeley, R. O. P. champion, sired by a son of Viola's Bright Prince is for sale. He is 3 years old, sure and active. Won third prize in aged class at Toronto and London, 1919. Write for price.
JAMES BAGG & SONS (Woodbridge C.P.R., Concord G.T.R.) EDGELEY, ONT.

SPRINGBANK R.O.P. AYRSHIRES

Our Ayrshires win in the show ring and they fill the pail. We hold more present R.O.P. Champion records than any other herd in Canada. Young bulls and females by present herd sire Netherton King Theodore (Imp.).

A. S. TURNER & SON, (Railway Station Hamilton) - RYCKMAN'S CORNERS, ONT

Homestead Farm R.O.P. Ayrshires—At the head of our herd at present we have a grandson of the great Jean Armour. He is being used on the daughters of our former sire, Garlaugh Prince Fortune (Imp.). Young cows freshen this fall and winter.

MACVICAR BROS., 'phone 2253 Harrietsville, Belmont, R.R. No. 1, Ont.

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

It should be remembered that the most durable results are obtained from tinted paints. Permanent colors which have been ground by machine into the lead and zinc base have the effect of preventing painting defects and increasing the durability of the paint by thirty per cent.

If the property owner should desire to mix his paint by hand which is not considered an economical procedure, he may obtain packages of white lead ground in oil and zinc oxide ground in oil, or paste paints containing a mixture of these pigments. Mixtures of lead containing from twenty-five to fifty per cent of zinc are generally used.

INTERIOR PAINTING OF WOOD.

CLEAN AND SAND-PAPER—Brush-coat knots and sappy spots with turpentine not more than one hour previous to the application of the first coat of paint. Select a high grade prepared paint made by a reputable manufacturer upon a lead and zinc base. To one gallon of paint there should be added three pints of turpentine. The thoroughly stirred mixture should then be applied, brushing it out into a thin coat. This will rapidly dry to a hard undercoating that has penetrated deeply into the wood. If the finishing color is to be white or a light tint, there should be applied over the priming coat of paint a thin coat of white shellac. This will prevent discoloration of the surface by resin in the wood. After drying, the imperfections may be puttied up. There should then be applied three coats of paint of the desired color. If a varnish coat is applied over the paint, it should be a light colored, good wearing varnish evenly applied and it should be colored by mixing in a small amount of the finishing tint of paint.

ENAMELING.

For enameling the same treatment of knots, priming with paint, coating with shellac, and puttying should be adopted. Apply three coats of white prepared paint or prepared flat finish paint. Then apply one coat of half paint and a half enamel. Finish with one full flowing coat of best enamel. Each coat must be thoroughly dry, and should be lightly sand-papered before the application of another. All coats should be tinted as desired. The enamel coats may be rubbed with water and powdered pumice stone if a satin finish is desired.

STAINING AND VARNISHING.

NATURAL FINISH—The woodwork should be thoroughly cleaned and sand-papered where necessary. Apply one coat of white shellac. Cover all nail holes and other imperfections with putty colored to match the wood, taking care to remove surplus putty. Apply two coats of good wearing body varnish, the last coat to be evenly flowed on. Sand-paper thoroughly between coats. If a flat finish is desired, the varnish coats may be rubbed—not too closely—to a dull, even finish. If desired, a dull-finish varnish may be used. If the natural color of the wood is a trifle too bright for the effect desired, a very little burnt sienna added to the first coat of varnish will produce a more pleasing effect.

STAINED WORK—All woodwork should be thoroughly cleaned and free from imperfections. Apply one coat of linseed oil prepared stain containing benzol. Sand-paper lightly. Close nail holes with putty to match stain, removing all excess putty. Apply two coats of strong wearing body varnish, evenly flowed on, and sand-paper lightly between coats, taking care that each coat is thoroughly dry before another is applied. For a flat surface rub lightly with oil and pumice stone or apply one coat of flat varnish.

FINISHING FLOORS.

NATURAL COLOR FINISH—It is advisable not to lay a floor surface until the plastering of the building is on and thoroughly dry. Floors should be cleaned, smoothed, hand-scraped, and sand-papered with the grain of the wood, and left in perfect condition to receive the work of the painter.

Apply a very thin first coat of white shellac. Sand-paper lightly with fine sand-paper, and apply two coats of best elastic floor varnish. Some painters prefer to omit the shellac and use three coats of floor varnish. If a dull finish is desired, rub lightly with oil and pumice stone. Wax the varnished surface if desired.

STAINED FLOORS—If the floor is to be stained, omit the shellac and apply one coat of linseed oil prepared stain con-

ROOF WITH METAL

Send us the size of any roof that needs covering and we will mail you a very interesting proposition.

"EMPIRE" CORRUGATED IRON "EASTLAKE" STEEL SHINGLES

are admitted Standards of Quality

35 years' reputation for sterling reliability is behind "Metallic" goods. 35 years' experience in filling farmers' needs is at your service.

