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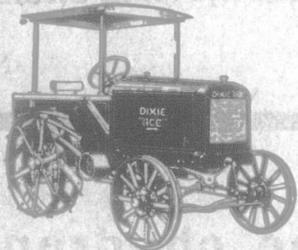
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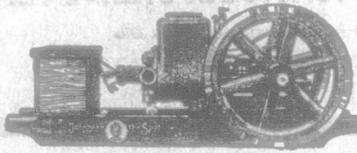
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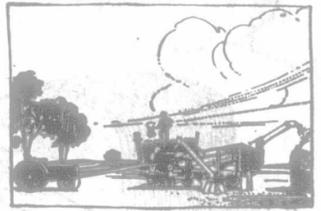
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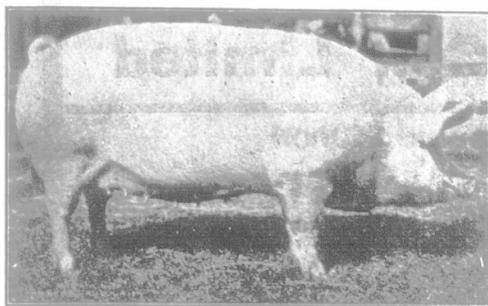
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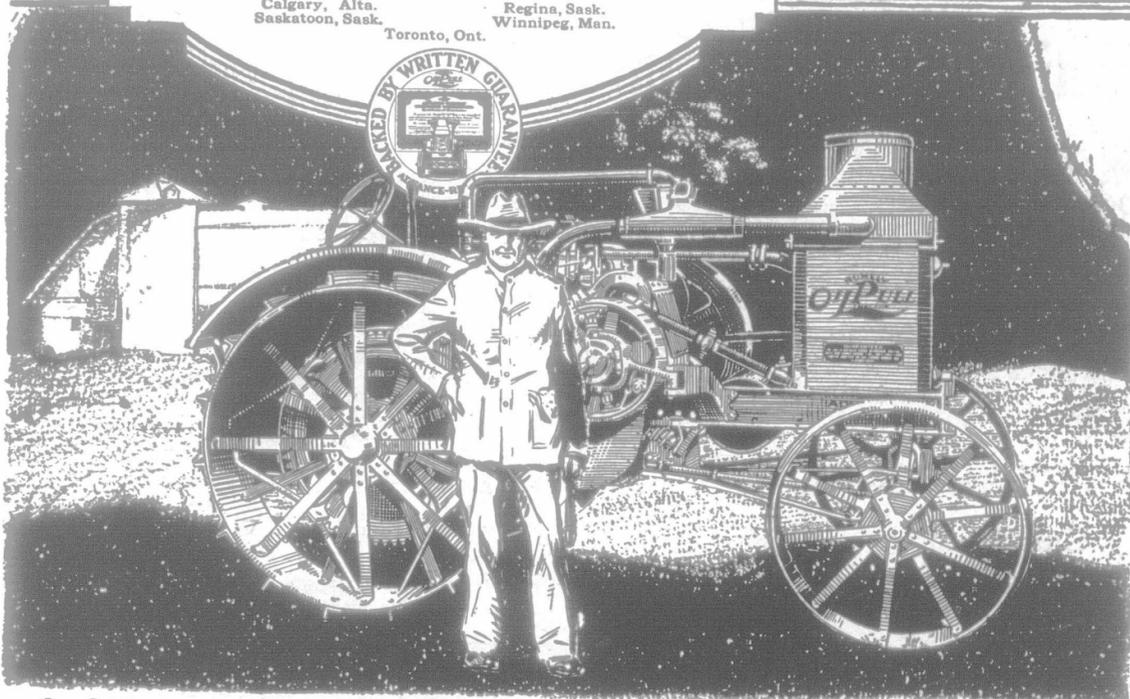
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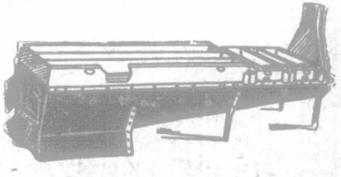
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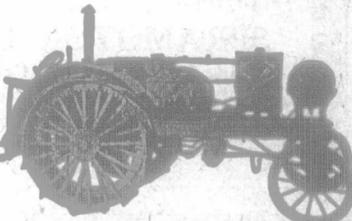


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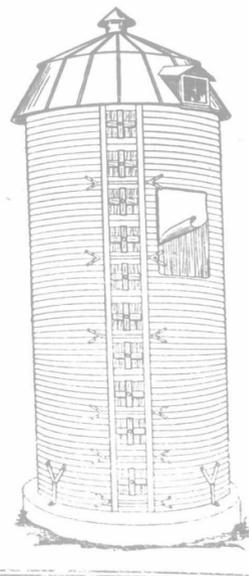
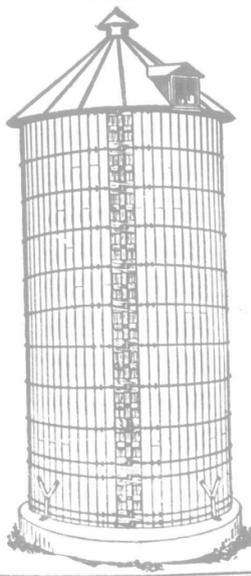
2. We also make **CRAINE THREE WALL SILOS**. They are absolutely the best equipment that can be purchased by you today. They are permanent buildings. They preserve silage perfectly, and the cost is moderate.

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LV.

LONDON, ONTARIO, JANUARY 15, 1920

1425

EDITORIAL.

Get rid of those boarders in the herd and flock.

As the days lengthen the hens will be getting back to full time, and the egg basket will fill more quickly.

When Germany begins to talk about the rationing of potatoes, it should be evidence that the food situation is critical.

With eggs at present prices they should be promptly gathered and marketed quickly so as to take advantage of the best prices

Sow the proven varieties of grains, rather than invest in some new variety just because the story told by the salesman sounds big.

Really good and entirely satisfactory commercial varieties of apples are few in number. Read the article on this subject in another column of this issue.

Don't neglect giving the flock some kind of green feed during the winter months when they are confined indoors. It will help greatly in egg production

Seldom has there been such a change in the personnel of many town and township councils. May the men elected give efficient service in their municipalities.

A neat, convenient cottage for the farm hands will help solve the labor problem and relieve the necessity of having outsiders constantly intruding upon the privacy of the family circle.

The implements which were giving a little difficulty last fall may give good service for a number of years yet by giving them a general overhauling and replacing worn parts with new.

If you are contemplating new buildings or remodeling your barns or stables, take advantage now of a little slack time to look up plans and convenient labor-saving arrangements.

Don't neglect attending one or more of the conventions that are now being held. The Breeders' meetings are especially valuable to all live-stock men, and deserve enthusiastic support

The meeting of the National Dairy Council in Winnipeg in February should be a good one. Financing is still a pressing consideration, and upon this the future of the Council depends.

There is no use weeping now over the results of using a scrub sire for so many years. Start a campaign of constructive breeding in the herd and flock by using the best sires available.

Breeders should begin now to prepare animals for showing at the Royal Canadian Winter Fair in November or December. Make this show worthy of the best support of the Canadian live-stock industry

In certain sections apple pruning should now be under way in order to make sure it gets done. In other places everything should be got ready for a sufficient thinning out of the branches to insure well-colored fruit.

The announcement has recently been made that the Soldier Settlement Board is making provision for the settling of ex-soldiers from the Imperial army on the land in Canada. Canada will welcome all such men who have it in them to make good as farmers.

Dissatisfaction at the Ontario Agricultural College.

The staff at the Ontario Agricultural College has been chafing for many months under treatment which they have considered unjust and uncalled for. A storm was brewing, but the Minister of Agriculture, Hon. Mr. Doherty, appeared at the College last week and threw oil on the troubled waters, promising some relief in the matter of salaries in a short time, and a general peace settlement within a year.

The situation was becoming very tense and the chief of one department, who recently lost a valuable assistant and was threatened with the loss of another, appealed to the President in such a way as to make it very plain that he could not carry on if this second man could not be held. This particular professor preferred to be relieved of his department rather than undertake the spring activities incident to his branch without trained help. Had this department been scrapped, the records and results of many years' work would have been rendered valueless and an impossible situation created. This crisis was the culmination of a year's fruitless efforts on the part of the O. A. C. staff to get some recognition that would make it possible for members to remain at the Institution. For one reason or another there were eighteen resignations tendered in 1919, but, leaving that feature and the results out of consideration, in the closing weeks of the year two men had recently gone, four more were preparing to go, two more were probably going, three more would like to go, and all were dissatisfied. This was the situation that confronted the Minister and called forth his promise of immediate attention to their case.

Broadly speaking, a big grievance at the College is the matter of "salaries," so-called. Artisans engaged in construction work about the College are receiving higher pay for services rendered than members of the staff, who have spent years in equipping themselves for responsible positions on the various departments. Certain members of the junior faculty are drawing as little as twelve or thirteen hundred dollars, and in some cases they are obliged to support families out of this small stipend. Lecturers and associate professors are getting more, but far too little, and heads of departments are ranging around twenty-three to twenty-six hundred dollars per annum.

The O. A. C. is affiliated with Toronto University, but the salaries paid at the latter Institution are sixty-two per cent. better, it is claimed, than those paid at Guelph. Agricultural colleges in the West pay from twenty to forty per cent. more to their men, and thus are able to, and do, help themselves at will to the best men at Guelph. United States colleges draw heavily from the O. A. C. staff and commercial work takes whom it chooses. A faculty committee has been working on the salary question for over a year, but the matter was so juggled about by officials and the Civil Service Commissioner that conditions became intolerable.

Another matter which the Minister of Agriculture must take into consideration is the almost utter absence of co-operation between the various departments, and the lack of harmony between the President and his staff. Where the blame should rest for this unhappy situation it is difficult to say. War work and the Commissioner's task obliged the President to spend too much time away from the institution, and it is furthermore possible that he has shouldered a large percentage of blame that should have gone to the Department of Agriculture and the Civil Service Commissioner. We do not propose to enumerate or dwell on the domestic grievances peculiar to the Institution; the Minister is, no doubt, acquainted with them and will, as he promised, give them his individual attention.

One thing that should be impressed upon the faculty is the necessity of closer co-operation between departments and the pooling of efforts to solve agricultural

problems which are constantly arising. Owing to local jealousies and staff prejudices the heads of the various branches are too much inclined to play a lone hand, and thus make the solution of any problem incomplete because the equipment and knowledge of one department is not at the disposal of other branches. Until a problem is made a station problem, rather than the problem of one department, the Institution will not serve the public as it should or function properly in the whole scheme of investigation, experimentation and education in the Province of Ontario.

It is only fair to state, however, that certain departments manifest a willingness to co-operate and are, to some extent, working in unison, but there is need of a get-together meeting of the faculty and a genuine effort to unite the various units so the Ontario Agricultural College will continue to flourish and serve this Province as it should.

While everyone realizes that the O. A. C. trouble is a legacy passed on to the present Minister of Agriculture and Provincial Government, those now in control cannot afford to take a short view of the situation. It is little short of an insult to the agriculture of this Province that its educational institution and experiment station has been treated in such a niggardly manner. No one wants to see investigators, experimenters or instructors at the O. A. C. working for less than the day laborer, artisan, or rank and file, now command. Agriculture in Canada is now recognized as the industry that must carry us through the trying times ahead, and nowhere in this Dominion is farming of more importance than in the Province of Ontario, and nowhere can it afford to reward any more generously those working in its behalf. Graduates of the O. A. C. have manned the colleges and departments of agriculture throughout Canada; United States and foreign countries have come to Guelph for good men and have found them there; the Institution is favorably known throughout the world and the Minister of Agriculture will have the hearty approval of all if he deals generously with the O. A. C., and insures for that Institution a high standard and respected position in the agricultural and educational life of Canada.

The 1920 Seed Supply.

As the 1919 crop of cereals and clover seed was not bounteous in many sections of Canada, there is a comparatively small supply from which to select the seed for the 1920 sowing. It is doubtful if the supply of small seeds on hand was ever so low. The mistake of not providing for an adequate quantity of good, clean seed early in the winter is made by many. Other tasks requiring attention crop up, and before one knows it the bin of the cleanest oats, barley or wheat has been encroached upon for feed. Plot and field tests have proven the advisability of using the best seed available. Plump uniform kernels give a stronger germination and a more abundant yield than does the small, shrunken kernel under similar cultural and climatic conditions. Furthermore, the plant is able to withstand adverse conditions better than the plant from the weaker seed. This being the case, it is expedient that an effort be made to secure the seed supply while there is sufficient in the bin to choose from. A very satisfactory sample can be secured by the proper use of the fanning-mill. It requires the use of the right sieves and screens, and the adjustment of the fans so that the light kernels and chaff are blown out and the inferior kernels screened out. Once through the mill is not enough. There is nothing lost—outside of a few hours' time—if half the grain is screened out in obtaining a satisfactory sample. The small kernels can be used for feed. Carelessness in the seed selection does not augur well for a maximum crop, even though the utmost care is bestowed upon the seeding operations.

What applies to cereals pertains also to the small

Organized
"Shingles"
Per Square
AID to most points
Proof, Fire-proof,
f, exceedingly
easy to Lay.
Shingles lead all
—for 35 years
reliable
"STLAKE"
metal shingles.
Experiment? Stick
"old reliable"
safe — buy
"STLAKE".
also make
Corrugated Iron
Tiles — Sidings
Roofs — Garages
FREE BOOKLETS FREE
sizes for estimate



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Due To -
Windsor
Dairy
Salt
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The Farmer's Advocate AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN THE
DOMINION.

Published weekly by
THE WILLIAM WELD COMPANY (Limited).

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

1. THE FARMER'S ADVOCATE AND HOME MAGAZINE is published every Thursday. It is impartial and independent of all cliques and parties, handsomely illustrated with original engravings, and furnishes the most practical, reliable and profitable information for farmers, dairymen, gardeners, stockmen and home-makers of any publication in Canada.
2. TERMS OF SUBSCRIPTION.—In Canada, England, Ireland, Scotland, Newfoundland and New Zealand, \$1.50 per year, in advance; \$2.00 per year when not paid in advance. United States, \$2.50 per year; all other countries, 12s. in advance.
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London, Canada

seeds. Clover seed is exceptionally scarce and the price high. The latter, however, should not influence one to sow inferior seed rather than pay the extra price for that which is of high grade, nor should one unduly reduce the quantity of seed sown, if it can be secured at any price. The value of legumes in permanent agriculture has apparently not been fully realized by Canadian farmers. The introduction of noxious weeds to the farm is one thing to be guarded against when purchasing small seeds. If inferior seed of any kind is sown, a crop of superior quality cannot be expected. Sow the best.

What a Veteran Reader Says.

EDITOR "THE FARMER'S ADVOCATE":

We have been getting "The Farmer's Advocate" ever since it first started, 1866, and I can remember the first numbers very well. I was a boy about five or six years old, and I never forgot till this day some of the first pictures of Shorthorns in those old books. Not long ago I came across some old numbers, and the thought struck me what a great change there is in the Shorthorn of to-day. The question is, have they really improved the type very much? We have got more bone, I suppose, but as far as the real beauty goes I am not so confident, as there were some grand animals in those days. I do not think they improved as much as "The Farmer's Advocate" has. It was a small paper then, printed once a month; now we have one of the best farm papers published on the continent to-day. I remember when I started a home of my own my father gave me a Christmas box in the shape of one year's subscription to "The Farmer's Advocate", and I intend to do the same with my own boys. We all look for Friday's mail, for "The Farmer's Advocate" is always there, and great praise should be given to the Manager for not raising the price and then blaming the war for it. And last but not least, I congratulate you on such a grand Christmas Number. It is really worth the price of the year's subscription, and its pages are filled with the best of reading for old and young, for Sunday or Saturday.

Middlesex Co., Ontario.

R. H. SCOTT.

Western wheat recently rose from \$2.30 to \$2.80 per bushel, or 21 per cent. Flour from Western wheat rose \$2.25 per barrel, or an equal percentage. The baker immediately increased the price of rolls from 12 to 17 cents per dozen, or 41 2/3 per cent., while the retailer raised his price from 30 to 40 cents per dozen, or 33 1/3 per cent.

The Pity of it.

BY ALLAN MCDIARMID.

During the past number of years, say since 1914 anyway, it has become almost a habit with writers to the city papers and magazines to jump at every opportunity given them to take a fling at the farmer for being responsible, as they say, for the increased cost of living. The farmer is made the "goat" who carries the blame that they are not far-sighted enough to be able to place where it belongs.

Recently there has seemed to be a tendency among those that are interested in agriculture to kick back at these city editors and others, who are "mis-stating the facts" and to try to prove that farmers, as a class, are hit by the increased cost of living as well as other people and that it isn't the producer that pockets all the difference between old prices and the new.

A short time ago five farmers took a meal in an up-town hotel in a large city. The bill amounted to eleven dollars. One of them proposed, for the fun of the thing, that they figure up how much the original producer of that meal had received for it. They found that it would be eighty-two cents.

If these men were correct in their calculations they had produced a pretty good proof that the H. C. of L. bugbear wasn't born on a farm. Apparently it has had its origin in a sort of "No Man's Land," located somewhere between the producer and the consumer and which none of us seem to be very familiar with. It is here that dwells that notorious middleman, however, he who has made out to escape the condemnation of the old sentence: "In the sweat of thy brow shalt thou eat bread," and who the producers are now in hot pursuit of, judging by what we see in several of the agricultural journals that have lately come our way.

But more than the journals are taking a hand in the discussion. A certain city daily having spoken of the farmers as being "rich grumblers" the Dean of the State Agricultural College made the statement that "the farmer's income in 1918 was actually less than in 1917, for while his sales increased 3 per cent. his expenses increased 10 per cent."

Then we find this coming from a Professor in one of our great universities. "The farmer is not responsible to any considerable extent for the high cost of living, and he has certainly done his part in producing, in the face of a most severe and ever-increasing shortage of farm-labor."

Our old friend, Wallace's Farmer says: "City people do not realize that costs of farm-production and farm-living have advanced with the price of farm-products; nor do they understand that production has been maintained by extra long hours in the field and by free work of farm women and children."

Another American journal puts it this way: "The farmer finds the rest of the world hoping that he will produce enough to knock the bottom out of his own market in order that they may buy more cheaply with the proceeds of their six-hour days and their five-day weeks."

Hoard's Dairyman says: "The higher wages in the cities have forced up farm wages by bringing about a shortage of farm labor. Unless the prices for produce keep up the farmer may not find it profitable to maintain the output, and the city worker may find himself and family hungry next year because the farmer has not worked his acres to their full limit." And along this line a farmer writing to the paper says: "I am going to quit this fall, as I can make more getting these big wages than I can trying to pay them."

Another writer says that "it looks as though prices will be forced down for what the farmer has to sell, while continuing high or going up for what he has to buy."

We find the conclusion of the matter in these words: "City people must get over the notion that it is the duty of the farmer to feed them cheaply," and, "to replenish the food-supply of the world we need high prices to stimulate production and to minimize waste; the days of cheap food have passed."

Now the pity of it is that nearly all of the above has appeared in farm papers, and has, consequently, been read by farmers and not by the people for whom it might be a warning. There isn't much use in going over our grievances amongst ourselves. If it has any effect it will only be to make us more discontented than we already are. There ought to be some way of bringing all these "cost of production" facts to the attention of the city consumer and reaching a ground of mutual understanding in the matter. Then some cure for the trouble might be found. Farmers should state their case for publication in the city papers, and whatever the "middleman" or the "ultimate consumer" has to say on the subject should find a place in our agricultural journals. It would be arguing the thing out in a common court, and there would be some chance of achieving results. As it is now it reminds me of some church business meetings that I have attended. The majority of those present could not be induced to express an opinion on any matter, but in talking to a neighbor the next day they could find fault with almost everything that had been done.

We've got to bring the other fellow into it and tell him what's what. If we don't do that we had better just keep our nose on the grindstone and our grumbling to ourselves.

On the other hand, there might be something gained by letting the city man continue to think that farming and gold-mining amount to about the same thing, so far as profits are concerned. If he gets the idea that the farmer is profiteering it will be the greatest possible inducement for him to come out to the country and

"do likewise." This, through time, may relieve the present situation. The balance of population ought to be restored. It would mean cheaper labor for the farmer and, as a consequence, lower food-prices for the man in town. So everybody would be satisfied. At least, it figures out that way. Perhaps humanity has become so accustomed to complaining and finding fault that they would hate to go back to the "good old days" when men were reasonably satisfied with their lot, even if it wasn't a time of big bank balances and the modern conveniences.

Nature's Diary.

BY A. BROOKER KLUGH, M.A.

Some data of great interest to those who love the woods is presented by Professor J. S. Illick in the Canadian Forestry Journal. Professor Illick has been engaged for some years past in the study of tree growth, and this data as to when trees grow is based upon observations made near Mont Alto, Pennsylvania, by Professor Illick and his assistants during the past four years. The field work embraced the measuring of a very large number of trees at weekly intervals, and the keeping of meteorological records especially of temperature and rainfall. During 1918 over two hundred trees were measured daily, and many trees were measured both in the morning and evening.

It is commonly believed that trees grow throughout the period of 150 to 200 days between the last heavy frost in the spring until the first killing frost in the autumn, but Professor Illick finds that practically all the forest trees make ninety per cent. of their growth in ninety days. He found that the White Pine makes ninety-two per cent. of its growth between April 18th and June 1st, and ceases growth by July 1st. Seventy per cent. of the trees of Pennsylvania were found to have ceased growth by June 10th, and all species by the first of August.

The date upon which the different species of trees begin their growth is found to depend upon the inherent tendency of the species and on the nature of the environment, such factors as latitude, altitude, exposure and shade having a strong influence. It is stated that buds open about three days later with each degree of latitude and about two days later with each 350 feet of altitude.

Different species vary a good deal in their growth habits, some species making their growth without a break, while others make it by spurts alternating with periods of rest. In the majority of species growth begins slowly, after a variable period rises rapidly, then reaches a maximum which is maintained for a short time, finally falls gradually away to a minimum, and then ceases completely. Prof. Illick found that rather regular rest periods are characteristic of certain species, thus the Pitch Pine was found each year to exhibit a period of cessation of two to three weeks duration.

It is shown that the rate of tree growth not only fluctuates throughout the growing season, but also during each day. The maximum growth usually occurs late at night, apparently after the preparation and transmission of food becomes less active, and the minimum growth occurs in the afternoon of each clear day when the greatest activity in the manufacture of starch and sugar is in operation. The White Pine was found to make 39% of its growth between 7.30 a.m. and 7.30 p.m. and 61% between 7.30 p.m. and 7.30 a.m.

The results of Professor Illick's study of tree-growth are not only of scientific interest, but are of practical value in connection with the investigation of the rate of reproduction on cut-over lands, which is one of the chief considerations of forestry to-day, and also as a guide to the time at which transplanting may be most successfully accomplished.

It has been assumed for some time that forests exert a considerable degree of regulation over stream-flow, but, as far as I know, no exact data has hitherto been presented on this subject. Now, however, the Swiss Federal Station of Forest Research has supplied us with accurate data on this matter, obtained from observations extending over a period of eighteen years. In 1900 observing stations were installed in the basins of two streams, tributaries of the Hornbach. One of the basins, with an extent of 140 acres is completely wooded; the other, with an extent of 175 acres, has only thirty per cent. of its area covered by forest. Three precipitation gauges were installed, at different altitudes, in each basin, and at the mouths of the streams apparatus was placed which automatically registers every five minutes the volume of the flow of water. From the data so obtained two general conclusions are drawn: First—In case of storms with heavy rains the maximum outflow in the wooded valley is from 30 to 50 per cent. less than in the other valley, and the maximum flow is also produced later in the wooded valley. Second—In the long periods of drought, in the summers of 1904, 1908 and 1911, the wooded district gave without interruption a flow of water, while in the denuded valley the stream dried up.

A little while ago I intimated that wireless was likely to prove a very efficient aid in fire-prevention in the forests. It is interesting to note that Major-General Squier, Chief Signal Officer of the U. S. Army, has made some highly successful experiments in using trees as terminals, instead of the lofty "towers" hitherto used. He has received messages from Europe by means of a wire connected to a nail driven into a top branch of a tree, and has transmitted messages from one tree terminal to another. Messages have also been received from aeroplanes. This recent development should be of great service in forest protective work.

THE HORSE.

Diseases of the Respiratory Organs.

INFLUENZA.

Influenza is an epizootic, infectious, febrile disease usually attended by great prostration of strength, with early inflammation of the nasal, laryngeal, and sometimes bronchial mucous membranes, and usually complicated with irritability of the digestive tract. Occasionally the disease implicates the substance of the lungs, pleura, liver, the joints, muscles and tendons. In fact, it is liable to very many complications.

Causes.—It is doubtless due to a specific virus, but it is often impossible to determine how or where the animal has been exposed to the contagion or infection. In many cases it apparently appears spontaneously. It does not depend upon any known condition of the atmosphere, soil, seasons, or temperature. It may appear at any season, but is more common during the fall, winter and early spring. Sudden changes of weather appear to assist the development of the virus, and exposure to cold and dampness predisposes an animal to the disease, by lowering the vitality and resistive power, but these causes alone will not produce it. In order that an animal may contract the disease it is necessary that he be exposed to the specific virus that produces it. It is generally conceded that the virus is volatile, that it exists in the air, probably multiplies there and is carried from locality to locality by the medium of the air. This accounts for its appearance in a stable in which neither the horses nor attendants have been exposed to horses suffering from the disease.

Symptoms.—An uncomplicated case exhibits only catarrhal symptoms. It is usually ushered in by rigors (a shivering fit) which often passes unobserved. This is followed by a dry, staring coat; the legs and ears are usually cold; a redness and dryness of the mucous membranes, especially that of the nostrils; a well-marked elevation of temperature, ranging from about 103 to 106 Fahrenheit. There is sneezing, a cough, at first dry and hacking but usually soon becoming moist; a nasal discharge, at first watery but soon becoming purulent. The eyes become infected and dull and tears usually flow over the cheeks.

There is decreased appetite and more or less inability to swallow. Pressure upon the throat usually causes acute coughing. The cough becomes deep, sonorous, painful, and with spasms convulsing the whole body. After the first day or two the pulse becomes frequent and weak. The mouth becomes hot and clammy, and thirst usually well marked. The soreness of the throat is indicated by a gulping noise when drinking, and often a return of some of the water through the nostrils, also by a quivering of the food. In the early stages the faeces are usually dry and hard and sometimes covered with mucous, the urine scanty and high colored. Owing to the weakness of the circulation, dropsical swellings often appear on the abdomen, breast and legs, the articulations become involved and the patient is disinclined to move by reason of the pain that motion in the joints causes.

Treatment.—This disease cannot be cured quickly. It is somewhat inclined to run a definite course. Treatment should consequently be directed to relieve the distressing symptoms, to allay irritability and support strength. Specific serums and antitoxines are on the market for the treatment (both preventive and curative) for this disease, but the amateur has neither the knowledge nor the instruments for their use. The patient should be placed in a roomy, well-ventilated box stall, excluded from drafts. Pure air is essential, even at the expense of heat. The body should be clothed according to the temperature; the patient fed on soft, easily digested feed, as rolled oats, bran, linseed meal, grass if in season, raw roots and good hay, and supplied with an abundance of good cold water. It is good practice to keep water where he can reach it at will, as even though he may not be thirsty he appears to get some relief by taking some cold water into his mouth. Inhalations of medicated steam, given by holding over a pot of boiling water to which a little carbolic acid or tincture of benzoin has been added, continued for half an hour or longer, three or four times daily, affords relief, encourages nasal discharge and relieves the cough. Hot poultices, or poultices of antiphlogistine, to the throat, and keeping the throat well wrapped with woolen bandages, or the application of a liniment made of one part liquor ammonia fortior and three parts each of oil of turpentine and raw linseed oil, and wrapping with woolen bandages gives good results. The throat should be kept warm. If the legs be swollen and joints sore, they should be well hand-rubbed two or three times daily and kept well wrapped in woolen bandages. Constitutional treatment should be directed towards allaying the fever and sustaining strength. Two to three drams of nitrate of potassium and twelve to fifteen grains of quinine should be given three times daily. This should be given by placing it well back on the tongue, out of a spoon, as the patient may not eat

it if given on feed, or drink it if offered in water, and on account of soreness of its throat it is dangerous to attempt to drench. If prostration be great, stimulants, as two to three ounces of sweet spirits of nitre, or four to six ounces of whiskey diluted with an equal quantity of water, should be given by the use of a dose syringe every four or five hours. If constipation occurs, relief should be given by administering a few ounces of raw linseed oil by the dose syringe and giving injections of warm, soapy water per rectum. Drastic purgatives such as aloes must be avoided.

If the appetite remains poor after three or four days, milk or gruel should be substituted for water, and tonics, as equal parts powdered gentian, ginger, nux vomica and bicarbonate of soda in dessert spoonfuls, given four or five times daily. This also should be given out of a spoon in order to avoid danger of suffocation. When complications that are not understood arise, the services of a veterinarian should be procured if possible.

WHIP.

Horse Notes From England.

Sir Lees Knowles, the President of the Hackney Horse Society, tells me that one hundred and fifty stallions of that breed have gone across to Holland and Denmark. Italy and Japan have also been buying. He thinks the Government should encourage Hackney breeders by offering them better prices than they do for the horses they take for the army's annual requirements.

The English farmer has more capital invested in Shire horses to-day than he ever had, and his faith in the industry is such that he is willing to give the record price of 2,000 pounds for the hire of a stallion to serve one hundred mares during the 1920 season.

I have it from Sir Walter Gilbey that the English Shire Horse Society now has a membership of 6,000. He is optimistic enough to say that the heavy horse—and therefore the Shire—must always be wanted on the land. He is always available in emergencies, when the tractor is held up through repairs or shortage of petrol.

The Percheron has made good in England. As a breed, it is gaining friends every day. It has a Breed



Plenty of Horse Power and Large Implements Will Speed Up the Seeding

Society of its own and a policy which can best be described as one of "push and go." Whichever stamp of Percheron finds favor over here—French or North American—the breed has now sufficient backing to justify its absorption among our British breeds. There is room and work for all and every type of draft horse in our Isles. The Canadian and American stamp of Percheron seen on this side is to some eyes more "English" than the exclusively bred French stock.

The Suffolk Punch is overcoming the prejudice in which he was once held in different parts of Britain. To-day, after years of neglect, he is roaming the whole countryside. The Suffolk Horse Society now has a membership of 500, and the cry is "still they come." The high opinion in which the Punch is held is reflected in the prices paid for filly foals which have several times exceeded 500 guineas, and have gone as high as 600 guineas at 1919 sales.

The extraordinary average of 971 guineas was obtained for 230 yearling Thoroughbreds sold at Doncaster, where Lady Sykes' brown colt, by Swynford and out of Blue Tit, fell to the bid of Lord Glanely at 11,500 guineas, which is the English record for a yearling Thoroughbred. Such prices as 8,000, 6,500, 6,300 and 6,000 guineas were frequent in those yearling sales.

ALBION.

Do not neglect the colt's feet. They require trimming regularly.

Hitch the colt frequently during the winter and have it accustomed to harness and pulling before it is forced to take a place in the team during spring seeding.

If there is a supply of roots, give the horses a mangel or turnip daily. Roots aid in keeping the digestive system working properly.

Co-operate with your neighbors to secure the best stallion available for use in your community. A good stallion will stamp his qualities on the horses of the neighborhood, and the effects will be noticeable in the years to come.

LIVE STOCK.

Our Scottish Letter.

The past two months have witnessed many incidents exciting and fraught with important results for agriculture. So far as parliamentary matters are concerned interest centres around the Hours of Employment, "No. 2 Bill." The meaning of this measure is to make a statutory forty-eight hours working week in all except certain industries. Amongst these excepted industries is agriculture defined for the purposes of the Bill as including horticulture, agriculture and forestry. Analyzed this may briefly be said to mean "excepting industries that have to be carried on in the open air and subject to climatic and seasonal conditions." To most people it would appear that to make a statutory working week for operations that are at the mercy of the elements and subject to modification according to the length of the daylight was unreasonable and impossible. The drafters of the measure now before Parliament recognizing this, have inserted a clause which excepts the industries named as well as others. So far as one can gather, plowmen and others engaged in agriculture themselves recognize the reasonableness of this position. When one gets to close quarters with them it would appear that for them the real issue is one of wages and not of hours. Their leaders, however, some of whom at least have had no practical acquaintance with agricultural conditions, have organized their forces with a view to deletion of the clause which excepts agriculture from the provisions of the Bill. A keen fight on the subject is in progress. The argument of the labor leaders is that the position of the Bill as it stands will operate to the detriment of agriculture. They say it will put a premium on desertion of agricultural employment in favor of other industries in which the statutory forty-eight hour week holds. There is substance in this contention, but the position is one with which agriculture has had to contend ever since the Saturday half-holiday, for example, became general in other industries. Those familiar with agricultural conditions recognize that this handicap belongs to the nature of things, whereas the proposal to make a working week applicable to agriculture is arbitrary and needlessly intensifies the difficulties. At the moment there would seem to be considerable risk of surrender on the part of members of Parliament to the labor demand. Lord Lee of Fareham, President of the Board of Agriculture, is resolute in his personal opposition to the inclusion of agriculture in the statutory measure, and there is a possibility that the Government may leave the question to be settled by a free vote of the House of Commons. As Parliament has now risen for the winter recess and will not meet again until February, we have the prospect before us of a couple of months' excitement and agitation. Unhappily a division has been caused in the ranks of associations representing agricultural opinion through a demand made by one of these that it and it alone should conduct negotiations with the Labor party. This is a most unfortunate development, and it is difficult to find any justification for it in the circumstances.

Dairy cattle have been put upon the market in considerable numbers during the past six weeks. An extraordinary sale of British Friesian cattle took place at Colton Mains, Dunfermline, Fifeshire, early in November, when 100 head of cattle bred by Hugh Brown on that farm sold for the extraordinary average of fully £500 each. This is the average when each calf is taken as a separate lot; the official return which classed the cow and calf as one lot is 96 lots of home-bred British Friesian cattle with an average of £552 16s. 8d. Hugh Brown, whose fortune it has been to establish this remarkable record, is a native of Ayrshire. He was born on a small farm in Kilwinning parish called Lissensmoss, a name which sufficiently indicates the character of the farm. He entered on the tenancy of Colton Mains in Fifeshire perhaps thirty years ago. His brother, John Brown, continued to farm Lissensmoss for some years after Hugh Brown went to Fifeshire. He then migrated to Herts, the county just to the north of London, and there at the farm of Marden, St. Albans, he established a herd of Friesian cattle. These cattle were at that time being imported from Holland to Harwick and were well known in the eastern counties of England, especially in Essex and Herts, amongst dairy farmers who supplied London with milk. Hugh Brown obtained some cattle from his brother and founded the herd at Colton Mains. The passing of the act 1896, which is well known to Canadians of course, put a stop to the importation of cows from Holland, and patrons of what are colloquially known as the black and white Dutch cattle had perforce to rely on their home supplies. The breed consequently became somewhat mixed, but a number of enthusiasts held to it. In 1914 these, by some means which has never been quite fathomed, succeeded in importing from Holland a number of cattle which were carefully selected and were sold by public auction after a lengthened quarantine at Bayfleet, in Surrey. Two of the bulls thus imported were sold at the Colton Mains sale. The one made £2,730, and the other £2,835. These imported animals have exerted an amazing influence in improving the breed during the past five years. A two-year-old heifer at the Colton Mains sale, got by one of these bulls, was sold for £1,680. One of the features of the sale was the purchase of some of the best dairy cattle amongst them by James Kilpatrick, Craigie Mains, Kilmarnock, and other breeders from Ayrshire and Renfrewshire.

The usual series of sales of young Ayrshires have also recently taken place at Lessnessock, Ochiltree,

yrshire. Adam W. Montgomerie sold 40 head of calves and yearling bulls at an average of £76 16s. 2d. The famous herd of the late John Cochrane, Nethercraig, near to Kilmarnock, was dispersed shortly afterwards, 59 head of all ages made an average of £83 10s. 8d. Sir Thomas and Mr. Andrew Clement held their annual winter sale a week ago, when 53 young cattle made an average of £59 12s. 7d. It is obvious that there is a wide difference between these figures and the phenomenal average for the British Friesians at Colton Mains. Mr. Hugh Brown has gone to reside in Sussex. He has been elected President of the B. F. Society.

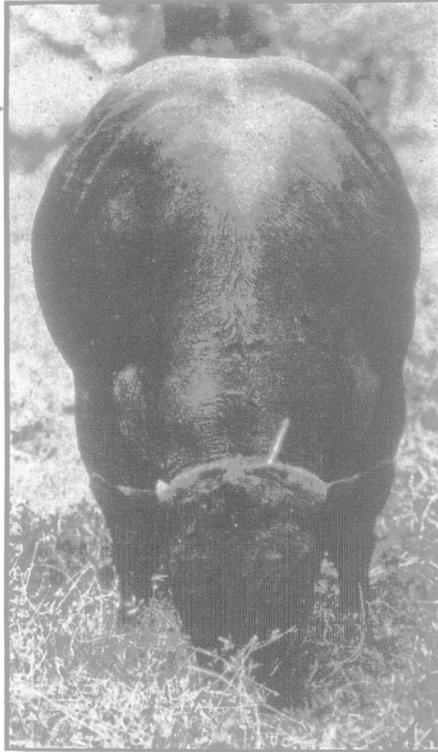
A strong effort is being made to establish milk records for one of the best classes of dairy cattle in Great Britain. These are what are known as milking Shorthorns bred in the north of England, chiefly in the Wensleydale district of Yorkshire and in Cumberland and Westmorland. The first sale of cattle of this type with certificated milk records took place recently at Penrith. The highest price realized was 184 gs. or £193 4s. for a cow newly calved. The average record for the best cattle shown was 1,000 gallons per annum, spread over two years. Other cows made 180 gs., 170 gs., 120 gs., and the average for twelve cows in the class for cows recently calved was £107. A sale of high-class Ayrshires was held at Beuchan in Nittsdale, when 47 cattle of different ages made an average of £55 7s. 7d.

Closely allied to the question of stock breeding is the subject of the tuberculin test, and its application in the case of animals sold for exportation. Great dissatisfaction exists in this country because of the position in which Scotland is placed. Relatively the export trade from Scotland is much more extensive than the export trade from England, yet the official testing station is situated at Pirbright in Surrey. At the present time there is a recrudescence of foot-and-mouth disease in England. Outbreaks are taking place at different centres with the result that various areas in England have been scheduled. Meanwhile Scotland is and has been for many years immune from this disease, but as the United Kingdom is treated by overseas dominions and foreign countries as a unit, cattle sold for export in Scotland are being held up. In this way heavy loss is being incurred. Ireland, for the purpose of administering the Contagious Diseases (Animals) Act is a separate unit from Great Britain. Cattle sold to Irish breeders at the October sales are still in this country, because Ireland refuses to admit them from Great Britain. Readers will appreciate the situation and will understand why Scottish breeders are conducting an agitation to have Scotland constituted a unit. There is also a demand that a tuberculin testing station should be established in Scotland. Regarding this there is, however, a good deal of difference of opinion, and no doubt the universal view of stock breeders in this country is that purchasers for export should test the animals at their breeders' farms, and, according to the result of the test, then should take them or leave them. This was the course followed many years ago when, for example, the Canadian Government had Dr. Rutherford as their representative in this country. I am afraid, however, that the doctor's experiences, if he chose to make them public, would make somewhat grim reading. They would also cast rather a sinister shadow upon at least some stock breeders in this country. At the recent conference of the Scottish Chamber of Agriculture the whole subject was discussed. On one point the conference was unanimous, namely, that tuberculin should be sold under statutory supervision as poisons are sold, and that its use should only be permitted to accredited members of the veterinary profession. The indiscriminate distribution of tuberculin has been abused, and it would be well if a strict and discriminate use of an agent which may be a good servant but can be put to a vicious use.

A very notable stock breeder has recently passed away in the person of James McWilliam, Garbity, Fochabers. Mr. McWilliam began farming many years ago at Stonetown in the parish of Boharn in Banffshire. He gradually built up a very fine herd of Shorthorn cattle, and was universally recognized as one of the best judges of that breed in Scotland. He was also an excellent judge of Aberdeen-Angus cattle, and perhaps, still better, a judge of cross-breeds. He was held in great respect as a man of singular probity and independent judgment. He judged at the famous Palermo Show in Argentina and, unless my memory is at fault, he also judged at the International at Chicago, and it may be at Guelph, Ontario. His oldest son is the capable farm manager and superintendent of the Royal herds at Windsor, while his youngest succeeded him a few years ago in Stonetown.

A movement is on foot to do honor to another veteran amongst Scottish stock judges; I refer to James Weir, of Sandelands, Lanark, perhaps the best-known judge of Clydesdales in Great Britain to-day. Mr.

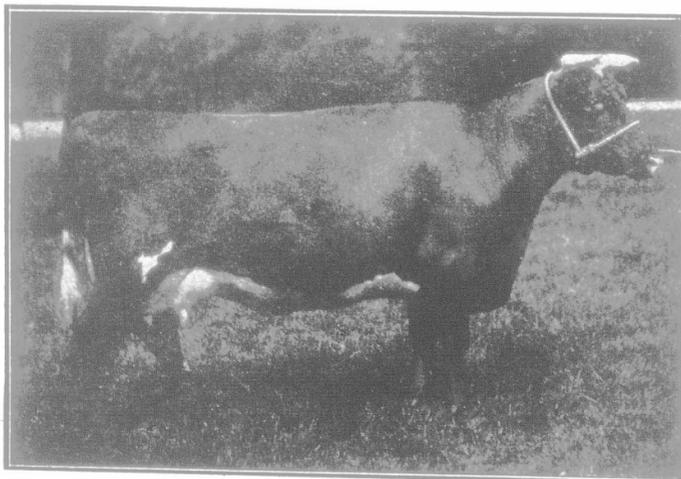
Weir is about 76 years of age, and has been in the front rank as a judge of Clydesdales for the past forty years. It would be difficult to name a show in Great Britain and Ireland in which he has not acted as a judge, and he is equally at home amongst Ayrshires as he is amongst Clydesdales. Beyond all that, he is a first-class farmer, and indeed the leading farmer in the Upper Ward of Lanarkshire. Mr. Weir has many friends in Canada. The proposal is to have his portrait painted by a first-class artist and presented. Subscriptions are limited to one guinea each, and the treasurer is William Shaw, Royal Bank, Lanark, Scotland. I have no doubt there are many in Canada who would be glad to take



Where Meat and Profit Combine

part in doing honor to this veteran judge and breeder of Clydesdales.

Another subject of vital interest is that of housing. The lack of housing accommodation at the moment is an ominous feature of our social state. Legislation has been passed, but it is not easy to see how legislation can do very much to help. For some reason which we are rather unable to fathom, there would seem to be a connection between the legislation passed through the energy of the present Prime Minister in 1910 and the present dearth of houses. Of course, during the four



Lengow Barrington

Dual-Purpose Shorthorn cow that recently sold for 1,100 gs. in England.

years and more of war, house-building was at a standstill, but why this should continue now that so many men have returned to civil life we do not quite understand. The problem is to build houses which can be let at economic rents. In the country there is a great dearth of good houses for married men employed on farms. The problems by which we are confronted in connection with such questions are serious, and may very well have dangerous issues.

Mechanical traction is coming into more and more favor in connection with farming operations. The leading agricultural societies are devoting much attention to this subject, and also to the improvement of

the implements and other machinery in use on the farm. A great improvement has taken place in motor plowing, and for spring and autumn work on level land where the fields are large there is every indication that mechanical traction is increasingly popular. The new type of tractor has been brought out by a leading firm of Scottish agricultural engineers, and is praised in all quarters as one of the best in the market.

Wishing all readers a happy New Year, I subscribe myself as of yore,

SCOTLAND YET.

Calf Rearing.

At this time of year we receive a number of enquiries as to the best method of feeding the calves in order to have them do well. Many find calf rearing a rather difficult problem. They are unable to get as thrifty and growthy calves as their neighbors who possibly keep the same breed. It is important that the youngster receives no setback in its development. If it has a touch of indigestion or scours, it loses more in a week than it will gain in two weeks. Therefore, the aim should be to, so far as possible, avoid ailments of all kinds. The two troubles above mentioned are usually due to carelessness in feeding, or using improper rations. Breeders who allow the calf to draw its own milk supply from the cow have less trouble in rearing calves than do those who milk the cows and raise the calves on skim-milk. The number of farmers who keep dual-purpose herds are in the majority, that is, on the average farm a double revenue is expected from the herd. It is important that the calf get a good start. If the feeder skimps the young stuff he usually has scrub stock to feed later on. Whole milk is nature's feed for the young, and the calves should get plenty of it at the start, and then the change to skim-milk made gradually. Too sudden changes in the ration, and not being particular enough about the temperature of the milk and the cleanliness of the pails, are the main causes of indigestion and scours. A calf will take from eight to ten pounds of milk at a meal, and we know of some that take as high as fifteen pounds. The milk should always be given at blood heat, and fed at the same temperature from day to day. Feeding it warm one day and cold the next is the forerunner of trouble. We believe that the pails are the source of a good deal of the trouble with calves. They should be scalded every second day at least, and if every day, so much the better. One feeder who has considerable trouble with scours, found that after commencing to feed the calves from the pails in which he milked there was no further bother from this disease, thus indicating the importance of cleanliness in the feeding utensils.

The calf needs more than skim-milk, and there are a number of supplementary feeds which may be used. There are commercial calf feeds on the market which have given marked results. These are usually scalded and fed in conjunction with the milk. Ground flaxseed may be allowed to cook until it takes on the consistency of a jelly and be fed with the milk. Two or three tablespoonfuls of this jelly are enough to start with, but the amount may be increased to a half teacupful. The oil in the flaxseed will help to make up for the fat removed in skimming the milk. Some use oil-cake meal, and as it is rich in protein it is a particularly good feed for growing stock, but remember it is a poor substitute for the fat taken from the milk. The aim should be to get something rich in fat to feed in conjunction with the skim-milk. A porridge made from crushed oats with the hulls sifted out is a wholesome feed for growing calves, but it cannot be termed a substitute for fat.

When a calf is a month old it should commence to pick at grain, hay and roots. The feeder should tempt the appetite of the youngsters and encourage them to eat as much roughage and concentrates as they will take. Roots, silage, clover hay, and the various grains are all relished by the young things. They may not eat very much at first, and the trouble with many feeders is that seeing a little feed in the manger they leave it there, instead of going to the trouble of thoroughly cleaning the manger and putting in fresh feed. The calves do not like eating out of a dirty manger and picking over mussv feed any more than do humans enjoy eating off a dirty plate and eating food that someone else has left. For the grain ration, there is nothing to equal oats and bran, with a little cornmeal and linseed meal added. Five pounds of oats, three pounds of bran, and a pound each of the meals make a very good mixture. As corn is fairly high in fat, it is a splendid feed to give to skim-milk calves. When a calf is a month and a half to two months old it will possibly eat about a pound of concentrates per day, and double that amount when it is three months old. Fresh clover hay or alfalfa makes excellent roughage.

Should the calf have an attack of scours, the following recipe has been recommended: Powdered chalk, 2 ounces; powdered catechu, 1 ounce; ginger, ½ ounce; opium, 2 drams; and peppermint water, one pint. Give a tablespoonful night and morning. Using a little limewater in the milk is a splendid method of rectifying this trouble. The lime is slacked and the clear liquid is the material used. Wherever there is any trouble, first ascertain the cause and remove it. Give the calves a chance; one cannot afford to raise second-rate calves when, by a little extra care and attention, they could be developed into individuals of first quality.

Curing Meat for Summer Use.

Sometime during the winter it is advisable that one should cure a quantity of meat for use during the summer months. There was a time when "killing bees" were quite popular, and barrels of shoulders, hams and bacon were put in salt. Times have changed, however, and the present generation does not seem to have a particular liking for salt pork. This should not prohibit anyone from putting away a supply of meat. There are a number of recipes for the curing of pork, which have proven very satisfactory, and the meat takes on an appetizing flavor and will keep during the entire summer if necessary. Curing the meat on the farm comes a good deal cheaper than purchasing it on the local market. After the meat has been pickled for the required length of time, it may be smoked.

A 200-pound hog will dress out around 160 pounds. This will give some idea of the number of hogs which should be killed to meet the requirement. Animals that are healthy and gaining in weight should be selected for slaughter as the meat from them is more palatable and will keep longer than that from animals which are not in good condition. Under no consideration should an unhealthy animal be used for human consumption. While some object to fat, it is necessary to have the fat in order to give flavor to the lean. One should be careful not to chase or beat the hogs previous to butchering. A bruise injures the meat and a rise in temperature has a detrimental effect on the keeping qualities. Withhold feed from hogs at least eighteen hours before slaughtering.

With a very large pig it is sometimes necessary to stun it before sticking it. This practice should be avoided where possible, as the stunning is liable to retard bleeding. By throwing the animal squarely on its back, one man is able to hold a fairly large-sized hog. The man who does the killing should grasp the hog by the jaw and make an incision about three inches from the breast-bone forward to the jaw. It may be necessary to insert the knife five inches in order to sever the veins and arteries.

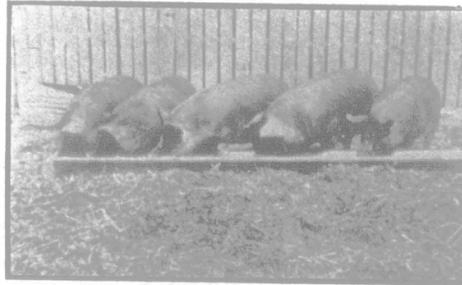
On the average farm the scalding is done in an ordinary barrel, although with an animal that cannot be handled in a barrel, sacks may be laid over the body and hot water poured on it to loosen the hair. The water should be from 150 to 165 degrees Fahrenheit, to give the best results, and it is advisable to put lime or wood ashes in the water to help loosening the hair and dirt. Unless the body is kept moving in the barrel, there is danger of burning the skin. After plunging the body in the scalding water for about a minute, it should be drawn out, as the contact with the air before the second plunge assists in loosening the hair. The hair is removed by the use of a knife, or regular scrapers, which are cup-shaped pieces of metal fastened to a handle. The amateur may have some difficulty in removing the entrails. Care should be taken, however, at all times to keep the meat clean.

The animal heat should be allowed to escape from the body before the meat is cut up and placed in pickle. Some make head-cheese from the head and legs, while others cure and smoke the jowl and find it a very savory dish. The four parts of the carcass remaining are the hams, shoulders, loin and bacon strip. These should be neatly trimmed before putting in pickle. The trimmings may be used for making sausage. Any of the fat parts trimmed off can be rendered along with the leaf fat. When killing only one pig there is scarcely enough trimmings to be bothered making into sausage, but where two or three pigs are killed it is advisable to make it. Practically every member of the family has an appetite for home-made sausage. A. M. Paterson, of the Kansas Agricultural College, gives the following recipe for making and seasoning sausage: "For each three pounds of lean pork there should be about one pound of fat. After it is finely cut it should be spread out thinly and seasoned. To each four pounds of meat use one ounce of fine salt, one-half ounce of ground black pepper, and one-half ounce of pure, finely-rubbed leaf sage. The meat may be run through the chopper the second time to properly mix the seasoning." Some prefer different seasonings, and the following recipe may be used: Black pepper, 1 pound; clover, 5 ounces; nutmeg, 4½ ounces; ginger, 9 ounces; anise, 2½ ounces; collander seed, 2½ ounces. Grind together and use one-half to one ounce to each ten pounds of meat. Where a large quantity of sausage is made, the meat should be pressed into casings, but where there is only a small quantity it may be packed away in stone jars or crocks, and covered with fat.

For the hams, shoulders and bacon, the common preservatives used are salt, saltpetre, sugar or molasses. These are all the ingredients necessary, although others are sometimes used. As salt is an astringent, it is a mistake to apply it alone to the meat. It tends to draw the juices and to cause the fibres of the meat to contract and harden. Saltpetre has the same action; its principal use is to retain the natural color of the meat, and it should not be used in a proportion of more than six ounces to one hundred pounds of meat. Sugar tends to soften the muscle fibres and improves the flavor. The three mixed together make a preservative that gives the meat a good flavor which it will retain for a long time. A clean barrel or jar, holding around twenty-five gallons, is very handy for curing the meat. For sugar-curing the hams and bacon, the pieces may be packed closely in the barrel with the hams and shoulders at the bottom. Then to each 100 pounds of meat, 8 pounds of salt, 3 pounds of brown sugar, and 3 ounces of saltpetre should be dissolved in four gallons of water, and the meat covered with this brine. It will require from four to six weeks for the bacon strips to be cured, and from six to eight weeks for the hams and shoulders. Some slightly vary the amount of salt

and sugar to be used, but the proportions given produce a good flavor and the pork will keep throughout the summer if properly smoked.

After the meat is taken out of the brine, it should be allowed to dry for a day or two before being put in the smoke-house. A building about six feet square, or even smaller than that, will prove satisfactory for a smokehouse. It should be so constructed as to retain the smoke and yet have sufficient ventilation to carry off the warm air. Meat has been successfully smoked by having the fire directly below it, and covered with a piece of metal to prevent the heat coming in direct contact with it. If it can be arranged it is desirable to have the fire-pot outside the smoke-house, and a flue carries the smoke into the building. Meat has been smoked in a barrel or large dry-goods box, and then there are smoke-houses on the market which are a very neat affair and can be used as a storehouse for meat throughout the summer. Hickory, maple, beech, or corn cobs may be used as fuel. The fire should be started slowly and so built that there will be the maximum amount of smoke with the minimum of heat. Three days' continuous smoking, or six or seven days



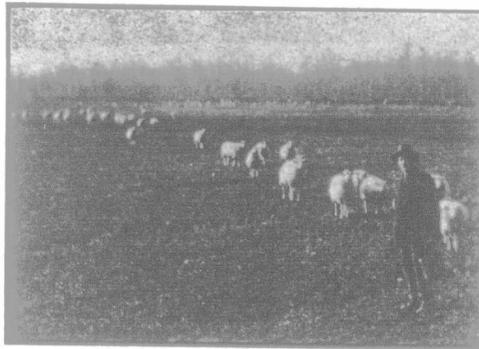
A Contented Bunch

Owned by J. George, Blenheim, Ont.

with the fire lit for a few hours each day, will usually be sufficient. The rich brown color which the meat takes on is an indication of when it has had sufficient smoke.

There is a liquid smoke on the market which may be brushed or rubbed on to the meat. This is much more convenient and less expensive than using the smoke-house, and many who have tried both methods cannot tell the difference in the flavor or keeping qualities of the meat. The material is brushed or rubbed on until it takes on a rich brown color. A dry, cool place, where there is a free circulation of air, can be used for keeping the stored meat. It is advisable to wrap it in paper or burlap in order to keep vermin away. The storage place should also be kept comparatively dark for best results.

Beef can also be cured and kept for summer use. Where there is no beef-ring, it is rather difficult to get fresh meat at all times during the summer months, especially if the farm is located some miles from the town. Some have taken the meat, cut it in slices and placed it in jars, which are sealed and placed in boiling



The Sheep Know The Voice of Their Shepherd

Part of Wm. Edwards flock, Lambton County.

water for a couple of hours. A piece of suet or fat is put in with the lean meat and the heat melts the fat, which hardens when the jars are cold and practically seals the meat. Some partially cook the beef and place it in large earthen jars, and then pour in sufficient fat to completely cover and seal the meat. This is ready for use at any time. All it requires is a little cooking before being served. A brine can be made of 4 pounds of salt, 2 pounds of brown sugar and one ounce of saltpetre, to two gallons of water, for each 50 pounds of meat. The brine is boiled for ten or fifteen minutes, when the scum which rises to the top is removed. The pieces of meat can then be put in a cask or crock and covered with this brine. Should the brine become sour, it should be drained off and boiled and then, when cool, put back on the meat again.

During the winter months when the weather is cold, beef can be kept frozen. However, the above mentioned methods of curing it will permit of the housewife putting away some of the meat for use during the summer months. Killing and curing the home meat supply is more economical, as a rule, than depending on the fresh product from the retail stores.

Sunflower Silage.

EDITOR "THE FARMER'S ADVOCATE":

We have been using sunflowers for silage this last two years. Last year we filled two silos, one which was used first was filled with matured corn and a load now and again of sunflowers mixed through it; the other silo was filled with seven-eighths sunflowers and the rest matured corn. We started feeding silo No. 1 in the latter part of October, and have been feeding from silo No. 2 for about four weeks. The cows are milking about the same as when on corn three months ago, although they are three months longer with calf and two are dry. We feed about one-third less sunflower silage as we find it more sappy, and the cows evidently relish it. Their manure has the same appearance as when on grass.

Vaudreuil Co., Que.

GEO. GREENWAY.

THE FARM.

Interesting Notes from Australia and New Zealand.

EDITOR "THE FARMER'S ADVOCATE":

Australia is still in the tentacles of a drought—in great belts the worst ever experienced. Twenty million sheep have perished, and five million cattle. At time of writing—November—the outlook for a break was not hopeful. So wonderful are the recuperative powers of the country that recovery would be rapid if good rains fell, though it would be three years before the live-stock shortage were overhauled.

There will be no wheat this year, as the season for this grain is over. There are still large quantities of war wheat available from previous seasons. There have been very serious scandals in connection with these reserves. In New South Wales the shortage in the stacks amounts to grain worth a million and a half sterling, owing to thefts and damage by vermin, in addition to which farmers contributing to the pool were overpaid by £60,000. Some of the supervising staff used to help themselves in railway truck loads, which they consigned to accomplices as merchandise. Three of them are now serving long sentences as a result. In addition to that phase of the question there was another which involved members of the New South Wales Government, and their maladministration has been the subject of inquiry by two royal commissions. The evidence given showed that there was a departmental back door by which certain agents did remarkably well out of transactions in the Orient in this wheat. At present the scandals promise to wield an influence during the coming elections.

These and other transactions have stirred the farmers up politically to the extent that they are to face the polls as a distinct entity in politics. Besides which they are determined that in any other wheat and butter pools, they will manage their own affairs quite outside Government circles.

The conditions surrounding the butter pool were much more satisfactory, for the reason that this commodity is not so liable to be made the sport of speculators. Despite that, however, the attempts of the Federal Government to organize another combine has met with considerable opposition, due to the variation in quality of the output from different zones. The larger factories object to the proposal that all butter be marketed as Australian and their identity lost. It means, they say, that the factories with a reputation to lose would have to carry the more unimportant ones, and thus help to shoulder the loss of prestige. The supervising Minister, too, wanted to retain the right of vote in relation to the controlling board of farmers. These differences may be fixed up, but there is a long row to hoe.

The apportioning of the Imperial butter bonus last season caused great discontent amongst farmers. The bonus came more or less of a surprise to the tune of half a million sterling. There was no direction as to distribution, so each directorate adopted its own way. Some factories divided it up amongst the wet shareholders only, others amongst shareholders and non-shareholders alike, others passed it on to capital account, others passed it on to the present season as a bonus, ignoring those whose produce it was in payment of. There are to be test cases in court.

For years objections have been raised to the system which gives to the buyers of greasy wool one pound out of every hundredweight. The only excuse for the draft concession is its antiquity. Already buyers in Australia get the benefit of the moisture increase during the overseas trip. The present movement promises to take very definite shape directly the system of open selling is restored.

Mr. C. C. Buckland, of Cambridge, N.Z., a very successful breeder of Friesians, is about to settle in Canada where he holds important interests. He is also much interested in Romney Marsh sheep.

Offered at Sydney markets, a backfitter sow realized £21 3s., easily an Australasian record. Prices for hides are also running in an unprecedented flood, for at Brisbane, Queensland, recently one brought £9, about half the value of the bullock.

The type of Australian kelpie, so useful where sheep are kept, are being more and more employed owing to increased cost of labor. The other day one was sold for £50. It is claimed that for drafting purposes one of these dogs will do the work of four men, and they never go slow or employ the strike weapons.

Owing to the extraordinary demand this season in America for Australian rabbit and marsupial furs,

hunters residing in the districts where they could acquire licensed rights have been making lucrative returns. Many of them during the open season for possum averaged £30 a week. Rabbits, too, who are not restricted by regulation in any way, work all the year round and average up to £20 a week. These earnings are most opportune, as hundreds of men in the drought belts have thus been provided for. The great slaughter amongst the possums, including the joeys, means that they will be closed against attack for two or three years.

Under a new Federal regulation hides and leather cannot be exported unless it is proved that there is no demand for it for local use. Central advising committees are acting in conjunction with the Government. The object is to keep prices from soaring as they did directly the war embargo was lifted.

What is claimed to be a world's record for a Guernsey cow was made by Tulip des Press (imp.), by producing in thirty days 2,075.63 lbs. milk, test 4.93, or 102.36 lbs. butter-fat. She is owned by E. Perry, New South Wales.

By a new system of branding it is estimated that there will be a saving in hides of £2,000,000 in Australia in a year. The main feature of it is the ear-notching of sheep, as well as vertical and horizontal branding of cattle. The markings will represent numerals, and each owner will have a registered number. The owner will be compelled to use the brand on the less valuable part of the hide. This scheme has been started in Victoria, but there is no certainty that other states will adopt it. The trouble is that on the big cattle ranches mustering only takes place once or twice a year, and brands in obscure parts cannot be easily detected even in small yards.

Mr. J. J. Smith, of the New South Wales Agricultural Department, claims to have discovered a fluid which if injected into fruit trees will completely rid them of sap-sucking insects, thus obviating any need to use a spray. He has been engaged in the research for ten years. He claims that the injection does not constitutionally affect the trees or the fruit.

Mr. J. O. Smith, of Inverell, New South Wales, has invented a maize-harvesting machine, which cuts the stalk and thrashes the cob in one operation. A knife operates on the principle of a binder to cut the stalk close to the ground. Fan bearers force the stalk on to a canvas elevator, thence into the thrashing drum. The lot passes into the shaker box and the sifted grain goes into the elevator. The machine, worked by a man and three horses, can treat six acres a day.

Australia. J. S. DUNNET.

Township Boards to Administer Rural Schools

EDITOR "THE FARMER'S ADVOCATE":

I have been asked the question: "What are the outstanding needs of the rural school?" To my mind there is only one answer. The most pressing need of the rural school is a change in the method of administration. In the rural schools under my inspectorial supervision there are 2,687 pupils enrolled and there are 240 trustees; one trustee per 11 pupils. To supervise an expenditure of \$72,333 requires the services of 240 trustees, to say nothing of 160 auditors, and 20 treasurers who are not trustees. Surely a simpler method of administration could be delivered and with great advantage. I am of the opinion that a simpler and more efficient method of administration offers itself in the form of township school boards; one board of trustees to manage the schools in each township.

The plan of administering rural schools by township boards has been endorsed by the two greatest educationists of this continent. The Honorable Horace Mann, the founder of the educational system of United States, said: "I consider the law authorizing townships to be divided into school district the most unsatisfactory ever enacted in the State of Massachusetts." Dr. Ryerson, the founder of the Educational system of our own Province, said: "I am satisfied that the township board is a remedy for many evils and an important step in advance."

In adopting township boards we are not making an experiment. Both systems have been tried in United States and experience there is strongly in favor of township boards. No State that has discarded the district school system for township boards has ever reverted to the old system; and always there has been a marked improvement in educational conditions where township boards have been adopted. It has been their experience that the consolidated school almost invariably follows in the wake of the township board.

There would be these advantages:—

It would greatly simplify the school law and proportionally reduce litigation. It would eliminate disputes about section boundaries which is a prolific source of trouble in rural communities.

It would reduce the number of school officers. To take a concrete case, I have in mind a township with 482 pupils enrolled where there are 60 trustees; one trustee per 8 pupils. I suggest that 5 trustees could manage the school affairs of this township and with greater efficiency.

There would be a uniform school rate throughout each township. This is just and proper. It is unjust that people in the smaller and weaker sections should be obliged to pay higher rates than their neighbors in the larger and more wealthy sections for a cause so vital to the interests of all.

In relation to teachers there would be many benefits. A board would ordinarily have in its employ from 15 to 25 teachers, and would find it advantageous to adopt a salary schedule. This would do much to mitigate one

of the greatest evils incidental to our present rural school system—the frequent changing of teachers. It would better the compensation of teachers and thus raise the status of the profession. And as in many cases fewer teachers could be employed to do the same work it would do something toward easing the situation in regard to the scarcity of teachers.

It would secure more efficient supervision. The office work of the Inspector would be materially reduced, and he would consequently be able to spend more time in the schools advising teachers and encouraging school boards to the efficient performance of their manifold duties. With the increased responsibilities the school board becomes a supervisory committee, vigilant and active, ever watching with zealous care the sacred trust confided to them in securing for every child in the municipality the best education possible.

It would secure improved accommodations and equipment. Local self interest would impel people who are paying a uniform school rate to make efforts to the end that their school house may be as good as others in the township. Not only that, but a board with twenty school buildings in charge would soon learn something about school architecture. As articles of equipment and school supplies could be purchased in quantity there would undoubtedly be an improvement in the matter of equipment.

There would be greater flexibility in the administration. Within certain limits parents might send their children to the school most conveniently situated. Over-crowding could be relieved by sending the larger pupils to schools with smaller attendance. Fifth classes could be established in schools where there is a demand for them. Schools with small attendance could be closed and the pupils transported to a neighboring school. Consolidated schools could be established with ease where the situation demands them. Moreover, modifications of the curriculum to meet local conditions could be easily and readily made.

The only argument I have heard advanced against township boards is the fact that two townships tried the plan and later reverted to our present system. In this connection we should remember that conditions have changed materially in the past twenty-five years. Improved roads, the telephone, and the automobile have made the townships smaller. To-day, everybody in a township knows everybody else. This was not the case when the two township boards were in operation in Ontario; and there was consequently more room for friction and misunderstanding than there is now. The fact that township boards failed twenty-five years ago is therefore no indication that they would fail now.

The proposal for township boards should appeal to those who are advocating consolidated schools. Our present antiquated, cumbersome and inefficient system of rural school administration is the one great obstacle to the development of these schools.

To secure the consent of a majority of the ratepayers in each of the five, six or more sections in the territory required for a satisfactory district for a consolidated school is in most cases a hopeless undertaking. With township boards this laborious procedure would be unnecessary. The board would have power to outline a desirable district, submit the proposition to the ratepayers and the matter could be settled with little trouble or delay.

In conclusion I may say that it is a question of co-operation in relation to education in rural schools. If the people of the rural districts can co-operate to secure better financial returns from their farms, surely they can co-operate in securing better educational facilities for their children.

Lambton Co., Ont.

HENRY CONN.

CANADA'S YOUNG FARMERS AND FUTURE LEADERS.

Topics for Discussion.

In a recent issue we published a list of topics as suggestions for discussion by readers of this department of "The Farmer's Advocate." Since that time quite a few letters have come to hand, and these will be published as space permits. There must, however, be many other readers who have useful ideas, and for this purpose we are re-publishing the list of subjects below. Look it over carefully and send us a short letter, of about six hundred words. We will be glad to pay for such letters as are found suitable.

1. Are you a member of a farmer's club? If so, how has membership in this club helped you?
2. What crops other than corn have you had experience with for silage purposes?
3. Have you a Community Hall in your district? Has it been a good thing for the people living round about?
4. Considering the quantities and kinds of home-grown feed available and the cost of purchased concentrates, what combinations of feeds make the most practicable ration for milk production in your district?
5. Did you ever belong to a Literary Society, or do you belong to one now? Is it worth while?
6. There are many farmers who have become advocates of sweet clover. What has been your experience either as regards hay, pasture or soiling?
7. What is the most useful thing you have learned about farming in 1919?
8. What is your idea of good social evenings for farming communities?
9. If you have recently started farming for yourself, or are planning on doing so as soon as you can,

what handicaps are you meeting with? How could it be made easier for young men to farm?

10. Do you use a camera on the farm? How can business and pleasure be combined in this way?

11. What does it cost now to produce a pound of pork?

12. On what crops do you prefer to apply manure? Does it pay best to put it on after the first cutting of a new meadow, or for the corn and root crops? Do you always manure for wheat?

Making the Club a Successful One.

EDITOR "THE FARMER'S ADVOCATE":

In a comparatively recent issue of your valuable journal appeared an article relating to young farmers' clubs. An example was cited of a certain club in one of our southern counties which, for reasons not apparent, had proved a failure. And this, it may be said, has provoked the following discussion.

From what one was able to glean, the club referred to lacked a definite purpose—without which little would be likely to be accomplished. That, it seems to the writer, is one of the first essentials toward the success of any organization. Aimless efforts in themselves are almost useless, no less in clubs or societies than in business. Definiteness of purpose, then, is the first essential. This, of course, may vary in nature; it may be essentially financial; it may be social; or a combination of both, but so long as a definite purpose exists there is some prospect of success.

Then, there is the question of organization. This is also of equal importance. Everyone is aware of the principle that efficient management is the cornerstone of business. Similarly, in establishing a club, the choice of executive is important. Sentiment should not be allowed to over-rule merit in this respect, for, as has been mentioned, upon the ability of the executive—the management—depends to a great extent the success of the club. This, however, should not be a difficult problem. In every rural community are young men who are quite capable, if only given the opportunity to prove their ability, and the farmers' club is possibly one of the best means of development along this line. If the executive is not thoroughly acquainted with the nature of the organization of such a club, forms outlining its constitution are available and may be adapted to local conditions. As in any society, the whole-hearted support of the members is highly important.

Naturally, every organization will have some plan or program of meetings. These may vary in nature, but it is well to give this matter some consideration. Many young farmers' clubs are essentially co-operative in nature; that is for the purpose of conducting their business on a co-operation scale. Others are social clubs whose chief aim is to promote the social welfare of the community. It seems to the writer that neither of these forms are to be recommended as such, for, generally speaking, there is seldom more than one club in any one community. If this is chiefly business in nature, then other phases of community development are neglected. Perhaps one would be more correct to call the more desirable form a community welfare organization or society. In any case, I think the program for the season should not be confined to one phase of development.

Briefly, a schedule of meetings for a young farmers' club might, by way of suggestion, be as follows: Suppose for instance, there are to be twenty meetings during the winter season. These might be devoted to at least three departments of the club—agricultural, literary, and social. The first, of course, would be chiefly concerned with farm activities, such as lectures on various classes of live stock, methods of farm management with suggestions for improvement, markets and methods of shipping, co-operation, etc. Literary evenings might take the form of debates, addresses by noted speakers, mock parliament, impromptu addresses by members—anything, in short, of an educational nature might well be included in this department. Then, too, social development should not be neglected. Social evenings could be arranged, when the public would be invited. Various forms of social enjoyment might be employed, such as music, games, dancing, recitations, skating parties, etc. All are wholesome forms of amusement and by arranging such functions at different homes in the community, the various members and their friends would come into social contact. The social department, in the writer's opinion, has its place in organizations such as this in welding the interest of the community and adding to the interest of farm life.

In arranging the schedule of meetings, the same department should not, of course, be represented on successive evenings of the club, but distributed over the season so as to vary the nature of the program. When arranging for a lecturer or speaker from a distance, it is always well to provide for a substitute program in case of emergency, so that the meeting may not result in total disappointment.