Write today for Roofing Booklet E

The **METALLIC ROOFING Co.** Limited

196

MANUFACTURERS

TORONTO

and **Winnipeg**

USE "METALLIC"

Clips a Cow in 5 Minutes

That's what the Stewart No. 1 Clipping Machine will do—clip the flanks and udder of a cow in five minutes. Do it every three or four weeks, and you can wipe off the parts in a jiffy before milking. Then there is no dirt and filth falling into the milk. This machine clips horses also. Get one from your dealer, or write direct to us.

CHICAGO FLEXIBLE SHAFT COMPANY
Dept. A.161 12th St. and Central Ave., Chicago, Ill.

City View Ayrshires—We are offering Charity of City View. A very large cow of splendid quality; 4 years old, just fresh; color pure white. Young bulls from one week to 14 months, and other cows.
James Begg & Son, St. Thomas, Ont.

Maple Shade Farm

Imported Shropshire ewes served by best imported rams very desirable for foundation flocks.

W. A. DRYDEN,

Brooklin, Ontario

Shropshires

25 Shearling Ewes, all bred to Knoch ram. Also a fine bunch of ewe lambs. Prices right. Satisfaction guaranteed.

W. D. BURTCH

R.R. No. 2 Brantford, Ont.

Dorsets and Oxfords

I have at present a choice offering in shearing and ram lambs (both breeds). We were unable to show this year, but these rams are the choicest lot we ever bred. Also have four two-year-old stock rams, as well as a limited number of shearing and two-shear Dorset ewes. Prices right.

S. J. Robertson (C.P.R.) Hornby, Ont.

Shropshire Sheep—40 shearing ewes, 30 two and three-shear ewes, mostly from imported stock. A few choice shearing rams; also ewes and ram lambs.

Oshawa all railroads. **C. H. SCOTT,**
Long distance phone. **Hampton, Ont.**

Shropshire yearling ewes bred to Bibby's 84 (Imp.) ram and ewe lambs sired by him. Two Shorthorn Bulls. Two Clydesdale Stallions.
W. H. FUGH, Myrtle Station, Ont.

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covering and
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TED IRON
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and
Winnipeg

ALIC"

in 5 Minutes

No. 1 Clipping Machine
and udder of a cow in five
ce or four weeks, and you
n a jiffy before milking.
fifth falling into the milk.
also. Get one from your
us.

SHAFT COMPANY
Central Ave., Chicago, Ill.

We are offering Charity
of City View. A very
uality; 4 years old, just
Young bulls from one
other cows.
on, St. Thomas, Ont.

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Shropshire
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RYDEN,
Ontario

shires

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also a fine bunch
Prices right,
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BURTON
Brantford, Ont.

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choice offering in shear-
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ear-old stock rams, as
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as. Prices right.

(P.R.) Hornby, Ont.

40 shearing ewes, 30 two
nd three-shear ewes, most-
- A few choice shearing
l lambs.

C. H. SCOTT,
Hampton, Ont.

ewes bred to Bibby's
84 (imp.) ram and
n. Two Shorthorn Bulls.
ns.

Myrtle Station, Ont.

Bone Spavin

No matter how old the blemish, how lame the horse, or how many doctors have tried and failed, use Fleming's Spavin and Ringbone Paste. Use it under our guarantee—your money refunded if it doesn't make the horse go sound. Most cases cured by a single 45-minute application—occasionally two required. Cures Bone Spavin, Ringbone and Sidebone, new and old cases alike. Write for detailed information and a free copy of Fleming's Vest-Pocket Veterinary Adviser. Ninety-six pages, durably bound, indexed and illustrated. Covers over one hundred veterinary subjects. Read this book before you treat any kind of lameness in horses.

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

FEEDS

Linseed Oil Cake Meal, Cotton Seed Meal, Gluten Feed (23% protein), Hominy Feed, Bran, Shorts, Feeding Cane Molasses (in barrels), Sugar Beet Meal, Feed Corn, Oats, Barley, Dairy Feed, Hog Feed, Poultry Feeds and supplies.

Car lots or less. Prices on application.

CRAMPSEY & KELLEY
776 Devercourt Rd., Toronto

Young Yorkshire Pigs FOR SALE

Also choice sows ready to breed. These are good ones. For further particulars, apply to

WM. VIVIAN Mitchell, Ont.
R.R. 43

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 1919. The Champion Berkshire barrows of 1918 International were double grandsons of Lord Premier's successor. We have shipped many Berkshires to Canada with satisfaction to customers. Prices on request.

HOOD FARM, INC., Lowell, Mass.

YORKSHIRES

We are now booking orders for Fall pigs, both sexes. Several large litters to choose from.

WELWOOD FARM
Farmer's Advocate, London, Ontario

Oak Lodge Yorkshires

We have on hand at present the strongest selection of young sows and boars we ever bred, including a number of our recent winners at Toronto. Are also booking orders now for fall pigs.

J. E. Brethour & Nephews, Burford, Ont.

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.

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.