Generally speaking, farmers' clubs discontinue their meetings with the return of spring. True it is, the summer season spells busy days for the farmer, yet, it should be possible to have occasional meetings, say at least once a month. At this season of the year an occasional meeting could be profitably devoted to agriculture, and a few to the social department. The latter might take the form of outdoor games, garden parties, or picnics. If the summer meetings do no more than maintain the interest of the organization and that of the community they will have a decided value as a connecting link between the winter seasons.

In conclusion, then, it might be said that in organizing

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a farmers' club at least three points should be borne in mind: The necessity of a definite purpose, efficient organization, and a program including agricultural, literary and social development. It should be the aim of the executive to maintain, as far as possible, the interest of the members. Then, other conditions being equal, with efficient organization, whole-hearted support and high ideals, there is every reason to believe that such a society would be a potent factor in the community which it serves.

Wellington Co., Ontario.

W. J. L.

AUTOMOBILES, FARM MACHINERY AND FARM MOTORS.

Winter Care and Repair of Farm Machinery.

A great deal of inconvenience and delay can be saved by judicious care and repair of farm machinery during the winter months. W. L. Graham, the Assistant Dominion Field Husbandman, Ottawa, has sent us the following suggestion for farmers, which we pass on to our readers.

"Let him use more machinery then," is the stock phrase and cure all prescribed by the 'knowitall' of the farmer's labor problem. This is just what he has been doing for a generation or ever since city wages were distinctly higher than those upon the farm. To-day machinery has doubled in cost because it does not grow upon the land by the free agency of sunlight like crops, but is made in cities and by labor that exacts far more than the farmer's wage. Thus there is a limit to the machinery the farmer can afford to buy, and to the extent to which he can substitute machinery for expensive labor. In other words, machinery is now expensive labor.

"Farmers, therefore, are going to house their machinery in some way since the price is still soaring, and since the life of an implement well cared for is prolonged four or five times the life of machinery which is left in the open. An energetic farmer will not allow his horse or cow to stand out in the rain or snow. He will rush to get his crop into the ground on time and in the best possible condition, and he will gather his

harvest promptly and carefully so that there is the least possible loss. Many of us will do all these things and still allow a part of the toil-earned revenue to be swallowed up in the purchase of sky-soaring priced machinery or in expensive repairs.

"See to it that each implement wears out and does not rust out. Every one knows that it should be housed but housing under any condition and not properly caring for it otherwise, constitute very poor care. Machinery may be just as well cared for if it is allowed to stand in the shade of a tree as if stored in some of the leaky sheds, open sheds, poorly-drained sheds or combined implement sheds and hen roosts which are found.

Do not merely go through the motion, but shelter considerably, and before doing so, first list the repairs needed for next season and secure them along with an assortment of bolts, rivets, springs, etc., in time to have each implement repaired and ready for use on time. An implement in repair at all times will have a longer life and will give more satisfactory service during its life than one receiving irregular attention. Secondly, clean and oil each machine and give all polished surfaces an application of some anti-rust preparation. Axle grease or other lubricant will answer the purpose.

"Another 'critter' occupies space in the implement shed; the twenty-four-hour-day-iron horse or tractor has arrived on the farm. To insure more efficient use of this implement next season there are two things that should be given special attention. First, take steps to put it in the best possible condition now, and secondly, learn as much as possible about the fundamentals of tractor operation. Read carefully the instruction book; newspapers, books and magazine articles also furnish a wealth of information. If possible attend one of the tractor schools which will be conducted during the winter. Leave nothing undone that will fit you to become a more proficient tractor operator.

"A properly-fitted work shop is a necessity on most farms. It provides a means of acquiring the 'knack' in doing repair work. Again at critical times, such as harvesting or seeding seasons, one long trip to town for repairs may cause a loss more than equal to the value of a well-equipped shop.

"Paint, although last mentioned, is by no means the least important factor in prolonging the usefulness of an implement. Painted machinery on the farm is an exception rather than a general rule. The chief utility of paint is in protecting materials rather than improving

appearances. Paint of good quality only should be used, and the surface to be painted should be dry and clean before the paint is applied."

THE DAIRY.

A Resolution Regarding Test Work.

The difficulties which have arisen during the last few months in connection with the testing of cows for high records in the United States have doubtless been responsible for the following motion, which will be moved as an amendment to the rules of the Record of Merit in the Holstein-Friesian Association, when that Association holds its thirty-seventh annual meeting in Toronto, on Thursday, February 5. The motion is timely and those who are favorable to honest methods in dairy record work will doubtless see something in it that they like. It reads as follows: "It shall not be allowable for the supervisor to either milk or feed any cow in test, unless in an emergency where the milker may be taken suddenly ill or called away; and then he may only milk until a milker can be provided.

"Under no circumstances shall any gift or payment to a supervisor be made by, or be permitted from, the owner of the cow or any one interested in her, except the regular rate of wages for supervisors fixed by the Agricultural College or Department of Agriculture which appoints them, and any such gift or payment will invalidate the test. It shall not be allowable for any supervisor appointed to conduct an official test in any herd to have any business dealings whatever with the owner of the herd, with any intent of gain or advantage; nor shall he have any such business dealings with the owner's employees, or with any person or persons financially interested in the herd, inclusive of owners of any near relatives to cows tested.

"Should any owner of a Holstein-Friesian cow that has been tested under the supervision of any Agricultural College or Department of Agriculture fail to pay the bill for the conduct of the test of that cow, the Secretary shall give said owner thirty days to pay the bill. If at the expiration of the time allowed the amount due has not been paid, the Secretary shall pay same, and such payment shall work out an automatic suspension of the delinquent owner from all privileges of the Association, until such time as his indebtedness is paid.

Commendable Attendance and Dairy Exhibits at Eastern Dairymen's Convention.

Under the inspiration of well-attended meetings splendid exhibits of high-quality dairy products and a more animated and practical program than usual, the forty-seventh annual convention of the Dairymen's Association of Eastern Ontario drew to a close on Friday, January 9, after a two-day session in Victoria Hall, Brockville. The President, R. G. Leggett, Newboro, called the convention to order Thursday morning shortly after ten o'clock, and in his presidential address said in part as follows:

"The quality of our cheese has been gradually increasing, but the quantity for the past two years has been decreasing. Last year we were short about six million pounds, and this year twice as much or over twelve million pounds. The cause for this is found in the failure of the corn crop of 1918, sending the cows to pasture in the spring of 1919 weak and ill-nourished; much valuable time was lost before the cows were in good milking condition. Last July, a very dry spell just as the grain was heading, resulted in a very scanty grain crop. Consequently the scarcity and high prices of feed hindered the majority of farmers of feeding for fall milking. The corn crop of 1919 was excellent and we hope that the cows will go to the pasture this year in good condition for giving a bountiful supply of milk.

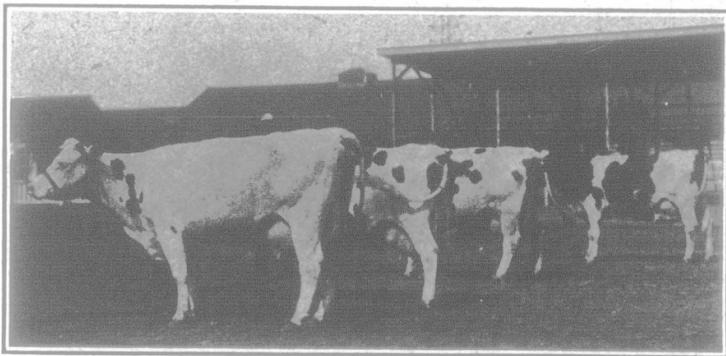
MAKE THE BEST OF CIRCUMSTANCES.

A note of optimism was sounded by H. Sirett, Agricultural Representative for Northumberland County when he discussed the relation of the Agricultural Representative to the dairy industry. The speaker thought the dairy industry was never on so sound a basis in Ontario as now, since prices for dairy products are attractive and dairymen generally never paid so much attention to the cost of production. Referring to the fact that dairy products have greatly advanced to the consumer, Mr. Sirett asked whether the prices of dairy product years ago when prices were lower had ever borne any direct relation to the cost of production. The fact that dairy products sold much lower in the 90's is no indication that those prices gave a return over the cost of production. The fact was, said the speaker, that a good living was so difficult to obtain on a farm that the farmer's wife and family were forced to do all the work possible in order to add to the yearly income. "From no source," said the speaker, "can there be offered a food product that costs the consumer so little when considered in conjunction with the cost of production. Moreover, no class of product finds so ready

a market as that from the dairy cow. Space does not permit us to discuss Mr. Sirett's address fully at this time, but we hope to reproduce it more fully in a later issue. Briefly, however, he did say with reference to the conditions affecting production that the dairyman must conceive that the keynote of successful dairying is the desire to do the best we can with what equipment and capital is at hand, and that it must be realized more generally that as far as feeding is concerned, there are more things to be learned about feeds than their names.

A NOTE OF HARMONY.

E. S. Archibald, Director of the Dominion Experimental Farms, Ottawa, speaking with reference to the



Line-up for the Holstein Female Championship at Toronto, 1919.

feeding of dairy cattle at the afternoon session delivered an exceedingly interesting, forceful and practical address. After eulogizing the past work of the various dairymen's associations he said that the needs of these organizations in the future would exceed those of the past. Dairymen who have lost faith in the industry should remember the fact that never had Canada so many milch cows and never had she so many dairy opportunities, facts which make it the duty of every dairyman to boost the industry he represents. Referring to the work of the Experimental Farms System, the speaker made note of the progress in live-stock work, and recalled the fact that whereas eight years ago there were only 500 head of live stock in all the farms, this comparatively small number has been increased to 6,000 in addition to re-stocking some of the older farms. He urged dairymen to give voice to their problems in order that the officers of the Experimental Farms

might be better able to assist in developing the dairy industry. An important part of the work undertaken during recent years has been in connection with new and little known feeds that could be used as substitutes for the older and better known concentrates, some of which are becoming more difficult to obtain in sufficient quantity. Studies have been undertaken in the digestibility and general utility of feeding stuffs in order to assist in cheapening practical dairy rations. "Prosperity in Agriculture", said the speaker, "depends not only on live stock, but, in Eastern Canada, primarily on dairying. The dairy cow has no peer as an insurance of financial returns from farming and as a mortgage lifter. Over production in dairy industry is an physical impossibility, but better cows better fed is the essence of greater profits for us as dairy farmers." A harmonious note was markedly noticeable in the speaker's reference to the good work being done at the Kemptville Agricultural College under the principalship of W. J. Bell. Special reference was made to the good to be derived from attendance at the Herdsman's Short Course now running. This note of sympathetic co-operation from Mr. Archibald is all the more noteworthy in as much as co-operation between Provincial and Federal officials has never been conspicuously harmonious.

PRACTICAL FEEDING ADVICE.

Referring more directly to his subject, the speaker said that the greatest mistakes in feeding dairy cows is the lack of knowledge as to the correct use of the various feeds. For maintenance purposes a 1,000-pound cow yielding 40 pounds daily of 3.5 per cent. milk requires 2 1/2 pounds digestible protein and 14 pounds digestible carbohydrates and fat including maintenance requirements which amount to 3/4 pound digestible protein, and nearly one pound of digestible carbohydrates and fat. Maintenance requirements are the same whether the cow is giving 40 or 60 pounds daily, while labor and other charges incidental to the cost of production are generally about equal to the cost of feed so that it is largely a matter of improved feeding practices to double the production. If the average individual would study his individual cows and realize the difference between a maintenance and a production ration he would not hesitate longer to buy feeds. Too many make the mistake of buying the cheapest feeds. One man recently was jubilant because he had been able to buy \$76 cottonseed while the Experimental Farms paid \$81 per ton. It was discovered, however, that his cottonseed contained 28 per cent. protein, while the other contained 40 per cent. He had less cause to be jubilant after noting this difference. Another man was feeding 5 pounds of cottonseed daily without any other grain to his herd of 36 cows and wondered why they were ailing.

HOW TO BUY FEEDS.

How to buy feeds—that is the question. There are two methods, the best one to follow is depending entirely on the character and quantity of the roughage available. If a man has rich protein roughages that will combine succulence, palatability, variety and protein

content he can do best by buying concentrates that carry digestible protein and digestible carbohydrates and fats in about the same proportion as his rich protein roughage, but in more concentrated form. If, however, he has no good choice of roughages, as in a disappointing crop season, it will be necessary to buy high protein concentrates so as to secure necessary relation between protein and other nutrients for maintenance and milk production. The Experimental Farms are very large buyers of feeding stuffs, and the system followed is to list once each month the feeds used, and the best prices at which they can be bought. The amount of digestible protein, carbohydrates and fat must also be shown so that the cost per pound of each constituent can be determined by merely dividing the market price per hundredweight by the number of pounds contained in 100 pounds of the feed. The accompanying table shows the relative cost as found in various feeds at present prices, of one hundred pounds of digestible protein, as actually prepared on October 8, 1919, for the Dominion Experimental Farms. The fact is recognized in the table that feeds such as cottonseed meal have a certain fertility value, and this value is deducted from the market price of the feed before determining the cost per pound of the nutrients. Thus at pre-war prices for commercial fertilizers, choice cottonseed meal has a fertilizing value of \$15.87 per ton, while gluten feed (23 per cent.) has a fertilizing value of only \$7.99 per ton. It does not take long to prepare this table, said the speaker, and it shows many things.

in discussing the elimination of inferior sires, "may be either a pure-bred, grade or mongrel. One man that I know of, has during the last four years used three different pure-bred sires on his herd, each one of a different breed. This is the type of man who cannot be reached by a campaign to eliminate the grade or mongrel. Not long ago a good average farmer whom I know bought for use on his herd a March calf weighing about 350 pounds that was being sent to market as a canner. He took it out of the loading yard for \$26 because it looked like a Holstein. Upon investigation I found that the sire of this calf was 50 per cent. Holstein, and that the dam was a mixture of Shorthorn, Jersey and Ayrshire. I also found out that two of this man's neighbors intended using this bull." The worst offender against improvement in cattle breeding is the man who breeds his cows to anything that will cause them to freshen; the second worst man is the one who mixes breeds, while a man who contributes but little improvement to the live-stock industry is the one who keeps pure-breds but does not develop them.

There are several methods of eliminating the scrub bull, and the first and most direct is by legislation, but at present this is not workable. It would also be possible to withhold all grants from fair or exhibition associations allowing a scrub or grade animal to be exhibited. Community bulls in all parts of the Province might also be bonused, but the only really successful way, said the speaker, would be a policy of education.

know that the number of cases of adulteration more than doubled over last season, there being 20 in 1918 and 46 this year, yielding in fines \$1,675.

"It seems to me that every year we have more convincing evidence of the advisability of having all milk paid for on a fat basis, for in spite of heavy fines imposed for skimming and watering, the practice still goes on unchecked. Then, too, as the average price of cheese has increased, the difference in the actual value of milks of different compositions is most marked, and I cannot understand how, year after year, patrons will submit to such an unfair, unequal distribution of their earnings as the pooling system provides, when it all could be accurately remedied by the use of the Babcock test. For our own information and in case of discussion pertaining to the paying for milk on a fat basis, I had a census made of the qualifications of cheese-makers, and conditions of the factory equipments, and a summary of these is as follows: 311 cheese-makers have attended a dairy school; 110 hold diplomas; 435 have permanent certificates; 119 have one-year permits, and 123 have been working on probation. The total estimated value of the cheese factories in Eastern Ontario is \$2,367,000, and 166 have suitable apparatus for the testing of milk. It is my opinion that every factory should be provided with a Lactometer and Babcock test, and every maker should qualify in the use of them. If this were done we no doubt would find less tendency to adulteration, and the question of paying by test would be greatly simplified."

The report of cheese factories in Northern Ontario, as given by Mr. Publow, was as follows: 24 factories, 578 patrons, 3,475 cows producing cheese-milk, 8,545,663 lbs. milk delivered to cheese factories and yielding 837,414 lbs. cheese or 10.20 lbs. milk to one pound of cheese. Average production per cow 2,454 pounds. It is interesting to note that among cheese factory patrons in Eastern Ontario there are 1,014 milking machines used, and that 264 new silos were built in 1919.

In the absence of E. H. Stonehouse, President of the National Dairy Council, D'Arcy Scott, Ottawa, Secretary and General Counsel for the Council, spoke on the work of that organization, and in the course of his speaking characterized the action of the British Ministry of Food in setting a final price of 25 cents for their cheese purchases in Canada without consultation with Canadian producers as "a most iniquitous proceeding." This subject brought out much discussion, and considerable dissatisfaction was evidenced. The next morning J. A. Ruddick, Dairy Commissioner, Ottawa, reviewed at length the circumstances surrounding the cheese situation during 1919, and we quote quite fully from his address as follows:

REVIEW OF THE DAIRY INDUSTRY.

"When this association met in convention a year ago you had every reason to believe that the trade in dairy products would revert to the pre-war status during the season of 1919. Perhaps the wish was father to the thought, but in any case your hopes, if you had any in that respect, have not been fully realized.

"I do not wish to revive dead issues, or to direct your minds to things which are past and gone when we should all be looking forward, but as there was more or less dissatisfaction over the policy of the British Ministry of Food in connection with the purchase of Canadian cheese last summer, it seems to be desirable that a brief statement of the facts in connection with this matter should be made at this time.

"The removal of the restrictions on the imports into the United Kingdom in the early part of the season opened the way for private trading, and for a time there was considerable business done at advancing prices, in spite of the fact that the retail selling price of 36 cents was still in force. The business came from the large multiple shop companies and others who were determined to secure full supplies of cheese, free importation being permitted, even if they had to be handled at a loss. This competition, together with inquiries and some actual business from continental Europe which induced speculative buying, forced prices up to a point above that which could be paid for cheese to be retailed in the United Kingdom at a profit under the fixed price of 36 cents. The regular British importers and wholesalers, who had been receiving a good commission on all controlled imports, now found that in many cases they were getting neither commission nor the business. Whether this fact had anything to do with the decision of the Ministry of Food to again negotiate for Canadian cheese, I am unable to state positively, but I think very likely it had. At any rate an announcement was made in London one day that after a certain date all imports of cheese would be subject to the importers' maximum selling price of 28 cents, and that representatives would be sent to Canada to arrange for the purchase of our surplus cheese. The result of this action, together with the fact that the continental demand had suddenly collapsed, was to stop buying in Canada over night.

"When the representatives arrived in this country and offered 25 cents delivered at Montreal for 20,000 tons of cheese, it is unnecessary for me to say there was considerable dissatisfaction, because it was felt that 25 cents was a big drop from the prices which had been ruling, and so it was. The prices which had been paid, however, were very largely fictitious and speculative, involving some very heavy losses on the part of the dealers. Had it not been for the offer of the committee there seems no doubt that the price of cheese would have fallen, temporarily at least, to about 23 cents in Canada, for that was as much as could have been paid for cheese to be sold retail in England at 36 cents and leave a profit for those who handled it, after bearing the loss on the prevailing rate of exchange.

DIGESTIBLE NUTRIENTS IN FEEDS FOR CATTLE, OCT. 8TH, 1919.

Kind of Feed	Price per ton car lots Oct. 8th, 1919	Digestible nutrients per ton	Manure value per ton	Net cost per ton	Net cost per 100 lbs. digestible nutrients	Total crude protein per 100 lbs. as guaranteed when sold lbs.	Digestible protein per 100 lbs. as determined by analysis lbs.	Cost digestible protein per 100 lbs.
	\$	lbs.	\$	\$				\$
1. Corn.....	70.00	1676	3.78	66.22	3.95	10.1	7.5	46.67
2. Gluten Feed (23%).....	72.00	1614	7.99	64.01	3.96	25.4	21.6	16.67
3. Dried Distillers' Grains (D).....	62.00	1778	9.43	52.57	2.95	30.7	22.4	13.84
4. Dried Brewers' Grains (D).....	48.00	1272	7.50	40.50	3.18	23.1	18.7	12.83
5. Wheat Shorts.....	56.00	1386	7.20	48.80	3.52	17.4	13.4	20.82
6. Wheat Bran.....	46.00	1218	7.81	38.19	3.13	16.0	12.5	18.40
7. Oats.....	62.00	1408	4.53	57.47	4.08	12.4	9.7	31.95
8. Barley.....	73.00	1588	4.56	68.44	4.31	11.5	9.0	40.66
9. Linseed Oil Meal.....	85.00	1558	12.10	72.90	4.68	33.9	30.2	14.07
10. Cottonseed Meal, Choice.....	90.00	1564	15.87	74.13	4.74	44.1	37.0	12.16
11. Ground Elevator Screenings.....	42.00	1410	4.10	37.90	2.68	14.0	10.5	20.00
12. Alfalfa Hay.....	28.00	1032	6.40	21.60	2.09	14.9	10.6	13.21
13. Clover Hay.....	24.00	1018	5.23	18.77	1.84	12.8	7.6	15.78
14. Timothy Hay.....	27.00	970	3.05	23.95	2.47	6.2	3.0	45.00
15. Corn Ensilage.....	3.00	354	1.07	1.93	.54	2.1	1.1	8.77
16. Mangels or Turnips.....	4.00	148	.59	3.41	2.30	1.4	.8	21.31

X—Cost of raising and storing an average crop at present.
 O—Manure value based on pre-war prices of commercial fertilizers.
 (D)—Difficult to obtain, but occasionally available.

Regarding the selection of feeds, much depends on the purpose for which they are to be used, whether for maintenance, growth, fattening or milk production. If for growing young cattle, oats and bran in equal parts is a reliable mixture. For fattening corn and barley are both strong heating feeds, while for milk production, oil cake, cottonseed and gluten are all rich in digestible protein, and all are necessary. It should be remembered, however, that several other considerations must be kept in mind aside from the mere nutrient of a ration if it is to be safe and economical. These are bulk, palatability, cheapness, variety, suitability and digestibility in addition to the fact that any changes that are made should be made gradually.

FEEDING OF MILCH COWS.

Mr. Archibald expressed the opinion that at no time in the life of a cow can you do more to increase capacity and production than during the last three months previous to the first freshening. At Ottawa, heifers about to freshen are fed fairly heavily up to four days before freshening. For three days after calving a slop feed is given, rather laxative in nature, but after three days when the cows are milked out dry for the first time, they are gradually changed back to heavier feed. The meal mixture fed during the fall, winter and spring should contain about 60 per cent. of the lighter concentrates, such as oats and bran, and 40 per cent. of the heavier concentrates, such as cottonseed, gluten feed, etc. The standard ration used at Ottawa during this period is clover, 10 lbs.; oat straw, 4 lbs.; 50 lbs. roots (if silage not available); 30 lbs. silage (if roots not available). The meal ration is made up of bran, oats, oil cake and cottonseed, made up as suggested above, and fed at the rate of one pound to every 4 pounds of milk produced. The speaker thought it more practicable to vary the quantity than to change the character or quality of the mixture to suit the varying quality of milk yielded by individual cows.

"What we need in feeding", said the speaker, in closing "is more faith in our cows. Faith in the ability of our cows to use more feed fed more wisely. Faith in the dairy industry when the world demands dairy products in quantities we cannot supply. If we as dairy farmers have this faith, let us study our feeds as we do our breed and breeding."

ELIMINATING THE SCRUB BULL.

"The scrub bull," said F. R. Mallory, Frankford.

As a seller of pure-bred stock, the speaker found that after a brief campaign of advertising by the Dominion Government many men purchased pure-bred sires for double the money they had previously been willing to pay. He thought that by the use of production figures from the books of cheese factories, the utilization of school fairs, placards and posters, much good could be done. As to what a man could afford to pay for a bull Mr. Mallory said that it was easily possible, with a herd of ten ordinary cows, to raise the average production for the year ten pounds daily, an increase which, valued at \$2 per hundred pounds, would make it profitable to invest as much as \$1,000 in a bull. A bull that would do this, however, could be purchased for much less money.

40,000,000 POUNDS LESS MILK IN 1919.

G. G. Publow, Chief Dairy Instructor for Eastern Ontario, presented his seventeenth annual report, from which the following is quoted:

"There were 789 cheese factories in operation this year, some 28 less than in 1918. Nine new factories were built, and additional improvements on repairs and equipment were made to 408 of the others, the total expenditure being approximately \$210,000. This includes 32 new plants which were equipped to manufacture whey butter, and 137 for the skimming of the whey. 209 factories made whey butter and 183 skimmed the whey and shipped the cream, as compared with 177 making whey butter and 46 shipping whey cream last season; 650,977 lbs. of whey butter was manufactured valued at \$292,822, while the value of the whey cream shipped was \$212,487, making a total of \$505,309 from this industry alone, or an increase of \$189,639 over last season. The number of patrons of cheese factories this year decreased from 30,088 to 28,908, and the number of cows from 279,849 to 267,411. From these there was obtained 883,175,685 lbs. of milk, a decrease of over 40 million lbs. The total make of cheese during the six months ending October 31 was 79,787,605 lbs., or nearly four million lbs. less than in 1918. The average yield was 11 lbs. milk per lb. of cheese as compared with 10.99 last season. One feature, however, that was greater was the average price which was fully 27 cents per lb. compared with 22½ cents last year, making an increase in the total revenue of nearly 3 million dollars. The Instructors made 27,790 tests of milk for composition and 6,680 sediment tests, and it is disappointing to

adulteration more being 20 in 1918, 1919, 1920.

ear we have more ability of having all spite of heavy fines y, the practice still the average price of in the actual value most marked, and r year, patrons will distribution of their ovides, when it all se of the Babcock in case of discussion a fat basis, I had a of cheese-makers, ements, and a sum- cheese-makers have diplomas; 435 have e-year permits, and bation. The total ctories in Eastern suitable apparatus opinion that every actometer and Bab- qualify the use of ubs would find less question of paying

Northern Ontario, lows: 24 factories, eese-milk, 8,545,663 ctories and yielding lk to one pound of cow 2,454 pounds. eese factory patrons milking machines ult in 1919. ouse, President of ry Scott, Ottawa, e Council, spoke nd in the course of ion of the British al price of 25 cents a without consulta- "a most iniquitous ht out much dis- tion was evidenced. Dairy Commissioner, circumstances sur- 1919, and we quote

INDUSTRY. onvention a year ve that the trade in the pre-war status s the wish was father ur hopes, if you had fully realized.

issues, or to direct at and gone when we as there was more or the British Ministry purchase of Canadian e desirable that a ction with this matter

s on the imports into part of the season and for a time there at advancing prices, il selling price of 36 ices came from the nd others who were of cheese, free im- if they had, to be ition, together with ss from cont'nental buying, forced prices ld be paid for cheese om at a profit under gular British import- en receiving a good orts, now found that neither commission ct had anything to do y of Food to again am unable to state it had. At any rate ondon one day that eese would be subject price of 28 cents, and to Canada to arrange eese. The result of that the continental as to stop buying in

ived in this country Montreal for 20,000 me to say there was e it was felt that 25 ices which had been which had been paid, ous and speculative, on the part of the e offer of the com- t the price of cheese t least, to about 23 ch as could have been England at 36 cents ndled it, after bearing change.

COST OF HANDLING CHEESE.

"That statement may seem incredible to those of you who have your minds fixed on the margin between primary prices in Canada and retail prices in England which prevailed in pre-war days, but the cost of handling dairy produce has advanced like everything else. I quote from a statement given out by the Department on July 30th last respecting the cheese purchase:

"The cost of handling the cheese from the time it is delivered by the Canadian producer at Montreal until it reaches the consumer in Great Britain at the present time amounts to 10.95 cents per pound, made up of the following items:

	Cents per lb.
British retailers' profit (which includes loss in weight in cutting up.....)	5.
Commission paid to British wholesalers and British importers (average).....	1.5
Inland transport in Great Britain.....	.5
Storage and handling in Great Britain.....	.5
Interest in carrying stock.....	.5
Loss in weight.....	.33
Ocean freight and landing charges.....	1.75
Discount.....	.25
Commission paid Montreal exporters.....	.37
Montreal handling charges.....	.25
Total.....	10.95

"In addition to these charges the British committee will have to bear the loss on account of the low rate of exchange, which at the present time is equivalent to about 2 cents per pound.

"The British committee will lose on the Canadian cheese purchased at 25 cents, and this loss will have to be met from the profits on purchases in other countries, or become a charge on the British Treasury."

NO FIXING OF PRICES.

"The offer of the committee to purchase cheese at 25 cents was held by some at the time as equivalent to 'fixing' the price, and there was more or less resentment on that ground. That this was a mistaken view of the matter has been fully shown by the course of prices during the latter part of the season. The price would have been a 'fixed' one only if the cheese had been commandeered and export to other markets prohibited. The British authorities would have been glad to have had this done, but consent to such action was refused in Canada, and thus you were in a position to take advantage of the European demand which came back late in July, this time through our own Canadian exporters, and at a higher price than the Montreal committee was paying. It may be news to some of you that the committee has not yet secured the full 20,000 tons covered by their first offer, and that not a single box of cheese has been offered to it since October 1st.

"Now I do not want you to misinterpret this statement of fact as in any sense an attempt to justify the policy of the British authorities, or as an argument that the price of 25 cents was a fair one under the existing cost of production. That is another matter entirely. My object is simply to put the facts fairly and squarely before you in the hope that a full knowledge of the situation will tend to remove any misunderstanding or sense of unfair treatment. It is not in the interest of the dairying industry that you should be dissatisfied, or feel that you have not been getting a square deal. I might add that the Ministry of Food have stated definitely that rather than pay more than 25 cents they are prepared to do without the cheese, and we cannot question their right to this decision."

A WARM DISCUSSION.

Following Mr. Riddick's paper the discussion again started and soon warmed up to an uncomfortable degree. The Commissioner, who was not at all well, lost his temper when some of those present who did not understand the situation as fully as he did, accused him of not looking out for the interests of the dairymen. For a time the meeting was mostly noise, but little of it is worth repeating because it was merely another instance of the fact that farmers engaged in a specialized business like cheese-making should know more about the marketing side of their own business than they usually do. Under such circumstances it may be quite natural, but it is not always fair to lay the blame for disappointments and lack of consideration upon Government officials.

DOMINION EDUCATIONAL BUTTER-SCORING CONTEST.

G. H. Barr, Chief of the Dairy Division, Ottawa, discussed on Friday afternoon the results of the first year's experience with the Dominion Educational Butter-Scoring Contest. A total of 181 samples were received during the year for scoring, from each of the nine Provinces of Canada. The following table, especially the first two columns were considered by the speaker to be a close indication of dairy education in butter carried on by the different provinces.

Province	Number Samples Received	Number Graded as Specials	Highest Score
British Columbia.....	18	6	97.1
Alberta.....	22	15	98.0
Saskatchewan.....	22	8	98.5
Manitoba.....	20	14	98.0
Ontario.....	19	2	96.5
Quebec.....	23	17	98.5
New Brunswick.....	20	5	96.8
Nova Scotia.....	20	8	98.0
P. E. Island.....	20	6	98.0

The speaker emphasized the value of using pasteurized cream as shown by the contest and said that as a general rule the unpasteurized cream butter deteriorated three times as much as did pasteurized cream butter. The value of the Storch test was also pointed out clearly in connection with determining the ability of a sample to retain its grade after storage. The type of butter we want will be firm, close and will pull out on the tryer like a piece of wax.

CREAMERY BUTTER IN EASTERN ONTARIO.

L. A. Zufelt, Superintendent of the Kingston Dairy School, made favorable references to the improvement in the quality of creamery butter from Eastern Ontario as shown by winnings at the larger Provincial exhibitions in 1919. Out of 54 prizes Eastern Ontario secured 9, Western Ontario 7, Alberta 21, Manitoba 7, Quebec 6, and Nova Scotia 4. The following is quoted from Mr. Zufelt's address:

"Conditions this season were rather unfavorable for making a high-grade butter. June was exceptionally hot. The ice harvest of last winter was of poor keeping quality, which, coupled with the fact that few of our creameries have an adequate water supply, pasteurization of the cream had to be discontinued in the majority of cases. Moulds developing on the butter of a few creameries caused us a great deal of anxiety, but owing to the assistance rendered by the bacteriological laboratory of Queen's University we were able to locate the source and finally to overcome the trouble. While we have made some real progress this season and have every reason to feel proud of what has been accomplished by a few of our creameries, yet we realize we have only just made a start and that much more must be accomplished before we can feel any real assurance of success.

"If I were asked for the one big reason why Ontario creamery butter has such a low standard of quality I would answer: 'Because of the vicious method practiced in placing it on the market.' Up to the present, with the exception of a few isolated cases during the past season, no pretence has been made to discriminate for quality. One price only has been paid for good, bad and indifferent qualities. Is it any wonder, therefore, that we have so much butter of inferior quality? The wonder is that we have any good butter at all. So long as we have butter merchants willing to pay as much money for inferior goods as they do for fancy, just so long will the inferior grades predominate. In order to make any lasting improvement in the quality of Ontario creamery butter the butter must be graded and sold on its merits. It costs money to make a good quality of butter and unless our creamerymen can be assured of getting more money for a higher quality we will be a long, long time persuading them to make the better article which costs them more money to manufacture. We simply get what we pay for. If we are not willing to pay a higher price for the better grades we will never get them, at least not in such quantities as to make us feel proud of the achievement."

THE CREAMERY AND THE FARM.

Professor H. H. Dean, O. A. C., discussed the creamery butter industry of Ontario in its relation to farms and farming, to other branches of dairying, to the Dairy Department of the O. A. C., and the Province as a whole. Regarding the relation of the creamery to farms and farming, the speaker said:

"Each and every branch of the dairy industry of Ontario bears a close and vital relation to the farms and farmers of this Province. Each also has some special or peculiar points in its relation to farming, which is not characteristic of other branches. For instance, the creamery has a special bearing on soil fertility and live-stock in that no other branch or line of dairying is so well adapted for maintaining and increasing the fertility of soils, which is granted to be the most vital problem in farming. No other kind of dairying is so well suited for raising good live stock, because skim-milk seems necessary for the young and growing animal, though men are now looking for a substitute, claiming that skim-milk and buttermilk are too valuable as human foods, to allow of their being fed economically to the lower animals.

"The use of artificial fertilizers is being advocated as a substitute for animal fertilizers, but experiments indicate that these are able to supplement only, not substitute for, the old reliable farmyard manure. It is altogether likely that farmers in Ontario will use more artificial fertilizers than has been the custom in the past, but no man can afford to do this who allows barnyard manure to waste, as is too frequently the case on Ontario farms.

"In its relation to the farmer the creamery has several points of special interest, among which may be mentioned that of knowing the cows in each herd individually by weighing and testing the milk, so that the owner may know how much fat or butter each cow is producing. The farmer is paid for fat only by the cream buyer, hence it is doubly necessary that the patron of a creamery should know how each cow's milk tests for milk-fat. The farmer in Ontario, as a rule, sells cream only to the creameryman, hence he must be familiar with cream separators and the necessity of keeping these clean; also he must know the importance of cooling cream immediately after separating, which involves the questions of ice-supply and cooling tanks—and there is no more important question in the whole creamery situation than at this point. We need a campaign for more ice and better cooling facilities on dairy farms where cream is sold for butter-making purposes. Cream grading and discrimination in prices favoring good cream by three to five cents a pound fat, naturally follow.

"The farmer is also interested in the transportation of his cream to market. How often should it be de-

livered, what should it cost, what is the best method—train, radial, truck, motor car, horse, or what? This leads us into the bigger questions of improved train service and better roads, which would take us too far afield to discuss at this time, but they are very important problems for dairy farmers to consider.

"In a word, the creamery industry at it affects farmers depends for its continued prosperity upon good farms and farming, good sweet cream, cheaply and efficiently transported from the farm to the creamery, a first-class quality of butter marketed in the best possible way, and upon good prices and fair dealing between the co-operative creamery and the dairy farmer. Without these, co-operative buttermaking will not make the progress it ought in a progressive country. Now is a good time to take stock of the good and also of the inefficient branches of the business."

AN \$80,000,000 DAIRY BUSINESS.

G. A. Putnam, Superintendent of Dairying, Toronto, estimated that Ontario's dairy production in 1919 was \$80,000,000. The speaker called attention to a statement made on reliable authority that the average milk going to cheese factories would not pass city milk inspection. His estimate of Ontario's business in dairying was as follows: 31,900,000 pounds of butter at 54 cents was worth \$17,250,000; 102,700,000 pounds cheese at 27 cents was worth \$27,750,000 (total factory production \$45,000,000); fresh milk and dairy butter, \$25,000,000; condensed and powdered milk, \$10,000,000; total, \$80,000,000. Mr. Putnam emphasized the need for an effective National Dairy Council not controlled by centralizers and distributors. He also urged the necessity of a "clean-milk" campaign, and stated that 6,000,000 children in the United States now need treatment because of poor nourishment. He also brought a request from Hon. Manning W. Doherty, Minister of Agriculture, that the Association make known its wishes regarding the Dairy Standards Act, which has been in cold storage for some time now.

A. A. Ayer, Montreal, representing the Montreal Produce Merchants, read a long paper dealing with business conditions. The speaker argued against shorter hours of labor, and for concentrated efforts toward thrift and increased production. Space does not permit us to go more fully into this address, which had been thoughtfully prepared.

At the evening session on Thursday, Dr. Mary Patterson, Toronto, spoke very entertainingly to a crowded mixed audience on the subject of "Milk and Health of the Nation." Milk in sufficient quantities said the speaker and quoted authority for her statement, will add 15 years to the life of the individual. Life she said is made up of three periods, preparation, usefulness and old age. The 15 years referred to would undoubtedly be added to the period of usefulness. Milk is at the same time the greatest source of infectious diseases, chief among which is tuberculosis which caused, during the war, more deaths than the war itself and the total deaths ascribed to the latter cause amount to fifteen million. All this wastage of life from tuberculosis is quite unnecessary but the essential for the control is proper feeding and among human foods milk comes first.

Dr. J. W. Robertson, for so long acquainted with various aspects of Canadian Agriculture followed Dr. Patterson on the program, and discussed the European situation as regards the dairy industry. He was overseas three times during the war, twice asked to go by the Government to observe conditions and interpret them to Canadians. The address of the speaker was one to demand attention. He dwelt on the great sacrifices of the war and emphasized the great name that Canada has made for herself during the struggle. He denied rumors that the United States took advantage of Canada in the matter of European markets for food supplies and stated emphatically that Herbert Hoover, U. S. Food Administrator, was always ready to yield Canada her fair place as a member of the British Empire, and therefore entitled to the utmost consideration. Now, said the speaker the British milk producer is guaranteed 68 cents per quart or \$6.80 per 100 lbs. for milk because Great Britain needs fresh milk for her people. The Canadian Government had nothing to do with fixing the price of any product of Canada in 1919 except to hold up the price of wheat. Britain lost 2 1/2 to 4 1/2 cents on every pound of Canadian cheese she bought in 1919 due to exchange rates and may have to lose still more. The burden of Dr. Robertson's address can be summed up in his own words, "We have got to buckle up in peace as in war, work harder, spend less, waste nothing, and find the food to feed the world in order to be worthy of the heritage we hold."

Dairymen reap their own reward when they keep a good herd properly cared for, and produce clean milk. Cities now have a fairly safe milk supply, but throughout the country congratulations are not always in order with respect to much of the milk that goes to our cheese factories. Milk is the very best food not only for human beings, but for all animal life. It is a splendid culture medium for bacteria. Many barns are not as clean as it is quite practical to keep them. Flies swarm in stables and lay their eggs in manure. These require 14 days to hatch so that if manure were spread once a week a serious danger to the milk supply would be practically removed. A great recent convention expressed its opinion that the most important thing in the world now is to conserve child life. Children should receive at least two, and the speaker thought three pints of milk per day. Every child naturally likes good milk. If they do not it is a lack of proper education. Milk is the cheapest product on the market to-day.

A NEW NATIONAL POLICY FOR AGRICULTURE.

The evening session on Friday was addressed by

Dr. G. C. Creelman, President O. A. C., Guelph, on some aspects of agriculture as they affect the individual farmer. In Canada, said the speaker, there is not yet one-seventh of the available fertile land in cultivation. This fact should make our enormous national debt less burdensome, but since it must be largely paid out of the products of agricultural labor, this debt should still give us cause for thrift and careful management. The speaker discussed the progress of agricultural education in Ontario, recounting the various types of assistance put forward by the Departments of Agriculture to meet the changing needs and demands of the industry. Now, said Dr. Creelman, it seems evident that there has arisen a new necessity for a new national policy in agriculture. No one has ever considered the farmer as a law-maker, because he has lacked experience. He has never counted, but has been regarded merely as a cheap source of food supply, and a necessity if a favorable balance of trade is to be maintained. The farmer should be the guardian of our land laws, but in our daily press—and the speaker read numerous recent headlines—Canada's basic industry is almost totally neglected. "We need in Canada a new national policy that will do for the farmer what the old National Policy did for the manufacturers."

THE DAIRY SHOW.

The dairy show this year surpassed the somewhat unattractive show of last year in quality at least, if not actually in quantity. The entries were of exceptionally good quality, as was evidenced by the large number of entries which scored over 96 points. All entries reaching this degree of perfection are eligible for a part of the prize money, and the percentage of participants was indeed noteworthy. The awards accompanying show the total scores of all entries scoring 98 points and over, and the fact that in both classes of white cheese there are about 20 entries above this score bears out what has been said above. The winning cheese in the October white class made the remarkable score of 99.6, and cleaned up the whole show for E. A. Tolles, Kinburn. The little table immediately following gives some idea of the quality of the cheese exhibits as evidenced by the scores. There is no doubt that this remarkable uniformity in quality is, in a great measure, due to the good work of the instructors employed by the Provincial Department of Agriculture, and in good measure, too, to the zeal of the Chief Dairy Instructor, G. G. Publow.

believing that the usefulness of this Association is imperilled by other organizations, be it resolved that the executive committee be authorized and urged to take immediate action in regard to any question that may affect the trade or interest of dairymen as a body, or of any particular district; and that the directors be empowered to bring before the executive such questions."

2. "That the dairymen of Eastern Ontario assembled in annual convention do memorialize the Federal and Provincial Departments of Agriculture to take immediate action either by educational or other means, to eliminate the scrub bull; and we pledge the assistance of this Association in this work."

3. "That we memorialize the Federal Government to oppose with its fullest power the fixing of prices of any dairy products, and to secure the open market for the same; and that the findings of the Board of Commerce appear to us to have been unfair to the milk producers, and we would ask that copies of this resolution and others bearing upon the activities of the De-



C. F. Bailey.

Newly appointed manager of the Royal Canadian Winter Fair.

Class	No. entries	No. scoring 96 or over	92 and under	93 to 94	94 to 95	95 to 96	96 to 97	97 to 98	98 to 99	99 to 100	Sale price. Cents
September White.....	72	58	2	4	3	5	14	26	17	1	26
October White.....	94	51	1	3	3	4	12	18	14	7	26
September Colored.....	71	38	6	6	8	14	15	14	6	-	27
October Colored.....	74	53	3	3	4	10	13	35	4	-	27
Flats.....	63	26	2	2	-	2	8	11	7	-	27 3/8

The butter exhibits were few, but of excellent quality, the White Packing Company, Brockville, winning heavily. Other successful exhibitors were T. J. Newman, Lorneville; H. F. Newman, Gamebridge; Jas. Small, Prescott, and L. E. Smith, Brockville.

CHEESE SCORING OVER 98 POINTS

SEPTEMBER WHITE: Benson Avery, Kinburn, 99.4; E. A. Tolles, Kinburn, 98.7; A. G. Miller, Carleton Place, 98.5; Stanley H. McNeil, Eldorado, 98.5; W. P. Kilfoyle, Franktown, 98.4; Gensmer Clark, Dunbar, 98.4; W. T. Lines, North Gower, 98.4; W. O. Douglas, Warsaw, 98.4; Alex. J. Cameron, Cornwall, 98.3; Wm. Landon, Rockport, 98.2; Orrie Barton, Campbellford, 98.1; Almond Cheetham, Portland, 98.1; Levi Whittiker, Williamsburg, 98.1; Mrs. Wm. Rowe, Eldorado, 98.1; A. G. Wiltsie, Vankleek Hill, 98.0; L. B. Jamieson, Clayton, 98.0; T. M. Tobin, Summerstown, 98.0; Andrew M. Shields, Kars, 98.0. **OCTOBER WHITE:** E. A. Tolles, Kinburn, 99.6; Gilbert Rancier, Wales, 99.5; L. A. Stevens, Manotick, 99.3; Alex. Clark, Williams-town, 99.2; Gensmer Clark, Dunbar, 99.1; Ernest Weatherly, Dunrobin, 99.1; C. L. Brown, Prospect, 99.0; Alfred Pepper, Alexandria, 98.9; Albert Gauthier, Mille Roches, 98.8; Harry F. Love Madoc, 98.8; Levi Whittiker, Williamsburg, 98.5; T. M. Tobin, Summerstown, 98.4; T. L. Shields, North Gore, 98.3; W. H. Bailey, Madoc, 98.3; A. G. Miller, Carleton Place, 98.3; Almond Cheetham, Portland, 98.2; W. R. Linn, Bellview, 98.1; S. T. McCann, Westport, 98.1; Stanley H. McNeil, Eldorado, 98.1; Kenneth Dewar, Var, 98.1; W. P. Hannah, Vankleek Hill, 98.0. **SEPTEMBER COLORED:** Jas. F. King, Almonte, 98.9; E. A. Tolles, Kinburn, 98.8; T. M. Tobin, Summerstown, 98.5; Jos. S. Ragsdale, Carp, 98.4; W. B. Lowry, Carp, 98.3; Elias Trueax, Avonmore, 98.0. **OCTOBER COLORED:** W. B. Lowry, Carp, 98.4; C. L. Brown, Prospect, 98.3; E. A. Tolles, Kinburn, 98.3; A. G. Wiltsie, Vankleek Hill, 98.1. **FLATS:** W. P. Kilfoyle, Franktown, 98.9; Jas. F. King, Almonte, 98.6; Edward Carter, Thomasburg, 98.5; W. A. Douglas, Warsaw, 98.4; Alex. J. Cameron, Cornwall, 98.3; C. A. Wilkins, Mille Roches, 98.0; Thos. Lloyd, Hallaway, 98.0. **STILTONS:** Jno. Snet-singer, Dickinson's Landing, 97.8; Gilbert Rancier, Wales, 97.7; C. J. Brennan, Deseronto, 97.3; Albert Gauthier, Mille Roches, 97.3; Clifford Morris, Mallorytown, 97.2; Albert Lapoint, Martintown, 97.1; J. A. Ferguson, Mallorytown, 94.7.

RESOLUTIONS.

1. That in order to make this Association of greater benefit to the dairymen of Eastern Ontario, and

partments of Agriculture be forwarded to the different ministers of agriculture."

4. "Whereas the justice and desirability of purchasing milk for manufacturing purposes on a butter-fat basis has been magnified with increased prices for dairy products,

"And whereas purchase on a butter-fat basis will result in improved quality,

"Be it, therefore, resolved that the Provincial Government be asked to consider, in consultation with all interests concerned, the advisability of making operative the Dairy Standards Act as it now stands, or with desirable amendments not later than the spring of 1921; and that full announcements as to the Act and the method of making it operative, be made at the earliest date possible, so that owners, makers and producers may make the necessary preparations."

OFFICERS.

Directors: RENFREW COUNTY, M. D. Muirhead, Renfrew; LANARK, Jno. Steele, Almonte; PRESCOTT, A. Carriers, CUITAN; RUSSELL, W. H. Olmstead, Bearbrook; CARLETON, Thomas Hicks, North Gower; GRENVILLE, J. A. Sanderson, Oxford Station; GLENGARRY, A. J. Robertson, Martintown; STORMONT, William Brown, Dickinson's Landing; DUNDAS, Geo. Smyth, Iroquois; SOUTH HASTINGS, F. G. Knight, Belleville; LENNOX AND ADDINGTON, M. N. Empey, Napanee; FRONTENAC, Ed. Campsel, Hartington; LEEDS, R. G. Leggett, Newboro; PRINCE EDWARD, R. W. Ireland, Wellington; N. HASTINGS, S. S. McComb, Belleview; NORTHUMBERLAND, Jas. A. Armstrong, Warkworth; PETERBORO, G. A. Gillespie, Peterboro; ONTARIO, VICTORIA AND HALIBURTON, H. Glendenning, Manilla. The officers elected by the directors at their first meeting are: President, Wm. Brown; First Vice-President, Geo. Smyth; Second Vice-President, M. N. Empey; Secretary, T. A. Thompson, Almonte; Treasurer, J. R. Anderson, Mountain View. The auditors are Martin Bird, Mountain View, and J. J. Payne, Brinston. EXECUTIVE: H. Glendenning, R. G. Leggett, Thos. Hicks, J. A. Sanderson, Jno. Steel, M. D. Muirhead, and M. N. Empey. The convention in 1921 will be held in Cobourg.

Our experimental farms have originated and acclimatized varieties of cereals, roots, etc., which have proven superior to varieties grown on the home farm. It is time enough to try the new varieties after these farms have tested them.

FARM BULLETIN.

Plan of Scrub Bull Campaign.

Reference was recently made in this paper to the appointment of a committee composed of Federal and Provincial Department of Agriculture officials to outline a plan of campaign for the elimination of the scrub bull. This committee has held two meetings since the time of the Winter Fair at Guelph, the second being held in Toronto on Saturday, January 10. In addition to the regular committee there were present the agricultural representatives from the Counties of Lambton, Wentworth, Halton, Dufferin, Prince Edward and Grenville, since these six Counties are the ones which have been selected for the first strong efforts in the campaign. R. W. Wade, Director of the Live-Stock Branch, Toronto, outlined the plan which has been developed, and stated that the Ontario Department of Agriculture is to supervise and direct the campaign. The immediate direction will be in the hands of a representative committee of the Ontario Cattle Breeders' Association. This committee will be composed of from six to nine members, representing each of the dairy and beef breeds and the two Departments of Agriculture. The secretaries of the various breed associations have already been written to and it is expected that about fifty of the most interested men in each breed will be present at a meeting to be held on Thursday during the breeders' week in Toronto, at which the central committee will be chosen. The Provincial Government will appoint an assistant to Mr. Wade to take immediate charge of the work of the Provincial Government in this connection, while the Dominion Government will also appoint a field man to co-operate with the Provincial Government in all matters affecting the campaign. The Federal Government will also pay the salaries of the men that are required to assist farmers to buy pure-bred bulls wherever such assistance is desired, but these bull buyers will only be such men as are fully recommended by the Ontario Cattle Breeders' committee. In the present plan of campaign the Agricultural Representative in the County will act as chief organizer in his own County, the actual plan of campaign being left largely with him because he is fully acquainted with local conditions. The Institutes Branch will co-operate in furnishing speakers for any meetings that may be considered necessary by the agricultural representative, while in counties where the representative considers it an advantage the Federal Department of Agriculture will establish bull exchanges. These bull exchanges will be situated at the most suitable point within the county and at a convenient place for transportation. They will contain a number of pure-bred bulls, depending upon the estimated needs of the county, and these bulls will be purchased by the bull buyers already referred to and will be paid for by the Federal Department of Agriculture until such time as they are purchased by farmers, who will secure them at the lowest possible cost. The exchange will be maintained by the Federal Department for a certain specified time, which will be communicated to all possible purchasers. After this time has elapsed the bulls which still remain unsold will be distributed in some other part of the country. The bulls offered for sale at these exchanges will be purchased so far as possible in the county, but if this is not possible the supply in adjoining countries will be tapped.

With this plan definitely established and already under way, it is important that all should assist in its success. While six counties have been chosen in which to make a start, any county may carry on a similar campaign with equal support from the central committee and both Departments of Agriculture. Some of the counties named are very difficult ones because of the large percentage of scrub bulls. Prince Edward County, for instance, has sixty per cent. of scrub bulls, as shown by the following table made up of figures compiled by the Agricultural Representative from reports sent in by secretaries of school sections.

Township	No. farmers keeping bulls	No. Bulls		Per cent. Grades
		Pure-bred	Grade	
Ameliasburg.....	59	16	43	73
Athol.....	43	14	29	67
Hillier.....	30	15	13	46
Hallowell.....	97	65	42	39
N. Marysburg.....	36	13	23	63
S. Marysburg.....	88	15	73	83
Sophiasburg.....	41	18	21	54
Grand Total.....	394	156	244	60

C. F. Bailey Resigns.

C. F. Bailey, Agricultural Commissioner for Ontario since early in 1919, and prior to that Assistant Deputy Minister of Agriculture since February, 1912, has resigned from the Ontario Department of Agriculture to accept the position of Manager of the new Royal Canadian Winter Fair, recently organized. Mr. Bailey has been one of the best known officers of the Department and has had direct supervision of the work of agricultural representatives in Ontario, as well as the other outside work of the Department not directly connected with the inside executive duties. He will be missed from the service of the Department and will carry with him the position of responsibility a very wide acquaintance with live-stock men throughout Canada and the United States, as well as a wide knowledge of the live-stock industry in Canada.

LETIN.

Campaign.

In this paper to the composed of Federal Agriculture officials the elimination of the s held two meetings at Guelph, the second day, January 10. In there were present the the Counties of Lamb- rin, Prince Edward ties are the ones which strong efforts in the or of the Live-Stock plan which has been Ontario Department of direct the campaign. in the hands of a rep- artorio Cattle Breeders' be composed of from ng each of the dairy tments of Agriculture. eed associations have s expected that about in each breed will be on Thursday during at which the central provincial Government ade to take immediate. provincial Government Dominion Govern- an to co-operate with matters affecting the ment will also pay the ed to assist farmers to n assistance is desired, such men as are fully e Breeders' committee. e Agricultural Repre- s chief organizer in his campaign being left fully acquainted with Branch will co-operate meetings that may be cultural representative, tentative considers it an ent of Agriculture will bull exchanges will be int within the county transportation. They ored bulls, depending county, and these bulls rers already referred Federal Department of hey are purchased by at the lowest possible tained by the Federal d time, which will be urchasers. After this still remain unsold will of the country. The nges will be purchased if this is not possible will be tapped. blished and already ll should assist in its been chosen in which ay carry on a similar the central committee ulture. Some of the nes because of the large Edward County, for ub bulls, as shown by gures compiled by the a reports sent in by

Toronto, Montreal, Buffalo, and Other Leading Markets
Week Ending January 8.

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

CATTLE						CALVES						
Receipts			Top Price Good Steers (1,000-1,200)			Receipts			Top Price Good Calves			
Week Ending Jan. 8	Same Week 1920	Week Ending Jan. 1	Week Ending Jan. 8	Same Week 1919	Week Ending Jan. 1	Week Ending Jan. 8	Same Week 1919	Week Ending Jan. 1	Week Ending Jan. 8	Same Week 1919	Week Ending Jan. 1	
Toronto (U. S. Y.)	4,003	5,851	1,272	\$13.75	\$14.00	\$13.50	552	540	336	\$22.50	\$19.00	\$21.00
Montreal (Pt. St. Chas.)	475	1,015	490	12.50	13.50	12.00	220	252	210	17.00	14.00	16.75
Montreal (East End)	840	1,018	792	12.50	13.50	12.00	196	96	119	17.00	14.00	16.75
Winnipeg	2,619	2,695	948	12.00	14.00	12.50	78	46	124	11.00	10.50	7.50
Calgary	1,313	2,580	1,039	11.25	14.00	10.85	69	84	120	8.50		9.00
Edmonton	498	757	449	10.25	13.00	9.25	12	9	161	9.00		

HOGS						SHEEP						
Receipts			Top Price Selects			Receipts			Top Price Good Lambs			
Week Ending Jan. 8	Same Week 1919	Week Ending Jan. 1	Week Ending Jan. 8	Same Week 1919	Week Ending Jan. 1	Week Ending Jan. 8	Same Week 1919	Week Ending Jan. 1	Week Ending Jan. 8	Same Week 1919	Week Ending Jan. 1	
Toronto (U. S. Y.)	7,476	9,699	3,399	\$18.50	\$19.00	\$18.25	2,234	5,095	987	\$19.00	\$16.75	\$19.00
Montreal (Pt. St. Chas.)	1,320	1,697	939	19.75	19.15	18.75	1,120	766	1,972	16.50	14.00	16.50
Montreal (East End)	717	700	431	19.75	19.15	18.75	763	312	1,312	16.50	14.00	16.50
Winnipeg	6,139	12,588	880	17.00	18.00	17.00	336	199	249	15.00	18.00	
Calgary	638	5,799	140	16.95	17.75	16.25	1,088	1,417	1,125		13.00	12.00
Edmonton	678	1,364	147	16.50	17.00	15.75	727	305	160	11.50	13.50	9.00

Market Comments.

Toronto Union Stock Yards.

Cattle receipts were comparatively light on the Monday market and prices on all grades advanced sharply, nearly all classes selling 50c. to 75c. above the previous week's close. The trade was steady on Tuesday but was less brisk on Wednesday and Thursday, and values eased off a shade on the latter days. During the week fifty-three hundred and thirty-two cattle were received and as heavy receipts are expected immediately, it is scarcely probable that present prices will hold. A few heavy cattle were on sale and for extra good finish as high as \$16.50 per hundred was paid, one extra choice steer selling at that figure. Six head which averaged thirteen hundred and ninety pounds sold at \$14.90, while numerous small lots changed hands from \$14 to \$15 per hundred. Of steers between the weights of ten hundred and twelve hundred pounds, the best loads sold at \$13.75 per hundred, several transactions being made at that figure, while other loads of slightly lower quality changed hands from \$13 to \$13.50 per hundred. Handyweight butcher steers and heifers under ten hundred pounds were in strong demand and \$13.25 per hundred was paid for top quality. A number of sales were made at \$13, and quite a large percentage in this grade moved from \$12.50 to \$12.75. Common to medium quality sold from \$8 to \$11 per hundred. Cows and bulls advanced in sympathy with other grades. One extra choice cow sold at \$13 per hundred, several choice cows from \$12 to \$12.25, good cows from \$10.50 to \$11.50, and good bulls from \$10.50 to \$12. Common and medium quality in both grades sold from \$7 to \$9. The stocker and feeder trade was very quiet and few shipments were made to country points. The calf market advanced during the week and on the closing market a few choice veal calves sold at \$22.50 per hundred. Choice calves were quoted from \$19 to \$22.50, good calves from \$17 to \$19, and common rough calves from \$8 to \$11. With but twenty-seven hundred lambs and sheep on sale the market was strong, a few choice lambs selling at \$19, good lambs from \$17.50 to \$18.50, the majority at the latter figure, and common lambs from \$15 to \$17. Ewes were in good demand and choice light ewes are in request at \$10 to \$12 per hundred, with a few at \$13. One carload of breeding ewes was shipped to Dundalk, Ontario. The hog market was weaker and closed with prices 75 cents lower on Monday, selects sold at \$18.50 per hundred. For the balance of the week packers' buyers were determined to lower initial cost, and were successful in buying hogs at \$17.75. A few hogs were sold to outside packers and local butchers at \$18 and \$18.25 per hundred. Of the disposition from the Yards for the week ending January 1st, Canadian packing houses purchased 102 calves, 906 butcher cattle, 3,218 hogs and 1,018 lambs. Local butchers purchased 70 calves, 186 butcher cattle, 181 hogs and 400 lambs. Canadian shipments were made up of 12 calves, 52 heavy steers and 30 stockers. Shipments to United States points consisted of 82 calves, 157 stockers, 155 feeders and 284 lambs.

TORONTO					MONTREAL (Pt. St. Charles)				
CLASSIFICATION	No.	Avg. Price	Price Range Bulk Sales	Top Price	No.	Avg. Price	Price Range Bulk Sales	Top Price	
STEERS									
heavy finished									
STEERS good	33	\$12.96	\$12.50-\$13.25	\$13.75	10	\$12.25	\$12.00-\$12.50	\$12.50	
1,000-1,200 common	14	11.25	11.00-12.00	12.00					
STEERS good	708	12.44	11.75-13.00	13.25	55	11.75	11.00-12.50	12.50	
700-1,000 common	257	10.31	9.75-11.00	11.00	18	9.75	8.00-10.50	10.75	
HEIFERS good	759	12.51	12.00-13.00	13.50	13	11.00	10.00-12.50	12.50	
fair	200	10.28	9.75-11.00	11.00	11	9.50	9.00-10.00	10.00	
common	198	8.29	7.50-9.75	10.00	61	7.50	6.50-6.75	8.75	
COWS good	155	10.28	9.75-11.00	12.00	8	10.00	9.00-11.00	11.00	
common	886	8.26	7.75-9.00	9.50	98	7.75	7.00-8.50	9.00	
BULLS good	30	10.47	10.00-11.00	12.00	1			11.00	
common	44	8.93	7.50-9.50	10.50	61	7.00	6.50-8.00	9.00	
CANNERS & CUTTERS	623	6.00	5.50-6.50	6.50	127	5.75	5.25-6.50	6.50	
OXEN									
CALVES veal	460	16.09	14.00-18.00	22.50	112	15.00	14.00-17.00	17.00	
grass	72	8.06	7.00-10.00	10.00	108	7.50	7.50		
STOCKERS good	63	9.25	9.00-9.50	9.50					
450-800 fair	19	7.95	7.00-8.50	9.00					
FEEDERS good	5	10.50	10.00-11.00	11.00					
800-1,100 fair	9	9.75	9.00-10.00	10.00					
HOGS selects	6,816	18.36	17.75-18.50	18.50	917	19.75	19.75	19.75	
(fed and watered) heavies	1	17.50	17.50	17.50	3				
lights	454	15.35	15.75-16.50	16.50	367	19.00		19.75	
sows	191	15.41	12.75-16.25	16.50	26	15.75	15.75	16.75	
stags	14	12.31	10.75-12.50	12.50	7				
LAMBS good	1,422	18.15	17.50-19.00	19.00	364	16.25	16.00-16.50	16.50	
common	179	15.99	14.00-17.00	17.00	442	15.25	15.00-15.50	15.50	
SHEEP heavy									
light	478	9.78	8.75-12.00	12.00	199	9.10	9.00	10.00	
common	155	6.00	5.00-8.00	8.00	115	8.50	8.50-9.00	9.00	

Montreal.

The market for cattle remained strong throughout the week at prices nearly 75 cents per hundred higher than the markets of the previous two weeks. There were no choice cattle on sale. The best steers averaged nine hundred and sixty pounds, and were in a load not very even in quality which included a few good heifers, and sold at \$12.50 per hundred. Fat heifers and fat cows were frequently weighed up together or with good medium weights steers at prices ranging from \$11 to \$12. One good young bull was sold for \$11. Canners were firm at \$5.25. There were fewer bulls at \$6 than usual, many of the common bulls selling around \$7 to \$7.50, and medium bulls not fat, from \$8 to \$9. There was a larger percentage of veal calves than usual. Most young veal calves were sold from \$16 to \$17 per hundred and grass calves principally at \$7.50.

There was an easier tone to the market for sheep and lambs at the close of the week. Lambs sold up to \$16.50 on Monday, and a few sheep up to \$10. The general price for sheep was \$9 and on Wednesday there were no lambs sold above \$16.25.

Light runs of hogs and the demand

from the local shop trade were responsible for an advance in the price of hogs to \$20 per hundred for mixed lots of selects and lights, weighed off cars. On Wednesday a local packing house sold two loads of live hogs at the stock yards and two loads were received from Winnipeg; these loads added to the slightly increased receipts from other sources, checked any further advance. The price in the near future will depend on the numbers of hogs offered. The trade claim that at \$20 hogs are about \$3 too high for them to handle for export bacon. Sows were sold \$4 lower than the lot they were shipped with and stags were sold according to age and quality.

PT. ST. CHARLES.—Of the disposition from the Yards for the week ending January 1st, Canadian packing houses and local butchers purchased 210 calves, 53 bulls, 332 butcher cattle, 939 hogs and 1,972 lambs. Canadian shipments were made up of 14 milch cows. There were no shipments to United States points during the week.

EAST END.—Of the disposition from the Yards for the week ending January 1st, Canadian packing houses and local butchers purchased 119 calves, 734 butcher cattle, 431 hogs and 345 sheep. Shipments to United States points consisted of 27 butcher cattle and 967 sheep.

Winnipeg.

A fairly liberal increase in receipts over those of the previous week brought the total offering up to twenty-six hundred and eighty cattle, seventy-eight calves, three hundred and thirty-six sheep and sixty-one hundred and thirty-nine hogs. One hundred and ninety-eight cattle, and two hundred and thirty-nine hogs were received on through-billing. Local packers were active buyers, but buyers for Eastern firms did not operate very freely. Shipments South were extremely light consisting of one hundred and seventy-eight feeder steers and sixty-three stockers. Shipments to country points included one hundred and forty-seven stockers, twenty-eight feeders, one hundred and eight sheep. The market was slow and receipts light until mid-week when liberal shipments were received and weighed up at strong prices. A fair number of choice animals were offered for sale, and quotations on butcher cattle showed a considerable advance over those ruling during the previous week. A shortage of calves, and a fairly keen demand brought about an appreciation in prices ranging from \$1 to \$1.50 per hundred. Butcher steers weighing from ten hundred to twelve hundred pounds and female butcher stock met with the most liberal inquiry. Heavy steers weighing over

No. Bulls	Grade	Per cent. Grades
6	43	73
4	29	67
5	13	46
5	42	39
3	23	63
5	73	83
8	21	54
66	244	60

Designs.

Commissioner for Ontario that Assistant Deputy February, 1912, has ment of Agriculture er of the new Royal organized. Mr. Bailey ers of the Department e work of agricultural al as the other outside y connected with the e missed from the e carry with him to his y wide acquaintance anada and the United dge of the live-stock

twelve hundred pounds sold generally from \$11.50 to \$12, and in a few cases at \$13. Steers within the weights of ten hundred to twelve hundred pounds sold up to \$12, but mostly from \$9.50 to \$11.50. Light butcher cattle of good quality were weighed up from \$8.50 to \$10, and the common kind from \$6.50 to \$7.50. Choice stocker steers and heifers were slightly stronger in price although the demand was only fair, and sold from \$6 to \$7.75 and \$8. Good feeders sold from \$9 to \$10, and those of fair quality from \$8 to \$8.50.

Toronto Produce.

Receipts of live stock at the Union Stock Yards, West Toronto, on Monday, January 12, numbered 235 cars, 3,751 cattle, 290 calves, 4,194 hogs, 1,606 sheep and lambs. Cattle trade steady to 16 cents higher; top \$15 per hundred for two steers—average weight 1,545 pounds. Best load \$14.30 per hundred for 25 head, 1,250 pounds each. Cows and bulls steady. Sheep strong; choice, \$11.50 to \$12.25 per hundred. Lambs \$18 to \$19.50. Calves steady. Hogs quoted at \$17.25 fed but no sales, sellers holding for last week's prices.

Breadstuffs.

Manitoba Wheat.—(In store Ft. William).—No. 1 northern, \$2.80; No. 2 northern, \$2.77; No. 3 northern, \$2.73. Manitoba Oats.—(In store Ft. William).—No. 2 C. W., 94½c.; No. 3 C. W., 89½c.; Extra No. 1 feed, 89½c.; No. 1 feed, 87½c.; No. 2 feed, 84½c.

Manitoba Barley.—(In store Fort William). No. 3 C. W., \$1.67½; No. 4 C. W., \$1.47½; rejected, \$1.36½; feed, \$1.36½.

American Corn.—(Track, Toronto, prompt shipment).—No. 3 yellow, \$1.73; No. 4 yellow, \$1.71.

Ontario Oats.—(According to freights outside).—No. 3 white, 96c. to 99c.

Ontario Wheat.—(f.o.b. shipping points according to freights).—No. 1 winter, per car lot, \$2 to \$2.01; No. 2 winter, per car lot, \$1.97 to \$2.03; No. 3 winter, per car lot, \$1.99 to \$1.99; No. 1 spring, per car lot, \$2.02 to \$2.08; No. 2 spring, per car lot, \$1.99 to \$2.05; No. 3 winter, per car lot, \$1.95 to \$2.01.

Peas.—(According to freights outside). No. 2, \$2.75.

Barley.—(According to freights outside).—Malting, \$1.70 to \$1.75.

Buckwheat.—According to freights outside—\$1.38 to \$1.40.

Rye.—(According to freights outside).—No. 3, \$1.70 to \$1.75.

Manitoba Flour.—(Toronto)—Government standard, \$13.25.

Ontario Flour.—(In jute bags, prompt shipment)—Government standard, \$9.50 to \$9.70, Montreal and Toronto.

Millfeed.—(Car lots, delivered, Montreal freights, bags included)—Bran, per ton, \$45; shorts, per ton, \$52; good feed flour, per bag, \$3.25.

Hav.—(Track, Toronto)—No. 1, per ton, \$27; mixed, per ton, \$25. Straw.—(Track, Toronto)—Car lots, per ton, \$14.50 to \$15.50.

Hides and Skins.

Hides f.o.b. country points—Beef hides, 25c. flat cured; 24c. part cured; green or frozen hides, 22c.; deacon or bob calf, \$2.50 to \$3; horsehides, country take off, \$8 to \$9; No. 2, \$6 to \$8; No. 1 sheep skins, \$2.50 to \$3.50; yearling lambs, \$1.75 to \$2.25; horse-hair, farmers' stock, 35c. to 37c.

City Hides—City butcher hides, green, flats, 25c.; calf skins, green, flats, 50c.; veal kip, 30c.; horsehides, city take-off, \$8 to \$9.

Tallow.—City rendered, solids in barrels, 10c. to 12c.; country solids in barrels, No. 1, 12c. to 14c.; cakes, No. 1, 12c. to 15c.

Seeds.

Following are the prices that wholesalers were paying for alsike and clover at country points:—

Alsike No. 1 fancy, \$28 to \$29; No. 1, bushel, \$26 to \$27.50; No. 2 choice, bushel, \$25 to \$26; No. 2, bushel, \$23 to \$24; No. 3, bushel, \$20 to \$22; rejected, bushel, \$13 to \$19; red clover, No. 1 fancy, \$30 to \$31; No. 1, bushel, \$28 to \$29; No. 2, bushel, \$26 to \$27; No. 3, bushel, \$22 to \$24; sweet clover, bushel, \$14 to \$15.75.

Farm Produce.

Butter.—Advanced in price on the wholesale during the past week—fresh-made creamery squares selling at 70c. to 72c. per lb.; creamery solids at 66c.

to 68c. per lb. and choice dairy at 65c. per lb.

Eggs.—New-laid eggs were more plentiful and declined in price, selling at 90c. per dozen, wholesale: Cold storage keeping about stationary at 64c. per dozen for selects and 61c. per dozen for No. 1's.

Poultry.—Chickens and fowl are in demand, and prices firmed slightly: Ducks and geese keeping practically stationary, while turkeys declined. The following prices being quoted for live-weight and dressed varieties, to the producer. Live-weight prices.—Chickens, spring, 25c. per lb.; ducklings, 25c. per lb.; hens, under 4 lbs., 20c. per lb.; hens 4 to 5 lbs., 23c. per lb.; roosters, 19c. per lb.; geese, 18c. per lb.; turkey, 35c. per lb.