HIGH-CLASS DUROC JERSEYS
Herd headed by Brookwater Ontario Principal 9735 (imp.) Champion male Toronto and London 1918. 25 high-class young boars 4 to 6 months old. Select your herd header here.

Culbert Malott, R. R. 3, Wheatley, Ont.
Bell Phone

TAMWORTHS

Young Boars and sows bred for fall farrow. Express charges prepaid. Registered stock. Write JOHN W. TODD, CORINTH ONTARIO

Big Type Chester Whites—We cleaned up at Exhibitions, 1919. Now offering pigs from our 805-lb. sows, and sows bred to our 1,005-lb. boar.

JOHN ANNESSER, Tilbury, Ont.

Meadow Brook Yorkshires—We have a choice offering of sows bred and boars fit for service. Also a number of large litters ready to wean. All show the best of breeding and excellent type.

G. W. MINERS, R.R. No. 3, Exeter, Ont.

When writing please mention Advocate.

taining benzol. When dry, apply two or three coats of best elastic floor varnish. Wax if desired.

Do not attempt to finish a floor by the use of wax or oil alone. A polished surface will result, but it will not be hard, and will soon be discolored with dust and dirt.

PAINTING SHINGLE ROOFS.

New shingles, if well seasoned, may be dipped or brush-coated in a prepared mineral paint that has been suitably thinned with turpentine or mineral spirits so that the excess paint will readily run off, leaving an even film. After laying, another coat is applied. The paint should be well brushed in. Shingles 4 inches in width are usually laid to show not over 4½ inches of their length of 16 inches, thus forming a quadruple roof of approximately 125 square feet to a thousand shingles. One gallon of prepared shingle paint will cover 400 square feet, one coat, if well brushed out.

Gossip.

W. R. Readhead, of Milton, writes that he has recently sold five yearling heifers, four heifer calves, and a bull calf to J. T. Ayers, of Quebec. A splendid bull calf was sold to C. W. Prosser. John McVey, & Son, of Thorndale, secured the junior bull calf, Brockdale Chief, which was second in his class at Toronto and first at Ottawa. Victor of Brookdale, grand champion Hereford at Ottawa, was purchased by J. D. Fraser, of Ottawa. Mr. Readhead writes that his stock went into the stable in splendid condition this fall, and that he is now using his new herd sire, Real Ace, by Fred Real and out of Cleopatra 2nd.

Maclaren Milking Shorthorns.

Shorthorn breeders, who are readers of these columns, will, no doubt, readily recall the Maclaren Milking Shorthorn advertisement which appeared in these columns recently. The herd was founded some four or five years ago only, but to-day for its size there is no doubt it compares favorably with the best milking Shorthorn herds throughout either the United States or Canada. The herd sires, as well as the breeding females, are strong in individuality and coupled with this they have the backing of a liberal flow in milk production, which makes up just the desired combination one likes to see in a dual-purpose herd. Mr. Maclaren's slogan "Quality and not quantity," has not only been carried out in his selection of foundation animals, but has also been responsible for his getting together upwards of a dozen big, deep breeding cows, weighing from 1,200 to 1,600 lbs. and producing in the R.O.P. all the way from 8,700 lbs. of milk for two-year-olds, up to 12,845 lbs. for mature cows. As the records of the majority of these cows have already been mentioned in the advertisement, it is quite unnecessary to give a repetition of them here, but it might be of interest to many of our readers to know something more of the two herd bulls which are the sires to which these cows are bred. Red Robin, the senior sire, is perhaps one of the best and largest individuals of any milking-bred sire in Canada to-day. He weighs to-day over 2,500 lbs., and his sire was the imported bull, Robin, brought out by Professor Barton to head the College herd of milking Shorthorns at Macdonald College. On the dam's side Red Robin is from Octavia, a 55-lb. per day cow, although never officially tested. Royal Signet, the junior sire, is also a bull of exceptional size for his age, weighing over 1,800 lbs. at two years and three months of age, and he is got by the noted American dual-purpose sire, Glenside Dairy King; while his dam, White Queen (imp.) had a yearly record of 10,430 lbs. of milk, and was sold at the Otis sale in 1917 for \$3,000. As will be seen, both these sires are bred for production, and in crossing the daughters of one with the other Mr. Maclaren should obtain some excellent results. If space would permit, we would like to give more information in detail regarding the breeding cows, as well as some of the better-bred young things in the herd, but this information will gladly be furnished by Mr. Maclaren at all times, and will be appreciated by all who are interested in dual-purpose Shorthorns of the correct type. Address all correspondence to Alexander Maclaren, Buckingham, Quebec.



Three million dollars for a phonograph!

That's what it cost to perfect the only instrument that RE-CREATES music so faithfully that no one can tell whether it is the living artist he hears or the phonograph—when one is heard in direct comparison with the other. Add to that three million dollars, Thomas A. Edison's genius, his vast knowledge and his indomitable will and you realize how much was required to make

The NEW EDISON

"The Phonograph with a Soul"

"Now go ahead and build replicas," said Mr. Edison to his staff when he had finally achieved an instrument which would meet the tone test. "Call it the Official Laboratory Model and uphold the standards I have set to the last detail."