Dressed.—Chickens, spring, 28c. to 35c. per lb.; ducklings, 32c. to 35c. per lb.; hens, under 5 lbs., 27c.; hens, over 5 lbs., 28c. per lb.; geese, 26c. per lb.; turkeys, 45c. per lb.; roosters, 25c. per lb.

Cheese.—Prices kept stationary on both new and old cheese, selling at 32c. and 34c. per lb., respectively, wholesale.

Honey.—There are only very light offerings in honey; the strained selling at 25c. to 26c. per pound, wholesale: while some extra choice comb brought as high as \$7 per dozen.

Wholesale Fruits and Vegetables.

Potatoes were the feature on the wholesale fruit and vegetable market this past week, as they advanced materially in price, and look as if they would still do so, as growers seem loath to part with them, as they, no doubt, expect to obtain still higher prices in the near future.

Carrots, beets and parsnips also went upward in price, and seem to be quite scarce.

Fruits kept practically stationary with the exception that some fancy No. 1 Spys brought the high price of \$12 per barrel.

Apples.—Western boxed, \$3.50 to \$4 per box; Ontario's and Nova Scotia's, \$5.50 to \$9.50 per barrel; Ontario boxed, \$1.60 to \$3.50 per box; fancy Spys (Ontario's), \$12 per barrel.

Bananas—7½c. and 8c. per lb. Cranberries—\$11.50 to \$12.50 per barrel, \$6 to \$6.25 per box; late Howes, \$14 to \$14.50 per barrel; \$7 to \$7.25 per box.

Grapes—Emperor, \$7.50 to \$9 per keg or drum; Spanish Malagas, \$11 to \$18 per keg.

Grapefruit—Florida, \$4 to \$4.50 per case; Cuban, \$3.50 to \$4.50 per case.

Lemons—\$4 to \$5.50 per case.

Oranges—Late Valencias, \$5.50 to \$7 per case; Cal. navels, \$5 to \$7 per case; Florida navels at \$5 to \$6.50 per case.

Pears—Imported, \$5 to \$6.50 per box. Pineapples—Cuban, \$6 to \$7 per case.

Tangerines—\$3.50 to \$5 per case.

Tomatoes—Hothouse, No. 1's, 40c. per lb.; No. 2's, 25c. per lb.

Artichokes—Jerusalem, 60c. per 1½-qt. basket; French, \$3.50 per dozen.

Beans.—New, wax and green, \$4.50 per hamper.

Beets.—\$2 per bag.

Cabbage—\$4 to \$5 per barrel.

Carrots—\$1.50 to \$1.75 per bag.

Cauliflower—California, \$6 per standard, crate, \$3.75 per pony crate.

Celery—60c. to \$1.50 per dozen, \$4 to \$4.50 per small case; Theford, \$7.50 to \$8 per case; Cal., \$11.50 to \$12 per case.

Cucumbers—Hothouse, \$3.50 to \$3.75 per dozen.

Lettuce.—California Iceberg, \$6 per case; Florida, \$4.50 per large hamper, \$3.50 per small hamper; leaf, 30c. to 35c. per dozen.

Mushrooms—Imported, \$3.50 per 3-lb. basket.

Onions—\$6.50 to \$8 per cwt., \$5 to \$5.50 per 75 lbs.; Spanish, \$7.50 to \$8.50 per case, \$5.50 to \$5.75 per three-quarter case.

Parsnips—\$2.25 to \$2.50 per bag.

Peppers—Imported, 50c. and \$1 per dozen.

Potatoes—\$3.50 to \$4 per bag.

Radishes—40c. to 50c. per doz. bunches; imported, 75c. to \$1 per doz. bunches.

Sweet potatoes—\$2.75 to \$3 per hamper.

Shallots—90c. to \$1 per dozen bunches; domestic, 50c. per doz. bunches.

Turnips—\$1 per bag.

Victory Bonds.

Following were the values of Victory Bonds on the Toronto market, Saturday, January 10: Victory Bonds maturing 1922, 98¼ to 98¾; Victory Bonds maturing 1923, 98¾ to 99; Victory Bonds

maturing 1927, 100¼; Victory Bonds maturing 1933, 101¼ to 101¾; Victory Bonds maturing 1937, 102¾ to 103¼.

Buffalo.

Cattle.—Cattle trade last week was lower by a quarter to a half on shipping steers, with butchering stuff generally bringing full steady prices. Western markets showed fairly liberal receipts and Eastern order buyers played the local markets against Western trading points. Best native steers reached \$15 to \$16.50, with best Canadians \$14.50. Best handy butchering steers sold on a range of from \$13 to \$13.75, a few fancy up to \$14 and \$14.50. Best butchering heifers generally ranged from \$10.50 to \$11. Demand was very light for stocker and feeder stuff. Bulls sold strong. Milk cow and springer trade was very weak, backward springers being especially hard sale. Offerings for the week totaled 4,050 head, as against 2,500 for the preceding week and as compared with 5,300 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, 1,200 to 1,300, \$13.50 to \$14.50; plain, \$11.50 to \$12.

Shipping Steers—Canadians—Best heavy, \$14 to \$14.50; 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.

Milkers and Springers—Good to best, small lots, \$100 to \$150; in carloads, \$90 to \$100; medium to fair, small lots, \$80 to \$85.

Hogs.—Market got a good start last week, Monday's trade being 25 to 50 cents higher than the previous week's close. The next three days prices were generally lower and a reaction was had on Friday. Monday the better weight grades landed generally at \$15.75, with lights and pigs selling up to \$16 and Tuesday several decks sold at \$15.60, with the bulk of all grades going at \$15.50. Wednesday the best grades sold at \$15.40, and \$15.50 with pigs ranging down to \$15.25, Thursday's range on all grades was from \$15.25 to \$15.40 and Friday the bulk sold at \$15.50, with a few \$15.60. Good roughs brought around \$13.25 and \$13.50 and stags \$10 to \$12. Receipts for last week were 34,700 head, being against \$25,815 head for the week before and 33,000 head for the same week a year ago.

Sheep and lambs—Trade was good all of last week. The first four days showed top native lambs selling at \$19.50, with a culls going from \$16 down and Friday best native lambs reached \$20.25, and the best seconds brought up to \$17. Canadian lambs sold around 50 to 75 cents under the natives. The week opened with sheep selling about steady but by the end of the week prices on these were up fifty cents. Friday yearling wethers sold up to \$17, best wether sheep were quoted up to \$13 and the range on top ewes was from \$10 to \$11. For last week receipts were 20,500 head, as compared with 20,790 head for the week preceding and 24,500 head for the same week a year ago.

Calves.—Prices held to a high range last week. The first two days showed tops selling at \$23, with culls going from \$18 down, and the next three days the bulk of the tops moved at \$23.50, with culls selling up to \$19. Thursday some top Canadian calves sold at \$22.50 and Friday river landed at \$22. Last week's receipts were 3,700 head the week before there were 3,131 head and for the same week a year ago the run figured 3,100 head.

Montreal.

Horses.—Following the passing of New Years there has been but slight improvement in the demand for horses. Dealers report almost nothing doing but prices holding about steady. Heavy draft horses, weighing from 1,500 to 1,600 lbs., were quoted at \$250 to \$300 each; light draft, weighing 1,400 to 1,500 lbs., \$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.—The market for dressed hogs was quite firm, and the tendency has lately been upward, country dressed light hogs being now 25c. to 26c. per lb.

Poultry.—The market has held quite firm since the Christmas season, and stock is none too plentiful. Choice turkeys were 49c. to 50c. per lb., while good to common ranges from 48c. down to 45c. per lb. Chickens were in good demand, being 33c. to 35c. per lb. for choice, and 32c. down to 25c. per lb. for common. Geese ranged from 28c. to 32c. per lb., and ducks from 38c. to 40c.

Potatoes.—There was an excellent demand for all the potatoes during the past week, and sales of Quebec whites were taking place in a jobbing way at \$2.60 to \$2.75 per bag of 90 lbs., ex-store.

Turnips.—Quebec turnips were of excellent quality, and prices were steady at \$1.50 per bag, onions being \$6.50.

Honey and Maple Syrup.—The price of maple syrup was little more than nominal, but was mentioned as \$1.30 to \$1.50 per gal. tin, with sugar at 30c. per lb. Honey was not heard much of, and prices were nominally 25c. per lb. for white clover comb, strained being 22c. in 30-lb. pails. Dark strained was 30c. per lb.

Chicago.

Cattle.—Compared with a week ago, good and best grades, beef steers, cows and heifers, little changed; others 25c. to 40c. higher; bulls, steady to strong; veal calves, mostly 75c. higher; stockers, 25c. to 50c. higher; feeders, 25c. higher.

Sheep.—Compared with a week ago, best fat lambs and low-grade sheep, 50c. to 75c. higher; others mostly \$1 to \$1.25 higher.

Hogs.—Heavy, \$14.55 to \$14.80; medium, \$14.60 to \$14.85; light, \$14.50 to \$14.90; light light, \$14 to \$14.65; heavy packing sows, smooth, \$14 to \$14.35; packing sows, rough, \$13.50 to \$14; pigs, \$13.50 to \$14.25.

Attention is hereby drawn to the auction sale of high-quality Holsteins at the farm of W. C. Prouse, Tillsonburg. Eighty head are being offered to the public, and it is a golden opportunity for beginners in the Black and Whites to secure foundation stock rich in the blood of noted sires. Prince Colanthus Abbekerk, the herd sire, together with twenty of his daughters and five of his sons are in the sale. There are fourteen daughters of FINDERNE VALDESSA ORMSBY FAYNE, whose dam is a 23-lb. four-year-old daughter of a 41-lb. cow. There are a number of females with very creditable records, and the public now have the opportunity of securing the results of Mr. Prouse's work in selection and breeding for production and quality. The sale is to be held at Annandale Farm, Tillsonburg, Ontario, on Thursday, January 22. Write W. C. Prouse, Tillsonburg, for a catalogue.

Sale Dates.

Jan. 22, 1920.—W. C. Prouse, Tillsonburg, Ont.—Holsteins.

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

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

March 2, 1920.—Victoria County Purebred Stock Association, Lindsay, Ont.

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

March 4, 1920.—W. G. Strong & Sons, Gorrie, Ont.—Ayrshire.

Coming Events.

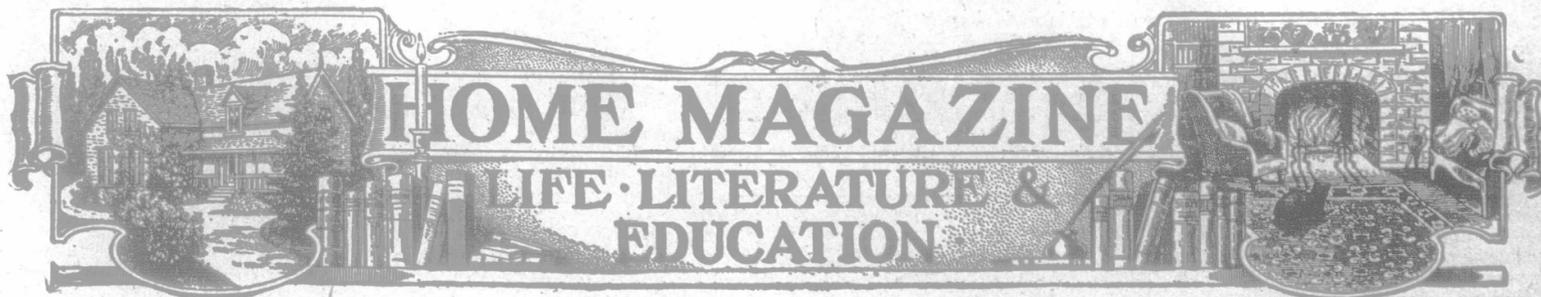
Feb. 2.—Ontario Plowmen's Association meeting, Toronto.

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.



Montreal.
Following the passing of New Year, the market for dressed turkeys has been but slight improved, and for horses. Dealers are doing nothing but prices are steady. Heavy draft horses, from 1,500 to 1,600 lbs., \$250 to \$300 each; light horses, from 1,400 to 1,500 lbs., \$200 to \$250 each; and saddle and harness, from 200 to \$250 each.
The market for dressed turkeys is firm, and the tendency is upward, country dressed turkeys now 25c. to 26c. per lb. The market has held quite steady during the past Christmas season, and stock prices are good. Choice turkeys are 25c. per lb., while good ones are 20c. to 22c. per lb. from 48c. down to 45c. Turkeys were in good demand, and prices are 25c. per lb. for choice, and 20c. per lb. for common. From 28c. to 32c. per lb., 38c. to 40c.
There was an excellent demand for potatoes during the past week. Quebec whites were a jobbing way at \$2.00 per 90 lbs., ex-store. Quebec turnips were of excellent quality and prices were steady at \$6.50 per 100 lbs. Apple Syrup.—The price of apple syrup is a little more than nominal, and is selling at \$1.30 to \$1.50 per gallon at 30c. per lb. Honey is selling at 25c. per lb. for white clover and 22c. in 30-lb. pails, and 30c. per lb.



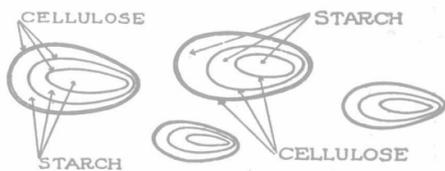
Prof. (Lieut.-Col.) W. L. Gill
Who has been appointed Director of Technical Education, Dept. of Labor, a new post under the Dominion Government. Prof. Gill, who has been head of the Electrical Engineering Department at Queen's University, Kingston, is a native of Prince Edward Island, and a graduate of McGill University. After being gassed at Vimy Ridge, he was placed in charge of the "Khaki University" in England.

Melody.

BY AMY E. CAMPBELL.
I am so glad for all the lovely things,
That find their way to me in busy hours,
For sunset's glory, and for birds that sing,
For revelations from the sun-kissed flowers.
For written thoughts that linger in my heart,
For tender words said unexpectedly,
These make me glad and strong to do my part,
And fill my days with haunting melody.

The Potato.

BY "MEDICUS."
IF the housewife would understand the "why" of cooking potatoes, she must understand the structure of the most important component of the potato, namely, the starch granule.
If you grate a potato into a basin of water, allow it to settle for a few minutes, pour off the water, and repeat the process several times, the white substance that settles to the bottom of the basin is potato starch. (This is improperly called potato flour.) If you examine some of this starch under the microscope, you will notice little particles, shaped something



like this. The rings are composed of cellulose, the white inside the rings is starch. Cellulose acts as a protective to the more delicate starch within, protecting it from germs, moulds, etc., the natural enemies of the starch. Paper is practically nothing else than cellulose, and, of course, is not digested in the stomach or intestines. So if the potato or other vegetable is eaten raw, very little if any is digested, and so diarrhoea may result. This explains why cucumbers cause diarrhoea, and green apples (which are very rich in cellulose) produce colic. If Johnny were not so greedy and did not eat the skin, core, seeds, blossom and stem—the parts of the apple consisting almost entirely of cellulose—he would

escape many an attack of stomach ache, also many doses of castor oil.

So, if starch is to be made available for digestion, you cooks must remove the cellulose or paper from around the layer of starch. You will notice that the cook often soaks the potatoes after they are peeled. They cook quicker if they are soaked. The water softens the paper and also causes the dry starch inside to swell up and burst the paper open. Then boiling finishes the job. So boiled vegetables are more completely digested than raw vegetables, and have a greater food value.

But, you cooks are extravagant, very extravagant. You throw away very important ingredients when you feed your "lord and master" (an expression used last century as synonymous to "husband") on boiled potatoes. In soaking your potatoes, and in boiling them in water, you extract valuable ingredients, and when you drain the potatoes and throw away the water you are losing indispensable mineral salts which the body must get in some other way. The efficient dietician (in other words, the average farmer's wife) makes potato soup with the water drained from the boiled potatoes. Others again use the water in making bread. Flour is deficient in mineral salts, so that bread made with potato water is better bread from a nutritional viewpoint.

If you cook the potatoes with their "jackets" on you lessen the waste of mineral salts. You all know the difference in taste when cooked this way. Steaming them or baking them is the most economical way of cooking potatoes, because the mineral salts are all retained and none thrown away.

The more important of the mineral salts needed by the human body are sodium chloride (or ordinary salt), salts of lime, potash, phosphorus and iron. (The wheat field needs these same salts). In a properly-balanced diet, sufficient amounts of these are supplied daily in our food.

We are all familiar with the necessity of salt in our diet. Boiled potatoes and boiled vegetables are deficient in salt because the salt is all boiled out. They taste "flat," so we make up the deficiency by salting them.

Lime, and phosphorus are essential for the proper nutrition of bone and teeth. Milk is rich in these mineral salts, so the cook who knows her food chemistry, adds milk to the mashed potato—and have you ever noticed how much better they taste? We like them better because instinct makes us crave for and enjoy the things we need.

Summary.

1. Raw vegetables and fruits, skins, seeds, etc., would be useful in constipation, because they are rich in cellulose.
2. Don't always cook the potatoes by boiling them. Occasionally steam or bake or cook with the "jackets" on.
3. Use the water drained from the boiled potatoes for soup or bread-making. You conserve the mineral salts.
4. Add milk to the mashed potatoes to supply the deficiency of lime and phosphorus.

A Social Evening For a Farming Community.

WHAT do you think of an old-fashioned singing school as a social evening for a farming community?
What trends more to harmony and good fellowship than meeting together, say once a week and learning to sing in the good old-fashioned way of forty years ago, when the singing master went from one community to another and taught a class in each?

This was very forcibly impressed on my mind a few weeks ago, when I went to visit in a small country village, where such a class was in operation. It had been organized by the local Women's Institute as a means of amusement for the long winter evenings, and its "success" was its own recommendation.

They organized with a score or more members who were willing to pay the small sum necessary to secure the services of a teacher, and in a few weeks their number was augmented to sixty.

Every one came, and learnt, or was trying to learn to sing. The ministers, with their wives and families, the doctors and local teachers, all helped.

The boys and girls from the outlying farms were delighted to find they possessed a voice, and sang for the first time in their lives. Old men who had attended singing school in their youth, and their wives, who had been their sweethearts of the long ago, found something attractive about the old-time singing school, and drove the three or four miles every week, and brought their load of young people to enjoy themselves.

On the evening of which I speak they were giving a concert, and the large hall was overflowed.

I can assure you that the entertainment was well worth the small price of admission—a quarter, and a goodly sum was realized. This was to help defray the cost of a new piano which the W. I. had installed in their place of meeting, and towards which a sum of two hundred dollars had already been collected.

Where a community hall is built, or in process of erection, this would be a good way to make it a social centre for one evening a week, and occasionally take up a collection, or get up an entertainment to help defray the expense.

The Women's Institutes have stood the test of the war, now give them an opportunity to "do their bit" in helping the world to become stable in peace.

S. H. ELLIS.

Billing's Bridge, Ont.

The Children's Poem.

My Shadow.

BY ROBERT LOUIS STEVENSON.

I have a little shadow that goes in and out with me,
And what can be the use of him is more than I can see.
He is very, very like me from the heels up to the head;
And I see him jump before me, when I jump into my bed.

The funniest thing about him is the way he likes to grow—
Not at all like proper children, which is always very slow;
For he sometimes shoots up taller, like an India-rubber ball,
And he sometimes gets so little that there's none of him at all.

Wasn't Hissing.—There was a com motion in the rear of the theater, and the usher was seen ejecting a man. The man was spluttering angrily when the manager of the theater came into the lobby.

"Why did you eject this man?" asked the manager.

"He was hissing the performance," replied the usher.

"Why did you hiss the performance?" asked the manager.

"I d-d-d-didn't h-h-h-hiss," spluttered the man. "I m-m-m-merely s-s-s-said t-t-to m-m-my f-f-f-friend beside me: 'S-S-S-S-Sammy, is-s-s-n't the s-s-s-s-s-singing s-s-s-s-s-s-uperb!'"



A G. W. V. A. Officer.
Nursing Sister, Mrs. J. R. Hamilton, of Steveston, B. C., is the only woman in Canada who serves on an executive of the Great War Veterans' Association, to which office she has just been elected in Richmond Branch, B. C. She was overseas for four years, and served with the Imperial forces in France, in the East, at Salonika with the Canadian nurses, and later in England.

Hope's Quiet Hour.

Good Courage.

Be of good courage, and let us play the men for our people.—2 Samuel 10:12.

During the swiftly-flying days before our great Peace Christmas one picture has been constantly presenting itself to my imagination—the scene described in the last part of Num. 14. There are the multitudinous of Israelites, murmuring against their Divine and earthly leaders. Suddenly the punishment falls and Moses exclaims to his brother Aaron: "Go quickly unto the congregation, and make an atonement for them, for there is wrath gone out from the Lord; the plague is begun."

"The plague," a name of dread. If the high priest had turned his back, and fled far from the ungrateful people, it might not have occasioned much surprise. But he "ran" into the midst of the congregation, he stood between the dead and the living; and the plague was staved. More than 14,000 went down before the scythe of Death, and yet the high priest stood undismayed between the dead and the living and made an atonement for the people.

Of course that mysterious incident speaks to us of our High Priest, who came to save sinners and offered His own life as an atonement for our sins. Each Christmas reminds us of our Deliverer, Who came swiftly into the midst of danger, accepting death in its most horrible form, for us.

But we are also reminded of the brave men, who—like Aaron—hurried swiftly to the danger-zone in order to stay the awful plague that threatened the world. They scornfully rejected the motto: "Safety first" and eagerly pressed between the dead and the living. And so the plague of War was staved; and we are able to sing of Christmas Peace after the black years of war.

"They gauged the peril, and they came.—Of many a race, and many a name, But all ablaze with one white flame, They tarried not to count the cost, But came. . . . They came a wrong to right,

Chicago.
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They came to end the blight
Of a vast ungodly might;
And by their gallant coming overcame."

John Oxenham wrote those lines before the victory was won. He saw the victory coming, and knew that the sacrifice was not made in vain.

I have been reading "The Glory of the Trenches" and "Out to Win," by Lieut. Coningsby Dawson; and I want to pass on to you some of his inspiring thoughts. He describes how men who are not eager for a post of danger seek service well behind the lines. Little by little they press nearer to the front. "Why? Because danger doesn't appeal; it allures. It holds a challenge. It stings one's pride. . . The safe job is the only job for which there's no competition in fighting units. You have to persuade men to be grooms, or cooks, or batmen. If you're seeking volunteers for a chance at annihilation, you have to cast lots to avoid the offence of rejecting."

It was not because our heroes liked the horrors and hardships of life at the front. It was a call of a great need that drew them away from peace and comfort. Their courage rose with danger and they ran towards the danger, instead of away from it, to save their people from the awful plague.

Dawson describes how some society girls from New York hurried across the sea to do their bit. For three months they lived in comfort in Paris and were consequently disgusted. They wanted to get into the danger-line and endure real hardships. They gloomily objected to having an easy time. At last they found themselves in a doomed city, where they had to care for women and children and the wounded, getting the helpless out of danger and remaining themselves where they were likely to be bombed. Then they cheered up and were really happy. The call of danger had drawn them across the Atlantic, and they were eager to stand between the dead and the living and do something to stay the plague.

When I was in Boston in 1918 I found the spirit of eager sacrifice everywhere. Women took the greatest pleasure in using "substitutes," in order to save wheat and other things for the soldiers. If they couldn't stand in the post of danger, at least they could do something to strengthen the hands of the men who were facing the horrors of war.

This is often called a "luxury-loving age;" and, now that the war is over, women seem to be willing to forget the hunger on the other side of the world in their desire to wear expensive clothing and revel in selfish pleasure. But the war has shown us that the spirit of selfless sacrifice may be hidden under an outer covering of selfishness. When the great call came the outer crust was thrown off and the hidden heroism leaped into sight. We are sure to make mistakes if we attempt the task—the task which is not our duty—of judging our fellows.

Dawson says that the British treat war as a "sport", the French consider it "martyrdom," and the Americans look on it as "a job;" but each nation faced undauntedly. Instead of running away from danger they hurried forward to meet it. "France became consciously and tragically heroic when war commenced. England became unwontedly cheerful because life was moving on grander levels. In America there was no outward change. The old habit of feverish industry still persisted, but was intensified and applied in unselfish directions."

But what of the New Year—the first great Peace Year after war has done its worst? Have we learned the lesson that life is not given to be spent in selfishness, but can be beautiful and glorious only if it is poured out unstintedly for others? Is it necessary for the scourge of war to be applied in order to make men grandly heroic, cheerily fearless and quietly resolved to "carry on" to the end?

Our greatest gain comes not from what we get but from what we give. Our soldiers faced death unshrinkingly, and we are facing death, too—though we may not be called to pass through it this year, or next. When our Master takes account of His servants, and asks what we have gained from the great opportunity of life in this world, what account can we make? If we can only show Him what money or admiration we have obtained, He will care nothing for that. If we tell Him we have had a

comfortable and pleasant journey from birth to death, He will not be satisfied. Have we lived bravely, accepting hardships as cheerfully as the "Tommies", and determined to "do our bit" in the post where the Commander-in-chief has placed us? If not, then we have lost our opportunity.



Mrs. E. C. Drury, Wife of the Premier of Ontario.
(From her latest photograph).

Life is always a great adventure. We go out, like soldiers, not knowing where our Captain may lead us. Each day and hour we receive our orders from Him. The monotony of daily routine is intended to prepare us for the moment when we may be called "over the top." We can't afford to despise or neglect the drill, which at times seems rather wearisome. Life, like the Great War, is not a battle, but a campaign. It is not necessarily waste of time to stick fast in one place for months or years. It probably took more courage to endure the deadly

monotony of trench life than to make a swift dash into danger. If you intend to make this great opportunity of life worth while, you have your chance now. Don't miss it. We are all invited to walk in the steps of the King of Kings, who worked faithfully for many years in a village workshop—and then went out fearlessly to stand in the post of danger, and give His life for the world's salvation. He was our Leader when working in Nazareth as truly as when dying on the Cross.

"What little spot is lighter,
Or better any way,
Because we live, all light to give,
Within our little day?"

DORA FARNCOMB.

Christmas Gifts for the Needy.

As usual (during this season) Christmas gifts for the sick and needy have been pouring in. One young girl of fifteen sent \$15—which she earned by her hard work. Two readers (A. D. W. and "Discharged Soldier") sent \$10 each. Two readers (Mrs. E. B. and "A friend," Oxford Co.) sent \$5 each. Three readers (C. McD., "Doris," and R. M. H.) sent \$2 each. T. L. M. asked me to give her donation of \$6 to six little sisters. (I gave it to their mother and it was most thankfully accepted.) Mrs. J. J. H. and "Crescent" each sent \$3. Besides this large amount of money I received 8 boxes of "good things to eat" from the M. L. S. C., Thornbury—"for poor families"—and many packages of papers also arrived. It is a good thing my own Christmas gifts are ready for posting, or I should be swamped by your great flood of kindness.

Three gifts of two dollars each arrived this week—from a Quebec reader, J. M. H. from Mrs. J. M.; and from "one who cares." I was quite overwhelmed when I opened a letter from two sisters, E. and E. W., for the letter contained fifty dollars for the needy.

I am honestly trying to justify your confidence in my judgment, but sometimes

the responsibility of acting as your steward makes me turn coward. It is easy to "pass on" your money, but it is not easy to spend it wisely. However, I will try to do so—God being my Helper.

During 1919 I received 125 gifts of money from readers of the "Quiet Hour," amounting to \$449.75—nearly a hundred dollars more than in 1918. Out of the "Quiet Hour Purse" have gone 234 separate gifts to the sick and needy; and the purse is far from empty to-day, thanks to the generous people who filled it up for the New Year. Some needy families have been helped again and again, and many messages of thanks have been sent to the kind readers of "The Farmer's Advocate"—messages which I can't possibly deliver in detail. The first \$2, sent years ago by "a country woman," has multiplied in marvelous fashion. What can I do but thank God and thank you, as we step across the threshold of the New Year?

DORA FARNCOMB,
6 West Ave, Toronto.

Current Events

Parliament is to meet in Ottawa on Feb. 26th.

Hon. W. L. M. King began a tour of Canada on Jan. 6 at Newmarket, when he spoke before the Liberal electors of North York, for which he has accepted the nomination.

The Board of Commerce, Ottawa, has ruled that sugar, in Canada, will not be higher than 16 cents a pound retail for a period of 3 months.

John B. McArthur, inventor and maker of the "McArthur plough," well known in the 'seventies and 'eighties, died at Paisley, Ont., in his 88th year.

Representatives of organized labor have asked the Dominion Government for legislation enacting the 8-hour day.

A resolution was passed at the Urban School Trustees' Association of Ottawa asking the Department of Education to abolish the Entrance examination in the cities of Ontario.

Nova Scotia school inspectors are pressing for better salaries for teachers.

The Associated School Boards of Montreal have started a movement to have a grant of at least \$1,000,000 given to the elementary schools of Quebec Province.

The quarantine against people from Ontario entering Montreal without vaccination certificates has been extended to the whole Province of Quebec.

Mr. J. J. Morrison, Secretary of the U. F. O., who has just returned from the Dominion Council of Agriculture at Winnipeg, says a Dominion-wide Farmer Party "has got to come."

The most important and interesting collection (a loan) of paintings ever exhibited in Toronto, are now to be seen at the Art Museum. Among them are works by Rembrandt, Reynolds, Raeburn, Hals, Corot, Anton Mauve, L'Hermite, Sir Thomas Lawrence and Constable. The great modern painter, Sir William Orpen, is represented by a portrait of the late Prof. Jas. Loudon of Toronto University. Canada is represented by works of Horatio Walker, Homer Watson, Fowler, Wylie Grier, Archibald Browne, G. A. Reid, Florence Carlyle and many others.

Failing to obtain relief from the high cost of living by any other means, the American Federation of Labor has decided upon an experiment in co-operative buying, production and distribution. An All-American Farmer-Labor Co-operative Commission has been found to work out the details of the scheme.

According to a resolution adopted by Indian Moslems who gathered at Delhi recently in the All-India Khalifat Conference, British goods will be boycotted if the peace settlement with Turkey is not satisfactory to Mussulmans.

Continued on page 98.



Photo by Boyd.

A Disaster.

Serial Story

"His Family,"

BY ERNEST POOLE.

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

CHAPTER XVIII.

In Deborah's school, in the meantime, affairs had drawn to a climax. The moment had come for the city to say whether her new experiment should be dropped the following year or allowed to go on and develop. There came a day of sharp suspense when Deborah's friends and enemies on the Board of Education sat down to discuss and settle her fate. They were at it for several hours, but late in the afternoon they decided not only to let her go on the next year but to try her idea in four other schools and place her in charge with ample funds. The long strain came to an end at last in a triumph beyond her wildest hopes; when the news arrived she relaxed, grew limp, and laughed and cried a little. And her father felt her tremble as he held her a moment in his arms.

"Now, Baird," he thought, "your chance has come. For God's sake, take it while it's here!"

But in place of Baird that afternoon came men and women from the press, and friends and fellow workers. The door-bell and the telephone kept ringing almost incessantly. Why couldn't they leave her a moment's peace? Roger buried himself in his study. Later, when he was called to dinner, he found that Allan was there, too, but at first the conversation was all upon Deborah's victory. Flushed with success, for the moment engrossed in the wider field she saw ahead, she had not a thought for anything else. But after dinner the atmosphere changed.

"To hear me talk," she told them, "you'd think the whole world depended on me, and on my school and my ideas. Me, me, me! And it has been me all winter long! What a time I've given both of you!"

She grew repentant and grateful, first to her father and then to Allan, and then more and more to Allan, with her happy eyes on his. And with a keen worried look at them both, Roger rose and left the room.

Baird was leaning forward. He had both her hands in his own.

"Well?" he asked. "Will you marry me now?"

Her eyes were looking straight into his. They kept moving slightly, searching his. Her wide, sensitive lips were tightly compressed, but did not quite hide their quivering. When she spoke her voice was low and a little queer and breathless:

"Do you want any children, Allan?"

"Yes."

"So do I. And with children, what of my work?"

"I don't want to stop your work. If you marry me we'll go right on. You see I know you, Deborah, I know you've always grown like that—by risking what you've got to-day for something more to-morrow."

"I've never taken a risk like this!"

"I tell you this time it's no risk! Because you're a grown woman—formed! I'm not making a saint of you. You're no angel down among the poor because you feel it's your duty in life—it's your happiness, your passion! You couldn't neglect them if you tried!"

"But the time," she asked him quickly.

"Where shall I find the time for it all?"

"A man finds time enough," he answered, "even when he's married."

"But I'm not a man, I'm a woman," she said. And in a low voice which thrilled him, "A woman who wants a child of her own!" His lean, muscular right hand contracted sharply upon hers. She winced, drew back a little.

"Oh—I'm sorry!" he whispered. Then he asked her again,

"Will you marry me now?" She looked suddenly up:

"Let's wait awhile, please! It won't be long—I'm in love with you, Allan—I'm sure of that now! And I'm not drawing back, I'm not afraid! Oh, I want you to feel I'm not running away! What I want to do is to face this square! It may be silly and foolish but—you see, I'm made like that. I want a little longer—I want to think it out by myself."

When Allan had gone she came into her father. And her radiant expression made him bounce up from his chair.

Continued on page 96.

The Fashions.

How to Order Patterns.

Order by number, giving age or measurement as required, and allowing at least ten days to receive pattern. Also state in which issue pattern appeared. Address Fashion Department, The Farmer's Advocate and Home Magazine, London, Ont. Be sure to sign your name when ordering patterns. Many forget to do this.

When ordering, please use this form:—
Send the following pattern to:

Name.....
Post Office.....
County.....
Province.....
Number of Pattern.....
Age (child or misses' pattern).....
Measurement—Waist..... Bust.....
Date of issue in which pattern appeared.....

- 3109. A Unique Model. Cut in 3 sizes: 16, 18 and 20 years. Size 18 will require 5 1/8 yards of 44-inch material. The width of the skirt at lower edge with plaits extended is 1 1/2 yard. Price 10 cents.
- 3123. A Dainty Frock. Cut in 4 sizes: 4, 6, 8 and 10 years. Size 10 will require 4 yards of 27-inch material. Price 10 cents.
- 3115. Dress for Work or Leisure.

Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 will require 5 1/4 yards of 36-inch material. The width of the skirt at lower edge is 2 yards. Price 10 cents.

2748. Boys' Suit. Cut in 4 sizes: 3, 4, 5 and 6 years. Size 4 requires 1 1/4 yards of 27-inch material for the waist, and 1 1/2 yards for the trousers. Price 10 cents.

3095-3104. A Very Attractive Combination.

3095 comprises a muff cut in one size, and a cape cut in 3 sizes: Small, 32-34; medium, 36-38; large, 40-42 inches bust measure. It will require 2 1/4 yards of 44-inch material for the cape, and 1/2 yard of 30-inch material with 1 1/4 yard of lining for the muff. Skirt 3104 is cut in 7 sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure. A medium size will require 3 1/2 yards of 40-inch material. With plaits extended the width of the skirt at its lower edge is 2 1/2 yards. Two separate patterns 10 cents FOR EACH pattern.

3099. Girl's Dress. Cut in 4 sizes: 8, 10, 12 and 14 years. Size 10 will require 2 1/2 yards of 44-inch material. Price 10 cents.

2841. Ladies' Apron. Cut in 4 sizes: Small, 32-34; medium, 36-38; large, 40-42; and extra large, 44-46 inches bust measure. Size medium requires 4 1/4 yards of 36-inch material, with 1 1/4 yards of banding, 2 1/4 inch wide, for neck and front. Price 10 cents.

3117. A New Corset Cover. Cut in 6 sizes: 32, 34, 36, 38, 40, and 42 inches bust measure. It will require 1 1/2 yards of 36-inch material for a 38-inch size. Price 10 cents.