This three million dollar Phonograph is on display in your neighborhood. Write us for the name of an Edison dealer in your vicinity who will gladly play for you the New Edison.

We will also send you a copy of the beautiful book "Edison and Music" and the booklet "What the Critics Say" which proves Edison superiority.

THOS. A. EDISON, INC., - ORANGE, N. J.

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EIGHTEENTH ANNUAL

Ottawa Winter Fair

OTTAWA, ONT.

January 13, 14, 15, 16, 1920

\$18,000.00 in Cash Prizes

Write to the Secretary for Prize Lists, Entry Forms and information.

Entries close December 30th

WM. SMITH, M. P. P., President **W. D. JACKSON, Secretary**
Columbus, Ont. Carp, Ont.

ELMHURST LARGE ENGLISH BERKSHIRES

From our recent importation of sows, together with the stock boar, Suddon Torredor, we can supply select breeding stock all ages. Satisfaction and safe delivery guaranteed.

H. M. VANDERLIP, Breeder and Importer, R. R. 1, BRANTFORD, ONTARIO.
Langford Station on Brantford and Hamilton Radial.

Westside Stock Farm

I have to offer at present one of the best litters of YORKSHIRE pigs I ever had. Also two extra good Ayrshire bull calves, born in March from heavy-producing dams. Write me for anything in Ayrshire or Yorkshires.

DAVID A. ASHWORTH, Denfield, Ont., Middlesex Co.

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

GOOD YEAR
MADE IN CANADA

The Road Has Proved This Tread

ALL experience, all research, simply add proof to our claim that there is no better tread—for rear wheels or front—than the Goodyear All-Weather Tread.

No tread has been subjected to more severe tests—or closer observation.

On the Road—millions of motorists have jealously watched its quality and its work.

In the Goodyear Plant—constant research and continual experimenting aimed at a better tread.

From such observation and study came the Goodyear success. For it showed how to make tires that give more mileage, less trouble. It produced the crowning Goodyear achievement—the Goodyear Cord Tire. Yet the All-Weather Tread stands unchanged, defying improvement.

All-Weather Tires are All-Wheel Tires.

The sharp-edged blocks are arranged to roll like a ribbed tread. But—made of tough rubber—they resist skidding: take you out of ruts, around slippery corners, across ice-bound car tracks.

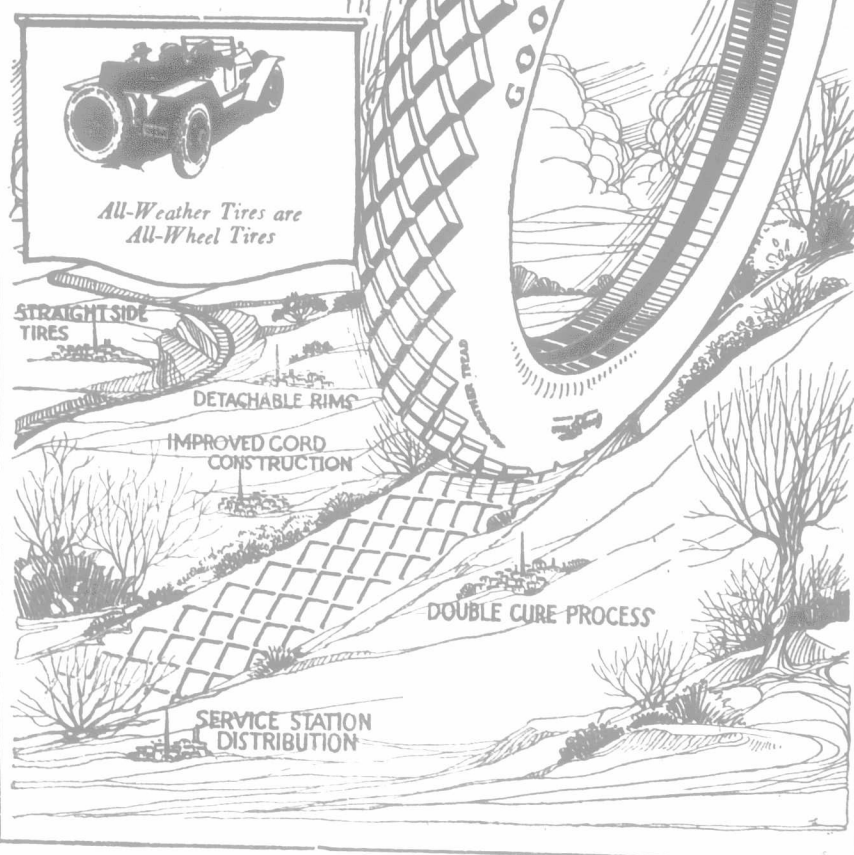
Through soft surfaces they cut to a solid footing.

Front wheels are kept under easy and absolute control.

With Goodyear All-Weather Treads on four wheels, and the spare, changing tires does not spoil the balanced appearance of your car.

Meet the winter weather, prepared with Goodyear All-Weather Treads on all wheels. Go to a Goodyear Service Station Dealer for tires and mileage-making service.

The Goodyear Tire & Rubber Company of Canada, Limited



Our School Department.

Better Habits of Study.

BY G. W. HOFFERD, M.A., NORMAL SCHOOL, LONDON.

Johnny was enjoying his Christmas holiday. Almost the moment we met him we knew by the twinkle in his happy eyes, that he had a story to tell, if he but got a chance.

"Well, Johnny, how goes it?" This was a real success in getting him started on the topic of chief interest to him. His face showed that something was filling his life with a purpose.

"You know we have a fine school now, and a new teacher," said Johnny. "She came last summer and her name is Miss Million. All the boys say that she is worth a million other teachers, for she keeps our school neat and tidy all the time through our helpfulness, and makes us study hard too. But who would not study hard for her; and who could not study in such clean, happy and comfortable surroundings, and with such a good teacher as we now have! Before the trustees fixed up our school it was a dingy, dirty, cold and lonely spot, excepting for a while in the spring and fall when the flies kept us busy. Miss Million will not put up with anything of that nature these days. She has a thermometer on the wall which she had the trustees purchase for the school. I never saw one of these instruments before, but now Miss Million has taught us how to read the temperature and insists that the room be kept between 68% and 70% F. That just suits us, for now we are comfortable and can work well all the time. Last year, we 'kids' did nothing but sit around with our backs hunched up on cold days, wishing for four o'clock to come.

"Soon after Miss Million came, we learned that she meant business. She did everything so quickly and cheerfully that we felt like doing likewise. One morning she had a long chat with us about things she had been observing in our habits of study. I will not tell you what they all were, but we 'kids' knew that we could all do better, and we were willing to do better too, if we only had someone to guide us in the right way. She pointed out that this school was for training boys and girls into better ways of studying and thinking. But we did not like some of the studies, and we told her that they were no good either. She just smiled and said, kindly but firmly, that we must not come to such hasty conclusions. She told us that we have varying dispositions, and that life is very complex, and that all types of studies are fundamental to good habits of study, and that good habits, well developed, will prepare us for our place, when we are men, in the great social world, where it will be necessary for us to have courage, unselfishness, honesty, imagination, and good reasoning powers to think out and to act rightly in the many intricate problems. A little light then dawned upon us as to why we had studies we liked, and studies we did not like. She told us that some were necessary for forming good physical habits, some for memory habits, some for appreciation, and some for helping us to make good judgments. Some studies had to do with books, some with people, and some with the materials of mother earth. This new way of looking at our work made study a big thing to some of us who wanted to get along. We saw that all the different varieties of our activities were being cultivated with the purpose of starting us into the way of making efficient citizens of ourselves, with a worldwide outlook and a sympathetic consideration for all men.

"We boys also have a feeling now that school days are worth while, and that the power to study is worth cultivating. We know, too, that Miss Million is teaching us how to study. She says that knowing how to study is not an inborn gift, but is a power which can be cultivated by anyone. She puts our lessons in such a clear and interesting way to us that we are glad to exercise our powers of concentration in working them out. Half an hour of concentrated effort, I know, gives me better results

than an hour of study with scattered attention. During the term before us we are going to be trained to ignore distractions, and learn how to keep our attention on our studies. Really, we have been wasting much time in looking around every time the door opened, or whenever a pupil was looking for a book, or any little thing like that. We are going to have a quiet ticking clock placed before us for the purpose of encouraging us to set time limits for doing various studies and exercises. We must try to do the task we set ourselves in a certain time. Miss Million has a timetable which she follows, and she wants us to have one too. She says that following a time-table will train us to be business-like and careful of the flying minutes of the school day. We are not to allow ourselves to be distracted and are to keep calm and steady and free from worry. It will be hard, as our teacher explained to us, to do our best and not allow exceptions; but these are difficulties which we must overcome for, through a little carelessness we can undo much of the good work already done in habit formation.

"Miss Million is teaching us how to use books in our studies, so that we may search out for ourselves answers to questions. This gave her much trouble at first, for we scarcely knew how to find the meaning of a word in a dictionary, and it never entered our heads that the general story and reference books of our little school library were there for use. They were dust covered and we scarcely noticed them except when the Inspector came and looked at them. Now we understand that a good dictionary is a wonderful aid in study. We also understand of what use are the 'contents', the 'index and the paragraph headings' of books. We use them some to help us find the essential facts we need to help answer our little questions. Really, books are a wonderful aid, when one knows how to use them. We are going to have some more help this term too. The trustees are providing us with a good Canadian newspaper and a farm journal—'The Farmer's Advocate.' They are to be mailed to Miss Million, and she says that if these are properly used they will be of great interest and assistance to us in geography, history, composition, agriculture and horticulture.