3100. Set of Infants' Clothes. Cut in one size: It will require 2 3/4 yards of 36-inch material for the dress 2 1/4 yards of 27-inch material for the petticoat and 2 yards of embroidery for the ruffle. The slippers require 3/8 yard of 18-inch material and the Barrie coat 3/8 yard of 27-inch material for band, and 1 yard 40-inches wide for skirt. Price 10 cents.

3120. A Smart Coat Dress. Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 34 will require 4 1/2 yards of 44-inch material. Width of dress at lower edge is about 1 1/2 yard. Price 10 cents.

2921. Girl's Dress. Cut in 5 sizes: 4, 6, 8, 10 and 12 years. Size 10 will require 2 1/2 yards of 44-inch material for the dress and 1 1/2 yard for the jumper. Price 10 cents.

3118. Ladies' Night Dress. Cut in 7 sizes: 36, 38, 40, 42, 44, 46 and 48 inches bust measure. A medium size will require 4 3/4 yards of 36-inch material. Price 10 cents.

3098. A Comfortable Play Garment. Cut in 4 sizes: 1, 2, 3 and 4 years. Size 3 will require 3 1/4 yards of 27-inch material. Price 10 cents.



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DORA FARNCOMB,
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ued on page 98.



PREPARATIONS for JUNE

PREPARATIONS for the June wedding—or for the wedding at any time, for that matter—cannot begin at a better time than now. The winter evenings before the fire offer the ideal time for sewing the dainty white fabrics of the young woman's trousseau.

And than soft white cotton, there is no more beautiful fabric for the intimate garments of femininity. Its snowy whiteness, its delicacy, combined with its durability, are the qualities which have included it in the fine apparel of the beautiful women of history.

DOMINION TEXTILE COMPANY
LIMITED

MONTREAL

TORONTO

WINNIPEG

Be sure to ask for Prue Cottons in the shops. There is a very wide range of fabrics to choose from, including material for underwear, nightwear, sheetings, pillow-casings, prints, galateas, duck, drill and blankets.

3111-3106. A Good Costume for Mature Figures.

Waist 3111 cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Skirt 3106 cut in 7 sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure. It will require $5\frac{1}{2}$ yards of 36-inch material for this costume for a medium size. The width of skirt at its lower edge is $1\frac{3}{4}$ yards. TWO separate patterns 10c. FOR EACH pattern.

3124. Girl's Dress.

Cut in 4 sizes: 8, 10, 12 and 14 years. Size 10 requires $3\frac{1}{8}$ yards of 40-inch material. Price 10 cents.

2912. Ladies' House Dress.

Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires 5 yards of 44-inch material. Width of skirt at lower edge about $1\frac{1}{8}$ yards. Price 10 cents.

3102. Child's Coat.

Cut in 4 sizes: 4, 6, 8 and 10 years. Size 6 will require $2\frac{5}{8}$ yards of 44-inch material. Price 10 cents.

3108. Girl's Dress.

Cut in 3 sizes: 12, 14 and 16 years. Size 14 will require $3\frac{3}{8}$ yards of 44-inch material. Price 10 cents.

3119-3116. A Stylish Costume.

Waist 3119 cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Skirt 3116 cut in 6 sizes: 22, 24, 26, 28, 30 and 32 inches waist measure. To make the costume for a medium size, will require $5\frac{1}{4}$ yards of 52-inch material. The width of the skirt at lower edge is about $2\frac{1}{8}$ yards when plaits are extended. Two separate patterns 10 cents FOR EACH pattern.

3110. Apron and Cap.

Cut in 4 sizes: Small, 32-34; medium, 36-38; large, 40-42; and extra large, 44-46 inches bust measure. Size medium

requires $3\frac{1}{4}$ yards for the apron, and $\frac{1}{2}$ yard for the cap, of 36-inch material. Price 10 cents.

3113. Child's Dress.

Cut in sizes: 2, 3, 4 and 5 years. Size 4 requires $2\frac{1}{8}$ yards of 36-inch material. Price 10 cents.

2639. Girl's Dress.

Cut in 4 sizes: 8, 10, 12 and 14 years. Size 12 requires $3\frac{5}{8}$ yards of 36-inch material. Price 10 cents.

2754. A Stylish Frock.

Cut in 4 sizes: 14, 16, 18 and 20 years. Size 18 requires $4\frac{5}{8}$ yards of 36-inch

material. Width of skirt at lower edge is about 1 7/8 yards. Price 10 cents.

3114. Ladies' House Gown.
Cut in 4 sizes: Small, 32-34; medium, 36-38; large, 40-42, and extra large, 44-46 inches bust measure. Size medium requires 5 3/4 yards of 36-inch material for garment in full length, and 4 1/4 yards for sack length. Price 10 cents.

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.

DEAR Ingle Nook Friends—I intended going on to-day with a talk about dinners, dwelling upon the wisdom of maintaining a right balance of the different kinds of food, and the foolishness, so far as both health and pocket are concerned, of serving too much protein (e. g., meat, beans, cheese, etc.) at any one meal; but I am sure you will pardon me for coming to a sudden stop when I tell you why: I have discovered a real expert in dietetics who is willing to take this subject up for us, and will be glad to tell us not only the foods that are good for health, but also the "whys" of cooking them in certain ways.

Don't you think we often find the endless work of cooking breakfasts and dinners and suppers monotonous simply because we do not understand just that—the why of things? Also, perhaps, because we fail to see how very important our work really is?—You see I say "we," putting myself with you in this, for I have had a try, occasionally, at getting breakfasts, and dinners, and suppers, and so I know how it goes.

Now let us ask ourselves a few questions:

In the first place why is this work so very important? . . . Don't you hear the answer come tinkling down as with the tones of a merry silver bell from the Realms of Commonsense?—"Your work is important, my dear, because it is helping to keep all the people who live in your house well. And, don't you know? they can't do their work in the world properly unless they are very well indeed. So your work is not only very personal, because it concerns the ones you love best, of all in the world, I hope; it is also humanitarian, because it affects the work of the world."

So far, so good. Now let us ask another question:

"Why is it necessary for me, in regard to such homely work as cooking, to know why I do things? Can't I get along very well by doing things just as my mother did them, without bothering further?"

Now listen for the answer. Here it comes!

"No doubt, my dear, your mother was a very good cook, as the cooks of that day went. But, don't you know that modern science insists that scientific methods be used even in cookery, in order that the very best results be reached? For example, probably your mother boiled her vegetables in salty water—plenty of it—poured the water off them into the back yard, shook them up again over the stove and served them piping hot. Now that sounds all right. But science to-day says, 'Oh no! you mustn't do that! If you do you pour a lot of stuff valuable to the health off out there in the back yard. No! No! You mustn't do that! Your husband needed those substances,—your children needed them. Fie! Fie!' And then it proceeds to point out lots of other things that the majority of cooks do in the wrong way. Certain processes *always* bring about certain results, my dear, so it's up to you to find out what those processes are, isn't it? And if you know *why* you do so-and-so you'll remember better."

Thus comes the message from the Realms of Commonsense, and if we just sit still and think about it for a while,—by and by it will dawn upon us—each of us, I mean:

"Why, I am health officer and artist combined. I must cook foods in the right way and serve them so attractively that even the 'pickiest' one in the house will want to eat them. I must know exactly how to do this. And I must watch to see the effect on 'the family.'"

3 REAL ACCESSORIES

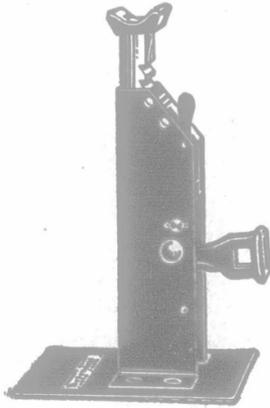
—Essential Adjuncts to every Car

"DEPENDABLE" AUTO JACKS

The merit of this jack lies in its strength, small size, and simple mechanism. The frame is steel, which is far more reliable than malleable. The rack is a three-quarter inch solid steel bar and the teeth are perfect.

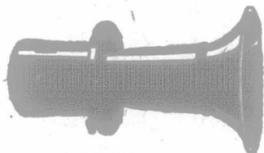
The long steel handle is stronger and has better leverage than the ordinary short wood handle.

Eight strokes with the handle raise the car three inches, a job that takes the ordinary screw jack forty strokes. Same motion for raising or lowering. When weight is off, the rack releases by tipping jack forward.



KLAXON—

Your Signal of Safety



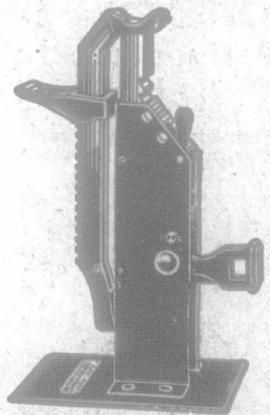
KLAXON 6

An electric motor driven safety signal—its warning note is instantaneous and independent of the running and speed of the car. Finished in the smart "Klaxon-black" enamel—no polishing necessary. A specially designed bracket makes this instrument easily and quickly attachable to any Ford car. Operates in connection with electric starting systems, with storage battery, or dry cells. Regularly wound for six volts. Furnished without extra charge for special voltages up to 21 volts. Suitable for all types of Fords, and is especially popular for closed cars.

Ask your dealer for Northern Electric Accessories.

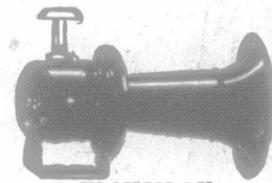
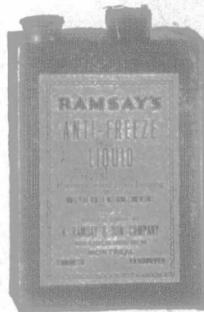
Northern Electric Company LIMITED

Montreal Quebec Toronto Winnipeg Calgary
Halifax Ottawa London Regina Edmonton Vancouver



RAMSAY'S ANTI-FREEZE

The Radiator solution that prevents over-heating and maintains the efficiency of the cooling system.



KLAXON 3-V

A hand operated safety signal with vertical push rod. Finished in the smart "Klaxon-black" enamel—no polishing necessary. Suitable to all Ford touring cars, runabouts and commercial cars with front door panel at driver's left.

Born With Club Feet



"He gets about as well as any of the boys," says father in letter below.

John Bauguss was 11 years old when brought to the McLain Sanitarium. Although deformity was extreme, result shown by photos was accomplished in 8 months. No Plaster Paris casts were used.

Father writes: My son John was born with club feet. I tried other doctors but without success. Being advised to take him to the L. C. McLain Orthopedic Sanitarium, which I did. After being treated a few months his feet are perfectly straight. He gets about as well as any of the other boys.

G. M. Bauguss, Mooringsport, La.

For further details write Mr. Bauguss or the Sanitarium.

For Crippled Children

The McLain Sanitarium is a thoroughly-equipped private institution devoted exclusively to the treatment of Club Feet, Infantile Paralysis, Spinal Disease and Deformities, Wry Neck, Hip Disease, Diseases of the Joints, especially as found in children and young adults. Our book, "Deformities and Paralysis," also "Book of References," sent free.

The L. C. McLain Orthopedic Sanitarium
949B Aubert Ave. St. Louis, Mo.

THE MOLSONS BANK

Incorporated in 1855

Capital & Reserve, \$9,000,000
Over 120 Branches

A good Banking connection is essential to the success of any farmer.

This Bank is equipped and prepared to give efficient, careful and quick service in every department of banking.

Wrestling Book FREE

Be an expert wrestler. Learn at home by mail. Wonderful lessons prepared by world's champion Farmer Burns and Frank Getch. Free booklet tells you how. Secret holds, blocks and tricks revealed. Don't delay. Be strong, healthy. Handle big men with ease. Write for free book. State age. Farmer Burns, 601 Lunge Bldg., Omaha, Neb.

SEND TO
EATON'S
 FOR
Men's Warm Winter Ulsters
 Reduced for Quick Clearance
18⁵⁰ and 25⁰⁰
 Delivered
Arrived too late for our Catalogue
Hence the Low Prices

With the real cold weather still ahead, this is a most timely offer, and the man who has been waiting until after the usual holiday rush to buy at a big saving, will take advantage of this exceptional opportunity.



Order by No. 44-3080.
 Color: Oxford Grey.

18⁵⁰

Ulsters of heavy Canadian Frieze, that good-looking, warm material which will keep you snug in the coldest weather. A medium dark Oxford Grey in a wool mixture with a small amount of cotton for strengthening purposes. This Ulster is cut in full-fitting double-breasted style. It is 48 inches long, with deep convertible storm collar, wind straps on cuffs, half belt at back, and lined throughout with good serviceable Italian lining. Sizes 36 to 44. 44-3080. Price, delivered..... 18.50

Order by No. 44-3060.
 Color: Dark Brown with Faint Over-check.

25⁰⁰

These are thick, warm, comfortable winter-weight Ulsters, well tailored and well finished. The material is a heavy all-wool tweed in a rich dark brown check with just a faint overcheck in contrasting color. Full-fitting double-breasted style, 48 inches long, deep convertible storm collar, half belt at back, wind strap on cuffs, and heavy twilled Italian lining. Sizes 36 to 44. 44-3060. Price, delivered..... 25.00

Delivered Free to Your Nearest Railroad Station or Post Office in Ontario or the Maritime Provinces.

THE T. EATON CO LIMITED
 TORONTO - CANADA

Aberdeen-Angus

Offering includes one bull calf 18 months old and four younger bull calves. Inspection and correspondence invited.

JOHN D. HAYDEN

Cobourg - Ontario

DR. BARNARDO'S HOMES

A party of boys and girls under the auspices of the above Homes will arrive in Ontario middle of March, 1920. Applications for service, as well as boarded-out children, may be sent for boys to

Mr. John W. Hobday, Manager, 50-52 Peter Street, Toronto, and for girls to Miss Taylor, Secretary, Girls' Home, "Hazelbrae," Peterborough.

Two Buckeye Incubators for Sale

Nearly new; used moderately two seasons; all complete, at half price, as we are out of the business—hence the sacrifice.

G. L. DOHERTY, Clinton, Ont.

SEEDS

We are in the market for Alsike, Red and Sweet Clover, Timothy, 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 Toronto

124 King St. East

WANTED Crate Fed Chickens

Dressed

Also Large Hens Alive or Dressed

Write for price list.

WALLER'S 702 Spadina Ave. TORONTO

POULTRY WANTED

It will pay you to sell your poultry to the best market in Western Ontario. Special prices this month for heavy live hens. Be sure and sell to

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

—Now, please tell me: Could anyone find cookery stupid and uninteresting after that?

Of course, it will be necessary to make the kitchen into a sort of laboratory.—But even the work of building it up so, little by little, must prove interesting.

And for the days when one is too ill to bother about the dinner-getting?—Well maybe Mrs. Glenn's emergency kitchens will come along, after a while, to fill the bill.

Now you see why I am so pleased to make my farewell bow to you in this matter. I want to know all the whys of cookery, so far as its effect on the human body is concerned, and I want you to know them too. Our expert in dietetics, who has spent several years in especial study of the subject, will write for us over the signature "Medicus." I am quite sure that he will be glad to answer any questions you may choose to ask him. Write your questions to him and address the envelope to me; and I will see to it that they reach him promptly.

I THINK I have been asked a dozen times since the U. F. W. O. Convention, "What is the difference between the United Farm Women and the Women's Institute?" Now, I am not exactly qualified to answer that question. But judging from the recent convention I should say: No difference at all except that the U. F. W. O. allowed more latitude regarding politics than was allowed at any W. I. convention I ever attended. I understand, however, that the ban is off that subject now in the W. I.; if I am wrong I hope someone will correct me.

Also, the U. F. W. O., of course, pledges itself to stand behind the U. F. O. in whatever that body may bring up. Superficially one might remark that there seem to be more town and village women in the W. I., but, outside of the two points mentioned above, no real difference was evident. The aims are practically the same—improvement of conditions wherever they can be improved. Of course, the U. F. W. O. was the first to suggest community laundries and emergency kitchens—but then the W. I. led the way by establishing community canneries and medical inspection of schools.

Personally, I think both splendid organizations. The natural sequence seems to be that, if they do not amalgamate they shall at least co-operate in all the progressive work—"community" and otherwise—that needs to be done.

One thing is sure: There must be no antagonism, no pulling in opposite directions, else every accomplishment must be hindered. Even different organizations must be big enough to work together, in all matters that really count, if this country is to go ahead as it should.

In these days it seems very advisable that town and country should draw closer together, and not merely in a commercial way, desirable though that surely is. Really there is no reason why they should not become one in sympathy and friendliness, each giving the other the best ideals it has. Perhaps the towns and cities need a few missionaries on that point. Co-operation in buying and selling was one of the subjects emphasized at the recent U. F. W. O. Convention, and a very necessary and practical subject it is. But there is so much more than that. One would like to see city folk more interested in agriculture—more ready to recognize the dignity of working on the soil and the brain-power required to do so scientifically. Perhaps the new developments in Government are already doing much toward that end, and they are bound to do more. But it is my own notion that, were it only for the sake of the "born" farmers who chance to open their eyes upon this world in the town, agriculture should be taught in every school, town and county alike. For a born farmer in the town is as much out of his element as a born doctor on the farm. . . . On the other hand one would like to see the country folk more anxious to bring to themselves the best the towns and cities have to offer—better teaching and equipment in the schools, good lectures, good music, talks on art, etc. Life needs its share of these things to keep it interesting. Work is done better when there are little breathing-spots along the way in which the mind is taken away from it altogether.

After all, why should we not be all



Safe Investments For Farmers

While it is true that Farmers are investing money in industrial securities, the investment that appeals most to them is still the "First Mortgage".

In order to cultivate this very desirable business, we shall offer from time to time well-secured First Mortgage Real Estate Bonds.

We have such an issue now. They are the 6 1/2% First (Closed) Mortgage Gold Bonds of the Drummond Apartment Buildings, Montreal.

Their features are fully described in the prospectus, which we will be pleased to send you upon request.

We recommend these Bonds as a safe investment. They are being sold rapidly. So we urge you to write now for a prospectus.

Royal Securities CORPORATION LIMITED
 73 MONTREAL
 Toronto Halifax St. John, N.B.
 Winnipeg London, Eng.



a delicious **COCOA CAKE** try it yourself

DIRECTIONS

CHOCOLATE CAKE

1/2 cup butter, 1 cup sugar, 1 1/2 cups flour, 1 teaspoon baking powder, 2 eggs, mix 1/2 teaspoon soda with 1/2 cup sweet milk, mix 1 1/2 teaspoons cocoa with 4 teaspoons hot water, 1 teaspoon vanilla, pinch of salt. Mix yolks, butter and sugar, add milk, soda, flour and salt; beaten whites of eggs last. Use a cocoa or coloring icing for filling and cover cake with same.

numerous other delightful dishes are made by using

COWAN'S COCOA



Send for recipe booklet to THE COWAN COMPANY LIMITED TORONTO

one, making the phrase "brotherhood of man" less a mere clashing of idle words. As a rule people, whether in town or country, are "nice," when you come to know them, and more alike than they dream. Through knowing comes sympathy, and understanding, and a greater tendency to work together rather than in opposite directions.

JUNIA.

Worth Thinking Over.

"The happiest man is the one with the greatest number of interesting thoughts."—Dr. A. T. Schofield.

"I wonder what the basis is of our instinct to belittle our fellows."—A. E. Winship.

What to do With Apples.

(From "The King of Fruits," issued by the Northumberland and Durham Apple Growers' Association.)

Bread and Butter Apple Pudding.—Cover the bottom of a shallow, well-buttered pudding dish with apple sauce. Butter slices of stale bread cut into diamond pieces and place as close together as possible over the apple sauce, buttered side up. Sprinkle with sugar and a few drops of vanilla. Bake in a moderate oven and serve hot with cream.

Pot Apple Pie.—Peel and quarter 8 nice tart apples (Greenings are the best) and slice in strips about 1/4 lb. fat salt pork; then mix a nice light biscuit dough. Take an iron kettle and lay strips of the pork across the bottom about half an inch apart. Lay on that some of the quartered apples, then sugar and cinnamon. Next slice your biscuit dough in strips about the same as the pork and place crosswise, leaving about an inch between the strips. Repeat the whole operation until you have used up the material, having the biscuit dough on top. Then pour down the side of the kettle carefully a cup of boiling water, cover and cook slowly for an hour and a half, adding boiling water when necessary. This is delicious when served with whipped cream.

Apple Custard Pie.—To 1 pint apple sauce add 1 qt. sweet milk, 4 eggs, 1 tablespoon cornstarch, pinch of salt, 1/4 grated nutmeg, 1 tablespoon melted butter, juice of 1 lemon and grated rind of half a lemon. Bake with undercrust only.

Apple Cornmeal Pudding.—Pare, core and slice 12 medium-size King apples. To 1 qt. sweet milk add 1 qt. cornmeal, 1 teaspoon salt, 4 tablespoons chopped suet, 1 cup molasses, 1 teaspoon soda dissolved in the molasses, and the sliced apples. Stir well and put in a well-buttered pudding mould. Steam for 4 hours and serve hot with any good pudding sauce.

The Scrap Bag.

Roasting Meat.

When roasting meat in the oven, if you have not a regular basting pan, place the pan in a dish of water. This will prevent the gravy from burning, and the meat will not have to be basted so frequently.

Baking Pie Shells.

When baking a single crust pie, put it on the outside of the pie plate turned upside down. It will not shrink, and you will avoid the annoyance of blisters.

Bureau Drawers.

When bureau drawers stick, remove them and rub the places that bind with hard soap and they will draw smoothly. Soap has the same effect on wood as oil has on hard-running machinery.

Rust From Tin.

Kerosene oil and finely-sifted coal ashes will remove rust from tin. Dip a woolen rag first in oil, then in ashes, and rub each spot until it disappears. Wash with hot soap-suds, then wipe it thoroughly dry, and the result will be a bright, smooth tin.

Boots in Winter.

Boots and shoes hardened by water can usually be softened by rubbing them with coal-oil (kerosene). Anyone who has to go out in the snow often without rubbers should keep his boots well greased to keep out the dampness. Melted tallow mixed with lamp-black is often used for this. It should be applied warm to warmed boots, and well rubbed in.

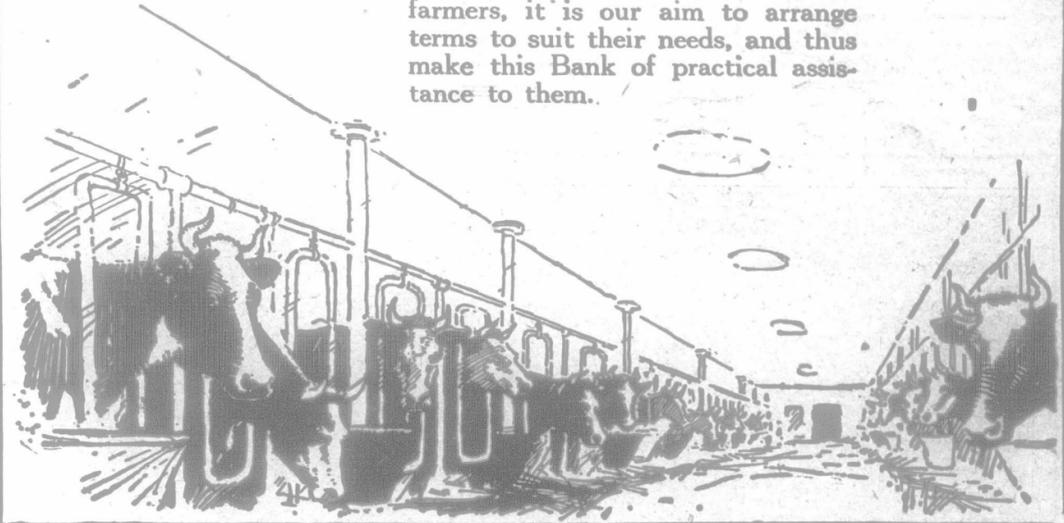
THE BANK OF TORONTO

Working Capital for FARMERS

THE branch managers of this Bank will meet reliable farmers in any reasonable demands for credit to finance heavier crops, to feed stock, to buy stockers, or for any sound enterprise in line with national development.

Further, in lending money to farmers, it is our aim to arrange terms to suit their needs, and thus make this Bank of practical assistance to them.

THOMAS F. HOW
GENERAL MANAGER



"For The Land's Sake" use

STONE'S FERTILIZER

For Bigger and Better Crops

Agents wanted where not represented
WM STONE SONS LIMITED
INGERSOLL ONT.

Lakeview Holsteins

Offer two bulls nearly ready for service, sired by a son of DUTCHLAND COLANTHA SIR MONA and LAKEVIEW LESTRANGE, the 38-lb. daughter of COUNT HENGERVELD FAYNE DEKOL. One is out of an 18-lb. junior two-year-old. These bulls are priced for quick sale.

E. F. OSLER

Bronte, Ontario

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



LABELS
Live-stock Labels for cattle, sheep and hogs. Manufactured by the Ketchum Manufacturing Co., Ltd., Box 501 Ottawa, Ont. Write for samples and prices.



Registered Clydesdales

Brood mares and fillies, to dispose of at all times.
JAS. STUBBS, R.R. 1, Caledonia, Ont.

SE
INVESTMENT-SERVICE

ments
rmers

is true that are investing in industrial securities the investment appeals most to still the "First e".

cultivate this very business, we shall time to time well-First Mortgage Real ds.

uch an issue now. to the 6 1/2% First Mortgage Gold Bonds Drummond Apartments, Montreal.

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St. John, N.E.
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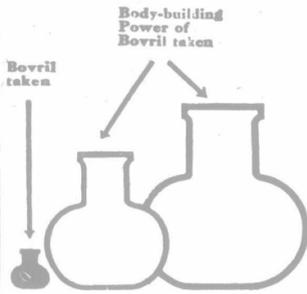
Delicious
COCA
AKE
yourself
CTIONS
COLATE CAKE
1 cup sugar, 1 1/4 cups baking powder, 2 eggs, soda with 1/2 cup sweet-teaspoons cocon with 4 water, 1 teaspoon vanilla, six yolks, butter and sugar, flour and salt; beaten it. Use a cross or colored and cover cake with same.

other delightful
made by using
WAN'S
COCA

recipe booklet to
COMPANY LIMITED
ORONTO

BOVRIL

The great "key food" that makes other foods more nourishing.



Independent scientific experiments have conclusively proved that the Body-building Power of Bovril is from 10 to 20 times the amount of Bovril taken.

WE TALK A LOT ABOUT SYDNEY BASIC SLAG FERTILIZER

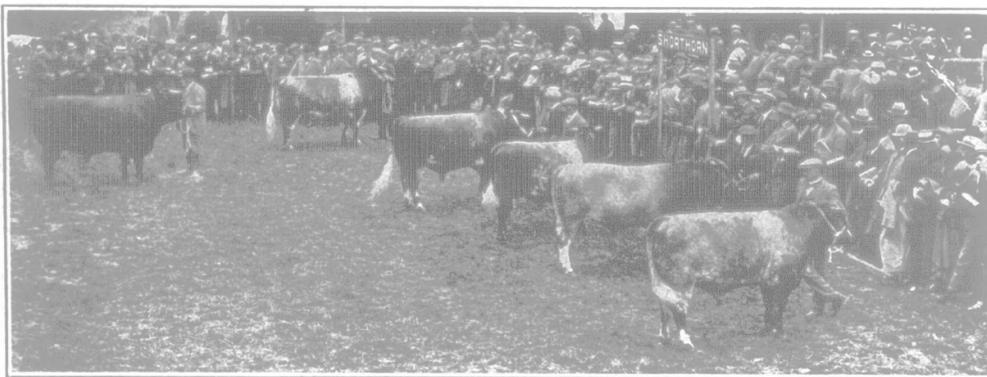
Just can't help it. You see, coming in contact continually with users of the goods and hearing them tell of the wonderful results they obtain, is bound to fill us with enthusiasm too. To be frank with you, we occasionally meet a man who thinks it is "no good." When asked what his opinion is based on, it invariably develops that he has never tried the goods at all, but was told by Mr. "So-and-So." Further investigation often reveals the fact that this Mr. "So-and-So" is interested in the sale of some other goods.

Don't be misled. Ask the man who has used Sydney Basic Slag.

We would be pleased to put you in touch with many users right here in Ontario—possibly some very close to where you live. This is a good way to find out. A better way is to try it for yourself. We have a very interesting booklet, which is free to those who ask. Don't delay—write while it is on your mind.

THE CROSS FERTILIZER COMPANY, LTD.
SYDNEY, NOVA SCOTIA

Address to our General Sales Agent:
A. L. SMITH, 220 Alfred St., Kingston, Ontario



Seventy
Head

For Imported Shorthorns of
The Better Sort

Seventy
Head

— ATTEND —

The Dryden-Miller Sale

EXHIBITION GROUNDS

TORONTO, ONT., WED., FEB. 4, 1920

Seventy Choice Selections. Sixty-one Imported Females.
Three Imported Bulls. Twenty Cows with Calves at foot.

The strongest contingent of imported breeding cattle ever consigned to a Canadian Sale Ring

MANY BREEDERS, both Canadian and American, refer to the Dryden-Miller importation of the fall of 1919 as the "Premier" Shorthorn importation of the past decade. The cattle were not only good individually but the pedigrees too were choice—in fact the lot throughout were right in all the essentials that have made the breed universally popular. It is this same importation that make up the major part of the 70 lots now being catalogued and which will be offered for your own appraisal at Toronto, on February 4th. The offering comprises, twenty cows which will have calves by their side on sale day; ten cows which will freshen shortly after; fourteen two-year-old heifers, and fifteen heifers past the year, all of which are safely settled to British service; four unbred heifers and seven young bulls, making in all seventy choice selections which will all appeal strongly to those who appreciate the best. Further particulars will be given in these columns next week.

For Catalogues address—W. A. DRYDEN, Maple Shade Farm, BROOKLIN, ONTARIO
WM. A. DRYDEN, Brooklin
JOHN MILLER, Ashburn

Watch these columns for further particulars

Auctioneers CAREY M. JONES
"SCOTTY" MILNE
CAPT. T. E. ROBSON

Serial Story---His Family.

Continued from page 91.

"By George," he cried, "he asked you!"

"Yes!"

"And you've taken him!"

"No!"

Roger gasped.

"Look here!" he demanded, angrily.

"What's the matter? Are you mad?" She threw back her head and laughed at him.

"No, I'm not—I'm happy!"

"What the devil about?" he snapped.

"We're going to wait a bit, that's all, till we're sure of everything!" she cried.

"Then," said Roger disgustedly, "you're smarter than your father is. I'm sure of nothing—nothing! I have never been sure in all my days! If I'd waited, you'd never have been born!"

"Oh, dearie," she begged him smilingly. "Please don't be so unhappy just now—"

"I've a right to be!" said Roger. "I see my house agog with this—in a turmoil—in a turmoil!"

But again he was mistaken. It was in fact astonishing how the old house quieted down. There came again one of those peaceful times, when his home to Roger's senses seemed to settle deep, grow still, and gather itself together. Day by day he felt more sure that Deborah was succeeding in making her work fit into her swiftly deepening passion for a full happy woman's life. And why shouldn't they live here, Allan and she? The thought of this dispelled the cloud which hung over the years he saw ahead. How smoothly things were working out. The monstrous new buildings around his house seemed to him to draw back as though balked of their prey.

On the mantle in Roger's study, for many years a bronze figure there, "The Thinker," huge and naked, forbidding in its crouching pose, the heavy chin on one clenched fist, had brooded down upon him. And in the years that had been so dark, it had been a figure of despair. Often he had looked up from his chair and grimly met its frowning gaze. But Roger seldom looked at it now, and even when it caught his eye it had little effect upon him. It appeared to brood less darkly. For though he did not think it out, there was this feeling in his mind:

"There is to be nothing startling in this quiet home of mine, no crashing deep calamity here."

Only the steadily deepening love between a grown man and a woman mature, both sensible, strong people with a firm control of their destinies. He felt so sure of this affair. For now, her tension once relaxed with the success which had come to her after so many long hard years, a new Deborah was revealed, more human in her yieldings. She let Allan take her off on the wildest little sprees uptown and out into the country. To Roger she seemed younger, more warm and joyous and more free. He loved to hear her laugh these nights, to catch the glad new tones in her voice.

"There is to be no tragedy here."

So, certain of this union and wistful for all he felt it would bring, Roger watched its swift approach. And when the news came, he was sure he'd been right. Because it came so quietly.

"It's settled, dear, at last it's sure. Allan and I are to be married." She was standing by his chair. Roger reached up and took her hand:

"I'm glad. You'll be very happy, my child."

She bent over and kissed him, and putting his arm around her he drew her down on the side of his chair.

"Now tell me all your plans," he said. And her answer brought him a deep peace.

"We're going abroad for the summer—and then if you'll have us we want to come here." Roger abruptly shut his eyes.

"By George, Deborah," he said, "you do have a way of getting right into the heart of things!" His arm closed about her with new strength and he felt all his troubles flying away.

"What a time we'll have, what a rich new life." Her deep sweet voice was a little unsteady. "Listen, dearie, how quiet it is." And for some moments nothing was heard but the sober tick-tick of the clock on the mantle. "I wonder what we're going to hear."

And they thought of new voices in the house.

(To be continued.)

His Family.

from page 91.
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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.

BRED-TO-LAY BARRED ROCKS—COCKERELS three dollars and pullets two-fifty. A. Donaghy, Colborne, Ont.

CHINESE GEESSE FOR SALE—THREE DOLLARS each. Mrs. M. A. Howard, R.R. No. 2, Ilderton, Ont.

INDIAN RUNNER, MUSCOVEY, WILD Mallard ducks, White Guineas, Barred Rocks. Mrs. John Annesser, Tilbury, Ont.

LIGHT BRAHMAS, S.-C. BLACK MINORCAS, Canada's best strains, \$4 each. Satisfaction guaranteed. Chas. Gould, R. 1, Glencoe, 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 2,034 eggs in eleven months. F. Coldham, Box 12, Kingston, Ont.

WHITE WYANDOTTE COCKERELS BRED from our Guelph champions 1919, \$4.00 up. Extra good laying strain. Satisfaction guaranteed. R. Trivett, Newmarket.

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
Catsville Ontario

FOR SALE
Barred Rock Cockerels
The O.A.C. bred-to-lay strain. Finely barred, single comb, rich yellow legs; sisters laid at 5 months. Prices—One \$4, two \$7, three \$10.
A. H. CROZIER
Meadowvale Ontario

Mrs. David Lloyd George took her seat on Jan. 8 in the Quarter Sessions as the first Welsh woman magistrate.



Freeman's High-Grade Fertilizers

For Bigger and Better Crops
The Best That Money Can Buy

Freeman's High-Grade Fertilizers build up impoverished lands—impart maximum strength and vitality. They help you secure bigger and better crops without extra labor or acreage.

Freeman's High-Grade Fertilizers have proven their worth every year for 40 years—they are a certainty, not an experiment. Just the correct proportion of Ammonia, Phosphoric Acid and Potash.

Different Brands for Different Crops

Write to-day for complete information regarding Freeman's High-Grade Fertilizers, as they apply to your particular problem.

AGENTS WANTED FOR UNOCCUPIED TERRITORY.

W. A. Freeman Company, Limited
HAMILTON ONTARIO

HORSES

ETC.

Union Stock Yards of Toronto Ltd.
Auction Sales every Wednesday at 11 o'clock.
Private Sales Daily.

Our 15th Annual Breeders' Sale
of registered
Clydesdale, Percheron Shire and Belgian
Stallions, Mares, Colts and Fillies will be held this year

March 4th and 5th

Entries will be catalogued and sold in the order received, therefore, those who prefer the best place in the Sale should send their entries in at once.