"It is during our supervised seat work that the teacher encourages us to make use of our few books. After she has taught the lesson, she also directs us how to study it. Sometimes she works with us and ask questions. We like this for then she comes to each of us to find out the difficulty and gives us just enough help to enable us to overcome our individual troubles.

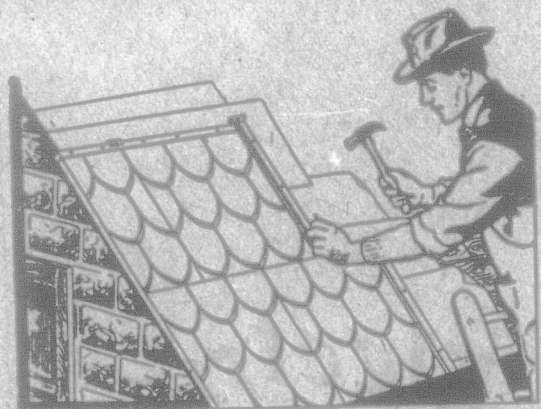
"All my class are working hard now at school to pass the Entrance next summer. Of course we are not worrying about the examination, for we are all interested, and doing well. Miss Million says that when this is the case the examination will not likely have any difficulties for us. Our motto is 'Do Your Best and Don't Worry.'"

Hot Lunch Appreciated.

Home demonstration agents in many counties in Minnesota have met with success in introducing the hot lunch in the public schools. Not only do the parents and teachers approve of it, says Adele Koch of the extension division, University Farm, but the children are unanimously in favor of it.

"To have one dish at noon," says Miss Koch, "requires very little equipment. The additional work for the teacher is light, as the children take turns in helping. Cost of the food is nominal; supplies can be brought from home, each contributing its share. For the children it means eating lunch in an orderly way while seated at a desk instead of snatching a bite of sandwich or doughnut while at play. It also means that the children eat a nourishing lunch instead of forgetting to eat or preferring not to eat stone cold food. It means improved health, bright eyes and red cheeks. The children are more alert and better able to master their lessons."

"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

Bricks

Are scarce: If you want them for the Spring, order now. Get winter delivery and haul while sleighing is good.

Write for colored Folder showing

Interprovincial Pressed Brick

if you want sterling quality and good appearance. Colors: Red, Buff and fire-flashed.

Interprovincial Brick Company of Canada, Limited

30 Toronto St. Toronto

Gossip.

At the annual meeting of the American Cotswold Registry Association, held in Chicago, it was decided that the regular appropriation to all state fairs and the Toronto exhibition be continued, and that the special prizes offered by the Association to the International Live-Stock Exposition be restricted to the sheep bred in North America. The receipts for the year amounted to \$2,769.60. The Association has a balance on hand of \$4,080.95. J. D. Brien, of Ridgeway, Ontario, is a director of this association.

An interesting survey of Orange Township, Iowa, was completed recently and the Christian Herald shows the results to be as follows: "The survey developed that of the 142 farm homes in the township all have newspapers and magazines; 125 have libraries, with an average of 100 volumes; 132 have telephones; 80 have pianos; 79 have automobiles; 76 have vacuum cleaners; 72 have furnace heat; 68 have power-washers; 63 have electric light; 57 have running water and 47 have bathrooms." This survey of the farm homes and the manner of living reveals high standards but many Canadian homes are now obtaining the conveniences necessary to comfort and recreation.

P. A. Thompson, Aberdeen-Angus breeder of Hillsburg, Ont., advises us that he now has on hand the strongest lot of young bulls he has advertised in years. He mentions four which are just past the year, three eighteen months' bulls, and one two-year-old, all of which are sired by his imported bull, Victor of Glencairn. These bulls are all from Mr. Thompson's own breeding cows, and represent the Pride of Aberdeen, Fair Maids. Several of the young bulls mentioned are from imported cows, and while none are in particularly high flesh, all have been well grown, and the majority of them are strong enough individually to have the best of herds. The 1918 bulls include eight calves and these, too, are all sired by Victor of Glencairn (imp.).

Canadian Pacific Will Only Withdraw the "Trans-Canada"

Owing to improvement in the coal situation, the alterations in train service and the temporary withdrawals advertised as effective January 3rd and 4th will not be made, with one exception, viz.—The "Trans-Canada", which will be temporarily withdrawn after Dec. 31st. Particulars from ticket agents or H. J. McCallum, City Passenger Agent, London.—Advt.

Temporary Withdrawal Canadian Pacific

"Trans-Canada Limited" Trains Effective January 1st, 1920, the "Trans-Canada Limited," The Canadian Pacific All Sleeping Car Train for Winnipeg and Vancouver leaving Toronto 7.15 p.m., Daily, will be temporarily withdrawn. There will not be any change in the "Vancouver Express." It will continue to leave Toronto 10.00 p.m., daily.—Advt.

New COAL OIL Light Beats Electric or Gasoline

10 Days FREE—Send No Money

Men With Rigs or Autos Make \$100 to \$300 Per Month



We don't ask you to pay us a cent until you have used this wonderful modern white light in your own home ten days, then you may return it at our expense if not perfectly satisfied. We want to prove to you that it makes an ordinary oil lamp look like a candle; beats electric, gasoline or acetylene. Passed by Insurance Underwriters. Children handle easily. Tests by Government and 35 leading Universities show that the new ALADDIN BURNS 70 HOURS ON ONE GALLON common coal oil, no odor, smoke or noise, simple, clean, won't explode. Over three million people already enjoying this powerful, white, steady light, nearest to sunlight. Won Gold Medal at Panama Exposition. Greatest invention of the age. Guaranteed.

\$1000 Reward will be given to the person who shows us an oil lamp equal to the new Aladdin in every way (details of offer given in our circular). We want one user in each locality to whom we can refer customers. To that person we will have a special introductory offer to make, under which one lamp is given free. Write quick for our 10-Day Free Trial Offer and learn how to get one free, all charges prepaid.

WANTLE LAMP COMPANY, 232 Aladdin Building, MONTREAL Largest Coal Oil Man. - A Lamp House in the World

Get One FREE

SEALED TENDERS addressed to the undersigned, and endorsed "Tender for Grading and Road Work, Westminster Hospital, London, Ont.," will be received until 12 o'clock noon, Wednesday, January 7, 1920, for grading and road work, Westminster Hospital, London, Ont.

Plans and Specifications can be seen and forms of tender obtained at the offices of the Chief Architect, Department of Public Works, Ottawa, the Superintendent of Military Hospitals, London, Ont., and of the Superintendent of Dominion Buildings, Postal Station "F," Toronto, Ont.

Tenders will not be considered unless made on the forms supplied by the Department and in accordance with the conditions set forth therein.

Each tender must be accompanied by an accepted cheque on a chartered bank payable to the order of the Minister of Public Works, equal to 10 p. c. of the amount of the tender. War Loan Bonds of the Dominion will also be accepted as security, or war bonds and cheques if required to make up an odd amount.

By order,
R. C. DESROCHERS,
Secretary.
Department of Public Works,
Ottawa, December 18, 1919.

If you want fair grading, highest prices and prompt returns, ship your

RAW FURS

to us. Price list of furs and trappers' supply catalogue free on request.

We are also in the market for

DEER SKINS

Write for prices.

E. T. CARTER & CO.
77 Front St. E. Toronto, Can.

FEEDERS

Let us place your name on our mailing list for weekly quotations on Lined Oil Cake Meal, Cotton Seed Meal, Gluten Feed, Oats, Feed Corn, Bran, Shorts, Hominy Feed, Feeding Molasses, and all kinds of hog and cattle feeds. Write us to-day.

Allen - Kelley Company
214 Board of Trade Bldg., Toronto

Stop being a Slave to the Wheelbarrow



Many a man abuses himself as he would abuse no other machine, no other beast of burden—then some day he is surprised to find that he does not work so well. He is not the indistructible engine he had always thought he was. Clean your stables with my SUPERIOR CARRIER. It will take a lot of drudgery out of your life—do the work of three men and four wheelbarrows. It will save 30% of the fertile properties of the stable manure. It will prevent any risk of your produce being condemned through an unsanitary stable or barnyard. Your Boy will take keen delight in cleaning the stable if you own a SUPERIOR CARRIER. You will be interested in my Superior Carrier. Investigate its merits. Write me personally for descriptive folder.



GEO. P. MAUDE, Manager. SUPERIOR BARN EQUIPMENT CO., Fergus, Ontario

Opportunity to Secure Durocs

A choice consignment of some of the most desirable blood lines. Each animal has been inspected and considered worthy.

Bred Sows Service Boars Pairs of Fall Pigs of Both Sexes

Will be offered for sale by PUBLIC AUCTION during Ontario Corn Show at Jamieson Sale Barns, CHATHAM, ONT., on

Thursday, January 15th, 1920, at 1.30 p.m.

COL. M. R. CLARK, Brimfield, Illinois, Auctioneer.

Write for catalogue and further particulars to Ontario Duroc Jersey Breeders' Association, Essex, Ont.