The Stock Yards Company has decided to make this Annual Sale the most important one in Canada to draught horse breeders, and will spare no expense in advertising it in every Province.

Parties having first-class stock to dispose of will avail themselves of the best possible market, by making entries and holding their stock for this sale.

Entry forms and all information will be mailed on application.

This is a spot-cash Sale, don't fail to take advantage of it.

UNION STOCK YARDS
of Toronto, Ltd.
Walter Harland Smith, Manager Horse Dept.

Crate-Fattened Poultry

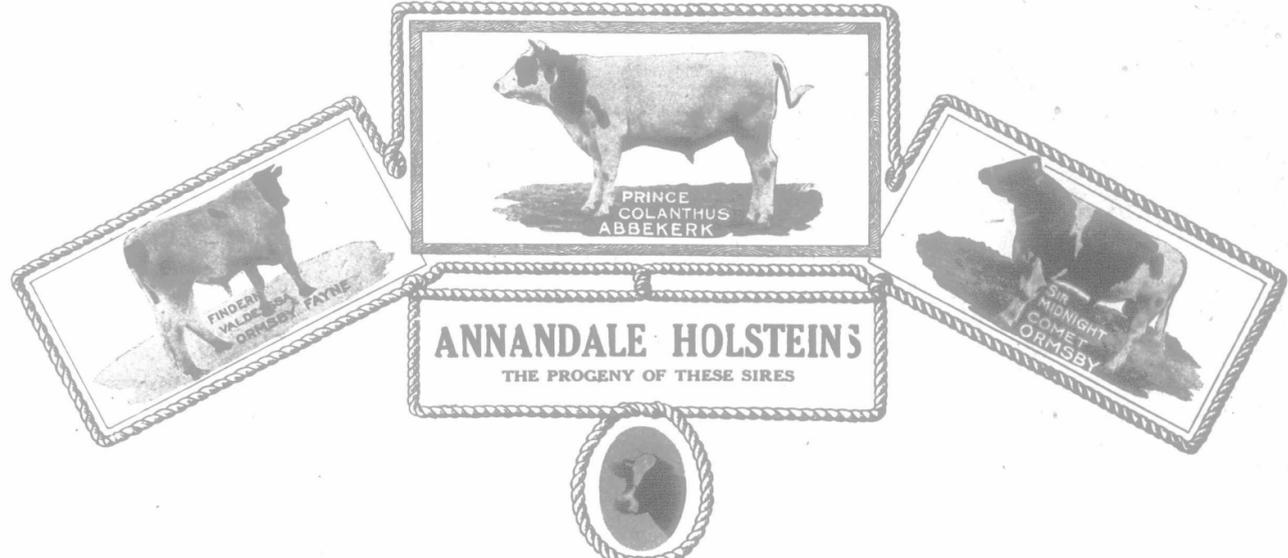
We are open for shipments of crate-fattened poultry. Highest market prices paid, according to quality.

HENRY GATEHOUSE & SON
Fish, Oysters, Game, Poultry, Eggs and Vegetables.
144-350 West Dorchester Street, Montreal

Home Camouflage.—Neighbor—"My dear, why are you covering your jam-pots with wall-paper?"

Efficient Mother—"Camouflage. It's the same paper as that on the pantry walls."

Dispersion Auction Sale



THURSDAY, JANUARY 22nd, 1920

AT ANNANDALE FARM IN TILLSONBURG, ONTARIO, at 12.30 noon

The Beginner's Chance. Such high-quality stock as is offered in this sale often sells below its actual value, and we are sure the beginner in Holsteins will find this a favorable opportunity to secure good foundation stock at rock-bottom prices. Come to the sale and buy something upon which to build a good herd. Included will be that greatest of all Canadian sires, Prince Colanthus Abbecker, with 20 of his daughters and 5 of his sons. There will be 14 daughters of Finderne Valdezza Ormsby Fayne, whose

dam is a 23-lb. 4-year-old daughter of the first 41-lb. cow—3 daughters of Sir Midnight Comet Ormsby, a son of a 34-lb. 4-year-old.

Three sisters of Magadora of Avondale, the 100-lb. cow who recently sold for \$1,000. Oakhurst Butter Girl, with 18½-lb. at 2 year-old, and her 5 daughters—and many winners at the big fairs.

If you want to get started in the best Holstein blood lines, plan to attend this sale—and buy. Write us for particulars about railway connections. Tillsonburg is on all lines.

WILBER C. PROUSE
PROPRIETOR, TILLSONBURG, ONT.

A. E. HULET
SALES MANAGER

MOORE & DEAN
AUCTIONEERS

(continued.)

Such a help in cooking!

OXO CUBES save many an hour for busy cooks. So many dishes can be improved by simply dropping in one or two OXO CUBES.

Dye That Skirt, Coat or Blouse

"Diamond Dyes" Make Old, Shabby, Faded Apparel Just Like New.

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.



Advertisements will be inserted under this heading, such as Farm Properties, Help and Situations Wanted and Pet Stock. TERMS—Four cents per word each insertion. Each initial counts for one word and figures for two words. Names and addresses are counted. Cash must always accompany the order. No advertisement inserted for less than 60 cents.

AMBITIOUS YOUNG MARRIED MAN DESIRES position as working foreman on farm, or would consider percentage proposition. Owner to furnish everything. Address, Box 2, Bridgeburg, Ont.

BLACK, WHITE AND TAN TRI-COLOR Collie pups. Handsome, intelligent heblers. Males \$8, females \$5. A. E. Bawtinheimer, Shedden, Ont.

COLLIE PUPPIES—MALES—BRED HEELERS. R. S. Nichol, R. 2, Wilton Grove, 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 loan, 25 acres of hardwood timber, mostly sugar maple; new basement barn 40x108. This is a splendid dairy farm. Apply to Nathaniel Carrothers, Wilton Grove.

MAN WANTED AT ONCE—MUST BE CAPABLE of handling stock (Pure-bred Holsteins), also mechanical milker, tractor, etc. State wages required in first letter. M. Shantz, Ayr, Ont.

SINGLE MAN, THOROUGHLY EXPERIENCED in farm work, wanted at once. Good home; yearly contract; best wages; near Toronto, offered to good man. Box 76, Farmer's Advocate, London, Ont.

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

WANTED—FIRST-CLASS STABLE MAN to care for a Jersey herd. Must be active and willing, kind to cows at all times; assist with milking machine. Wages \$650, with board and washing. Also bright boy, 16 or 17 years old, as assistant in barn and dairy. Wages \$500. Kindly state age and experience in first letter. R. & A. H. Baird, R.R. 1, New Hamburg, Ont.

WANTED BY MARCH 1ST, CAPABLE AND reliable man for mixed farming, wife to help milk; send references; countryman preferred. Cottage, garden &c. supplied. Peel Co. W. L. Davidson, Meadowdale, Ont.

WANTED—AN EXPERIENCED FARMER and his wife to help on the Glen Dhu Dairy and Poultry Farm at Whirby, Ontario. Applicant must have practical experience in farming, and we can employ the wife for the poultry department. This job is not practical if you have young children. Can put a son on wages from 15 years up. E. E. Wallace, 100 Stanley St., Montreal.

WANTED BY FEBRUARY FIRST—MARRIED man and wife; yearly engagement; both must be efficient, experienced and cheerful workers. Daughter of eighteen years could also find employment assisting in house. Good home, salary and conditions are offered; near Toronto. Apply Box 74, Farmer's Advocate, London, Ont.

WANTED BY EXPERIENCED CANADIAN farmer (married) March first or sooner, position as working manager on stock and dairy farm. Best references. Only first-class farm and good wages accepted. State privileges. Apply Farmer's Advocate, Box 72, London, Ont.

WANTED BY EXPERIENCED FARMER and stockman, work on good farm for self and 3 sons. House for family. Box 70, Farmer's Advocate, London, Ont.

President Wilson wishes the question of the League of Nations submitted to the voters of the United States as a Referendum.

Current Events.

Continued from page 90.

Thousands of helpless women and children in Armenia are dying slowly of starvation. Contributions towards their relief may be sent to Mr. D. A. Cameron, Bank of Commerce Building, Cor. King and Jordan Sts., Toronto.

Maurice Maeterlinck, the famous Belgian author, and Madam Maeterlinck, arrived in New York recently. They will remain in America for 3 months, and M. Maeterlinck will give a series of lectures.

On January 6, Santerri Nourteva, Sec. of the Russian "Soviet Government" Bureau, asserted at Washington, that the recent man-hunt carried on by the U. S. Dept. of Justice against "Reds" was an attempt to prevent peace with Soviet Russia. He declared that plots had been fixed up to throw blame upon the Reds, and asked that Mr. Marten's ("Soviet Ambassador") and himself be permitted to appear before the Senate sub-committee.

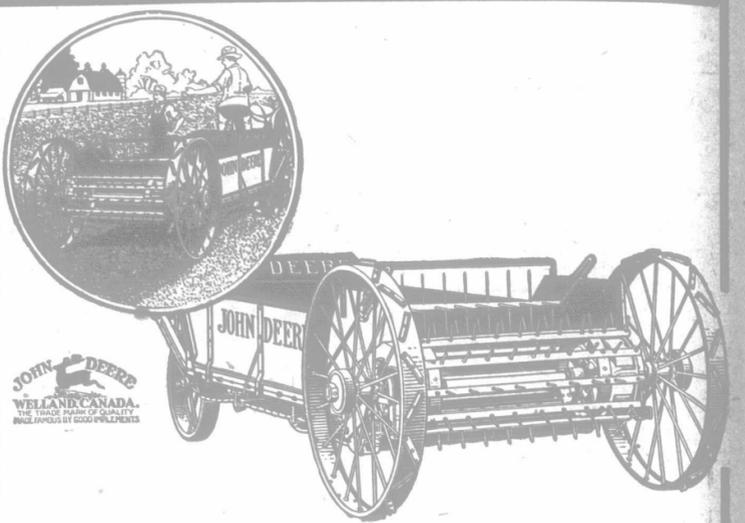
The Japanese are proposing legislation permitting foreigners to own land in Japan and removing certain other anti-alien restrictions.

Bolshevik forces have reached Irkutsk, on the western shore of Lake Baikal. Admiral Kolchak's forces have been cut off. The railroad tunnels of the Trans-Siberian line at Lake Baikal are now guarded by Japanese troops, evidently to prevent the Russian Reds from using them, and a representative of Japan has gone to China, where Gen. Semenov is now located, to confer with him.

In Southern Russia Gen. Denikine's forces have been cut in two by the Bolsheviks who have penetrated as far as the Sea of Azov and taken Taganrog; in consequence of which many of the populace of Odessa are flying to Constantinople. In the Ukraine Polish forces have advanced and taken the place of Denikine's troops. In the Northwest an armistice has been signed between Esthonia and the Soviet Government.

The world war was formally ended at 4 o'clock, on the afternoon of Jan. 10th, when, in the Clock Hall of the French Ministry of Foreign Affairs, the representatives of the Powers which had approved the Versailles Treaty deposited their certificates of ratification and made the signatures which put the Treaty into effect. The ceremony was very simple. Diplomats from nearly all the nations of the world were present, but there was no pomp of any kind. At 2 minutes after 4 Baron von Lersner, head of the German delegation, arose and affixed his signature to the document. He was quickly followed by Premiers Lloyd George, Clemenceau, Nitti, and Baron Matsui of Japan. Then the delegates of the following nations signed in the order named: Belgium, Bolivia, Brazil, Guatemala, Panama, Peru, Poland, Siam, Czecho-Slovakia, and Uruguay. The following countries, not having ratified the treaty with Germany, did not sign: The United States of America, China, Greece and Roumania. In conformity with the Peace Treaty Premier Clemenceau at once telegraphed to the following neutral countries that the Treaty is now effective, and asked them to join the League of Nations: Argentina, Chile, Colombia, Denmark, Spain, Norway, Paraguay, Holland, Salvador, Sweden, Switzerland and Venezuela. Following the signing of the Treaty trade relations were at once begun between the countries that signed and Germany. In an interview with the Press, Baron von Lersner stated that, notwithstanding the heavy sacrifices demanded of her, Germany will fulfil her obligations, including reparation for the vessels sunk at Scapa Flow. The first meeting of the Council of the League of Nations will be held at Paris on Jan. 16. The date was set by Premiers Clemenceau, Lloyd George and Nitti, and was at once cabled to President Wilson, that he might issue the call formally in accordance with the duty placed upon him by the Versailles Treaty.

A time of going to press it is stated that Admiral Kolchak, head of the All-Russian Government in Siberia, has been arrested at Irkutsk by Col. Popoffayev.



Many Exclusive Features on John Deere Low Down Manure Spreaders

The John Deere Low Down Manure Spreader is different and better. It has many **exclusive features**—all protected by patents. It does better work, lasts longer, costs less for repairs and is easier to load and operate.

The John Deere is the **only gear-driven spreader on the market.** The gears are covered—they are watertight and cannot freeze or become clogged. The beater is mounted on the axle. There are no clutches, no chains to get out of order.

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WRITE OR CALL AT NEAREST BRANCH.

Copy of Judgment re Sunday Milk Delivery at Aylmer.

In the fall of 1919 a good many of the dairymen were very much interested in the case in Court, in the County of Elgin, between The King VS Carnation Milk Products Company, it being claimed that the Company did unlawfully carry on work on the Lord's Day. The following is the judgment given by His Honor, Judge Ermatinger. It will be noted that Sunday work is considered necessary to the proper care of milk only in hot weather. The judgment is an important one, both from the standpoint of the farmer and of the manufacturer of dairy products. Angus McCrimmon, the County Crown Attorney for Elgin, acted for the prosecution, and Thomas Hobson, K. C., of Hamilton, and W. H. Barnham, barrister, at Aylmer, acted for the defendants. The following is the judgment given from the first Division Court in the County of Elgin.

The charge against the defendants was that the aforesaid Company on the first day of June, 1919, at the Town of Aylmer, County of Elgin, did unlawfully carry on its ordinary calling as manufacturers, of Carnation Sterilized Milk, and in connection with the said ordinary calling for gain employ, then and there, among other people, John T. Coyle and others in contravention of the Lord's Day Act, Chap. 153, Sec. 5 of the revised Statutes of Canada.

On 18 August the charge was dismissed by the Police Magistrate.

An appeal was taken to this Court and after several adjournments and hearing much evidence, in addition to that taken before the magistrate, and after very full and able arguments presented by Counsel on both sides, judgment was reserved by me, Sunday work having ceased, altogether, for the fall and winter season, and the case deserving careful consideration as being of interest to the public as well as to the defendants and their patrons. The extension of the notes of the mass of evidence given had also occasioned necessarily some delay.

The Lord's Day Act prohibits on the Lord's Day all work business or labor of one's ordinary calling, or for gain, except works of necessity or mercy, which latter are to include (though not restrictively as to the meaning of those words) among a considerable list of exceptions:

(d) Starting or maintaining fires, making repairs to furnaces, and repairs in cases of emergency and doing any other work, when such fires, repairs or work are essential to any industry, or industrial process of such a continuous nature that it cannot be stopped without serious injury to such industry or its product, or to the plant or property used in such process:

(m) The caring for milk, cheese and live animals, and the unloading of and caring for perishable products and live animals, arriving at any point during the Lord's Day:

(r) The delivery of milk for domestic use and the work of domestic servants and watchmen

It is admitted that work was done on the Lord's Day in question at the defendant company's factory, but such work, it is claimed by the defence, was work "of necessity" under the general exemption of Section 12 as well as under the above specified subsections. The work done in collecting and transporting the milk from the various farms to the factory was, it was claimed, done by certain of defendants' patrons, at the expense of the whole of the patrons, who sent in their products, though paid by the Company, and deducted from each patron's cheque. Some of the patrons haul their own milk. Presumably the trucks used by those who hauled the cans of the others were the Company's trucks, though I do not find any evidences as to this. It was agreed by the defence that the work done by these haulers was not work done by the Company nor by their employees as specified in Section 15 of the Act.

Counsel for the prosecution claimed that (1) the clauses and sections of the Act cited by the defence were not intended to relieve manufacturers of milk products, but to relieve the producer—the farmer—only.

(2) That there is a distinction between milk delivery for manufacture and delivery for consumption—the latter only

being work of necessity as defined by the Act.

(3) That there is a distinction between avoidable and absolute necessity, and that this was a case of avoidable necessity according to the evidence.

The evidence of a considerable number of responsible farmers who milked a large number of cows was to the effect that no necessity existed for milk being received at the factory on Sunday as they themselves had had little or no loss and little or no trouble in caring for their milk at home over Sunday and disposing of it on Monday either at defendants' factory or some other, or by churning into butter, or sending to a creamery, feeding refuse in some cases to the hogs, etc. These farmers were, I am satisfied, perfectly honest in their statements and conclusions. Some took every precaution to keep their cattle and those who milked them clean, and healthy, and the milk uncontaminated covered, in exceptionally cool water, and unshaken. Some who lived farther from the condenser, who had not such cool water wells, and some who were possibly less careful as to cleanliness of the cattle and their vessels, had their Sunday's milk sometimes returned to them, while some of the more careful class, who were not too far from the Condenser and had good cool water, suffered little or no loss in this way.

The evidence of the analytical chemists is to the effect that milk is one of the most perishable, if not the most perishable of foods, that acidity begins and continues to increase from the time the milk is taken from the cow. Mr. McLaughlin, public analyst of St. Thomas, testified that fresh milk procured in weather at a temperature of 60 degrees and kept under favorable conditions at that temperature for 24 hours showed more than 22 degrees of acidity. When it reaches more than 20 one-hundredths of acidity it is unfit for the food product made by defendants, according to their manager's evidence. According to their chemist, it might be useful at 21 one-hundredths, but not at 22. That milk 24 hours old would be no good for their product unless freed from bacteria and cooled down to a temperature of 40 degrees by ice or refrigeration unless pasteurized. The reason, the manager states, they began taking milk on Sunday was that it reaches more than 20 one-hundredths of acidity, if taken in on Monday. He produced cans showing the company's pure product, and also the product of Sunday milk taken in on Monday, which as contrasted with the former was much coagulated and unfit, he states, for human consumption. He also described the process of condensation, by heating, which is performed on Sunday at the factory, and takes about 1½ hours. He testified that quantities of Sunday milk had to be returned to farmers when delivered on Monday, from 20 to 220 cans, eighty pounds to the can, also that 8,500 pounds were manufactured in 1917 on one June day, which had to go for hog feed, and to the dump.

Thirteen men were employed on the Sunday in question, and other Sundays, I presume, during the hot weather, five in caring for machinery, and fires, who, I understand would be so employed (necessarily) on Sundays, whether milk was being received on that day or not. Eight other men were employed, six in receiving, and 2 in condensing and cooling, as compared with 59 on week days of the same week. There were 409 patrons on June 1st whose milk had to be cared for, to the extent of 75,086 pounds, or about 34,000 quarts. Eighteen haulers brought the milk of these 409 patrons, or those of them who did not haul their own milk, to the condenser, the haulers themselves, as I understand, included.

Assuming for the moment that the defendant company are not bound to change their product by installing a new plant to turn the Sunday milk into sweetened milk, or powdered milk or cheese, butter or something else, to the making of which bacteria and acidity are not so fatal, conceding this, I am forced to the conclusion that Sunday work on the part of farmers, early Sunday morning employees, at the receiving stations and condensers, when no Sunday delivery is allowed would exceed in numbers employed, and probably in total number of hours of work, of those employed in hauling, receiving, and condensing at the factory while Sunday delivery was permitted.

The conscientious and good farmers and



Food Up 85%

So statistics show at this writing, compared with pre-war cost. That's the average on common foods.

On this account, about 9 in 10 are underfed. So states a Chicago Board of Health authority.

That is, most men don't get what men must have—3,000 calories of nutriment per day. So the facts here stated are of paramount importance.

One Cent Per Dish

Buys the Supreme Food—Quaker Oats



One Cent
buys a big dish of Quaker Oats.



One Cent
buys but a bite of meat or a bit of fish.



One Cent
buys ½ an egg, or a small potato.



One Cent
buys a slice of bacon, or a single muffin.

Quaker Oats is prepared from the greatest food that grows.

It is almost a complete food—nearly the ideal food. In energy units it yields 1810 calories per pound, while round steak yields 890.

Yet Quaker Oats costs one cent per big dish. A whole dish costs you no more than a bite of meat.

Saves You 88%

Foods are compared by calories, the energy measure of food value. A man must have at least 3,000 calories per day, a boy at least 2,000.

At this writing, some necessary foods cost as follows on this basis:

Cost Per 1000 Calories

Quaker Oats	51c
Average Meats	45c
Eggs about	70c
Average Fish	50c
Vegetables	11c to 75c

So Quaker Oats, per 1,000 calories, costs you 88 per cent less than meats, eggs and fish on the average.

Let Quaker Oats cut down your breakfast cost. Serve the costlier foods at dinner.

Quaker Oats

With That Matchless Flavor

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plump, flavory oats. We get but ten pounds from a bushel. Don't miss this extra flavor when it costs no extra price.

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will clean it off without laying up the horse. No blister, no hair gone. Concentrated—only a few drops required at an application. \$2.50 per bottle delivered. Describe your case for special instructions, and Book 8 R free. ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful Swellings, Enlarged Glands, Wens, Bruises, Varicose Veins; allays Pain and Inflammation. Price \$1.25 a bottle at druggists or delivered. Liberal trial bottle postpaid for 10c.

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Keep Dirt and Filth Out of the Milk
by clipping the cow's flanks and udder every month. Then with a damp cloth wipe the parts off in a hurry. There is no long hair to hold the dirt and the milk is clean and wholesome as it falls into the pail. Clipping all over twice a year is good for the cows. A Stewart No. 1 Machine is best. It will clip hooves also. Get one from your dealer or write direct to us.

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Our raw materials have come forward most irregularly, due to strikes in the mines some months ago, and the present railway car shortage and soft coal cut-off. Our advice is—go to your dealer and order a full supply of GUNNS "SHUR-GAIN," and arrange to take delivery in January or February at latest. Avoid the last-minute scramble to get your fertilizer. Users of Gunns "SHUR-GAIN" have told us that they have received \$3 or \$4 cash returns for every dollar spent on it.

Gunns "SHUR-GAIN" gives your soil the complete blend of nitrates, phosphoric acid and potash you need for bumper crops.

Gunns SHUR-GAIN Fertilizers

SEE YOUR DEALER TO-DAY!
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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

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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.

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Nine extra good young bulls for sale. Also female all ages. Show-ring quality.

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Sunny Side Herefords—Choice bulls and heifer calves, young cows with calves at foot. Reg. Shropshire ram-ewe and ewe lambs. Inspection invited. All are priced to sell.
Arthur F. O'Neil & Sons, R.R. No. 2
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cattle men, who object to Sunday Labor, and are fortunately able to care for their own milk, with little or no trouble or inconvenience, are free to send it to the Condenser or not as they may choose. On Sunday in summers. Unfortunately all are not equally fortunate in respect to cool wells of water, nearness to other markets or plants, intelligent and cleanly families and employees, and other advantages. In the days when Sabbath observance was instituted in the wilderness there was direct Divine provision made, not only to insure food in plenty, but rest on the Sabbath as well. A double portion had to be collected on the previous day for no manna was found on the Sabbath, but that gathered the previous day "did not stink, neither was there any worm therein" (Exodus 16-24), as at other times Under the Christian Dispensation, we are left to make our own rules for observance of the Lord's Day. The cows must be milked, and bacteria and acidity attack the milk on that as on other days, and we must meet these conditions as best we can. The Lord's Day Act is intended to provide for them.

Have the defendants shown themselves to have come within the exceptions in the Act, in doing what they did on June 1st last? Could not the Sunday milk be cared for on Monday, otherwise than on other days of the week, by making sweetened milk, cheese, or some other product of it? To do this, the defendants would have to establish an additional plant at a large expense and engage in what would practically be another industry. I do not think they should be called upon to do so. Their product seems to be a pure and nutritious one, being milk unalloyed with other ingredients. It affords food suitable alike for adults and infants, for army and navy, workers at home and abroad, in forest or mine. It is milk, which the Act allows of being cared for on Sunday, even though it be condensed.

To sum up—I find that the work done by defendants at their factory on June 1st was a work of necessity within the meaning of Section 12 of the Lord's Day Act.

Also that such work fell within subsection (d) of said Sec. 12, as being work essential to an industry of such a continuous nature that it could not be stopped without serious injury to such industry.

Also that such work was a "caring for milk" within Subs. (m) of said Sec. 12, and that said subsection covers work by manufacturers of this character, and not exclusively work by the producer on farm or in dairy. The "caring for cheese", a manufactured article, is provided for in the same subsection.

Subsection (r) referring to the delivery of milk for domestic use etc., has, I think, no application here.

It has been suggested that defendants contemplate more extensive Sunday work. Though there is no actual evidence of such intention before me, I may say that it would be well for the defendants to confine their operations to such "work of necessity" as that done by them the past summer, and that only when warm weather renders it necessary.

Our Lord's Day Act is not only intended to preserve the sanctity of the Lord's Day, but to promote the general welfare in an industrial and economic, as well as a religious and humanitarian sense. The appeal will be dismissed.

Through the courtesy of the Secretary of the Clydesdale Horse Association, a copy of Volume 27 of the Clydesdale Stud Book has been received at this office. It is a volume containing over 700 pages, giving the pedigrees of stallions numbering from 19879 to 21094, and of mares from 40230 to 42575. The constitution as amended in 1917 is given, together with a report of the last annual meeting. All interested in Clydesdale would find it to their interest to have this volume in their libraries. The award^s at the Ontario Provincial Winter Fair^s 1918, and the Ottawa Winter Fair^s, 1919 are given, together with the awards at the Western Fairs.

Attention is herewith drawn to A. M. Crozier's advertisement of Barred Rocks, which appears in another column of this issue. Mr. Crozier has a particularly large flock of the bred-to-lay strain, and is prepared to supply breeding stock and eggs.

Royal Purple Stock and Poultry Specifics and Foods.

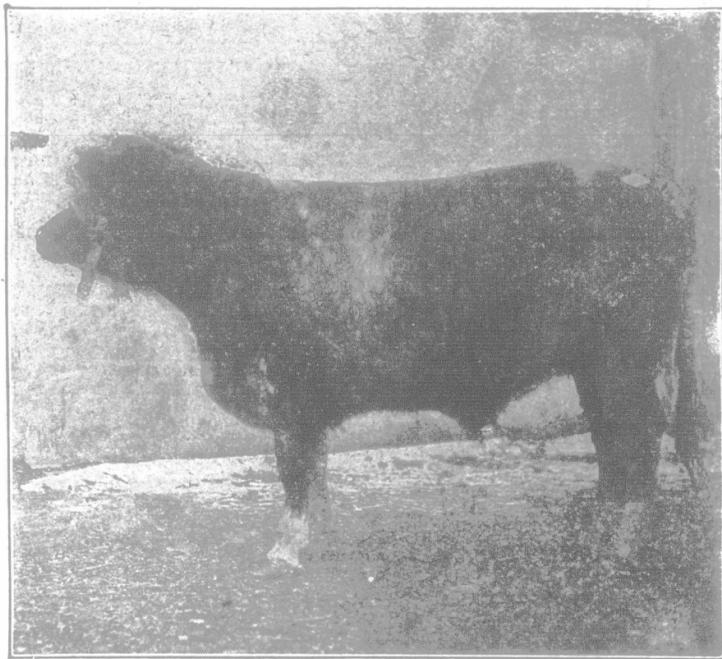
In the manufacture of all our Stock and Poultry Condition Powders and Remedies we eliminate the cheap filler which is used by many manufacturers to make up a large package, and give you pure material which you can adulterate yourself if you wish. Mr. Farmer, how does this appeal to you?

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is a pure unadulterated condition powder, it is not a dope. It can be used throughout the entire feeding season and will not do your animals one iota of harm, works entirely on their digestive organs, causes them to assimilate the foods properly and digest every particle of food value. Fifty-five to sixty per cent. of food value is a fair average of what the animal takes out of its food without this condition powder: it makes their coats sleek and causes them to take on a healthy appearance in a very short time.

What We Claim For It

Cows will give from three to five pounds more milk per day during the winter months. You can fatten pigs a month earlier, have larger and better pigs and save a month's time and feed. You can fatten horses ready for sale in four to six weeks. If you don't believe us try a 60c. package on the worst animal you have on your place and be convinced. How many times have you said to yourself, "No matter how much I feed my animals they do not seem to thrive". This, Mr. Farmer, is because your animals are not in a healthy thriving condition. Royal Purple Stock Specific will compel them to put on a thrifty appearance in a short time and yet it will cost you less than 15c. per month per animal to use it. Put up in 60c. packages, \$1.75 and \$8.00 tins. If you have a lot of stock buy the large tin. It contains sixteen 60c. packages.



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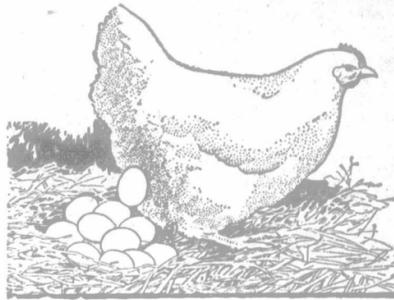
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Royal Purple Calf Meal

There is probably no mixed feed on the Canadian market that the farmers have been buncoed more on than Calf Meal. You cannot make a substitute for milk with less than 10% Fat or over 20% Protein. Calves are entirely different from grown animals. You must supply them with material as much like milk as possible. In our Royal Purple Calf Meal we have a product on which you can raise calves after they are eight days old just as well as though you used new milk. At the Toronto Fat Stock Show this year there were eight calves shown not over a year old that averaged over one thousand pounds each, that were fed on this meal. If you will write us for our new booklet we will send you the full particulars and photographs of all these calves. Mr. Farmer, when you want calf meal you see that it contains over 10% Fat. Unscrupulous dealers and manufacturers are making meals that do not contain more than 7% fat and a large percentage of protein. Many of these meals are no better than ordinary dairy feeds. Fat costs two and a half to three times as much as protein in any market but you must have it in calf meal to make a substitute for milk. Our Royal Purple Calf Meal is put up in 25, 50 and 100-lb. bags.

Royal Purple Poultry Specific

If your hens are not laying after the first of January it is because they are not housed properly and are in an unhealthy condition. There is no excuse for hens not laying if they are fed and housed properly. Our Royal Purple Poultry Specific, if used in the mash given them, will make them digest their food properly, make their digestive organs healthy and active and will produce the eggs for you as well in the winter as in the summer. The eggs are formed in batches from ten to fifteen, from the large egg down to the size of a pin head. If the hens are not healthy nature will lie dormant. As soon as our Poultry Specific is used nature becomes active. This is why so many people get eggs in a few days after using our Specific. If you do not get eggs it is your own fault. This Specific is put up in 30c. and 60c. packages, \$1.75 and \$8 tins.



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made from all kiln dried white grains. You can raise 95 to 98% of your young chicks with this food, put up in packages and bags.

We also manufacture the following valuable brands:

- Royal Purple Lice Killer in 30c. and 60c. tins.
- " " Cough Cure in 60c. tins.
- " " Sweat Liniment in 60c. bottles.
- " " Disinfectant in 35c., 65c. and \$1.40 tins.
- " " Roup Cure in 30c. and 60c. tins.
- " " Worm Powder in 30c. and 60c. tins.

Every article we make is guaranteed to do exactly as represented.

For Sale by reliable dealers everywhere. If you cannot get any of the above articles from your dealer write us direct.

FREE—Write us and we will send you one of our new books that are now being published, giving you all the common diseases of stock and poultry, how to treat them, how to build a hen house, and wilderness of valuable information.

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of Hallam's Paste Animal Bait

Enough for 2 or 3 sets— attracts all flesh eating animals—is put up in tubes (like tooth paste)—not affected by rain or snow. Economical to use, handy to carry.

Also Hallam's Trappers and Sportsmens Supply Catalog—48 pages, English and French—showing Animal Traps, Guns, Ammunition, Fish Nets, etc. All at moderate prices.

Sample bait and catalog Free for the asking—send to-day.

when you ship your RAW FURS

John Hallam Limited 506 HALLAM BUILDING, TORONTO.

Address in full as below

Glenhurst Ayrshires headed by Mansfield Mains Sir Douglas Hague No. 16163 Imp. have been noted for their depth and size, good teats and smoothness of conformation. If you are looking for a combination of size, type, and production—plus high 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

1854 Maple Lodge Stock Farm Shorthorn Cattle and Leicester Sheep "Hean Dorothy Star" 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, Clondeboye, 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.
DUNCA NBROWN & SONS, Shedden, Ont., P. M. M. C. R.

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 Kinlock (imp.) 12248, safe in foal.

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. GERRIE, C.P.R. Station on farm. Bell Phone. BELLWOOD, ONTARIO

Spring Valley Shorthorns
—Herd headed by Sea Gem Pride = 96365 =. Present offering includes two real herd headers. One imported 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.

SHORTHORNS (PURE SCOTCH)
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

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 farmer's bulls. Cows and heifers in calf. Yearling and heifer calves. Yorkshires either sex. T. W. McCamus, Gavan, C.P.R., Millbrook, G.T.R. and P.O., Ontario.

ROBERT, MILLER, Stouffville, Ont. Has EIGHT of the best young bulls that he fully bred. Also several cows and heifers, some of them with calves at foot, others in calf to Rosemary'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.

THE HAWTHORNE SHORTHORNS AND CLYDESDALES
Herd headed by "Gainford Select" = 90772 = by "Gainford Marquis" (imp.). Heifers and cows in calf to him, and six bulls, mostly by our former sire "Royal Choice." Clydesdale mares and fillies, imported and Canadian-bred. Leicester sheep. Prices moderate.
ALLAN B. MANN, Peterboro, R. R. 4, Ont.; The Hawthornes, C.P.R. and G.T.R.

Questions and Answers. Miscellaneous.

Correspondence School.

What is the address of a correspondence school in Canada? H. M.

Ans.—The Canadian Correspondence School, Toronto, Ontario.

Sweet Clover.

Is sweet clover a suitable pasture for fattening steers? I have 16 acres seeded with sweet clover and I never had my cows do better than they did all last fall. F. S.

Ans.—Sweet clover has proven as valuable a pasture crop for fattening steers as for milch cows.

Hog Pasture.

Would you recommend alfalfa as a hog pasture? What age hogs should be pastured? In what part of Ontario does alfalfa grow the best? J. M.

Ans.—Alfalfa makes an ideal pasture for hogs. They should not be allowed to crop it too closely however. Pigs may be run on pasture before they are weaned, but best gains are usually made with pigs over three months of age. Alfalfa seems to grow best in Haldimand County, or on that ridge of land running through the Niagara Peninsula.

Lectures at O. A. C.

How many hours of lecture and how many hours of practical work do the students have at the O. A. C., Guelph? A. D.

Ans.—It depends on the year they are in. The lectures usually commence at 8.30 in the morning and last until 12, and from 1.30 in the afternoon until 4 or 4.30. The afternoons are given over largely to practical work in the laboratories. The first-year students have two half-days a week of practical work on the farm. By writing the President of the Ontario Agricultural College, Guelph, you would obtain a College Calendar which will give the exact number of hours devoted to the various subjects.

Periodic Ophthalmia.

A young horse has a scum over his eye. It comes on gradually and goes away after a week or so. There is no discharge. He is practically blind in this eye when the scum is on it. Can it be cured? Will the trouble affect the other eye in time? R. C.

Ans.—This is a case of periodic ophthalmia. It is a constitutional disease which appears without apparent cause, and after a few attacks usually results in blindness from cataract. Administer a laxative of 1½ pints of raw linseed oil. Keep the horse in a comfortable stall free from drafts and direct sunlight. Get a lotion made of 10 grains sulphate of zinc, 20 drops fluid extract of belladonna and 2 ounces of distilled water. Bathe the eyes well three times daily with hot water, and after bathing put a few drops of the lotion into each eye. Recovery is very slow, consequently one must have patience in treatment.

Veterinary.

Piles.

What is a cure for piles in young pigs? T. W.

Ans.—This complaint is very hard to cure. If the bowels are constipated give a little raw linseed oil, and feed on laxative food. If any of the raw surfaces are irritable, dress 3 times daily with an ointment made of 2 drams tannic acid mixed with an ounce of vaseline. Inject into the rectum 3 times daily a warm solution of alum 1 oz. to a quart of water. V.

Gossip.

D. C. Flatt & Son, whose advertisement appears in another column of this issue, writes: "Anyone looking for a combination of quality and breeding in a Holstein bull should not fail to see what we have to offer. One is a full brother to the grand champion at Toronto; another is out of a cow that has made over 34 lbs. of butter a week. The sire's dam also made over 34 lbs. of butter in a week, and the two dams averaged over 100 lbs. of milk a day. Another is out of Ardelia De Kol Tensen, one of the very finest and best-producing cows of the breed. Besides a half dozen other bulls we have a few good heifers to offer."

Trapping Weasel.

EDITOR 'THE FARMER'S ADVOCATE':

One of the most easily trapped and common fur bearers in Canada is the weasel. Here are a few hints for the farm boy who would like to make some pocket money trapping.

For weasel, No. 0 or No. 1 traps should be used, baited preferably with dead rabbit or chicken, though almost any raw meat will do.

Find a well-travelled rabbit path in the woods, and hang your bait from an overhanging branch so that it reaches to about nine inches above the surface of the snow and is about a foot to one side of the path. Scoop out a little hollow exactly under the bait, just large enough to hold the trap and deep enough to bring the pan of the trap to a level with the surrounding snow. In this hollow lay a small piece of tissue paper, on top of which lay the trap. Then lay another piece of tissue paper over the trap. This prevents snow from getting under the pan and stopping it from springing. Sprinkle snow over the set, leaving the surroundings as little disturbed as possible, and scatter a few feathers around. These help to attract the weasel, who smells the bait, and when he tries to investigate, he gets caught.

Another good set is made by making a little mound of snow with a small hole in the side facing the rabbit run, in which the trap is placed, covered with feathers. Other feathers are scattered over the surroundings. Most trappers fasten their weasel traps to the middle of a small stick about a yard long, so that if a rabbit or other larger animal gets caught in the trap, it will get entangled in the brush and will not lose the trap. The weasel itself will not move the trap.

In trapping weasels in the open, or around strawpiles—where they are often found—a very handy and easily constructed device for suspending the bait can be made.

Cut length of two by eight lumber about eighteen inches long. In this bore a hole and insert in it a curved stick, from the end of which the bait is suspended. The board is pushed down under the snow when the set is made, and the trap set under the bait as before.

Care should be taken in killing a trapped weasel not to injure the pelt. The best way to kill it is to hit it on the back of the head with a club to stun it, and then crush the ribs in with the hands.

To skin the weasel cut the feet off and slit the skin down the inside of the hind legs and around the vent, care being taken not to get any of the yellow fluid from the scent glands onto the hands. Then insert the fore-finger beneath the skin of the rump, and separate the skin from the flesh up to the base of the tail. The tail should be skinned by simply pulling the skin off it fur side out. The best way to do this is to work the tail between the finger and thumb until the skin is quite loose on the bone. Then grasp the tail firmly and pull it off the bone. Care must be taken to leave the tail on the pelt as it takes about half the price of the skin off if it is destroyed. After the tail has been skinned, remove the pelt in the usual way, using the knife where the skin adheres to the flesh. Work the front legs out, cut around the ears, eyes, and lips as they come, and the skinning is finished.

For a stretcher, cut a shingle or other very thin board just wide enough to let the pelt stretch over it tightly, and tapering to a point to accommodate the head. The pelt must be stretched flesh side out and pulled down as far as possible on to the stretcher. Tacks are then put through the extremities of the skin of each hind leg and driven into the edges of the stretcher to keep the pelt tightly stretched. The pelt should be kept on the stretching board in a dry place for two or three weeks and is then ready for sale. "Fox."

J. S. Collyer, one of our subscribers, writes that he has used the following recipe for stifle with success; One-half pint high wines, one-half ounce saltpetre, one-quarter ounce oil of spike, one-half ounce hartshorn, one-half ounce British Oil. Shake and rub on. We have not had any experience with this liniment, but pass on the recipe for what it is worth.



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A Welcome Visitor

at any time in every household. Every Bug, Flea, Roach, Moth, Fly, etc., dies once it has come into proper contact with



KEATING'S

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, Distillers Grains, Dairy Feed, Hog Feed, Poultry Feeds and supplies.

Kelley Seed & Feed Co. Successors to CRAMPSEY & KELLEY 776 Dovercourt Road, Toronto

Lump Jaw

The only reliable treatment for Lump Jaw in Cattle.

Fleming's Lump Jaw Cure Price \$2.50 a bottle. Sold under a positive guarantee since 1896. Your money back if it fails. Write for Fleming's Vest-Pocket Veterinary Advisor - 96 pages and illustrated. It is Free.

Fleming's Chemical Horn Stop. A small quantity applied when calves are young will prevent growth of Horns. A 50c tube sent postpaid is enough for 25 calves.

FLEMING BROS., Chemists, 78 Church St., Toronto, Ont.

Maple Shade SHORTHORNS

A dozen young bulls imported and my own breeding at moderate prices.

W. A. DRYDEN

Brooklin - Ontario

The Get of Burnbrae Sultan = 80325 = Shorthorn Bulls For Sale 1. Successor = 127444 = white, born March 29, 1918; dam Rosy Bud = 99834 =, by Waverly = 72804 =. 2. Ravenscraig = 12745 = roan, twin, born Nov. 19, 1918; dam Meadow Beauty 3rd (imp.) by Ben Lomond (80465). 3. Meadow Crown, white, twin with Ravenscraig. 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 Moderate. Satisfaction guaranteed. Chas. Graham, Port Perry, Ont.

Mardella Dual-purpose Shorthorns

8 choice young bulls; 30 females, cows and heifers. All of good size, type and breeding. Herd headed by The Duke; dam gave 13,599 lbs. milk, 474 lbs. butter-fat. He is one of the greatest living combinations of beef, milk and Shorthorn character. All priced to sell. Write, call or 'phone. THOMAS GRAHAM, Port Perry, R. R. 3, Ont.

Shorthorns 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.

Auctioneers' School of Experience

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

Questions and Answers. Miscellaneous.

Building Material.

Where could I secure barn tile for a foundation? C. R.

Ans.—We cannot tell you just at present where this material can be secured. The gypsum works at Caledonia manufacture a tile which is used in foundations. The National Fireproofing Company, Agricultural Dept., Dominion Bank Bldg., Toronto, manufacture tile and brick for barn construction.

Provincial Highway.

1. What was the estimated cost per mile for construction of the Provincial Highway? 2. What proportion of construction costs was to be borne by the Province, and how much by the municipality? 3. From what source was the provincial part to be drawn? A. R. Ans.—From \$30,000 to \$40,000 per mile. 2. The Province to pay 70 per cent. and the municipality 30 per cent. 3. The Provincial Government 70 per cent. from the consolidated revenue, into which motor license fees pass. The municipalities obtain the 30 per cent. from the treasurers of the counties. F. C. B.

Premature Birth.

Young cow has had two calves, was bred about six months ago, and seemed to be all right, about a week ago she gave birth to an undeveloped calf, which from appearance seemed to have lain in her, in the same condition in which it was born, for about four months. Cow was not sick at all and had milked well. Is this abortion, if so what should be done for it. Will it affect the other cows? Is there any treatment to prevent the rest from being affected? J. P. W.

Ans.—It is quite possible that an injury caused the death of the calf. It does not appear like a case of abortion. However, it is well to take every precaution and flush the cow frequently with a mild disinfectant. If it is contagious abortion, there is danger of the other cows contracting it. Careful disinfection and isolating the diseased animals is about the only treatment that can be applied.

Miscellaneous.

1. Is there any advantage in allowing two rams to run with a flock of twenty-five sheep? Is there danger of having sheep too fat to breed? 2. What is the best known method of clearing a pasture of hazel bushes and prickly ash? Can they be poisoned or blighted in some way to save cutting which is a tedious job? 3. What caused my sow to give me litter of dead pigs at 117 days? Sow was pretty well fed. Is in good condition, was fed on oats and buckwheat meal. About two weeks ago she eat an aborted calf and about ten days ago we run her till she was puffing to get her in the pen. She had been out all the time till then. 4. Would there be any loss in spreading Agrilime at this time of year and what is the best way to spread it. If I lime a field with Agrilime will that have any detrimental effect on manure which I would put on at later dates during the winter. 5. In starting a Ford car is it detrimental to any part of it to jack up one wheel and allow it to run while the other remains still on the ground. E. G. L.

Ans.—1. There is no need of having two rams in a flock of the size mentioned. There is the danger of having the ewes too fat at breeding time. 2. We do not know of anything that can be done to blight the hazel bushes. About the only way to get rid of them is to cut them. 3. Driving the sow unduly is possibly the cause of the dead pigs. It is unwise to drive a sow until she becomes exhausted. 4. Lime is frequently applied during winter, when the snow is not too deep. It may be spread directly from the sleigh or wagon, or distributed with the fertilizer drill. The lime should not have a very detrimental effect on the manure, as bacterial action is at a minimum during the cold weather. 5. It is quite a common practice to jack up one wheel of the car so as to make starting easier. We have never heard of it in any way injuring the car.

FREE! POSTPAID SAMPLE BOX OF CORONA WOOL FAT. You know what it means to you when busy with field work to have your horses laid up with sore shoulders and harness sores. You know what you lose in milk profits when your cows have sore teats. You know the danger of losing valuable cows at calving time as a result of caked or inflamed udders. THE GREAT HEALING OINTMENT is worth its weight in gold to any live stock owner—there is no other remedy so effective for quickly healing Horse's Galled Shoulders, Barbed Wire Cuts, Torn or Bruised Flesh, Scratches, Greases, Heel, Thrush, Sore Teats and Caked Udders on Cows, Ulcers or old sores of any kind. Try this Big FREE SAMPLE BOX AT MY EXPENSE. Send me your name and address, and I'll send you free and postpaid, a sample box of this wonderful healing compound. I want you to prove at my expense that it is the best and most effective remedy you ever used. CORONA WOOL FAT is different from ordinary salves and blistering compounds. It is extracted from the wool and skin of sheep. It is very penetrating (but does not smart) and carries its soothing, healing properties directly to the seat of trouble. It has been the means of saving many valuable animals from permanent disability. CORONA WOOL COMPOUND is for sale by reliable Druggists, Dealers in Ointments and Stock Food Remedies. Send for FREE sample. C. O. PHILLIPS, President, 90 Duane Street, Toronto, Ont., U.S.A. CORONA MFG. CO., 90 Duane Street, Kenton, Ohio, U.S.A.

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.

BRAEBURN SCOTCH SHORTHORNS 150 Head 100 Breeding Females

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.

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.

Shorthorns and Clydesdales

—College Duke 4th in service. Three nearest 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.

SHORTHORNS SHROPSHIRE COTSWOLDS

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

Imported Scotch Shorthorns For Sale—three imported bulls, one yearling one two-year-old, and our three-year-old herd sire, also a choice two-year-old Orange Blossom of our own breeding and three well bred bull calves about year-old. Would consider exchanging an imported bull for Scotch females. R. M. MITCHELL, R.R. No. 1, FREEMAN, 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. Inspection of herd solicited. WELLDWOOD FARM, Farmer's Advocate, London, Ont.

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, C.P.R., D. BIRRELL & SON, CLAREMONT, ONT. Greenburn C.N.R., Pickering G.T.R.

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.

Cedar Dale Scotch Shorthorns—Pleasing Cattle and Pleasing Pedigrees—Senior sire, Excelsior, by Gainford Matchless, the \$12,000 son of Gainford Marquis (imp.). Junior sire, Matchless Duke, by Gainford Matchless, the \$12,000 son of Gainford Marquis (imp.). I have a number of choice bred heifers, and must sell a few to make room. Also have a couple of Scotch-bred bulls. Prices right at all times. FRED. J. CURRY, Markdale, Ont.

Scotch Shorthorn Bulls and Females

—I have a nice offering of Scotch-bred females and one or two young 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 shorthorn. Prices reasonable. Wm. D. Dyer, Columbus, Ont., Brooklin G.T.R., Myrtle, C.P.R.

PEERLESS PERFECTION



FOR CANADA'S BROAD ACRES
Put up a fence that will last a lifetime—a fence that can't sag or break down—that will hold a wild horse—that hogs can't nose through—that can't rust—a fence that stands rough usage by animals or weather and is guaranteed. PEERLESS PERFECTION Fencing is made of Heavy Open Hearth Steel Wire with all the impurities burned out and all the strength and toughness left in. Heavily galvanized. Every intersection is locked together with the Peerless Lock.
Stiff stay wires too, it rigid, making fewer posts necessary. Send for Catalog today. It's attractive, interesting, well worth the stamp. Best dealers throughout Canada handle our complete line.
THE SANWELL-HOXIE WIRE FENCE CO., Ltd.
Winnipeg, Manitoba Hamilton, Ontario

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

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 38.56 lbs. His two nearest dams therefore average 33.44 lbs. and both have over 100 lbs. of milk per day. We have several older bulls by the same sire and from two and three-year-old heifers with records up to 27.24 lbs. All are priced to sell.

D. B. TRACY, - Hamilton House, COBOURG, 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 Korrdyke 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

"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.

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.

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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 Lestrang, the \$15,000 sire— 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 and mile) Orono, Ontario.

Silver Stream Holsteins

Special offer—Four choice bulls fit for service, sired by King Lyons Colantha, the records of his six nearest dams average 30.16 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 bull herd of Holstein bulls ever offered at our farm. The 34 dam has records up to 67.24 lbs. of butter in 7 days. All are sired by a bull 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—D. C. FLATT & SON, R.R. No. 2, Hamilton, Ont.

A 31-lb. SON OF FINDERN KING MAY FAYNE

The sire of three bull calves we are now offering. This sire has a young cow that has milked 105 lbs. of milk in one day and from good record dams. Don't miss this R.O.P. sire. Write at once for particulars and price, or better, come and see them.
PETER B. ECK, - POKEE WALK, ONT.

Questions and Answers.

Miscellaneous.

Sows in Poor Condition.

1. What is the matter with my brood sows. They are fed grain twice a day but yet they are very thin in flesh. They have a depraved appetite.

2. How can I avoid being secretary of a school section? I have tendered my resignation but the trustees will not accept it.

Ans.—1. It is possible that the sows are affected with worms, for which the following treatment is recommended. Fast the patient for twelve to eighteen hours. Mix one part oil of turpentine in seven parts new milk. Give 2 to 6 tablespoonfuls, according to size, of the mixture to each pig. It may be necessary to repeat the dose in from eight to ten days.

2. If you do not wish to act in the capacity of secretary, no one can force you to do so. If you have tendered your resignation in writing, the trustees will be obliged to appoint another secretary.

Feeding Heifer.

What are the best methods of feeding a two-year-old heifer due to freshen in March?

Ans.—The heifer should be kept on a good growing ration composed of roots and silage, and alfalfa or clover hay. If she is not in high condition a little grain should be fed. After she freshens it is well to keep her on a light ration for the first week or ten days and then gradually increase the grain ration until she is getting all that she is paying for. To ascertain what the heifer will profitably take one must keep daily records of the milk. Oats, bran, cotton-seed meal, oil cake, and a little corn are very good feeds to include in the concentrate ration. The heifer should have all the roughage she will take, and the better quality it is the less she will need of concentrates. In order to avoid udder trouble, one needs to be fairly careful of the ration around freshening time. Feeding one pound of meal to four pounds of milk is a fairly good guide.

Muskrat Farming.

Could muskrats be raised on a pond 60x120 ft. where there is fresh water and some marsh?

Would they have any objections to ducks being in the pond?

Would I need to fence it and what size fence would be needed?

Could you give me a general idea as to methods of procedure?

Ans.—From your description of the pond I believe you have a good location, running water, pond, and a little marshy land. If the pond does not freeze to the bottom in the winter months, this ought to be an ideal location, and if it freezes you can raise the dam and increase the depth of the water. If muskrats live in the pond all winter you can rest assured it does not freeze to the bottom.

On beginning to raise muskrats it should be understood that they are different from almost any other animal in that they cannot be domesticated and confined to such a close range as say the mink. On the other hand, raising muskrats has many advantages over raising other animals in that they require very little if any care, and with muskrat hides being worth at present as high as \$5.00 each, and as from fifty to one hundred muskrats can be raised to the acre without feeding or special care, it readily runs into big figures.

It is not a matter of how small space you can devote to it, rather it is how much. You should give them as much space as you possibly can, and if the muskrats are to find their own food, some marshy land, on which bullrushes and such aquatic plants grow should be enclosed.

Your space of 60x120 (which I presume is feet) could be used, but make it larger if you wish to make the venture a commercial success.

One and one-half inch mesh galvanized wire should be used, one foot being sunk below surface of ground, and four feet above ground.

After you had secured sufficient stock to warrant the capturing of some for their fur, take them only during the spring months when they are fully prime. In taking them use the No. 1 Giant, or 91 Victor or 91 Jump traps, for you must make sure that no animals are allowed to escape from traps once they are captured. In addition use the sliding wire or sliding pole as I have already described in some of my writings, to drown them. Extension chains, procurable from any hardware store, should be used in conjunction with pole or wire, for if in your capturing of the stock you scare the others you are likely to have much poorer results in the number born that year. It pays to be careful in this direction and take every precaution that can possibly be taken.

I do not believe the muskrats would object to the society of the ducks you refer to, they surely wouldn't eat them.

Lumber for Silo.

I am thinking of putting up a silo next summer. I have about half enough cedar in my swamp and was thinking of building the top half of maple. Which is the better a round or square silo? What is the best kind of rods to use, and how far apart should they be? F. B.

Ans.—The cedar would be all right, but we would not advise using maple. You would find difficulty in keeping your silo erect, as the maple shrinks and expands considerably. A round silo is preferable. There is always difficulty in getting the corners of a square silo air-tight. There is less waste in a round silo. Three-eighths or half-inch iron rods, threaded and fastened together by clamps so that they may be tightened in the spring and possibly let out a little when the silo is full, make a very good rod for holding the silo together. These rods should be placed about 3 feet apart. It is well to put guy-wires on a silo to prevent the wind wrecking it when empty.

Miscellaneous.

1. How much should a two-year-old Ayrshire bull weigh? What should I feed him for best results?

2. A number of our cows are going wrong in their udders. One quarter swells up and the milk stops flowing.

3. What should I feed a two-and-a-half-months old calf? Would you advise giving it about 4 quarts of milk in water for a drink, and five or six handfuls of cornmeal and bran twice a day?

4. Is there any cure for a horse that holds out its tongue while driving? I have used a flat bit without results.

Ans.—1. It depends a good deal on how the animal has been fed. A well-grown calf should weigh from 1,300 to 1,400 pounds. He should have all the roughage, consisting of roots or silage and legume hay, that he will eat. If a person has roots, they are preferable to silage for a herd sire. The amount of grain to feed will depend upon his condition. Oats and bran make a very good concentrate mixture.

2. Sometimes the udders go wrong due to carelessness in milking, or from a chill. It is possible that there may be some infection which may be carried from one cow to the other on the hands of the milker. The udder should be bathed and massaged. Rubbing with goose grease or camphorated oil is sometimes recommended. If possible, ascertain the cause of the trouble and endeavor to prevent it. We have known of several cases where the quarters were lost through failure to take prompt action in treating for udder trouble.

3. We would sooner give the milk by itself, and then let the calf drink what water he wanted. If water is mixed with the milk, be sure and have it the same temperature. If you have not enough milk to give the calves a full allowance, why not make up a calf meal or use one of the commercial calf meals and prepare a gruel to supplement the milk. Cornmeal and bran, or cornmeal and rolled oats, are very good for calves. They should also have clover or alfalfa hay and a few roots. It is important that the calves be encouraged to eat all the roughage they will, as this tends to give them greater spread of rib.

4. This is a habit which one will no doubt have difficulty in breaking. We do not know of anything that can be used to prevent the horse from holding out its tongue.

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Let us place your name on our mailing list for weekly quotations on Linseed 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.

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Ready for service; one (imp.) son Combination Premier; dam, daughter of Golden Fern's Noble.

IRA NICHOLS, - Burgessville, Ontario

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.

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Imported Shropshire ewes served by best imported rams, very desirable for foundation flocks.

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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.

Shropshire Yearling Ewes bred to Bibby's 84 (imp.) ram and ewe lambs sired by him. Two Shorthorn bulls. Two Clydesdale stallions.

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Oak Lodge Yorkshires

Sixty young boars of splendid quality. Sows all ages and of the correct type.

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Berkshires—Boars ready for service and boar sows, 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.

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We are now booking orders for Fall pigs, both sexes, 6 weeks to 3 months old. Several large litters to choose from.

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Farmer's Advocate, London, Ontario

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 1005-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.

Sunnyside Chester Whites and Dorsets—In 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 DUCOC 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.
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AVONDALE TAMWORTHS
Anything in Tamworths, boars or sows. All big and thrifty together with the best of breeding. Also anything in Belgian Hares. Satisfaction guaranteed. We pay the Express. Write, or better come an sec. **JOS. PURVIS & SON, Sunderland, No. 3, Ontario**

Questions and Answers.

Miscellaneous.

Landlord and Tenant.

1. A rents his farm to C for a term of year's. Is it customary for either party to give the other six months' notice if not satisfied if not mentioned on the lease?

2. Can A force C to leave, or vice versa?

Ans.—1. No.

2. No—that is not during the term.

Baby Beef.

I have 3 June calves which are still on cows. They weigh about 700 pounds each. I am feeding chop, hay and roots. They look fine—I intend finishing for Easter. Several tell me they should be altered. I don't know myself as this is my first experiment with baby beef. Will the cold weather hurt them or should I wait for warmer. L. S. L.

Ans.—Your calves are a good weight for their age, showing that your system of feeding is about right. It would have been better had the calves been castrated when a few weeks old. They should be altered but it is likely that they will not gain much for a week or two after the operation. If they are in a fairly comfortable stable the cold weather will not interfere with altering them now. They should be watched closely as the wound may heal too rapidly with the result that pus will form.

Difficult Churning.

I have two cows which freshened last March. I had no difficulty in getting the butter to gather until about six weeks ago. Since then it all froths up in the churn and will not form any resemblance of butter. I feed corn stalks, hay, mangels and cabbage. A. S.

Ans.—There is frequently difficulty in getting butter to gather when the cows have been a considerable time in milk. Sometimes if the cream is too poor in fat, the fat globules will not gather. It is necessary at this time of year to have the cream a little warmer than during the summer. It must be remembered that a cold churn will considerably reduce the temperature, or even if the churning is done in a cold room it will retard the gathering of butter. When the cream foams badly, adding a little water about 80 degrees, together with a couple of handfuls of salt, will sometimes relieve the trouble. Sometimes a gas-producing organism will work in the cream-gathering can. This would cause the cream to foam up, and can only be overcome by pasteurizing. As the cows are nearing the end of their lactation, you may have difficulty in rectifying the trouble. You would no doubt have little trouble had you a fresh cow in the herd.

Horse Overcome with Heat.

1. I have a five-year-old horse which was broken to work last spring. He fell over while working last spring, apparently being overcome with the heat. He is in good condition and appears healthy, but can only stand to work two or three hours a day. Is there anything I can give him?

2. My pullets are dying off, and when I examine them they are very thin. They are well fed. What is the trouble? H. C.

Ans.—1. Evidently he has not recovered from the trouble last spring. His system has become so affected from the exhaustion due to the heat that he has not gained sufficient strength to stand the work. As he is in good condition, and appears healthy, a tonic would not give results. Using him at light work and gradually bringing to the heavy jobs is about all that can be done.

2. Evidently the pullets are affected with tuberculosis, at least the symptoms would indicate this. All diseased birds or those showing symptoms should be destroyed and then the pen and yards thoroughly disinfected. It is quite possible that some of the healthy birds may show signs of infection. When the first symptoms appear they should be removed from the flock. Once a bird is affected nothing can be done to bring about recovery.

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Thousands of De Laval Cream Separators have been sold to young people just beginning to run a farm, because a father or friend wanted to see them start right.

The older people know from experience that the De Laval skims cleaner, runs easier and lasts longer. They also remember the service they have always received from the De Laval Company and its agents.

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Any time is a good time to buy a De Laval Cream Separator—to start saving cream, as well as time and energy.

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PROSPECT FARM JERSEYS

The prices of all dairy products are very high, and Jersey milk, and milk products are the highest quality. Where can you find a better investment, or one that will give you more satisfaction than to buy one or more good fresh Jersey cows?

We have for sale: pure-bred cows and high grades, fresh, or to freshen soon, or cows due to calve later. These are fine cows, good producers, quiet and easily milked, and in splendid condition.

Also young bulls under nine months old, from R.O.P. dams that will be priced very reasonably. Buy bulls young so that they can be shipped by express.

R. & A. H. BAIRD, - R. R. 1, - NEW HAMBURG, ONT.

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. O. 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.**

CANADA'S MOST BEAUTIFUL JERSEY HERD
The Woodview Farm Herd headed by Imported Champion Rowar, winner of first prize with five of his daughters on the Island of Jersey, 1914, second in 1916, and again first in 1917. We are now offering for sale some very choice bull calves, ready for service, sired by imported bulls and from Record of Performance imported prize-winning cows. Also some cows and heifers. Prices right. We work our show cows and show our work cows.

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, Carlaugh Prince Fortune (imp.). Young cows freshen this fall and winter.

MACVICAR BROS., 'phone 2253 Harrietsville, Belmont, R.R. No. 1, 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

Westside Ayrshires and Yorkshires—I can spare a few females, some fresh. All have good records, or are running in R.O.P., age and either sex. Write me your wants, or come and see.

Middlesex Co. DAVID A. ASHWORTH, Denfield, Ont.

ELMHURST LARGE ENGLISH BERKSHIRES

From our recent importation of sows, together with the stock born, Sutton Corridor, 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.

Combines the Two Essentials of Tea Perfection

There are two prime essentials in the production of this delicious new tea called Lanka.

First, the original tea must be the choicest pickings from the finest varieties grown.

Second, the blending of these choice growths must be done with superlative skill to attain the highest perfection of flavor.

The teas which achieve the Lanka blend are the best the hill gardens of Ceylon can produce.

The result is exquisite flavor, delicious bouquet and the rich sparkling color which proclaims fine tea.

Your grocer can supply you with Lanka Tea. He welcomed its introduction as the opportunity to supply his customers with the best tea the world produces. It comes in the handsome striking package, illustrated in this advertisement. The price is but 75 cents a pound.

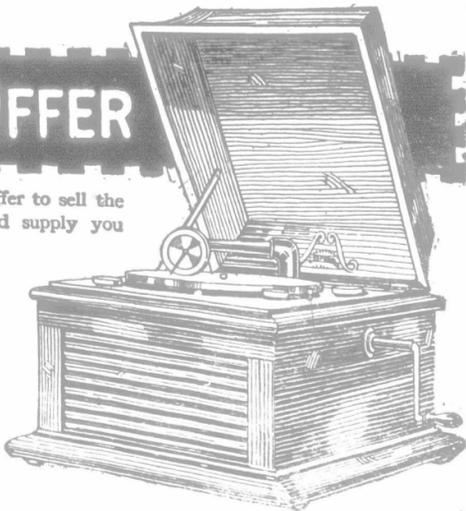
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THE MACHINE CAN BE SECURED for as little as \$5.00 down, balance payable on easy instalments. No better machine made. It has every new improvement, Plays all makes of records, and its tone is well-nigh perfect. Cabinets have a beautiful piano finish.



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Our School Department.

Breeds of Farm Animals.

By GEO. W. HOFFERD, M.A., NORMAL SCHOOL, LONDON.

To have pupils of our elementary and secondary schools become better acquainted with farm animals is not an easy task, because the teacher will feel that there is no real substitute for the barnyard as a practical laboratory. But he will recognize the fact that, though he has not the barnyard at his immediate disposal, he is dealing with a topic that has come within the pupil's experience. He has a real opportunity of bringing the school into touch with the home-life of the community.

The usual problems of what to teach, how to teach, and how to obtain the necessary information, may present some difficulties. The primary aim will not be merely to give information and a little mental discipline. Though this may be good, the powers of observation, imagination, reasoning and memory must be exercised in presenting this work, for it is through these that we arouse the interests of our bright boys and girls. The aim will be to encourage pupils to live close to Nature, that they may learn of Her; to open up a field for intellectual life, the existence of which they never suspected; to stimulate and improve their aesthetic and social natures.

This is not a topic that can be dealt with in one or two lessons in a school-room, if one expects to accomplish anything worth while. It would be well to have a few lessons extending over at least a month; and if a proper start be made, there need be no uneasy feeling that "nothing of itself will come." What is really wanted is a better direction and management of "the incidence of teaching." The pupils must be so introduced to the work that they may play a vigorous part, and be made increasingly responsible for their own education through interest. This is not forgetting that the majority of our boys and girls do not desire to make the effort to get an education. Can they be put in such a position that they may be interested; and that it may be unpleasant to be idle, and attractive to be diligent and well informed regarding this important farm topic?

The necessary information is briefly outlined and discussed in the Manual of Agriculture and Horticulture for Ontario schools, pp. 42-79. Through the study of these pages, and by careful observations made of types and breeds in various stables and barnyards of the community and elsewhere, the wide-awake teacher can prepare himself fairly well, though his past experience in this line of observation may have been meagre. There are excellent additional helps in various numbers of "The Farmer's Advocate;" "Bulletins" published by the Ontario Department of Agriculture, which may be had for the asking; "The Essentials of Agriculture," by Waters, published by Ginn & Company, Boston, price \$1.48; "Fundamentals of Agriculture," by Halligan, published by D. C. Heath & Company, Boston, price \$1.50; "High School Agriculture," by Mayne & Hatch, published by the American Book Company, New York, price \$1.00. Needless to say, no young teacher should depend entirely on books. They are mere aids. The real knowledge and interest must come from studying the animals themselves.

Perhaps most pupils have their greatest interest in horses. Then let the horse be the starting point. Divide horses into two main classes or types, viz., draft horses and light horses, as indicated in the Manual; or for high school purposes in districts where horse breeding is important,—the draft, carriage, roadster and saddle horse. The average farmer is most interested in the draft horse, and it would be well to put the emphasis on the breeds which are classed under this type. Form III pupils of our elementary schools are not able to do much, either in extent or detail, with this topic. High-school pupils can do a great deal.

The care of horses is an important part to stress with young people. The benefit to horses of keeping them clean, fed upon clean fodder, and kept in stables well lighted and ventilated is too frequently overlooked. Harness should not be allowed to chafe the skin and produce sores, some of which are hard to heal. Tight checking is cruel, and a very cold bit put into a horse's mouth often causes serious difficulty by tearing the skin of the mouth. Everybody should know such facts as these.

Similarly, a little systematic work should be undertaken, as outlined in the Manual on cattle, pigs, sheep and poultry.

The difficulty arises in how to teach this work effectively in a class-room. Here the teacher must endeavor to stimulate the pupils to make observations of farm animals outside of school hours. A visit, by teacher and class, once or twice a year to a farm, where well-bred and well-cared-for animals are kept, is time well spent. A very satisfactory way to start the study is by presenting a series of good pictures of good breeds of farm animals. The writer has made quite a collection of these, which he clipped from agricultural papers and mounted on cardboard for class use. At the beginning of a lesson, say on horses, these can be handed out to the pupils, one type at a time, and the common breeds of the type. Then, by conversation and discussion with the class, the experiences and observations of the pupils can be brought out. Some know considerable, and others often are surprised that they know so little about the animals in their immediate surroundings. The interested tone of the teacher and a few interested members of the class will do much to stimulate the others to cease living in ignorance of things which they might know for a look. Follow up this little introduction by asking pupils to bring a list of the breeds of all their farm animals at home. In some cases the total of a class will make quite a respectable list. A second and a third lesson can be spent in an interesting way by classifying the breeds of the list into types, and by having pupils describe and discuss the breeds on their list, which they have observed and discussed with the older members of the family at home. Plenty of time for home observation should be given after the stimulus has commenced to incite self-education by observation and reflection. The native home of the various breeds, and their merits and demerits from an economic standpoint would naturally follow an acquaintance of the breeds. This will have a desirable socializing influence on the young pupils' outlook, and a definite correlation with geography, history and arithmetic.



Mr. John Dearness, London Normal School, Demonstrating How a Lesson in Farm Animals May be Taught.

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Concrete in the Barnyard

The photograph on the opposite page shows how conditions in the barnyard can be improved by the use of concrete. It is not uncommon to find in the springtime, to see a barnyard so wet and muddy that the stock can almost swim in it. This condition of things certainly does not improve the live stock, and in fact may do them considerable harm. Then there is the discomfort to the farmer and his help in wading through the mud and dirt day after day.

After these considerations, there is an actual saving in having a concrete floor in the barnyard. This is not only because the floor that a large amount of manure that would otherwise be trampled in the mud and never used, is saved with the rest of its fertilizer value.

If this work were to be done all at one time, on a large yard, it would be a large undertaking. This, however, is not necessary. The work may be extended over a long period, a small section being laid down each year. If a farmer decides to pave a portion of the yard each year, he should begin at the barn and extend the floor outward each year.

To do this work, remove the manure and loose dirt level off the ground and slope it all in one direction to drain off surface water. This slope does not need to be very steep—1 inch in 10 feet will be sufficient. The floor should then be laid from 4 inches to 6 inches thick with concrete mixed 1:2:4 in sections 10 feet square. To hold the concrete in place, use 1 1/2 inch x 2 1/2 inch scantling on edge, staked to the concrete to the top of these scantlings and a straight edge laid across the forms.

As soon as the concrete is in place, level it off, and the day after, cover it with straw and wet it every day.

It is not necessary to smooth the surface—rough

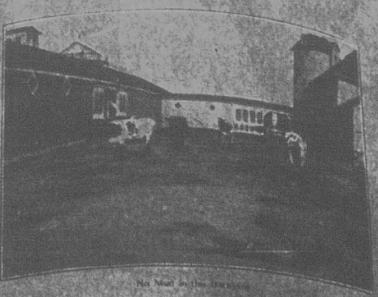
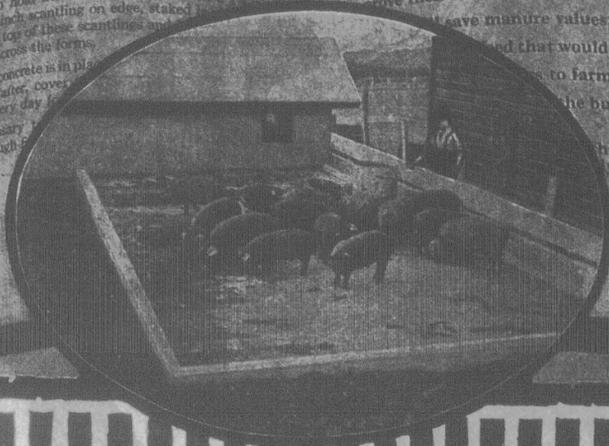
What Concrete Will Do in the Barnyard

It will keep the stock out of the mud and improve their health.

It will save manure values.

It will prevent mud from being trampled into the buildings without waste.

It will save the general appearance of the farm during the summer months only occasionally and

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Other equally important improvements can be made on your farm by the use of concrete, aided by the simple instructions given in our free book, "What the Farmer Can Do With Concrete."

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