SELL YOUR SEED DIRECT

Red and Alsike Clover Pure Seed Grain

Alfalfa and Sweet Clover We are Buyers Send Samples State Quantities

WM. RENNIE CO., Limited, TORONTO

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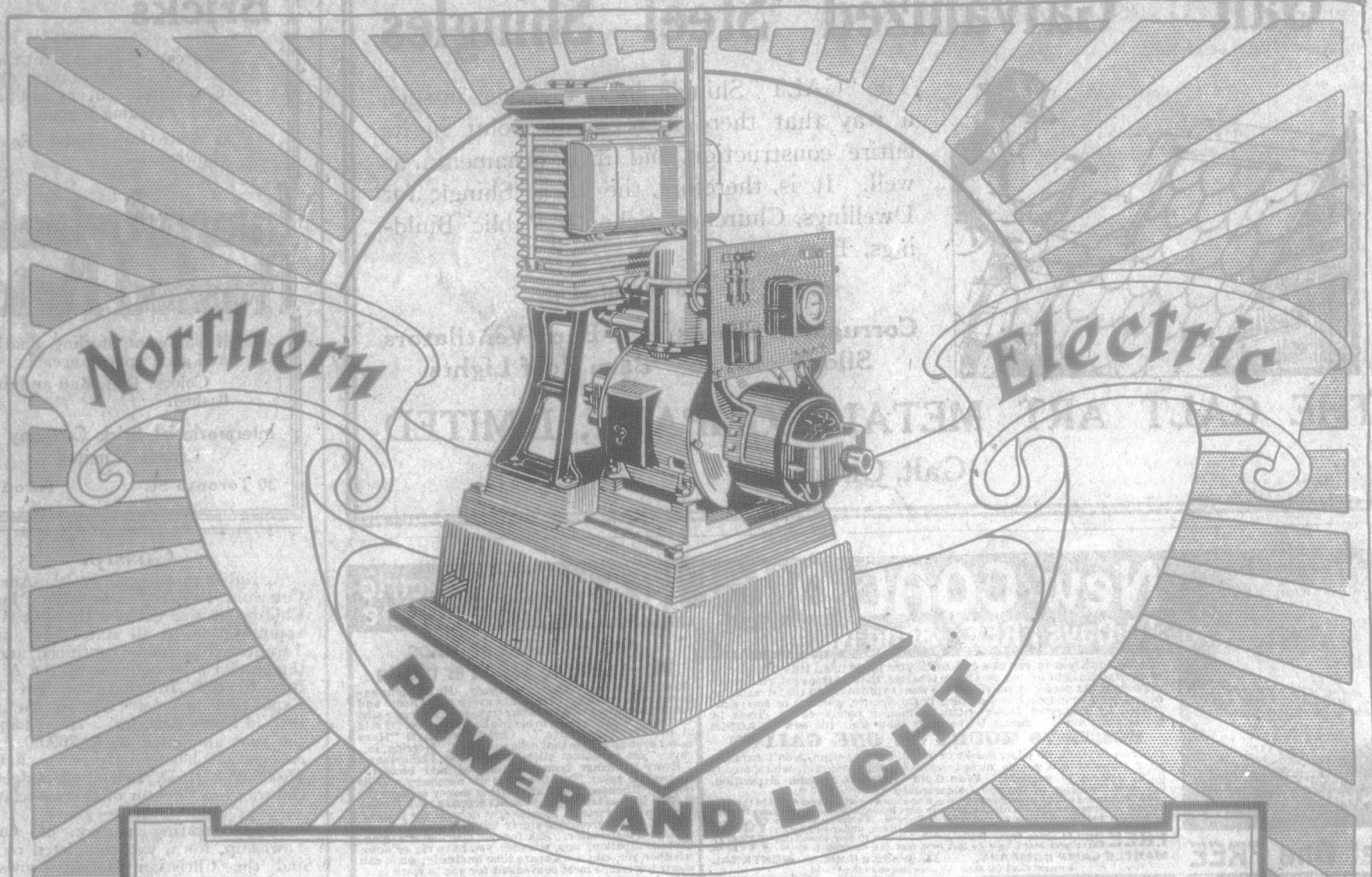
dy with scattered e term before us ned to ignore dis- how to keep our studies Really, we uch time in looking the door opened, was looking for a hing like that. We quiet ticking clock the purpose of en- time limits for doing exercises. We must e set ourselves in a Million has a time- ows, and she wants e says that following n us to be business- e flying minutes of e are not to allow racted and are to and free from worry, ur teacher explained t and not allow ex- re difficulties which or, through a little undo much of the one in habit forma-

ching us how to use s, so that we may selves answers to e her much trouble rce knew how to word in a dictionary, ur heads that the erence books of our were there for use. red and we scarcely when the Inspector t them. Now we ood dictionary is a dy. We also under- e the 'contents', the paragraph headings' hem some to help us we need to help ions. Really, books when one knows how e going to have some oo. The trustees h a good Canadian arm journal—"The y They are to be on, and she says that used they will be of assistance to us in composition, agri- ure.

supervised seat work rages us to make use After she has taught directs us how to s she works with us We like this for ch of us to find out ves us just enough o overcome our in- working hard now at trance next summer. worrying about the are all interested, Miss Million says case the examination ny difficulties for us. our Best and Don't

Appreciated.

ion agents in many ota have met with ng the hot lunch in Not only do the s approve of it, says extension division, ut the children are of it. ish at noon," says es very little equip- nal work for the e the children take Cost of the food is an be brought from ting its share. For s eating lunch in a seated at a desk in- bite of sandwich or play. It also means a nourishing lunch g to eat or prefer- cold food. It means right eyes and red en are more alert aster their lessons."



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